



## 2023 ESG Report

Pan Ocean strives to become a global leading shipping and logistics company by enhancing corporate and shareholder value through practical and transparent management practices.



# ABOUT THIS REPORT

This report is the second Sustainable Management Report of Pan Ocean Co., Ltd. (hereinafter referred to as "Pan Ocean"). It is published to transparently disclose the direction of our sustainable management efforts and ESG management performance to stakeholders.

## Period

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This report covers activities and performances from January to December 2022. For certain major activities, it also refers to data up to the first half of 2023.

## Scope

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The reporting scope of this report includes Pan Ocean's domestic headquarters and offices, as well as the activities of overseas subsidiaries and offices, including its subsidiary, POS SM. Financial results were prepared in accordance with the consolidated financial statements guidelines of the Korean International Financial Reporting Standards (K-IFRS). Any discrepancies in the reporting scope, if present, have been clearly indicated.

## Principles

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This report follows the Global Reporting Initiative (GRI) Standards 2021. It is also based on the Sustainability Accounting Standards Board(SASB) and Task Force on Climate-related Financial Disclosures (TCFD).

## Cycle

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Pan Ocean publishes this ESG (Environmental, Social, and Governance) report annually.

## Reliability

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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.

## Contact Information

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## LETTER TO STAKEHOLDERS



### Dear stakeholders,

I extend my warm greetings to you on the occasion of Pan Ocean's second Sustainable Management Report publication. Since our establishment in 1966, Pan Ocean has emerged as a prominent shipping company, overcoming various challenges that have shaped our journey. Today, we proudly stand as a leading representative of the maritime industry in South Korea.

Amidst strengthened environmental regulations and the dynamic market landscape, I am pleased to share that Pan Ocean achieved its best business performance last year, surpassing all previous records. This remarkable accomplishment would not have been possible without the unwavering support and dedication of our valued business partners, shareholders, and employees. We are grateful for your continued interest and support.

Recognizing that our responsibilities extend beyond financial success, we feel a profound sense of duty towards addressing broader social challenges.

Through continuous innovation and a commitment to global standards, we aim to enhance our corporate value and contribute to solving pressing societal issues.

## LETTER TO STAKEHOLDERS

Since 2009, we have voluntarily collected and managed greenhouse gas emissions data from our operations on land and at sea. Building on the foundation laid by our Environmental Management Policy established in 2012, we continue to strengthen our environmental management system, striving for continuous improvement.

In August 2022, we set ambitious long-term targets, including the declaration of 'Net Zero by 2050,' and unveiled our roadmap for carbon reduction, the '2030 Carbon Reduction Strategy,' which outlines specific measures such as adopting low-carbon fuels and introducing zero-emission vessels. These initiatives align with our vision of achieving a sustainable future and making a meaningful contribution to combatting climate change.

The safety and well-being of our employees and stakeholders are of paramount importance. We are actively preparing for ISO 45001 certification in 2023 to establish a comprehensive occupational health and safety system. Through the implementation of our safety and health management system, we aim to proactively identify and prevent potential risks, minimize harm, and foster a culture of safety awareness.

Furthermore, we have embraced the principles of human rights management through our Human Rights Management Declaration. By formulating guidelines for human rights management, we seek to fulfill our social responsibility and role safeguarding the rights of our employees and stakeholders. Our commitment to human rights management aligns with international principles, including the UN Universal Declaration of Human Rights.

As part of our efforts to enhance corporate governance, in February 2022, we established and disclosed the Corporate Governance Charter. Based on this charter, we strive to protect the rights of all stakeholders, including shareholders, and seek to establish and develop a sound corporate governance framework. Furthermore, to strengthen transparency in our management, we disclose the operations of key decision-making bodies such as the general meeting of shareholders, Board of Directors, and Committees, along with relevant regulations.

Additionally, we have implemented an ethical management system and established a Risk Management Committee to proactively address various risks associated with our business activities. These initiatives contribute to our sustainable management by strengthening our ESG foundation.

Recognizing the impact of ESG factors on our sustainable management, we are actively promoting awareness among our employees and striving to improve our ESG activities. Through these efforts, we aim to address any areas of improvement and enhance our overall ESG performance.

Despite the challenges posed by economic uncertainties, we remain steadfast in our commitment to our core values and continuous growth. We believe that by upholding these values, we can navigate through the current realities and strive for excellence.

We sincerely appreciate your unwavering support and encouragement as we pursue our journey of improvement. Your continued partnership is vital to the success of Pan Ocean's endeavors.

Thank you.

June 2023

CEO **Ahn Joong Ho**



# OVERVIEW

Pan Ocean provides differentiated maritime transportation services with its well-established business capabilities and global competitiveness. We will solidify our position as a sustainable shipping logistics and agri-trading company offering safe and high-quality services.

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# Company Overview

Pan Ocean has been at the forefront of the shipping industry since its establishment in 1966, providing industry-leading shipping services to a diverse range of stakeholders. Our business operations encompass all areas of shipping, including bulk carriers as our key business, as well as containers, tankers, and LNG carriers. With an extensive seaway network that spans Asia, Europe, the Americas, and Oceania, we have forged strong partnerships with major shippers globally, bolstering our global reach. POS SM, a subsidiary of Pan Ocean, provides comprehensive vessel management solutions ranging from vessel and offshore employees management to new shipbuilding supervision, safety and quality management. Through excellent technologies and rich experience, we strive to make shipping even safer and more efficient, leading the vessel management industry. We will strive to become the world's leading shipping logistics and agri-trading company by leveraging our exceptional talent and capabilities to deliver differentiated services.

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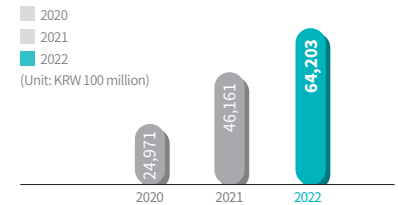
## Overview

 <p><b>Company Name</b> Pan Ocean Co., Ltd.</p>	 <p><b>Head Office</b> Tower 8, 7 Jongno5-gil, Jongno-gu, Seoul</p>	 <p><b>Annual cargo transport</b> 104,480,000 tons</p>
 <p><b>Establishment</b> 1966.05</p>	 <p><b>Employees</b> 1,146 (Onshore/Offshore employees, as at the end of 2022)</p>	 <p><b>Fleet</b> Total 268 (Owned 110, Chartered 158)</p>
 <p><b>CEO</b> Kim Hong Kuk &amp; Ahn Joong Ho</p>	 <p><b>Main Business</b> Shipping(Bulker, Tanker, Container, LNG) &amp; Agri-trading</p>	 <p><b>Website</b> www.panocean.com</p>

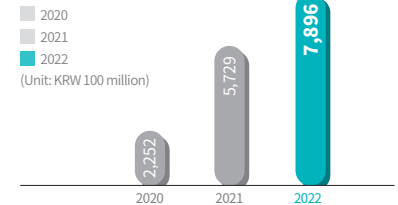
## Key Financial Results

(Consolidated financial statements)

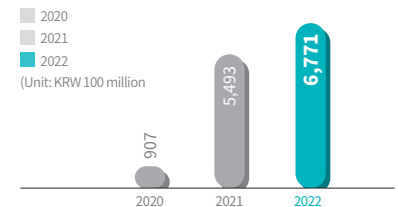
### Sales



### Operating Profit



### Net Income



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## Vision and Core Values





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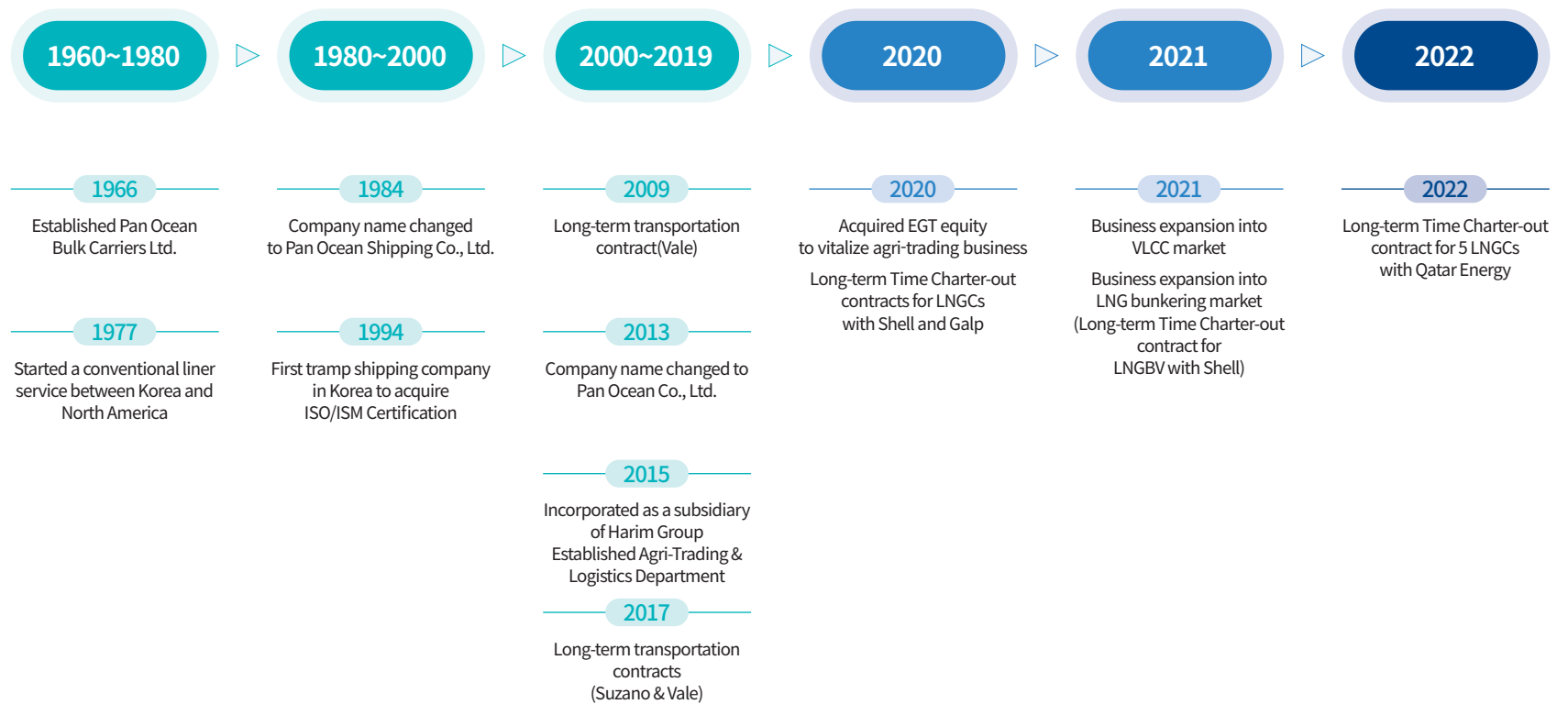
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# Company Overview

## History



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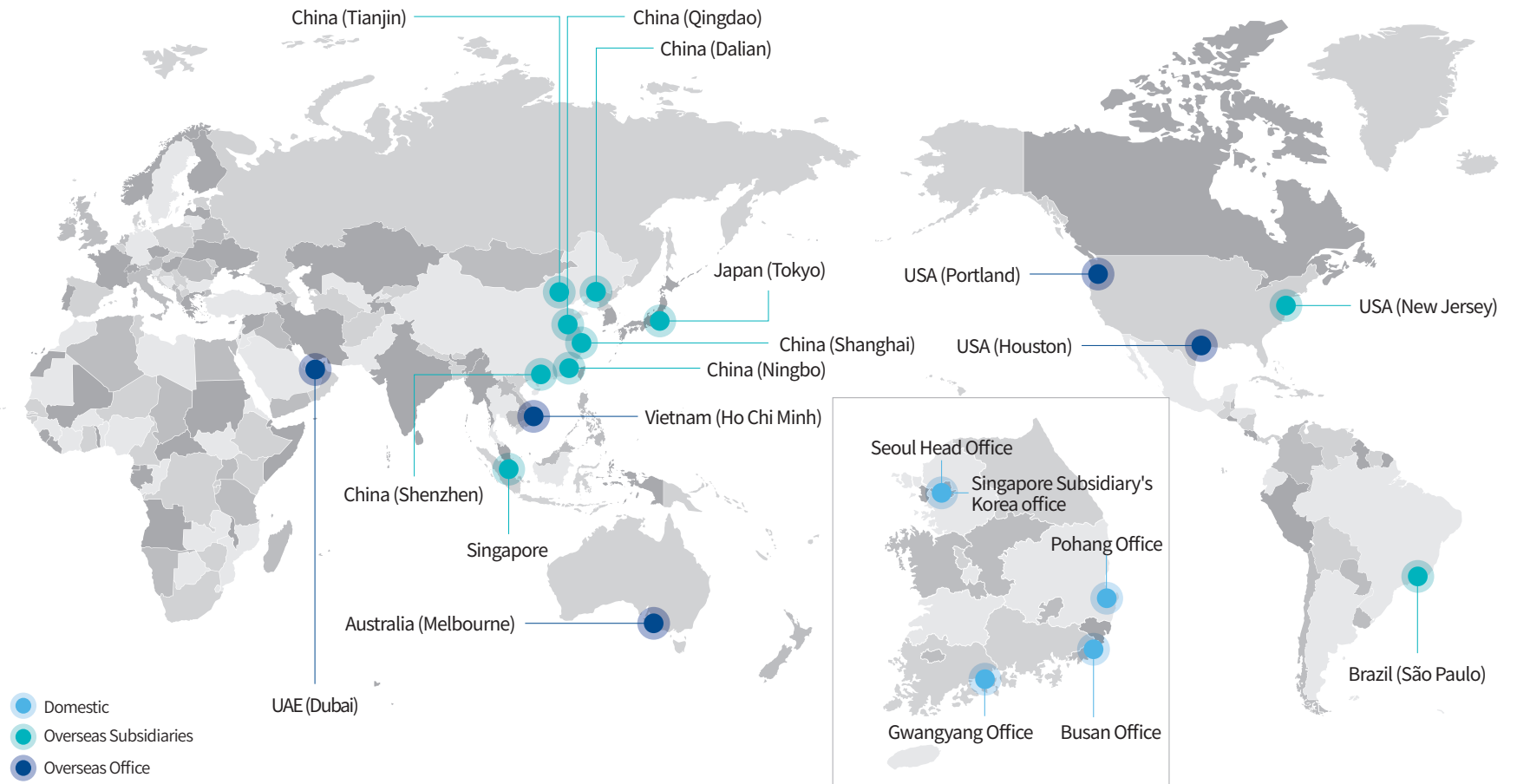
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# Company Overview

## Global Network

Pan Ocean is headquartered in Korea and has local and overseas subsidiaries and offices across the globe including Asia, The Americas, Oceania, and Europe.



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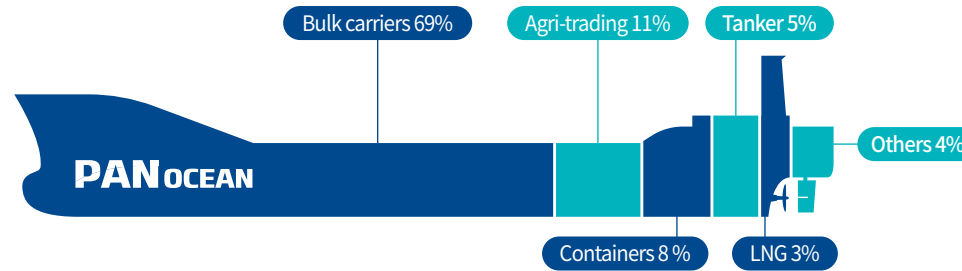
# Business Overview

As a leading global shipping company, we specialize in providing comprehensive shipping services including bulk carriers as our key business and containers, tankers, heavy lift, and LNG carriers. By leveraging our extensive experience and expertise in the shipping industry, we have built a robust network that connects key hubs worldwide. We actively explore new business opportunities, such as agri-trading business and logistics, to fuel our continuous growth. Our ambition is to become a top global shipping and logistics company, constantly seeking innovation and momentum to maintain our trusted position in the industry.

## PAN OCEAN BUSINESS PORTFOLIO

### Sales by business sector

(As of December 31, 2022)



**6** trillion **420** billion KRW  
Sales

<p><b>69%</b></p> <p><b>Bulk carriers</b></p> <ul style="list-style-type: none"> <li>· Cape/Panamax</li> <li>· Iron ore</li> <li>· Coal</li> <li>· Grain</li> <li>· Supramax/Handy</li> <li>· Steel/wood products</li> <li>· Machinery and facilities</li> <li>· Grain/fertilizer/sugar</li> <li>· Minerals/wood-pulp</li> </ul>	<p><b>11%</b></p> <p><b>Agri-trading</b></p> <ul style="list-style-type: none"> <li>· Food/feed grain</li> <li>· Grain byproducts</li> </ul>	<p><b>8%</b></p> <p><b>Containers</b></p> <ul style="list-style-type: none"> <li>· Intra-Asia/Far East</li> <li>· Container cargo</li> </ul>	<p><b>5%</b></p> <p><b>Tanker</b></p> <ul style="list-style-type: none"> <li>· Petroleum products</li> <li>· Oils/fats</li> <li>· Crude oil</li> </ul>	<p><b>3%</b></p> <p><b>LNG</b></p> <ul style="list-style-type: none"> <li>· LNG</li> <li>· LNG Bunkering</li> </ul>
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Providing Differentiated Shipping Services

## Business Overview



### Bulker Service

#### Transportation Services for All Types of Dry Bulk Cargo

As a core business of Pan Ocean, we provide transportation services for various types of dry bulk cargo, including grains, iron ore, timber, coal, minerals, fertilizers, scrap metals, and more, through global routes. We operate a fleet ranging from Small Handy to Ultramax and VLOC vessels to meet the diverse needs of our customers.

#### Expanding Worldwide Services Using An Excellent Fleet

Based on more than 50 years of experience in the bulk cargo transportation business, Pan Ocean has built trust with major shippers around the world. By capitalizing on this competency, we are focusing on securing more CVC(Consecutive Voyage Charter) contracts with POSCO, HYUNDAI STEEL, domestic power generation companies, major overseas steelworks, and resource developers, while also expanding short-term SPOT cargo transport contracts that are impervious to market fluctuation. Moreover, we are committed to reinforcing local customer-centered marketing activities and ensuring differentiated bulker services to develop new customers. Meanwhile, the strategic portfolio between short- and long-term transportation contracts is promoted to ensure stable growth foundation.

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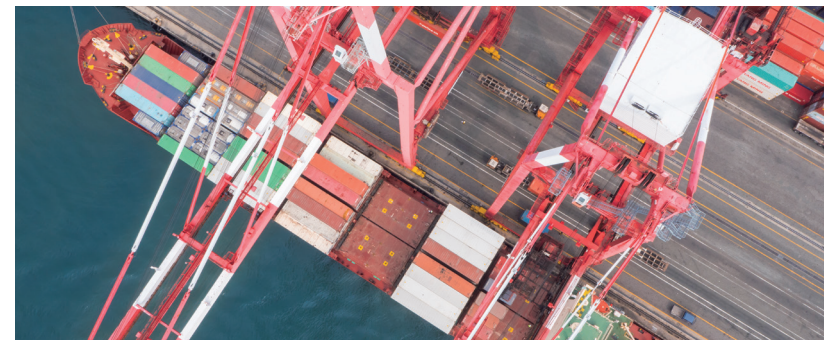
Expanding Intra-Asia Routes Based on Korea-China-Japan Services

## Business Overview

 **Container**

**Efficient Service and Customer Value**

Our container service operates routes covering Korea, Japan, China, and Southeast Asia, solidifying its position as a leading Intra-Asia carrier. We spare no efforts in reinforcing our global network services to actively respond to customers' diverse demands, ensuring punctual scheduled operations. We will continue to provide differentiated customer satisfaction services through advanced integrated logistics IT systems and domestic and international networks.



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Operation of VLCC and small and medium range tankers

## Business Overview

### Tanker

#### Providing High-Quality Tanker Service Using MR Tankers

Our tanker service demonstrates on-time delivery of crude oils, petroleum products, petrochemicals, and palm oils. By operating the largest owned fleet of MR tankers and building a solid partnership with global leading oil majors and traders including EXXON MOBIL, SHELL, and BP, Pan Ocean has fortified its presence as Korea's leading tanker service provider. Chemical tanker service safely transports petrochemicals such as benzene, toluene, xylene, base oil, and caustic soda in the routes of Middle East to Asia, and Far East to Southeast Asia.

#### Expanding Business Foundation

In the tanker service, our crude oil transportation capacity and global competitiveness have further been enhanced by securing two VLCCs in 2021 in addition to the existing fleet of MR tankers and chemical tankers. Service routes are also being expanded to U.S West Coast and South America beyond the Middle East, Asia, and Oceania. Major customers in the tanker service include global oil majors such as SHELL, BP, EXXON MOBIL, CHEVRON, and TOTAL and renowned oil traders such as VITOL, TRAFIGURA, and MERCURIA as well as Korean refiners S-OIL and SK Energy and food majors such as NONGSHIM, OTTOGI, SAMYANG CORPORATION, CJ, and LOTTE GROUP. We are making efforts to expand long-term contracts with them based on trust and partnership.

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## LNG Business Expansion

# Business Overview

## LNG

### Growing as a Global LNG Transportation Operator

Since December 2008, the 153,000 CBM-class LNG carrier "LNG KOLT" has been deployed in Korea Gas Corporation's (KOGAS) LNG import business. It transports approximately 1,500,000 CBM of LNG annually from major LNG loading ports in the Middle East such as Yemen, Qatar, Oman, as well as 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

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, the gas carrier fleet (including LNG bunkering vessels) is expected to expand to 13 vessels.

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Growing as Korea's No. 1 Grain Trader

## Business Overview



### Agri-trading

#### Successfully Advancing Into The Agri Trading

After establishing a dedicated organization, we have successfully entered the grain distribution market by selling over 1.5 million tons of corn, soybeans, barley, and feed wheat annually. Despite a short period, we have also ventured into new markets beyond Korea, including China, Taiwan, and Vietnam. In addition, we plan to continuously explore additional new markets such as Malaysia and Indonesia.

#### Building A Foundation For Stable Growth

Our entry into the grain distribution business holds significant importance at the national economic level, considering that over 85% of domestic grain demand relies on imports, with wheat, corn, and soybean consumption relying on imports up to 97%. Our Agri-trading and logistics business will serve as a future growth driver closely linked to the government's grain procurement system for food security. To activate the grain distribution business, we acquired shares in the grain export elevator "EGT" in the US West Coast in September 2020 and will focus on expanding worldwide sales routes utilizing its existing global network. This will establish a stable growth foundation and enhance our influence in the global grain market.



# ESG IMPACT

We aim to systematically implement ESG management activities To secure a foundation for sustainable growth. From a long-term perspective, Pan Ocean will identify and manage key sustainability issues, ensuring their ongoing monitoring and improvement.

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# 2022-2023 ESG Highlights

## ECONOMY

**Record-Breaking Operating Profit** (38% YoY Increase)  
(FY 2022)

Built a solid business foundation for stable sales performances



**Achieved 'A' credit rating**

(2022.05 Korea Ratings Corporation, 2023.06 Korea Investors Service)

Secured financial stability through robust business risk management



**Global LNG Business Expansion**

(2022.06)

Long term charter contract With QatarEnergy



## ENVIRONMENTAL

**Declaration of 2050 carbon neutrality**

(2022.08)

Commitment to attaining carbon neutrality by 2050 and delivering Net Zero solutions to all stakeholders



**Initiate Maritime Autonomous Surface Ship(MASS) demonstration project**

(2022.09)

Participate in the demonstration project to implement Maritime Autonomous Surface Ship (MASS)



**Fuel-saving effects of MASS Undertake the demonstration project**

(2023.03)

Validation of the operational efficiency improvement and carbon emission reduction effects of MASS technology in ship navigation.



## SOCIAL

**Revamping the education system by role and job duties**

(2022.12)

Induce engagement and practical skills through the revamp of the education system



**Establishment of Human Rights Management Policy**

(2023.06)

Enhancing Human Rights Management System and Policy Integration



## GOVERNANCE

**Corporate Governance Charter Enactment**

(2022.02)

Establishing a Corporate Governance Charter for stakeholder rights and sound governance



**Establishment of ESG Committee**

(2022.05)

Established ESG Committee within the Board of Directors for comprehensive and sustainable management at the board level.



**Introduction of Self-compliance Program (CP)**

(2022.06)

Corporate-wide compliance management system for voluntary compliance



**Anti-Corruption Program (AP) Enactment of Operational Regulations**

(2023.02)

Introduction of Anti-Corruption Program for Strengthening Anti-Corruption System



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# Materiality Assessment

## Overview and Process of Dual Materiality Assessment

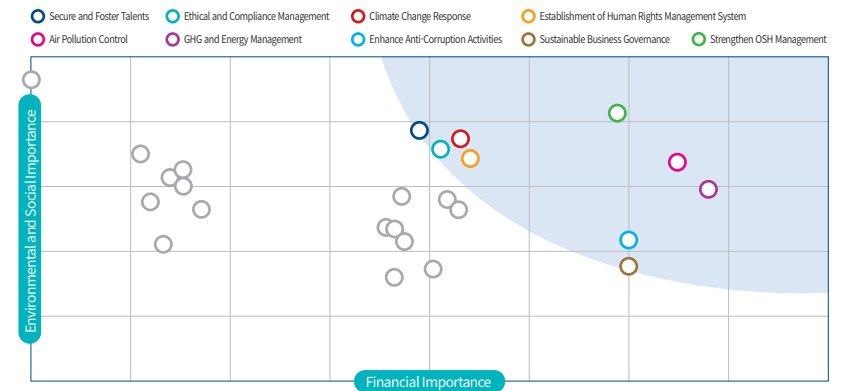
Pan Ocean has conducted a Dual Materiality Assessment to identify issues that are important to its stakeholders and to facilitate systematic reporting on sustainable management practices.

Dual materiality refers to considering both the external environmental and social impacts of a company's business activities and the external environmental and social factors that affect the company's financial condition. It is a tool used to assess the economic value of ESG (Environmental, Social, and Governance) factors.

Pan Ocean incorporated the concept of dual materiality, which measures the social and environmental importance and financial importance, to identify key issues related to sustainable management. We assessed the potential impact on both the organization and its stakeholders. International initiatives and guidelines such as GRI, ISO 26000, K-ESG, SDGs, as well as financial-related international recommendations and ESG evaluation indicators such as DJSI, TCFD, KCGS, SASB, and EcoVadis, were actively utilized in the process.

## Dual Materiality Assessment Result

Based on the derived ESG Issue Pool, a quantitative measurement of "Environmental and Social Importance" and "Financial Importance" was conducted, resulting in the selection of 9 significant issues. Issues related to the environment, such as "Climate Change Response" and "Greenhouse Gas and Energy Management," were identified alongside social issues including "Enhanced Safety and Health Management" and "Establishment of Human Rights Management System," classified as core issues.



# Materiality Assessment

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## Material Topic Management

No.	Material issues	Impact in sustainability context	Activity and Performance	ESG indicators	Page	Documents																		
1	   <p><b>Strengthen OSH Management</b></p>	<p>Providing safety and security is our utmost responsibility to protect employees. In particular, the offshore work environment involves higher risks for injuries, hence even more careful approaches are needed. Furthermore, there is a potential for loss of life and environmental pollution in the event of a maritime accident. Therefore, it is crucial to establish a fundamental accident prevention system to ensure the safety of members and adhere to environmental responsibilities. Efforts are needed to promote zero serious accidents and proactively identify safety and health risks to improve hazards and risk factors.</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>Lost time incident rate (LTIFR)</th> <th>Deaths (people)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>(Onshore) 1.13</td> <td>0</td> </tr> <tr> <td>(Offshore) 5.97</td> <td>0</td> </tr> <tr> <td rowspan="2">2021</td> <td>(Onshore) 0</td> <td>0</td> </tr> <tr> <td>(Offshore) 4.07</td> <td>0</td> </tr> <tr> <td rowspan="2">2022</td> <td>(Onshore) 0</td> <td>0</td> </tr> <tr> <td>(Offshore) 4.63</td> <td>0</td> </tr> </tbody> </table>	Year	Lost time incident rate (LTIFR)	Deaths (people)	2020	(Onshore) 1.13	0	(Offshore) 5.97	0	2021	(Onshore) 0	0	(Offshore) 4.07	0	2022	(Onshore) 0	0	(Offshore) 4.63	0	<p>· GRI 403</p>	57-65, 94	<ul style="list-style-type: none"> <li>· Safety and Health Policy for offshore employees</li> <li>· Safety and Health Policy for onshore employees</li> </ul>
Year	Lost time incident rate (LTIFR)	Deaths (people)																						
2020	(Onshore) 1.13	0																						
	(Offshore) 5.97	0																						
2021	(Onshore) 0	0																						
	(Offshore) 4.07	0																						
2022	(Onshore) 0	0																						
	(Offshore) 4.63	0																						
2	  <p><b>Air Pollution Control</b></p>	<p>With the tightening regulations on nitrogen oxides and sulfur oxides emissions in major ports, the classification of air pollutants is becoming more specific based on their respective sources of pollution. We take proactive measures to actively monitor and manage the air pollutants emitted from our vessels in real-time. Our commitment to reducing air pollutants includes the use of low-sulfur fuel oil, installation of scrubber systems, and implementation of other effective measures.</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>NOx (Kg)</th> <th>SOx (Kg)</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>63,851,643</td> <td>7,511,958</td> </tr> <tr> <td>2021</td> <td>71,729,675</td> <td>8,438,785</td> </tr> <tr> <td>2022</td> <td>71,249,120</td> <td>8,382,249</td> </tr> </tbody> </table>	Year	NOx (Kg)	SOx (Kg)	2020	63,851,643	7,511,958	2021	71,729,675	8,438,785	2022	71,249,120	8,382,249	<p>· GRI 305-7</p>	29, 88	-						
Year	NOx (Kg)	SOx (Kg)																						
2020	63,851,643	7,511,958																						
2021	71,729,675	8,438,785																						
2022	71,249,120	8,382,249																						
3	    <p><b>GHG and Energy Management</b></p>	<p>The world has now reached a climate crisis that goes beyond climate change, as it is accompanied by consequences such as rising sea levels, increasing ocean temperatures, and changes in ecosystems, all stemming from greenhouse gas emissions. Therefore, greenhouse gas reduction and energy efficiency management are not only challenges but also obligations for all companies that emit greenhouse gases through their business operations. In particular, shipping has a significant impact on climate change and is directly affected by irregular natural phenomena that occur. Furthermore, with the inclusion of the shipping industry in the EU ETS, there are financial implications associated with the cost of emission allowances trading. In addition, companies that do not actively participate in climate change mitigation are increasingly at risk of being excluded from investment opportunities due to their perceived low contribution to sustainability. Greenhouse gas and energy management are important tasks for Pan Ocean in terms of securing investors and fulfilling environmental responsibilities.</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>GHG emission intensity (tCO2eq/KRW 100 million)</th> <th>Energy intensity (TOE/KRW 100 million)</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>113.346</td> <td>36.070</td> </tr> <tr> <td>2021</td> <td>67.776</td> <td>21.733</td> </tr> <tr> <td>2022</td> <td>46.831</td> <td>14.890</td> </tr> </tbody> </table>	Year	GHG emission intensity (tCO2eq/KRW 100 million)	Energy intensity (TOE/KRW 100 million)	2020	113.346	36.070	2021	67.776	21.733	2022	46.831	14.890	<p>· GRI 302 · GRI 305</p>	26, 35-36, 87	<ul style="list-style-type: none"> <li>· Environmental Management Policy</li> </ul>						
Year	GHG emission intensity (tCO2eq/KRW 100 million)	Energy intensity (TOE/KRW 100 million)																						
2020	113.346	36.070																						
2021	67.776	21.733																						
2022	46.831	14.890																						

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# Materiality Assessment

## Material Topic Management

No.	Material issues	Impact in sustainability context	Activity and Performance	ESG indicators	Page	Documents												
4	    <p><b>Climate Change Response</b></p>	<p>As a situation is emerging where a temperature rise of 1.5°C is expected within the next 20 years compared to pre-industrial levels, there is an urgent need for rapid climate change mitigation. Pan Ocean is facing demands from stakeholders to concretize and implement Net Zero targets. Various investment and evaluation institutions require companies to set specific short-term Net Zero goals, disclose their reduction performance, enhance the alignment between Net Zero achievements and management KPIs, and provide comprehensive plans for attaining Net Zero, including investment costs for different mitigation options. In response to these demands, Pan Ocean is fully committed to establishing and implementing the Road to Decarbonisation, aligning with stakeholders' expectations.</p>	<ul style="list-style-type: none"> <li>Total emissions reduced by 88,380 tCO<sub>2</sub>eq compared to 2021, with a 31% reduction in emissions intensity</li> </ul>	<ul style="list-style-type: none"> <li>GRI 305</li> </ul>	37-41	-												
5	  <p><b>Establishment of Human Rights Management System</b></p>	<p>By implementing human rights management, businesses can not only reduce the risks associated with human rights violations but also enhance sustainability and improve competitiveness. Pan Ocean has established a human rights management policy to ensure the integration and enhancement of human rights within the organization. We have set specific medium to long-term goals, including conducting human rights assessments and implementing remedial measures, to strengthen our commitment to human rights management.</p>	<ul style="list-style-type: none"> <li>Human Rights Management Policy established in June 2023</li> </ul>	<ul style="list-style-type: none"> <li>GRI 405, 406, 407, 408, 409, 411</li> </ul>	43-44	<ul style="list-style-type: none"> <li>Human Rights Management</li> </ul>												
6	 <p><b>Ethical and Compliance Management</b></p>	<p>Responsible ethical management and compliance are linked to various risks that can significantly impact our survival, including reputation, market competitiveness, and human rights. The level of responsibility and expectations from evaluation groups, investors, and customers is continuously rising, accompanied by increasingly stringent laws and regulations. Failure to meet these expectations can result in financial penalties, loss of social credibility, and internal concerns. Therefore, it is imperative to ensure thorough compliance with all relevant laws and regulations pertaining to anti-corruption, fair trade, and workplace bullying prevention. Pan Ocean has implemented the Self-Compliance Program(CP) to proactively prevent potential risks and enable immediate responses to unethical conduct.</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>% ethics/compliance pledge signed</th> <th>% voluntary compliance review conducted</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>99.4%</td> <td>100%</td> </tr> <tr> <td>2021</td> <td>99.6%</td> <td>100%</td> </tr> <tr> <td>2022</td> <td>99.7%</td> <td>100%</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Implementation of the Self-compliance Program (CP) in June 2022</li> </ul>	Year	% ethics/compliance pledge signed	% voluntary compliance review conducted	2020	99.4%	100%	2021	99.6%	100%	2022	99.7%	100%	<ul style="list-style-type: none"> <li>GRI 2-27</li> <li>GRI 205</li> </ul>	76-79	<ul style="list-style-type: none"> <li>Charter of Ethics</li> <li>Code of Ethics</li> <li>Ethical Management Guidelines</li> </ul>
Year	% ethics/compliance pledge signed	% voluntary compliance review conducted																
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# Materiality Assessment

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## Material Topic Management

No.	Material issues	Impact in sustainability context	Activity and Performance	ESG indicators	Page	Documents																
7	     <p><b>Secure and Foster Talents</b></p>	<p>The growth and happiness of our employees directly contribute to the development of Pan Ocean. As the competitiveness of a company begins with securing and continuously managing its talent pool, we have a clear responsibility to ensure the capacity development and quality of life of its employees. In the case of our company, long-term talent acquisition is especially important for business continuity, and constant attention should be given to prevent talent attrition and loss. It is necessary to establish medium to long-term workforce planning and take sincere considerations and practical actions to address the concerns of employees. Moreover, securing and retaining innovative talents with diverse capabilities is not only crucial for the growth of Pan Ocean but also has a positive social impact in terms of creating new jobs. Therefore, the entire process of talent management, from recruitment to development, retention, and re-employment support, is essential for our sustainable growth and fulfillment of social responsibilities.</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>New hires (people)</th> <th>Voluntary resignation (%)</th> <th>Training costs (KRW 100 million)</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>206</td> <td>(Onshore) 2.5 (Offshore) 8.9</td> <td>2.8 4.0</td> </tr> <tr> <td>2021</td> <td>235</td> <td>(Onshore) 3.1 (Offshore) 6.8</td> <td>3.4 5.2</td> </tr> <tr> <td>2022</td> <td>169</td> <td>(Onshore) 4.9 (Offshore) 8.6</td> <td>4.2 5.6</td> </tr> </tbody> </table>	Year	New hires (people)	Voluntary resignation (%)	Training costs (KRW 100 million)	2020	206	(Onshore) 2.5 (Offshore) 8.9	2.8 4.0	2021	235	(Onshore) 3.1 (Offshore) 6.8	3.4 5.2	2022	169	(Onshore) 4.9 (Offshore) 8.6	4.2 5.6	<ul style="list-style-type: none"> <li>GRI 401,404</li> </ul>	45-56	-
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2022	169	(Onshore) 4.9 (Offshore) 8.6	4.2 5.6																			
8	 <p><b>Enhance AntiCorruption Activities</b></p>	<p>Through effective human rights management, companies can mitigate the risks associated with human rights violations and enhance their sustainability and competitiveness. We are committed to internalizing and strengthening our human rights management system. We have established a comprehensive human rights management policy and implemented measures such as human rights assessments and remedial actions. By setting specific medium to long-term goals, we aim to further enhance our human rights management practices.</p>	<ul style="list-style-type: none"> <li>Completed risk assessment and mitigation measures for a total of 48 items across five categories of corruption risks</li> </ul>	<ul style="list-style-type: none"> <li>GRI 205 (Anti-corruption)</li> </ul>	78	-																
9	 <p><b>Establishment of Sustainable Business Governance</b></p>	<p>External stakeholders, including evaluators, shareholders, investors, and customers, have high expectations for our company's ESG activities and achievements. The shift towards non-financial performance criteria, such as environmental impact and human rights, underscores the significance of ESG management for our business's survival and growth. To ensure the integration of sustainable management into our company's policies, the board of directors must assume leadership roles within the governance structure. However, it is crucial to foster consensus among all employees, as sustainable management requires their active engagement and contributions. Building company-wide consensus and developing an interconnected ESG strategic system aligned with our medium to long-term strategic directions are essential for success.</p>	<ul style="list-style-type: none"> <li>ESG Committee operated within the Board of Directors</li> </ul>	<ul style="list-style-type: none"> <li>GRI 2-14</li> <li>GRI 2-22</li> </ul>	70-72	<ul style="list-style-type: none"> <li>ESG Committee Operation Rules</li> <li>ESG Finance Management System</li> </ul>																

# Stakeholder Engagement

Pan Ocean defines stakeholders as employees, customers, business partners, shareholders/investors, and local communities. We actively gather the interests and opinions of each group through various channels and have incorporated stakeholder input into our Materiality Assessment. Furthermore, we will continue to identify and prioritize issues that are of high interest and impact to stakeholders, ensuring smooth communication and engagement with them.

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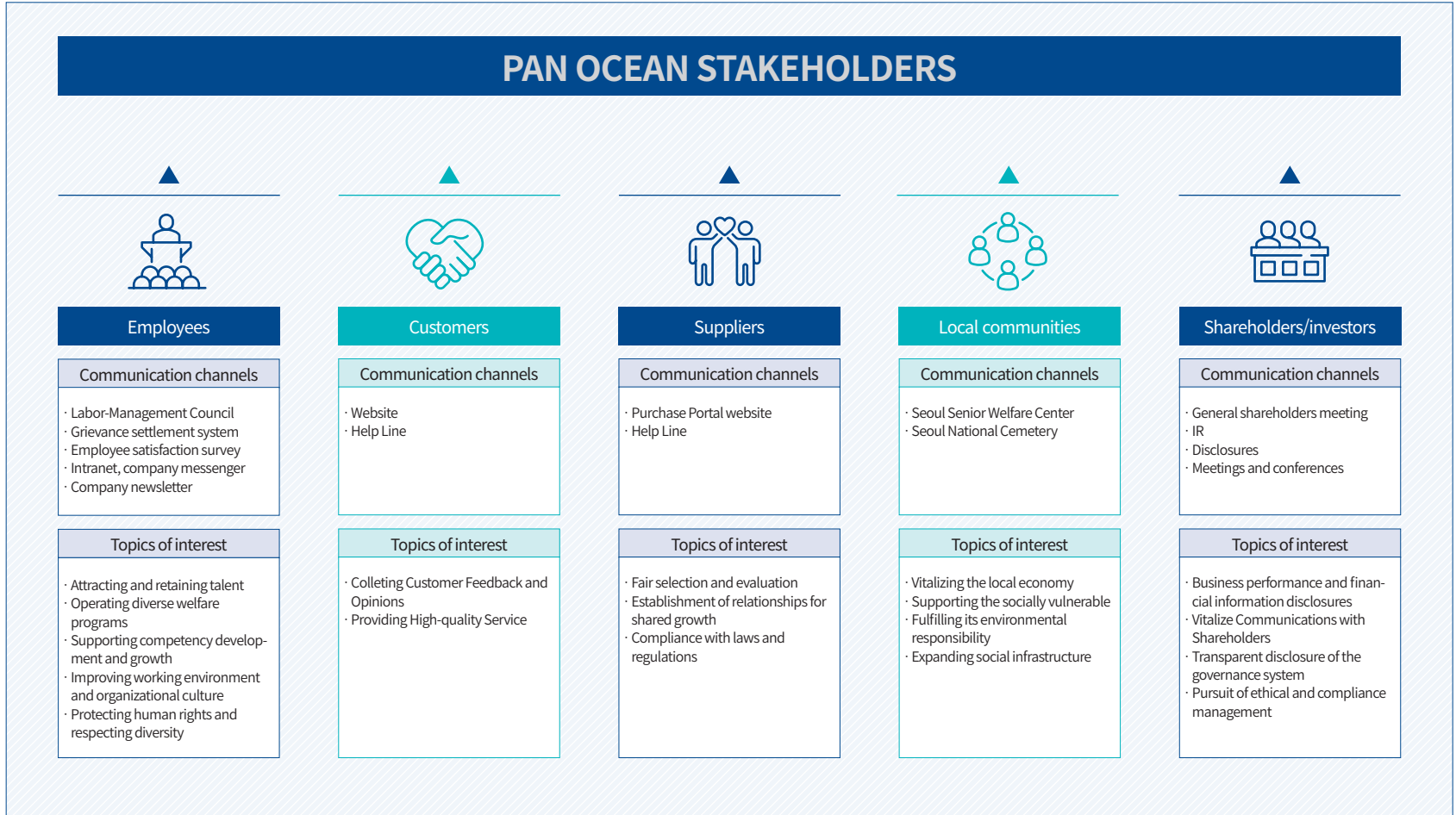
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# ENVIRONMENTAL

It is vital that corporates make commitments to the environment and respond to the climate crisis and sustainable future.

Pan Ocean takes preemptive measures and actively responds to resolve environmental issues.

- 25** Establishment of Environmental Management System
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- 37** Climate Change Response



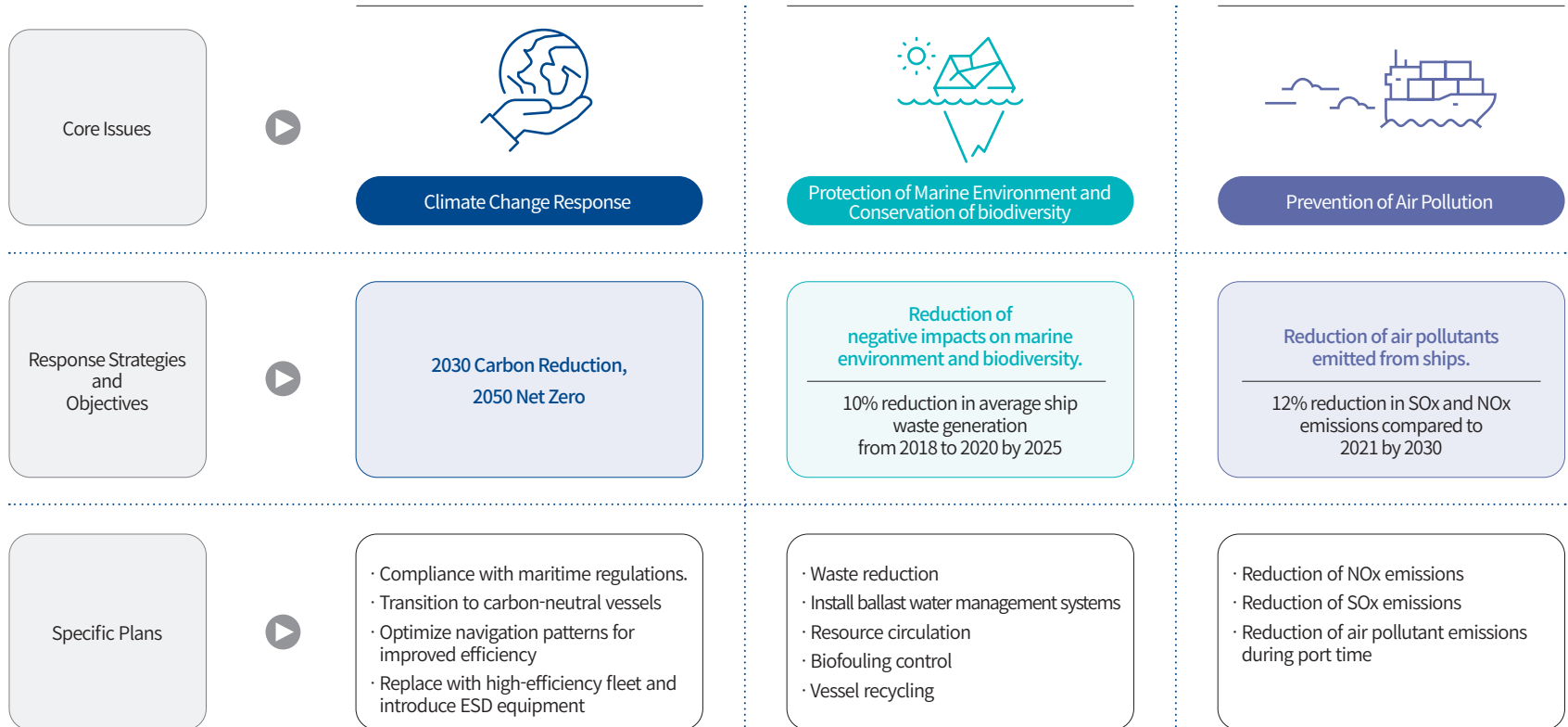


# Establishment of Environmental Management System

## VISION

Pan Ocean is committed to efforts for marine environmental protection, biodiversity conservation, and prevention of air pollution. Our goals include reducing emissions of air pollutants, carbon emissions, and introducing environmentally friendly technologies to pursue sustainable development. Additionally, we strive for effective communication with stakeholders to ensure empathy and capability to address environmental issues, aiming for both nature conservation and sustainable growth.

### Core Issues and Objectives Pursued Strategy



# Establishment of Environmental Management System

## Environmental Management Policy

Since the establishment of the environmental management policy in 2012, we have been continuously making efforts to strengthen the environmental management system. We annually establish specific environmental goals and plans in accordance with our policy and implement them to create a sustainable environment for future generations and become an environmentally friendly company.

## Environmental Management System

We pursue safe vessel operations and environmentally friendly transportation services. For more organized environmental management, we obtained the ISO14001 certification in 2010 and have maintained it since then. POS SM also retains the certification. We manage overall environmental impact through the PDCA (Plan-Do-Check-Action) cycle. In order to enhance our environmental management, we conduct improvement activities ranging from planning and implementing environmental goals to environmental education, monitoring, taking corrective measures for noncompliance, and managerial review. The Maritime Environment Team is exclusively responsible for environmental management and dedicated to maintaining the environmental management system.

## Environmental Impact Assessment

We conduct annual environmental impact assessments to predict and analyze the impact of Pan Ocean's business activities on environment and prevent environmental pollution in advance. The severity of environmental impact is calculated by combining the likelihood of each environmental risk and potential consequences. Aspects identified to have significant environmental impact based on the level of severity are taken into consideration in establishing the following year's environmental goals.

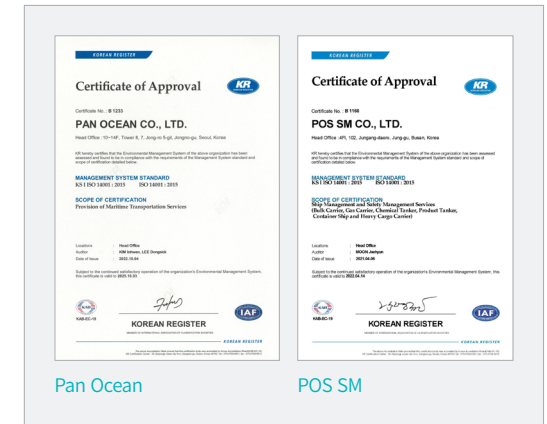
## Environmental Impact Assessment Result

Category	Impact	Response
Climate change	· Increased capital investment	· Timely implementation of Engine Power Limitation (EPL) and minimizing operational delays
	· Introduction of carbon tax and increased costs due to emission trading system	· Collaborate with long-term charterers and shipowners to manage emissions allowances and address pricing risks. · Develop an EU ETS management system
Regulations on Fossil Fuel Usage	· Decline competitiveness of vessels as decrease in fossil fuel transportation	· Expansion of investment in LNG transportation and LNG bunkering
Increased frequency of tropical cyclones	· Increasing risk of vessel accidents	· Development and operation of vessel and weather monitoring system
Strengthening regulations on Lower-Grade Vessels and the Growing Importance of Scope 3 Management	· Increasing demand for high-efficiency vessels	· Introduction of high-efficiency vessels and installation of Energy Saving Devices (ESDs)

## Pan Ocean Environmental Management Policy

1. We aim to provide sustainable maritime services.
2. We proactively pursue carbon neutrality and lead the industry's future.
3. We continue our efforts to protect marine environments and preserve biodiversity.
4. We strive to reduce emissions of air pollutants and comply with relevant regulations.
5. We maintain ongoing communication with stakeholders to ensure empathy and responsiveness to environmental issues.

## ISO14001 Certificates



Pan Ocean

POS SM

# Establishment of Environmental Management System

## Conducting Environmental Training

We conduct annual environmental training sessions to promote employees' understanding and integration of environmental awareness, while sharing pertinent information on environmental laws and regulations to ensure strict compliance. In particular, we regularly conduct marine pollution prevention education based on the Environment Management System (EMS) manual. Our offshore employees undergo onboard on-the-job training (OJT), computer-based training programs, and drills to enhance their knowledge and preparedness. Preembarkation job training and onshore safety quality meetings serve as fundamental pillars for the ongoing and systematic management of marine pollution prevention. Moreover, we provide our employees with opportunities to receive training on greenhouse gas (GHG) and energy regulations, clean fuel technologies, and emerging industries such as green vessels, fostering a corporate-wide consensus on environmental management.

### Environmental training for onshore and offshore employees

Onshore employee	Offshore employee
<ul style="list-style-type: none"> <li>Alternative fuel and alternative fuel-powered vessel market status</li> <li>Global decarbonization trends in shipping</li> <li>Impact of IMO/EU Environmental Regulation and Countermeasures</li> </ul>	<ul style="list-style-type: none"> <li>Environmental pollution prevention training for Chief Officer/Engineer</li> <li>Environmental pollution prevention training for personnel boarding vessels carrying hazardous liquid substances</li> </ul>

## Compliance with Environmental Laws and Regulations

We proactively assess our legal and regulatory compliance to ensure full adherence to all applicable laws and regulations governing the shipping industry. Our approach is guided by the rules outlined in the International Maritime Organization's (IMO) MARPOL convention, as well as the latest local and international environmental regulations, including regulations pertaining to vessel greenhouse gas (GHG) reduction. We report key compliance response measures and progress to the Risk Management Committee, ensuring the maintenance of an efficient compliance management system.

## Green Products Purchase and Use

To minimize the environmental impact caused by vessels, we purchase and promote eco-friendly products such as environmentally acceptable lubricants (EALs) and biodegradable chemicals for vessels' consumables. We adhere to the standards of environmentally acceptable lubeoil and biodegradable chemicals set by the U.S. Environmental Protection Agency and distribute them. Furthermore, we plan to progressively expand the range of eco-friendly products among the supplies provided to ships.

## Issuing Green Bonds

We have issued the first-ever green bond in the domestic shipping industry with a size of 50 billion KRW. We have maintained G1 certification, the highest rating for ESG green bonds, as recognized by Korea Ratings. The funds secured through the bond issuance have been invested in the introduction of environmentally friendly ship fuel (LNG), leading to a reduction in environmental pollutants. They have also been utilized for the installation of ballast water management systems, contributing to the conservation of biodiversity. We adhere to the principles outlined in our ESG financial management system to identify and evaluate investment projects. Going forward, we plan to fully invest in ESG projects that are expected to have positive environmental effects.

### Violation of Environmental Regulations

Category	2020	2021	2022
Cases	0	0	0

### Green products purchase track records

(Unit: KRW million)

Category	2020	2021	2022	Remark
Green lubricants	172	264	269	Environmental Acceptable Lubricants (EALs) purchases according to the U.S. Environmental Protection Agency Standards
Green chemicals	29	36	59	Biodegradable product purchases
Green product purchases	201	300	328	
Total purchases	47,112	57,197	82,894	
% green product purchases	0.4%	0.5%	0.4%	Green product purchases/total purchases

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# Establishment of Environmental Management System

## Targets and Indicators

We have established and implemented plans to attain our environmental and climate change response targets. To ensure effective performance management, we define indicators for annual evaluations and identify areas for improvement through thorough audit processes, including internal and external reviews. By proactively operating our environmental management system, we aim to continuously enhance our environmental performance.

2022		
KPI	Target	Result
Zero use of off-spec fuel oil	0 Case	3 Cases
GHG emissions [tCO <sub>2</sub> e] (Scope1)	2,503,830	2,669,080
Emission intensity [gCO <sub>2</sub> /ton mile]	5.94	6.02
Energy consumption [TOE]	829,919	848,790
Amount of oil waste (sludge) [m <sup>3</sup> /vessel]	10.75	14.66
Amount of oil waste (bilge) [m <sup>3</sup> /vessel]	185.79	136.11
ZERO regulatory violations	0 Case	0 Case
Investment in environmental facilities	190 million	202 million

Details	Target	Result
Sample tests for every fuel supply	Zero Cases	Zero Cases
Pre-confirmation of ON-SPEC status by securing product specifications from major suppliers	6 times per quarter	Securing product specifications in progress
Vessel Performance Data Update	Biannual	Update in Oct.
Implementation of slow steaming	90%	87%
Key regulation seminars	Biannual	2 sessions
Reporting on trends (IMO, EU)	Biannual+	3 sessions
Establishment of Greenhouse Gas Emissions Monitoring System in response to IMO CII rating regulations	System development	CII Rating Monitoring System Development completed
BWMS installation	15 vessels	17 vessels
Implementation of EPL measures in response to IMO EEXI regulations*	EPL implementation	-

\* Delay in approval of EPL (Engine Power Limitation) provider and considering speed restrictions after EPL implementation, postponing it to 2023

2023		
Category	KPI	Target
Climate Change Response	GHG emissions (Scope1)	2,481,640 tCO <sub>2</sub> e
	Emission intensity (Vessel)	6.11 gCO <sub>2</sub> /ton mile
	Energy consumption	829,641 TOE
Marine Environment Conservation	Amount of Oil Waste (sludge)	10.53 m <sup>3</sup> /vessel
	Amount of Oil Waste (bilge)	181.92 m <sup>3</sup> /vessel
Biodiversity Conservation	Additional measures in accordance with international regulations and requirements	
Air Pollution Prevention	NOx emissions	68,418 ton
	SOx emissions	8,043 ton

Category	Activity	Target
Climate Change Response	Enhancement of CII system	Development within the first half of the year
	Development of EU ETS monitoring system	Development of a cost calculation system
	Development of greenhouse gas inventory management system	Development within the year
Marine Environment Conservation	Eco-friendly automobiles	Introduction of 3 hybrid vehicles
	Amount of Oil Waste (sludge)	10.53 m <sup>3</sup> (Avg. per vessel)
	Amount of Oil Waste (bilge)	181.92 m <sup>3</sup> (Avg. per vessel)
	Plastics	11.82 m <sup>3</sup> (Avg. per vessel)
	Vessels refrigerant usage	66.06 kg (Avg. per vessel)
	Food waste	2.89 m <sup>3</sup> (Avg. per vessel)
Biodiversity Conservation	Zero marine pollution accidents	0 Case
	BWMS installation	7 vessels
	Implementation of Hull Cleaning	70 times
Air Pollution Prevention	NOx reduction devices (SCR) installation	1 vessel
	Conduct fuel oil sample test	Implementation of bunkering at each bunkering session
Supplier Management and Compliance with Initiatives	Evaluation of Suppliers	Introduction of self-environmental management evaluation scores, evaluated twice
	Environment-friendly social contribution activities	· Eco-clean Volunteer work 24 sessions · Seoul National Cemetery environmental cleanup twice

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# Environmental Impact Management

## Harmful Chemicals Management

### Identifying Harmful Chemicals

In accordance with the IMDG Code\* and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), we classify and manage substances that are explosive, flammable, toxic, corrosive, or marine pollutants as hazardous chemicals. These substances have the potential to directly affect people, cargo on board, and the marine environment. Specifically, for chemicals and cleaners that may have adverse effects on the marine environment, we procure and utilize green products certified by the IMO. This is part of our comprehensive approach to control harmful chemicals.

\* IMDG Code: International Maritime Dangerous Goods Code adopted by the IMO and applicable to dangerous substances packed and shipped via the sea.

### Inspection and Management of Harmful Chemicals

Extra precautions are taken to prevent accidents during the transportation and storage of hazardous chemicals. For bulk hazardous chemicals, we adhere to stringent procedures that include cargo temperature checks, the use of inhibitors, monitoring of oxygen levels in tanks, and thorough management of void spaces. Daily inspections and documentation are carried out for transportation and storage activities. The processes for managing hazardous chemicals undergo internal and external validity reviews twice a year.

### Handling of Harmful Chemicals

We perform preliminary screening for all chemicals used, assessing their characteristics, hazards, and emergency response procedures. Packaged harmful chemicals are categorized into nine classes, while bulk chemicals are classified into five classes, and we implement appropriate isolation and separation measures accordingly. We also conduct thorough checks to identify any restricted or prohibited items. To ensure safety, we have a Personal Protective Equipment (PPE) matrix in place, specifying the required PPE based on specific situations. Handling of harmful chemicals is carried out in accordance with the guidelines provided in the Material Safety Data Sheets (MSDS) under the Occupational Safety and Health Act.

## Air Pollutants Management

### Using Low Sulfur Fuel Oil

Bunker C fuel, which is used as a ship fuel, emits sulfur compounds during the combustion process, which is one of the three major air pollutants and a significant contributor to respiratory diseases and particulate matter. In response to this, the International Maritime Organization (IMO) has implemented regulations on sulfur content in vessel fuels. Since January 2020, Pan Ocean has been supplying low sulfur fuel with a sulfur content of less than 0.5% as the main fuel.

### Scrubber (Desulfurizer) Installation

We have installed scrubbers in 76% of our Capesize vessels that consume the largest amount of fuel in our fleet. This system allows us to monitor sulfur oxides emissions from the vessels in real time. By applying procedure-based control, we strive to reduce sulfur oxide emissions.

### Alternative Maritime Power (AMP)

To reduce fine dust from vessels at anchor, we installed Alternative Maritime Power (AMP) system in two vessels. The AMP supplies power from land to the vessel while anchored in the port. This system is used to reduce air pollutant emissions from power generation using vessel fuel.

# Environmental Impact Management

## Waste Management

We established a waste management manual to minimize waste generation and facilitate recycling. We also asked waste disposal services to apply the same standards to ensure waste management in accordance with international rules, including the International Safety Management Code (ISM Code) and the requirements of MARPOL and Pan Ocean. We ensure thorough management and monitoring with the ultimate goal of preventing pollution by minimizing waste disposal.

### 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 the targets are met. We encourage the use of onboard incinerators to minimize waste discharged to land and water, and we supply plastic shredders and presses to facilitate waste recycling.

### Oil Waste

In accordance with our SHEQ manual, the disposal of onboard waste and oil waste (Bilge, Oily bilge, Sludge) is strictly and meticulously managed. We closely monitor and document the generation and treatment of oil waste (bilge, oily bilge, and sludge) to ensure compliance with international standards. Our fleet is equipped with an autonomous Environment Tag System (ETS) for monitoring proper oil waste management. Furthermore, we plan to evaluate standardized criteria such as 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.

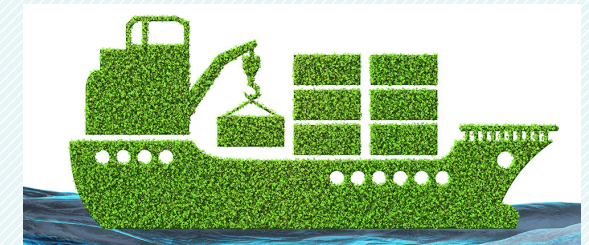
### Packing Material Waste

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

## Vessel Recycling

### Green Recycling Policy

- Pan Ocean complies with vessel recycling rules. Our fleet has the Inventory of Hazardous Materials (IHM) furnished onboard. The IHM helps ensure the safety and health of workers in the dismantling process and prevents pollution.
- To prevent vessels from being recycled under poor environmental conditions, we have established the Green Recycling Policy. Under this policy, we only utilize yards that are accredited by the Korean Register, following the guidelines set by the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.
- We consider and implement the safest and most environmentally-friendly vessel recycling policies to protect the marine environment and the rights of workers.



# Environmental Impact Management

## Conservation of Biodiversity

### BWMS Installation

Ballast water is either stored in the ballast tank of a vessel or discharged into the seas to ensure the safe operation of the vessel. However, this process can lead to the introduction of microorganisms that may disrupt the marine ecosystem. To address this concern, the IMO implemented the Ballast Water Management System (BWMS) in September 2017, which is designed to sterilize and remove microorganisms from ballast water.

Pan Ocean has been installing ballast water treatment systems on its vessels since 2016, before the regulations came into effect. The disinfection process and results of the discharged ballast water are monitored in real-time. As of the end of June 2023, the installation has been completed on a total of 105 vessels, and it is planned to expand the installation to all vessels by 2025.

### Fouling Prevention

We employ a range of measures to preserve marine biodiversity and protect the ecosystem. To prevent the disruption of ecosystems caused by foreign species attached to the hull of internationally operating vessels, we ensure regular cleaning of the vessel surface and application of anti-fouling paints whenever vessels enter the dock. Furthermore, vessels at sea adhere to procedures for regular inspections of hull surfaces to detect and address contamination and damages. Furthermore, Pan Ocean is making efforts to prevent marine growth by installing Marine Growth Preventing Systems (MGPS) at seawater inlets on its vessels. Managers are assigned to regularly maintain and manage these systems. These measures aim to prevent the colonization of marine organisms and promote the preservation of marine ecosystems.

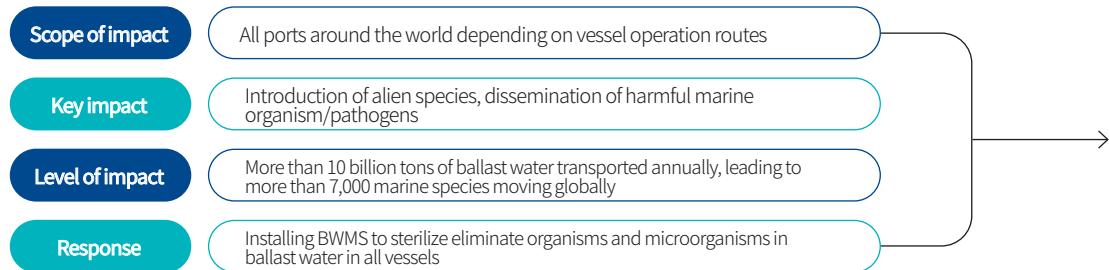
## Water Resource Management

### Vessel Drainwater Management

Pan Ocean systematically manages and controls the discharge of effluent to minimize the marine environmental impact resulting from vessel operations. For the discharged cleaning water, which is treated using exhaust gas scrubbers to reduce sulfur oxides, parameters such as pH, turbidity, PAH, and nitrate levels are measured and monitored in real-time. Additionally, monitoring data is continuously accumulated and managed in an integrated manner.

Gray water and wastewater from vessels are processed through vessel wastewater treatment systems to ensure sterilization prior to discharge. If sterilization is not possible, the water is stored in separate holding tanks. We actively engage in marine water resource management in full compliance with international agreements and regulations.

### Environmental impact of ballast water discharge



### BWMS Installation Records and Plans



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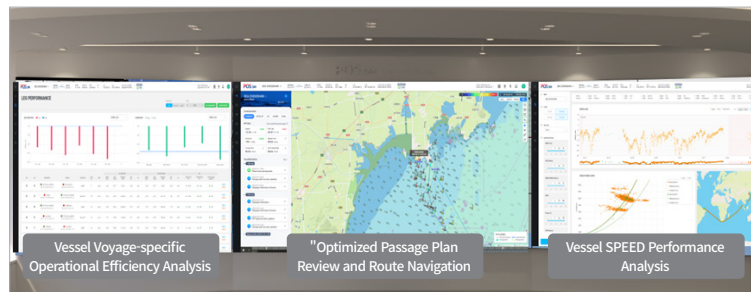
# Investment in Green Vessels

## Introduction of Advanced Green Systems

### Vessel Operation Optimization System

In 2022, Pan Ocean and POS SM established the Fleet Operation e-Center, their own control center, to enhance ship operation optimization system. Through the e-Center, basic data collected for each vessel, including location, speed, route, and fuel consumption, is integrated and monitored in real-time, enabling swift bi-directional information exchange between land and sea. Utilizing the collected data, analysis of voyage-specific operational efficiency and vessel speed performance is conducted to derive optimal routes, ensuring efficient ship operations. Furthermore, the system is designed to prevent major accidents and incidents and facilitate immediate response in case of emergencies. We also manage the vessel's Carbon Intensity Indicator (CII) rating through CII reports and simulators, preparing for potential rating changes. In addition, AI technology is applied to analyze CCTV data in real-time, enabling early identification and prevention of potential risks within the vessel, such as abnormal conditions of offshore employees or fire detection in engine rooms. We strive to effectively utilize advanced IT technology to manage and analyze ship big data, preparing for the upcoming Fourth Industrial Revolution.

### Fleet Operation e-Center



Operational Efficiency Management System



e-Center Control Room

### Applying Rotor Sail Systems

Pan Ocean has introduced the environmentally friendly propulsion device, the Rotor Sail System (RTS), to the large bulk carrier, SEA ZHOUSHAN, making it the first domestic and foreign vessel in Korea to adopt such a system. The Rotor Sail System is an environmentally-friendly auxiliary propulsion system that harnesses wind energy by rotating a vertical cylindrical column, providing additional thrust and enabling fuel savings and a reduction in carbon dioxide emissions. Additionally, in collaboration with POS SM and the Korean Register of Shipping, we have signed a "Joint Research Agreement for Environmental Regulation Compliance" to develop the Air Lubrication System, an environmentally friendly energy-saving device that reduces ship frictional resistance. Through this research, the effectiveness of energy-saving devices will be validated based on actual operational data, and strategies to maximize their utilization will be established.



SEA ZHOUSHAN with RTS



# Investment in Green Vessels

## Establishment of Foundation for Green Vessels

### Development of MASS Technology

MASS (Maritime Autonomous Surface Ships) represent the latest advancements in vessel technology, integrating artificial intelligence, the Internet of Things, big data, and other digital innovations to optimize route planning and navigation. By introducing MASS, we can significantly reduce travel time, save fuel, and mitigate human errors that contribute to accidents. As pioneers in MASS technology development, we view it as a key driver for growth and strive to enhance the stability and efficiency of our shipping services. In October 2020, Pan Ocean and POS SM were selected by the Ministry of Oceans and Fisheries and the Ministry of Trade, Industry and Energy for a MASS project. In September 2022, both parties signed an agreement to facilitate offshore demonstrations, focusing on developing core MASS technologies and conducting phased demonstrations to establish a foundation for commercialization.

The signing ceremony coincided with the opening of our Fleet Operation e-Center, a cutting-edge facility providing real-time insights into vessel locations, fuel consumption, cargo loading, and support for enhancing operational efficiency and stability. Through advanced features such as pre-screening risk factors and remote inspections, the e-Center empowers us to improve ship efficiency. Additionally, we plan to leverage the vast amount of big data collected by the center to further optimize vessel performance and showcase the capabilities of MASS technology.

We have plans to install an autonomous navigation system on an operational container ship in 2024 to showcase its effectiveness and validity. Pan Ocean's MASS technology is classified as Level 3, which is a high level in the International Maritime Organization's four-level autonomous navigation system classification. Level 3 ships can be controlled remotely without onboard operators, highlighting the advanced nature of Pan Ocean's MASS technology compared to competitors. Our commitment extends beyond this achievement, as we will continue to develop environmentally friendly digital shipping technologies and make necessary preparations for the successful deployment of this technology.

### Fuel/GHG Emission Reduction and Its Verification by Autonomous Navigation

In March 2023, Pan Ocean signed a memorandum of understanding for a verification project to assess the effectiveness of fuel savings through the operation of an autonomous navigation system, making it the world's first initiative of its kind. This project, involving a total of five companies including Pan Ocean, POS SM, the Korean Register, HD Korea Shipbuilding & Offshore Engineering, and Avikus, holds significant importance as it is the world's first verification of the fuel-saving effect of autonomous navigation systems on actual ships rather than simulation. The HiNAS 2.0 autonomous navigation system, which will be utilized in this verification, has undergone safety and suitability validations, including classification rule and regulatory reviews, and received conceptual approval from Korean Register in January 2023. By leveraging Albased optimal route planning and automatic control functions for speed, it is expected to deliver substantial fuel savings.

Pan Ocean and POS SM will provide crucial actual ship operational data that will serve as the cornerstone of verification reliability, and they will be responsible for reviewing the feasibility of the validation process. Furthermore, we will continue to make sustained efforts to lead significant changes in fuel-saving aspects through autonomous navigation technology.



MOU Signing Ceremony for MASS Fuel and GHG Reduction Research

# Investment in Green Vessels

## Establishment of Foundation for Green Vessels

### Expansion of Investment in Eco-friendly Devices

We have identified various eco-friendly facilities through the Ship Energy Efficiency Management Plan (SEEMP) for standard ships and analyzed their effects. Based on these analysis results, the company is actively investing in equipment such as hull resistance reduction, propulsion efficiency improvement, and engine efficiency enhancement.

Specifically, we have incorporated hull designs in 15 new vessels to minimize water resistance and utilized low-friction coatings to achieve fuel efficiency. We have also installed various devices to enhance energy efficiency, such as high-efficiency LED lighting. We plan to gradually increase investment in green facilities to actively respond to heightened environmental regulations and contribute to vessel energy efficiency improvement and GHG reductions.

### Research on Green Smart Bulk Carriers

In October 2021, Pan Ocean signed a memorandum of understanding for the research of next-generation green smart bulk carriers. This agreement was of significant importance as the world's first private-led cooperative framework involving all stakeholders in the shipping process, including shipping companies, shipbuilding companies, shippers, and the Korean Register. Our aim is to achieve a 70% reduction in GHG emissions from vessels, and we are actively participating in a research project to explore the use of next-generation green fuels such as LNG, ammonia, hydrogen, methanol, and ethanol, while assessing their economic feasibility and efficiency.



'Signing Ceremony for a Mutual Cooperation Agreement for NextGeneration Eco-Friendly Smart Bulk Vessel Research

### Investment Status and Plans for Environmental Devices

(Unit: KRW million)

Category	2020	2021	2022	2023 Target
BWMS	17,325	23,814	25,989	6,860
Scrubber	48,518	-	-	2,587
AMP	569	573	-	-
EPL	91	-	-	2,068
<b>Total</b>	<b>66,503</b>	<b>24,387</b>	<b>25,989</b>	<b>11,515</b>

### Participation in National Environmental Projects

We are engaged in numerous government projects, contributing to the development of the EEOI\*/EEDI\*\* system, optimizing hull management for improved efficiency, and implementing measures for vessel fuel efficiency management. By acquiring and applying these technologies, we are integrating and utilizing them within our operations. Additionally, we have entered into an agreement with the MacNet Cluster, an integrated consultative body for marine industries, to foster industry, research, and academia collaboration through strategic seminars.

\* EEOI: Energy Efficiency Operational Indicator, an indicator showing vessels' energy efficiency at sea.

\*\* EEDI: Energy Efficient Design Index, an indicator applicable to new vessel design and building from 2013.

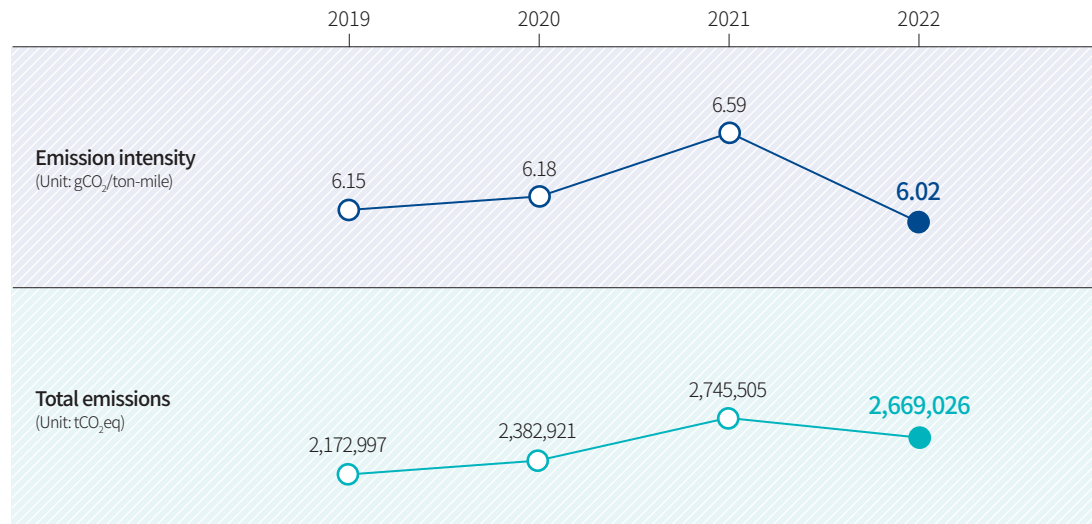
# Greenhouse Gas and Energy Management

## Greenhouse Gas (GHG) Reduction of Vessel

### IMO DCS, EU MRV Regulation Response

We comply with the International Maritime Organization (IMO) Data Collection System (DCS), which requires reporting the fuel oil consumption and greenhouse gas emissions of international navigating vessels. Every year, data from all vessels is collected and reported to obtain certification. Additionally, for vessels calling at EU member states for cargo operations, we follow the EU Monitoring, Reporting, and Verification (MRV) regulation, reporting annual data for applicable ships and undergoing verification. To facilitate these verifications, we have established its own IMO DCS and EU MRV reporting systems, ensuring swift and systematic responses to expanding GHG emissions regulations in the future.

### GHG emissions from vessels by year



### GHG Inventory Management

We have established a GHG inventory system that identifies and categorizes emission sources, enabling us to effectively manage and monitor greenhouse gas (GHG) emissions. This system allows us to collect real-time data on fuel oil consumption and GHG emissions, including CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, for each vessel. We can then analyze and manage this data by individual vessel, vessel type, and year. Leveraging our robust infrastructure and comprehensive data, we are well-positioned to proactively respond to increasingly stringent GHG regulations that apply to the shipping industry.

### GHG Emissions Verification

Since 2009, we have been voluntarily collecting and managing greenhouse gas emissions from both land-based and maritime activities on an annual basis. We aggregate CO<sub>2</sub> emissions for each vessel and ensure objectivity in emission calculations through third-party verification conducted by professional institutions every year. This verification is conducted using our in-house analysis and aggregation system, and it is based on the principles specified in ISO GHG Protocol and IMO guidelines. We also use the verified data for preferential tax treatments for green vessels.

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# Greenhouse Gas and Energy Management

## Energy efficiency improvement

### Ship Energy Efficiency Management Plan (SEEMP)

Pan Ocean's vessels are actively raising awareness about energy-related issues and continuously advancing energy-saving efforts. To achieve this, they have implemented an Energy Management System (EnMS) based on the PDCA (Plan-Do-Check-Act) method. The EnMS is being operated, and to maintain a continuous focus on energy matters, an energy policy has been posted on all vessels. In particular, each vessel is equipped with the Ship Energy Efficiency Management Plan (SEEMP), and dedicated personnel are assigned for various tasks to ensure ongoing efforts for increased energy efficiency on the vessels. The SEEMP includes identification of factors related to ship energy efficiency management, such as ballast water management and hull resistance reduction, along with an analysis of their effectiveness.

### Energy Efficiency Design Index Management\_EEDI/EEXI

Pan Ocean complies with the International Maritime Organization's (IMO) Energy Efficiency Design Index (EEDI) regulation for new vessels constructed after 2013. They measure the energy efficiency index for these vessels and specify it in the Ship Energy Efficiency Management Plan (SEEMP) for each ship. Furthermore, to comply with the Energy Efficiency Existing Ship Index (EEXI) regulation, which will be effective from 2023, we have established an in-house system for calculating and aggregating the EEXI for each vessel. Based on this data, starting from 2023, we are progressively implementing Engine Power Limitation (EPL) measures on the vessels.

### Vessel Energy Efficiency Index Management\_CII

To manage the vessels' energy efficiency, including both inherent energy efficiency and energy efficiency during operation, we have established a system for analyzing and aggregating the Carbon Intensity Indicator (CII) for each vessel. This system allows them to simulate the CII reference values and rating changes for all their vessels until 2030.

Based on this data, we aim to respond flexibly and promptly to the Carbon Intensity Indicator (CII) regulation by the International Maritime Organization (IMO), which will come into effect from 2023.

### Ballast Water Management

We support individual vessels' trim optimization for energy efficiency. Efforts are made to reduce fuel consumption and keep the vessel operating with the best possible efficiency.

### Hull Resistance Reduction

To reduce hull frictional resistance that is the biggest obstacle to vessel operation efficiency, we apply antifouling paints to minimize the impact of hull fouling. We also conduct hull examinations and performance analysis on a regular basis to constantly monitor vessel conditions.

# Climate Change Response

## Governance

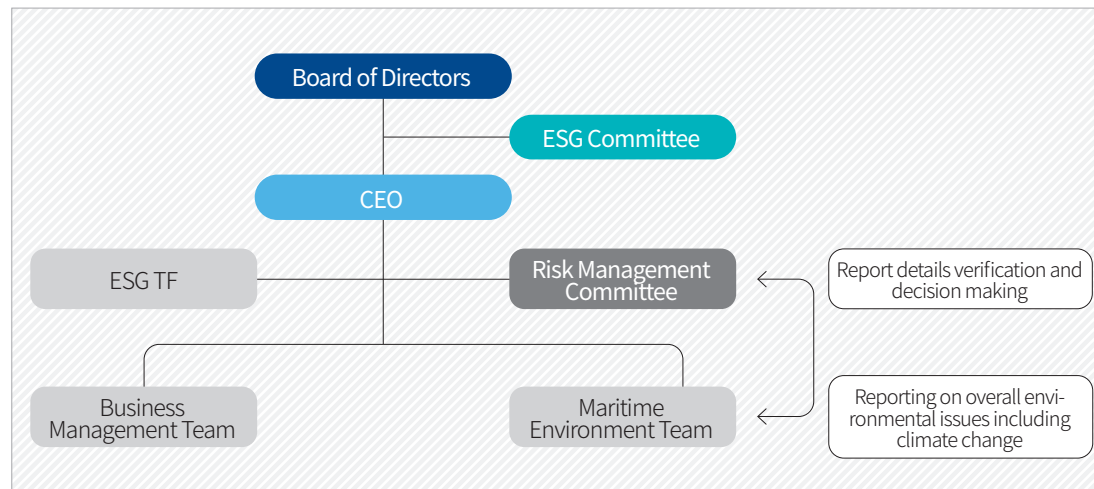
### Board Activities and Management's Roles

As the final decision maker, Pan Ocean's CEO is an inside director and the chairperson of the Board of Directors responsible for the company's response to climate change issues. The CEO reviews the environmental management system more than once a year and set goals and action plans for climate change response. The CEO also evaluates action plans and investment plans to achieve environmental goals and their progress as part of overall climate change response monitoring. Established in May 2022, the ESG Committee holds half-annual committee meetings to make decisions on and approve climate change and ESG business plans. It also manages, supervises, evaluates, and reviews relevant activities. The committee takes charge in reviewing climate risks' impact on Pan Ocean's business and the company's response.

The Risk Management Committee deliberates and make decisions on key agenda related to climate change risks and opportunities and monitors the outcomes and their impact. It also proactively inspects environmental regulations to identify and review all potential environmental issues.

### Risk Management

To pinpoint climate change risks and opportunities that may have material financial or strategic impact on Pan Ocean and understand how to best manage them, we address climate change issues in accordance with the Risk Management Committee's operation process. The Chief Risk Officer (CRO) chairs quarterly regular committee meetings. The CRO has the authority to convene extraordinary meetings as needed depending on the urgency of the issue to ensure organized and swift response to climate change risks.



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# Climate Change Response

## Strategy

### Climate Change Risks and Opportunities

The climate change impact assessment process is proceduralized to identify key climate change issues for Pan Ocean’s value chains. Through this procedure, we identify climate change risks and opportunities, examine their likelihood and impact, and manage them accordingly.

### Connections with Business and Financial Plans

Changes in maritime cargo volume driven by climate change have overarching impact on Pan Ocean’s business operations and financial plans. In this regard, we are recouping investment by selling off lowefficiency dry-bulks and tankers and aggressively investing in LNG carriers and LNG bunkering vessels. Environmental regulations also incur direct and indirect costs.

### Climate Change Scenario

We are working on the transition plan as specified in the 2030 Carbon Reduction Strategy. We will develop detailed plans to have our targets validated by the SBTi and assess our targets to be in line with the 1.5- degree scenario.

### Financial Implications of Climate Change Risks and Opportunities

Transition risks		
Policy/ regulation	Vessel operation suspension if failing to meet EEXI* requirements	Short-term
	Low-rating in CII**	Short-term
	Risk from inclusion of shipping in EU ETS	Short-term
Reputation	Reputational deterioration due to GHG emissions from vessel introduction and selling	Mid-term

Physical risks		
Acute	offshore employees and cargo safety risks from sea temperature and sea level rising due to global warming	Short-term
Chronic	Impact on vessel navigation patterns (routes, speed, fuel consumption) due to continued changes in marine environments (current, wave height, wind, etc.)	Long-term

(Short-term: in 2 years, mid-term: in 3-5 years, and long-term: in 6-10 years)

Opportunity		
Energy resources	Transition to high-efficiency, low-carbon vessels	
	Greater fleet competitiveness achieved by optimized fleet operations	
	Profits generated from trading carbon reduction credits	
Resource efficiency	Fleet reorganization toward green/high-efficiency vessels	
Market	Portfolio expansion of green vessel and fuel related businesses	
	Green bonds to raise funds for green transformation	

Financial Impacts		
Costs to introduce environmentally-friendly systems and technologies for regulatory compliance		
Loss from drastic value decreases of non-compliant vessels forced out of market		
Investment in green vessels and fuels		
Emissions trading costs		
Reductions in fuel consumption through high-efficiency vessel operations		
Sales from increases in demands for environmentally-friendly vessels		
Decreases in sales due to delays in operations		

\* EEXI: Energy Existing Ship Index, CO2 emission per transport work calculated by design performance of vessel.

\*\* CII: Carbon Intensity Indicator, CO2 emission calculations per transport work (ton-nautical mile) based on fuel consumption, distance travelled, etc.

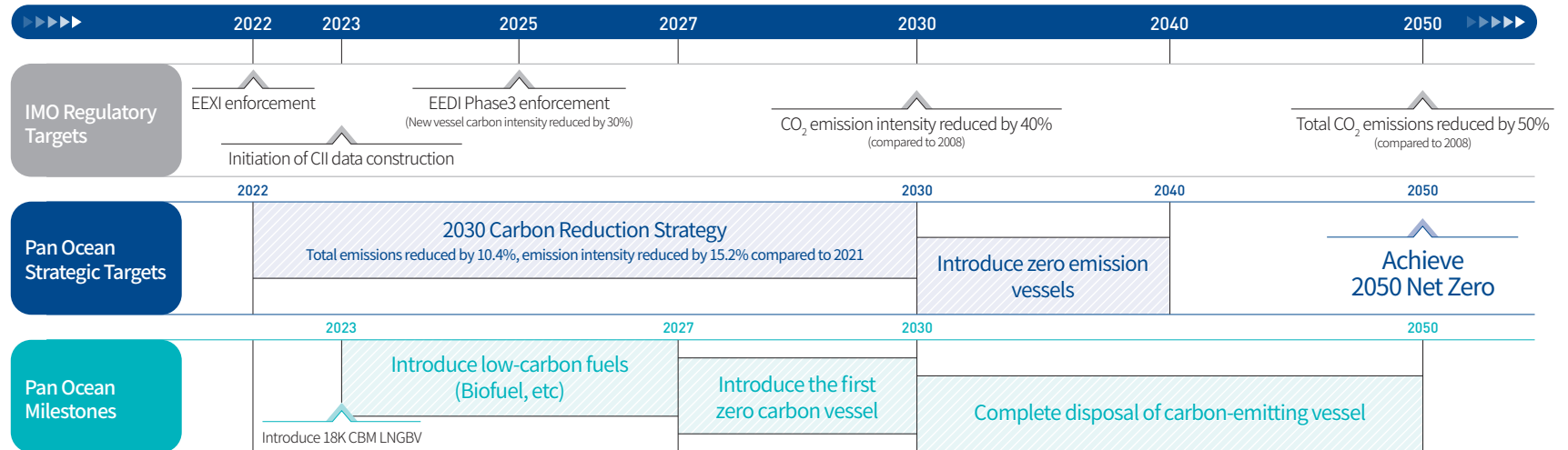
# Climate Change Response

## 2050 Carbon Neutrality

Pan Ocean is firmly committed to assuming a leadership role in addressing and overcoming the global challenge of climate change. In pursuit of this commitment, we declared 2050 Carbon Neutrality pledge in 2022 and established the 2030 Carbon Reduction Strategy as a tangible action plan.



### Road to Decarbonisation



\* Zero carbon vessels: Vessels that can completely eliminate carbon emissions (WtW), for example methanol/ammonia-powered vessels and vessels with CCUS equipment.

# Climate Change Response

## 2030 Carbon Reduction Strategy

While the quantitative targets of the 2030 Carbon Reduction Strategy are established only in Scope 1, we address Scope 2 and Scope 3 emissions in our detailed action plans. We aim to verify the actual route of carbon reductions and technical development/infrastructural expansion by 2030 and develop organizational net zero strategies for all business areas by 2050.

## Carbon Emission Reduction Details

Category	Unit	'21 Result	'30 Target	Target Reduction	% Reduction
Total Emission	CO <sub>2</sub> e	2,745,000 tons	2,458,000 tons	286,000 tons	10.4%
Emission Intensity	gCO <sub>2</sub> /ton-mile	6.59	5.59	1.00	15.2%

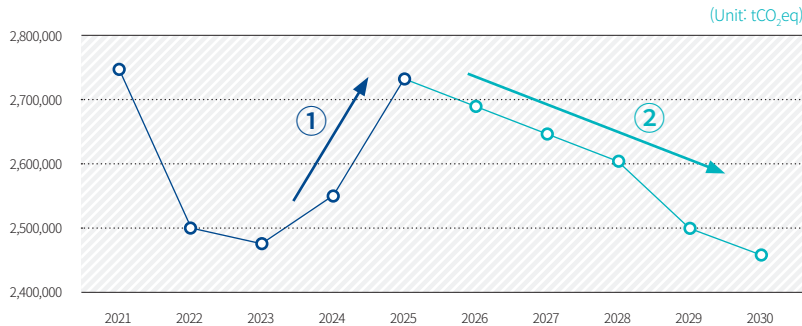
Emission Reduction Measures	Total emissions		Emission intensity	
	Reductions	% Reduction	Reduction	% Reduction
Efficiency in operation patterns	216,000 tons	10.5%	0.62	9.6%
High-efficiency fleet replacement and ESD introduction*	(93,000 tons)	(18.9%)	1.26	16.7%
Transition to zero-carbon vessels	163,000 tons	85.5%	3.51	100%

\* Due to the replacement of vessel with large-scale vessels, the total emissions have increased, but emissions per unit of cargo have decreased.

## Carbon Reduction Pathway by 2030

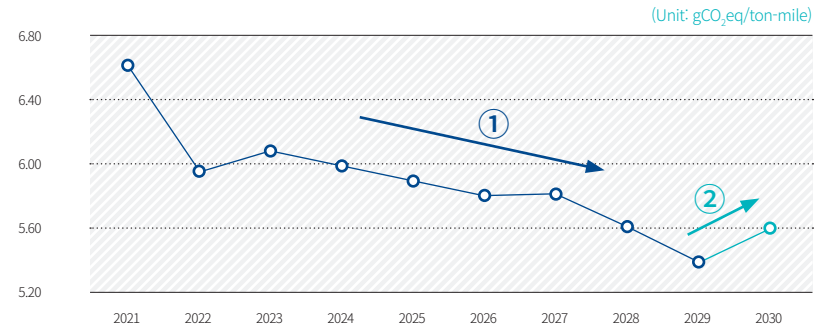
### Total Emissions Trend

- ① Temporary expansion demonstration due to the enlargement of large-scale vessels, including the addition of 174K CBM LNGC 7 vessels
- ② Continued reductions by selling off low-efficiency vessels and acquiring zero-carbon vessels



### Emission Intensity Trend

- ① Since 2021, continuous mitigation through efficient operation patterns, high-efficiency fleet replacement and ESD introduction, etc.
- ② Temporary increase in carbon emissions due to the sale of small carbon-emitting vessels, such as Chemical vessels, in 2030





# Climate Change Response

## 2030 Carbon Reduction Plans

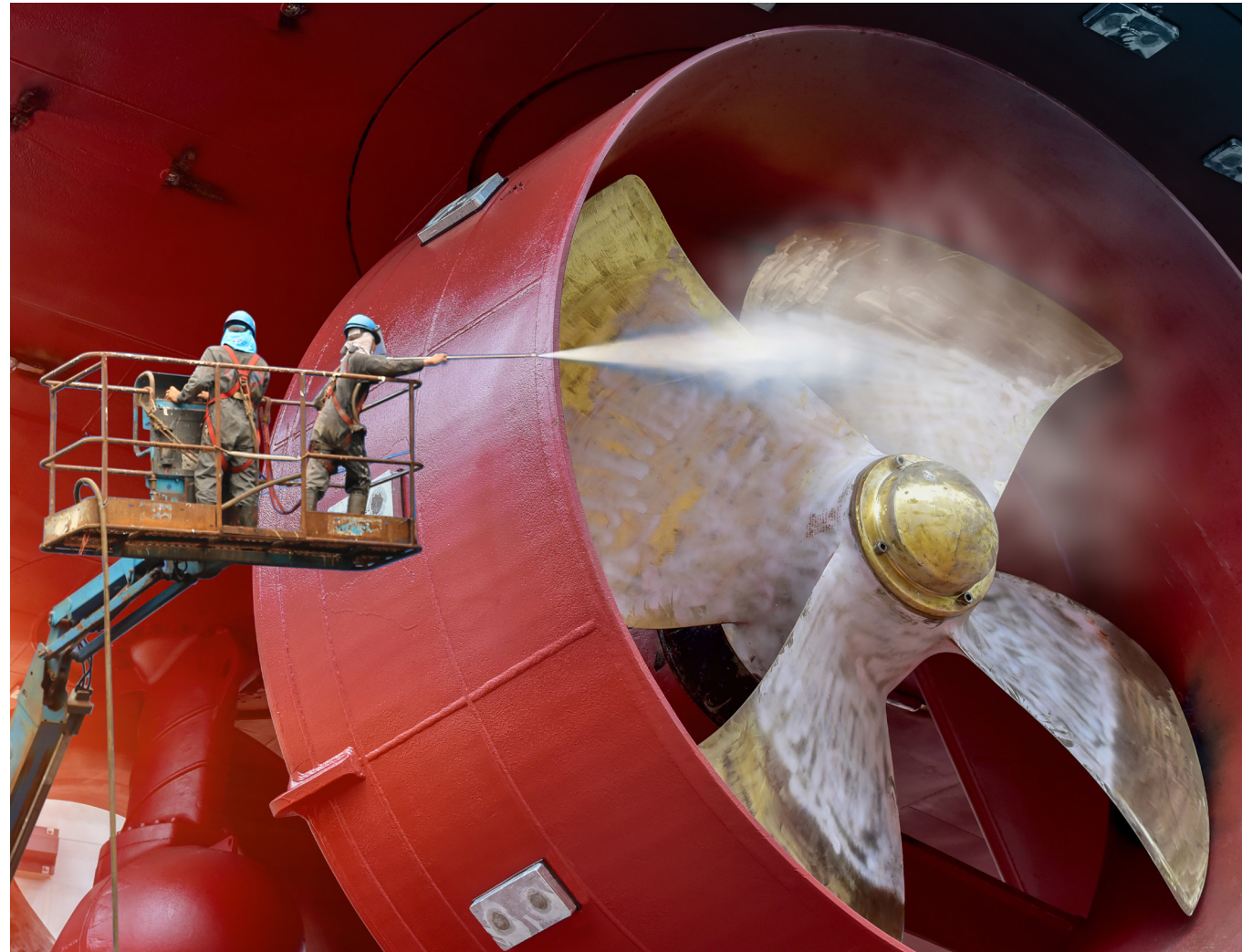
We have identified feasible carbon reduction initiatives in each area of Scope 1, 2, and 3 emissions and are actively implementing them. We are committed to ongoing carbon reduction activities and will explore and implement further initiatives in the future.

Scope 1		Scope 2	
Response to shipping regulations	<ul style="list-style-type: none"> <li>· IMO EEXI: EPL(Engine Power Limitation) to be fitted in approximately 50 vessels in 2022 and 2023</li> <li>· IMO CII: Introduce high-efficiency vessels, increasing efficiency in operation patterns, etc.</li> <li>· Market-based regulations such as EU ETS and Fuel EU Maritime: Trials to apply low-carbon bio-fuels produced from biomass and introduce zero-carbon vessels</li> </ul>	Exploring Opportunities in the Korean RE100	<ul style="list-style-type: none"> <li>· Actively considering participation in campaigns to procure 100% renewable energy for internal power consumption</li> <li>· Reviewing Renewable Energy Certificate (REC) purchases or third-party Power Purchase Agreements (PPAs)</li> </ul>
Increase efficiency in operation patterns	<ul style="list-style-type: none"> <li>· Vessel speed reduction and cruising to maximize reductions: increases in power output of an internal combustion engine result exponential increase in emissions</li> <li>· Develop a route monitoring system that uses data for long-term efficiency in operation patterns</li> </ul>	Scope 3	
Replace with high-efficiency fleet and introduce ESD equipment (2022-2026)	<ul style="list-style-type: none"> <li>· Sell off low-efficiency vessels (26)</li> <li>· Eco-spec (hull design, PBCF, etc.) new vessel orders (24)</li> <li>· Effective ESD equipment applications including existing vessels like rotor sails, and air lubrication systems</li> </ul>	Reductions in emissions from capital goods such as vessels	<ul style="list-style-type: none"> <li>· Continue cooperating with shipyards by increasing eco-friendly products to reduce carbon emissions during the construction of vessels</li> <li>· Negotiate with manufacturers and service providers to reduce carbon emissions from the production and transportation of parts for the existing fleet</li> </ul>
Transition to zero-carbon vessels (2027-2030)	<ul style="list-style-type: none"> <li>· Sell off carbon-emitting vessels (10)</li> <li>· Discontinue ordering carbon-emitting vessels</li> <li>· Introduce zero-carbon vessels (6)</li> </ul>	Reductions of fuel consumption in chartered vessels	<ul style="list-style-type: none"> <li>· Select high-efficiency vessels to reduce carbon emissions from operation of chartered-vessels</li> </ul>
		Reductions in waste	<ul style="list-style-type: none"> <li>· Increase recycling rates and minimize the amount of waste when treating general waste and sludge from vessels</li> <li>· Continue corporate-wide campaigns to minimize office waste, for example a coffee mug giveaway campaign (2022)</li> </ul>

# SOCIAL

Pan Ocean believes the value of respect for human rights and diversity to be realized throughout all aspects of its business activities. We are committed to strengthening safety management in the work environment and investing in talent development and training, in pursuit of human-centered management.

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# Human Rights Management

## Human Rights Management System

We have established Human Rights Management Guidelines to enhance employees' understanding of human rights and foster a culture of respect for human rights in June 2023. These newly established guidelines incorporate principles from various sources, including the UN Universal Declaration of Human Rights, UN Guiding Principles on Business and Human Rights, and International Labour Organization Declaration on Fundamental Principles and Rights at Work. By implementing the Human Rights Management Guidelines, we aim to share the fundamental principles of human rights and strive to protect the human rights of not only our employees but also all stakeholders. In addition, we have set medium to long-term goals for human rights management until 2025 and plan to continually strengthen the human rights management system through human rights evaluations.

### Fundamental Principles of Human Rights Management

- |   |  |
|---|--|
| 1. Prohibition of discrimination                                    | 6. Guarantee of freedom of association and collective bargaining |
| 2. Compliance with working hours and laws related with labor        | 7. Ensuring a safe work environment                              |
| 3. Prohibition of forced labor                                      | 8. Protection of environmental rights                            |
| 4. Prohibition of child labor and measures to protect young workers | 9. Protection of the rights of local communities                 |
| 5. Humane treatment   | 10. Protection of the rights of stakeholders                     |

### Scope of Human Rights Management

Pan Ocean actively implements human rights management among its employees and encourages all stakeholders, including business partners involved in our business activities, to respect human rights. Furthermore, we strive to promote the dissemination of human rights management to local communities, customers, shareholders, and other stakeholders who are directly or indirectly affected by our company's operations.

### Human Rights Management and Risk Management System

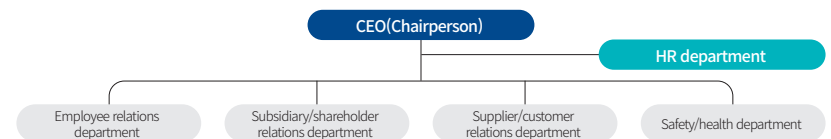


### Medium to long-term Targets of Human Rights Management

We have established long-term targets to foster a culture that respects human rights and ensure its widespread adoption throughout the organization.

	Step 1(2023)	Step 2(2024)	Step 3 (2025)
Human Rights Management System Establishment	<ul style="list-style-type: none"> <li>Establish Human Rights Management Guidelines and Declarations</li> <li>Set med-long term Human Rights Management targets</li> <li>Basic Human Rights Education</li> <li>Establish Human Rights Management Committee and Designate Responsible Organizational Unit</li> </ul>	<ul style="list-style-type: none"> <li>Setting Annual Human Rights Management Goals</li> <li>Implementation of Human Rights Management Training for New Employees</li> <li>Convening of Human Rights Management Committee</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of Human Rights Risk-Linked Specialized Training for Job Roles</li> <li>Expanding Human Rights Management in the Supply Chain</li> </ul>
Assessment	<ul style="list-style-type: none"> <li>Set Human Rights Management Assessment Indicators</li> <li>Implement Human Rights Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Develop Human Rights Evaluation and Response by Responsible</li> <li>Appoint Human Rights Management Audit Personnel</li> </ul>	<ul style="list-style-type: none"> <li>Human Rights Management Organizational Audit</li> <li>Review and Edit Human Rights Evaluation Indicators</li> </ul>
Remedial Measures	<ul style="list-style-type: none"> <li>Establish a procedure for remedial measures</li> <li>Reporting and response measures</li> <li>Report result</li> </ul>	<ul style="list-style-type: none"> <li>Report and share reported matters and outcomes with management</li> </ul>	<ul style="list-style-type: none"> <li>Share with employees and implement preventive measures</li> </ul>

### Organizational Structure of Human Rights Management Committee



# Human Rights Management

## Human Rights Protection

### Human Rights Education

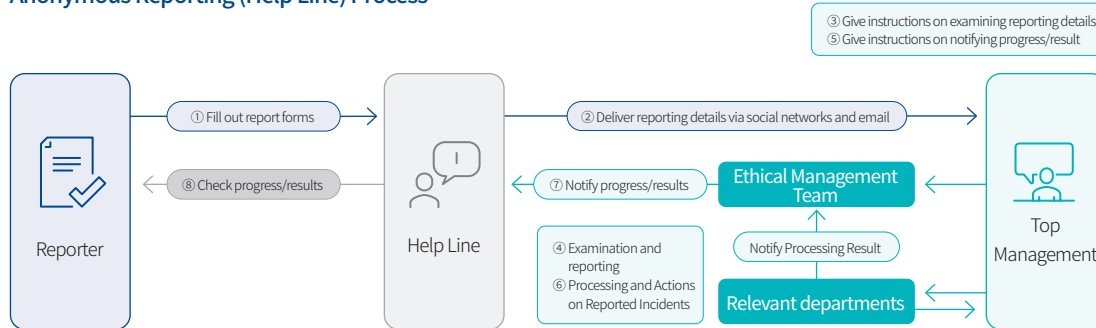
We conduct education to promote employees' awareness of human rights and internalize a culture of respecting human rights. We provide harassment prevention, sexual harassment prevention, and disability awareness improvement training to both onshore and offshore employees. As of 2022, the training completion rate is 100%. In addition to legal human rights education, starting from January 2023, we are also conducting offshore employees and labor rights, and human rights protection education organized by the Ministry of Oceans and Fisheries and the Korean Ship Management Industry Association. As of the end of March 2023, 104 individuals completed the basic course, and 73 individuals completed the advanced course.

### Grievance Handling System

We provide a grievance handling system where the employers and employees can share their conflicts or concerns and receive feedback. We also have an anonymous whistle-blowing system (Help Line) in place for not only employees, but also third parties to access and file reports. If a offshore employees find his/her legitimate rights infringed by, for example, working condition violations, medical treatment, overdue wage etc., he/she can rely on the onboard grievance handling system (Open Reporting). At least one grievance/complaint handling officer is appointed by offshore employees' voting, and at the same time an onshore committee of safety managers and offshore personnel officers help address their grievance.

[Pan Ocean Anonymous Reporting center](#) [POS SM Help Line](#)

### Anonymous Reporting (Help Line) Process



\* For issues that cannot be handled, we organize an ad hoc council for handling.

### Training Programs for the Protection of offshore employees' Rights, Labor Rights, and Human Rights

No.	Topic	Curriculum
1	Concept of offshore employees' Human Rights	shared curriculum
2	Concept of offshore employees' Labor Rights	shared curriculum
3	Rights to Privacy for offshore employees onboard	Basic/Advanced
4	Bystander Effect	shared curriculum
5	Discrimination against Foreign offshore employees	Basic/Advanced
6	Protection and Obligation of Human Rights for Female offshore employees and Trainees (in terms of OSH)	shared curriculum
7	Violence: Physical Harassment	shared curriculum
8	Bullying and Harassment: Including Verbal Abuse	shared curriculum
9	Stress and Suicide: Stress Management	shared curriculum
10	Enhancement of Gender Sensitivity	shared curriculum
11	Methods for Victims' Coping (Proper Procedures and Methods for Reporting Incidents)	Basic/Advanced
12	Managing Human Rights onboard and Remedial Measures	shared curriculum

(Unit: cases)

Category	2020	2021	2022
Onshore*	0	0	0
Offshore**	3	5	6

\* Excluding reports received but found not to constitute workplace bullying.

\*\* Number of cases handled as discrimination or bullying in the Open Reporting and grievance handling system

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# Human Resources Management

## Attracting and Fostering Talents

### Talents Recruitment

Pan Ocean develops annual recruitment strategies to streamline the process. We attract outstanding candidates through targeted channels like social media and conduct blind interviews to ensure fairness and transparency in the recruitment process. We organize annual interviewer training to ensure that interviews are conducted fairly and effectively, focusing on developing the qualities and skills of our interviewers. For offshore employees, we prioritize stability by converting contract-based master and chief engineers into regular positions. By providing stable employment opportunities, we aim to create a supportive and reliable work environment for our offshore employees, ensuring the smooth functioning of our business activities.

### Fostering Talents in Shipping

#### Providing Recruiting/Job Information

We take responsibility and a sense of mission in cultivating 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, as well as 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.

#### Industry-Academia Scholarship and Placement

To foster and attract exceptional ship officers, we collaborate with the nation's two maritime universities to run scholarship programs. We select approximately 20 senior students and provide them with scholarships and certificates. We also allocate a specific number of employment quotas for graduates in our annual first officer hiring process. The scholarship recipients are given priority in the following year's hiring process. Additionally, we offer full support for their learning and development, enabling them to excel as senior officers. Our commitment to fostering global shipping talent that will grow with us remains unwavering.

### Pan Ocean's Talent Profile

#### Innovator with creative minds

Creative thinkers ushering new changes

#### Practical leader to pioneer global markets

Highly engaged leaders ready to seize the global markets

#### Experts aiming to be the best

Talents who contribute to the organization's performance by being industry-leading experts

#### Team player with an open-minded attitude

A team player with mutual respect



2022 Recruitment Fair at KOREA MARITIME & OCEAN UNIVERSITY

### Mentoring Programs

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

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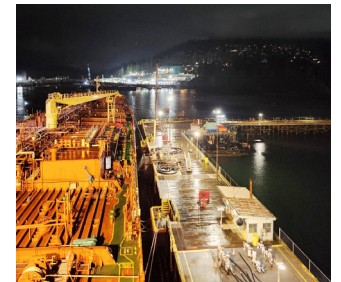
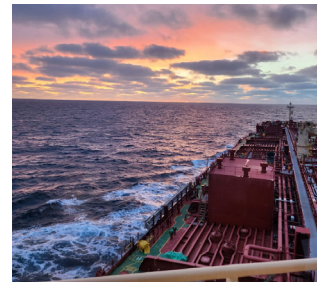
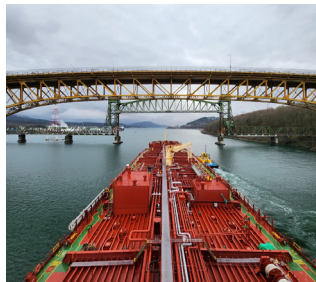
## Attracting and Fostering Talents

### Cadetship Program

Pan Ocean annually commissions 40 third-year students, known as cadets, from Korea Maritime and Mokpo National Maritime Universities to participate in six-month onboard training programs. Our goal is to foster talented Korean offshore employees, considering them as potential future Pan Ocean maritime personnel. We prioritize creating a supportive and secure learning environment for these cadets, providing them with exceptional education and training opportunities. Upon completion of their cadet training with Pan Ocean, 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. Additionally, we maintain ongoing mentorship activities with our onshore staff to ensure continuous support and guidance.

### Annual Cadet Training Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
First Half Cadet Training									Debriefing	First Half Demand Survey	First Half Cadet Selection, Preparation, and Embarkation
		Debriefing	Second Half Demand Survey	Second Half Cadet Selection, Preparation, and Embarkation				Second Half Cadet Training			



# Human Resources Management

## Employee Diversity

### Embracing Diversity and Prohibiting Discrimination

We are dedicated to promoting the values of human rights and fostering a culture that embraces diversity in all our business endeavors. With operations spanning across diverse nations around the globe, we make efforts to understand and respect different races, nationalities, and cultural differences. Our commitment extends to meticulously managing recruitment and evaluation processes to ensure equal opportunities and prevent any form of discrimination.

Pan Ocean's Code of Ethics explicitly declares our recognition of employee diversity and the commitment to non-discrimination. Our goal is to establish a more progressive corporate culture through equal treatment, compensation based on abilities and achievements, and to further enhance the Pan Ocean's development.

### Employee Demographics by Type

Category	Unit	2020	2021	2022	
% Female employees	Total	%	8.5	9.3	10.1
	Onshore	%	24.8	26.7	27.0
	Offshore	%	1.2	1.5	2.1
People with disabilities	Total	people	4	4	32
	Employment of people with disabilities	people	4	4	4
	KD Tech Co., Ltd*	people	-	-	28
	% employees with disabilities	%	0.4	0.3	4.3
Foreign internationals	people	-	-	-	
Veterans	people	6	6	6	

\* Sheltered Workshop for People with Disabilities: When considering a 2x count for severely disabled individuals, a total of 50 employees are recognized (based on the Employment Promotion and Vocational Rehabilitation for Disabled Persons Act)

Category	Unit	2020	2021	2022	
Senior Manager	Male	people	148	156	166
	Female	people	11	14	12
Position/Grade   Female Ratio		%	6.9	8.2	6.7
Manager	Male	people	71	73	63
	Female	people	32	33	35
Position/Grade   Female Ratio		%	31.1	31.1	35.7
Staff	Male	people	27	29	42
	Female	people	38	47	53
Position/Grade   Female Ratio		%	58.5	61.8	55.8
Master and Chief Engineer	Male	people	194	226	217
	Female	people	-	-	-
Officer	Male	people	395	418	413
	Female	people	9	12	16
Position/Grade   Female Ratio		%	2.2	2.8	3.7
Rating	Male	people	136	127	129
	Female	people	-	-	-

# Human Resources Management

## Education System

### Training System Based on Roles and Responsibilities

#### Onshore employees

In 2022, Pan Ocean restructured its education system, shifting from a rank and job-based approach to a focus on employee lifecycle and job-centric education. Through this reform, we aim to enhance employees' dedication and practical capabilities by emphasizing their roles and responsibilities within the organization rather than merely their job titles. Additionally, we provide specialized and differentiated training tailored to the unique characteristics of the maritime industry. Particularly, the onshore employees are equipped with a deeper understanding of maritime operations and improved communication skills through onboard training programs.

	Organizational Adaptation Period (Associate)	Engagement & Development (Manager)	Specialist (Senior Manager)	Leader (Deputy heads)	Business Leader (Department/team heads)
Category	Organizational Engagement Training (Staff Seminar, TDP etc.) / Smart Learning(Micro-Learning, Online Library) / Statutory training				
Level	New hire early onboarding	Professional course (4 years)		Professional course (4 years)	Newly hired/promoted executive course
	New Employee Course	Promotion course		Promotion course	
Job Competency	Professional practice, OJT, online job training				
	Manager Promotion qualification course	Workplace Practicum	Overseas Dispatch		Executive/MBA
	OJT	Vessel On-board training		Job Mentor	
On-site training					
Leadership			Bridge Leadership Training		Team head leadership training
					New organization head leadership course
Global	Executive workshop				
	Leadership/insight reverse mentor				
	Foreign language training program (online / phone etc.)				



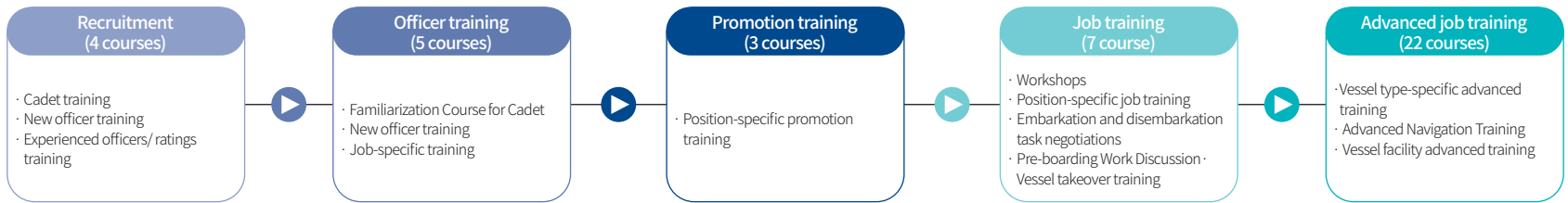
# Human Resources Management

## Education System

### Training System Based on Roles and Responsibilities

#### Offshore employees

We have a customized training system optimized for enhancing the capabilities of offshore employees. Various training programs are conducted, such as promotion-required education for prospective master/chief engineers and chief officers to ensure smooth onboard life, training for new officers, education for the acquisition of new and second-hand vessels, and more. The training extends beyond job-specific education to include safety-related training such as maritime accident emergency response, personal survival techniques, health and incident prevention. Starting from 2023, we plan to fully restore in-person training that had been transitioned to remote or reduced due to COVID-19. The focus will be on improving the quality and efficiency of education programs by reflecting the needs of the field and adapting to internal and external environmental changes. The aim is to revamp the education system to better meet the demands of the maritime industry.



#### Revamp Highlights

New officer training	Refinement of Education Targeting (by Position/Rank and Department)
Workshops	Revamping from Theory-Centric to Participation-Oriented Discussions Focused on Communication and Safety
Pre-boarding Work	Expansion of Job-Specific Training and Addition of R/S and Major Requirements Education

#### Onboard Maritime Training and Development

SHEQ System Manual	Maritime Survival Training
Maritime Emergency Response Training	Environmental Management Education and Pollution Prevention
Health and Safety Training for Disaster Prevention	Job Training
Statutory Training	Ship Security Training
Cybersecurity Education	Ice Class Education

# Human Resources Management

## Education System

### Online Education

#### Utilizing Online Education Platform

As the demand for more professional and advanced education increases, we actively utilize online platforms to enhance accessibility and efficiency of education. Our online education is composed of "E-Learning," which encourages continuous learning for all employees and supports job-related and foreign language competencies and self-development. "Smart Learning" is tailored to executives, team leaders, and team members, providing insights to flexibly respond to rapidly changing trends. It offers concise microlearning content in various fields such as management/economics/industry, leadership and communication, humanities/trends, encouraging a self-directed learning culture during commute times. In addition, we conduct Zoom special lectures three to four times a year, allowing all employees to gain insights in various fields such as economics, organizational culture, and humanities in the era of the new normal. Furthermore, we support the implementation of education programs that are perceived as necessary by each department and team, considering their feedback. Since 2022, we have opened an e-library, offering access to e-books, audiobooks, academic papers, etc., contributing to self-development and enhancing employee welfare. We continuously explore and actively support the development of capabilities by meeting the educational needs of its members.

#### Seagull: Online Training Program for offshore employees

We introduced the 'Seagull', an online training program for offshore employees, in 2021. This makes e-learning available on the web and from personal mobile devices, hence increasing accessibility. Aside from workstations, we also equipped vessels with computer-based training (CBT) learning materials. CBT is used as training material for fire extinguishing, evacuation drills, and onboard safety training.

Also, we have increased the efficiency of offshore employees education by conducting ongoing monitoring of training completion status and evaluating the effectiveness of education through subject-specific tests. We ensure that the same education is provided regardless of nationality, location, and time.

### Employee Satisfaction Survey Results on Online Education



### Onshore Employee Boarding Training

Pan Ocean provides onboard training for onshore employees. This initiative aims not only to foster maritime expertise but also to facilitate interaction and mutual understanding between onshore and onboard employees, considering the physical separation due to the nature of our business. We are committed to enhancing cooperation and synergy between both groups.



Onshore Employee Onboard Training Structure and Onboard Ship Training

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# Human Resources Management

## Education System

### Rehiring Retirees

We rehire retirees as part-timers in consideration of their health conditions and job capabilities. For retirees aged between 60 and 70, we comprehensively assess their willingness, skills, and health checkup results to determine re-employment and take them onboard. For those aged 65 or older, we conduct additional exams for cardiovascular diseases to regular employee health examinations for a thorough assessment, and consider the results in our boarding plans. By rehiring retirees, we encourage the employment of seniors with expertise and experience and contribute to job creation for their age group.

### Retirees rehired in 2022

(Unit: persons)

Category	Rehired	
Master	28	
Chief Engineer	50	
Ratings	Deck	23
	Steward	12
	Engine	25
Total	138	



**Kim Soon-kwon (61), Master, PAN FREEDOM**

I have devoted my life to being a sailor, aspiring to become a captain. My unwavering passion for my job and my deep connection to Pan Ocean, coupled with the professional skills and expertise I have acquired through years of experience, have been the pillars that sustained and motivated me. As retirement loomed on the horizon, however, concerns about the career break, financial stability, and family support began to weigh heavily on my mind. It was a bittersweet realization that I would have to bid farewell to the job and life I cherished. Then, an opportunity for re-employment surfaced, acknowledging my capabilities and skills. In good physical health and driven by determination, I recognized the potential this offered, including a relatively higher salary compared to others of my age. Accepting the offer, I recommitted myself to my role onboard, vowing to approach it with the same dedication and enthusiasm as when I was a rookie. The evolving nature of onboard responsibilities, increasingly diverse and intricate, has instilled in me a greater sense of responsibility, and I wholeheartedly embrace this commitment. I continually strive to maintain my physical fitness through regular workouts onboard, while also placing great importance on the mental well-being of my fellow offshore employees. Through open communication and meaningful conversations, I endeavor to create a positive and supportive atmosphere onboard. Actively participating in Pan Ocean's job continuity programs, which encompass broader communication channels, officer workshops, and various training initiatives, empowers me to fulfill my duties and play my part as a valued member of both the organization and society. With Pan Ocean as my partner, I am determined to forge ahead, dedicating myself to the career development of highly skilled workers from our generation the Baby Boom Generation. Leading by example, I aspire to set the highest standards, contributing both socially and economically to the betterment of our industry and beyond.

# Human Resources Management

## A Healthy Organizational Culture

### Mentoring Program

We have a mentoring program designed to support both entry-level employees and newly hired experienced professionals. Recognizing the importance of assisting newcomers in adapting to the organization, the program has been expanded to encompass employees at various stages of their careers. Monthly programs are organized for mentors and mentees, and to ensure effectiveness of the mentoring program, anonymous surveys are conducted at the conclusion of each mentoring cycle. These surveys gather feedback and suggestions from both mentors and mentees, which are then taken into consideration during the planning phase for the following year's program. The mentoring program helps facilitate communications between colleagues and build a positive corporate culture.

### Overview of Mentoring Program

Category	Graduate New Hires	New Hires (Experienced Position)
Mentees	Graduate new hires	New hires (experienced positions)
Mentors	Senior team member	Senior Manager- Team Leader
Duration	6 months	3 months
Type	Mentee/mentor 1:1 matching At least 2 activities per month	Mentee/mentor 1:1 (or 2:2) matching
Program	Monthly Guided Themed Activities + Recommended Additional Activities  <Monthly themes> 1st : Mentoring W/S (Team Building and Planning) 2nd : Networking 3rd : Work-Life Balance 4th : Ritual Life 5th : Reverse Mentoring 6th : Collaborative Mentoring (WRAP-UP)	<Monthly themes> 1st : Mentoring W/S (Team Building and Planning) 2nd : Networking 3rd : Collaborative Mentoring (WRAP-UP)
Reporting	Mentees and mentors to file monthly reports (no fixed reporting templates for mentees)	

### Flexible Working System

Pan Ocean has flexible work arrangements such as selective working hours, flexible working hours, and staggered commuting, taking into account employees' individual job and work situations. We are making efforts to expand flexible work options in order to ensure employees' autonomy in their work schedules.

### Flexible Working System in Place

Arrangement	Details	Applicable situations
Selective working hours	Core time and selective work hours	Where there are difficulties in predicting workload peaks and extended working hours for certain times are expected (e.g., staggered operations, long-term projects leading to irregularities in extended working hours)
Flexible working hours	Pre-defined daily work hours depending on fluctuations in workload	Where workload peaks are predictable (e.g., monthly closing, short-term projects, etc.)
Staggered office hours	Flexibility in attending the office without changes in daily work hours	Avoiding congestion during rush hours, personal circumstances, etc.

# Human Resources Management

## A Healthy Organizational Culture

### Benefits and Welfare Programs

Pan Ocean offers a comprehensive set of welfare programs designed to promote a healthy work-life balance for its employees. In addition to statutory parental leaves and family care leaves, Pan Ocean provides a variety of benefits aimed at enhancing the overall well-being and quality of life for its employees.

Life Support	
Child tuition support	Support for kindergarten and college tuition fees for all employees
Housing support	Home loan support to help with employees' residential stability and welfare
Communication fee support	Support for employees' monthly mobile phone bills
Meal support	Lunch offered at various restaurants near the office

Shipping-specific Welfare Programs	
Family boarding	Families invited to vessels with safe shipping service distance
Family visit (into the ship)	Through prior applications, families visit employees during port calls
Recreation allowances	Support provided for individuals and group leisure activities (books, music records, fitness equipment, etc.) per vessel

Hobby/Leisure/Learning	
Recreational facilities	Partnerships with condominiums, hotels, etc. for reasonable accommodation costs
Club activities	Support for company club activities such as football, baseball, ski, tennis, theaters, etc.
Language learning	Support for tuitions at external language academies of employees' choice
Fitness	Support through partnerships with fitness centers for employees' health

Others	
Welfare card	Pre-charged welfare cards (KRW 1,000,000 – 2,500,000 depending on position) offered annually
Health examinations	Comprehensive health examinations with optional extras added to basic examinations
Birthday voucher	Birthday vouchers worth KRW 50,000
Family events	Congratulatory/condolence money, leaves, goods/wreaths for all employees and their spouses

### Satisfaction Surveys

We conduct annual satisfaction surveys of both onshore and offshore employees, and the results are incorporated in recommendations for improvement and the following year's action plans. For onshore employees, we use an external agency to carry out the satisfaction survey to ensure independence. Survey items include the corporate vision, organizational efficiency and effectiveness, corporate culture, and human resources management. We conduct indicator specific review of the results to develop improvement measures and have each organization implement action plans. Doing so allows us to objectively analyze requests from all fields in our organizational management and continue making improvements for problems, thereby ultimately better satisfying employees. In addition, we also conduct inhouse job satisfaction surveys twice a year. To understand offshore employees' needs and satisfaction, we conduct an internal customer survey of masters, chief engineers, officers and engineers. Survey items are segregated to many different dimensions including management, communications, training, operation management, and safety and quality management, as well as into different levels by position, nationality, and fleet. These are intended to identify factors that have the biggest impact on local and international offshore employees' satisfaction and find room for improvement.

### Satisfaction Survey Results

Category	Unit	2020	2021	2022
Onshore	points	4.23	4.16	4.02
Offshore	points	64.8	68.7	70.2
POS SM	points	3.58	3.69	3.57

(Onshore: out of 5 points, Offshore: out of 100 points)

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# Human Resources Management

## A Healthy Organizational Culture

### Mental Health Programs for Offshore employees

As Offshore employees spend a long time onboard, we offer them mental health programs. These programs are conducted as part of pre-boarding consultation meetings and workshops and aim to teach them effective communication skills to manage stressful situations and resolve disputes. In a survey of Offshore employees regarding their satisfaction with these programs by Korea Seafarer's Welfare & Employment Center, 110 out of 115 respondents, or 95.6%, answered positively to the question, "Do you find the programs helpful?"

#### Topics covered by the Mental Health Programs for Offshore employees

Category	Subjects	Content and Objectives
Stress Management		
Smart Life Onboard	2nd/3rd Officer and Engineer	Stress management, adaptability to new environment, work ethics
Smart Leaders' Life	Master and Chief Engineer, Chief officer and First Engineer	Right leadership types for oneself, how to understand and exercise leadership to minimize stress onboard
Improvement of self-esteem		
Happiness Investment	Master and Chief Engineer	Understanding and finding meanings of happiness and how to apply the learnings to real-life settings

### Employee Lounge Renovation

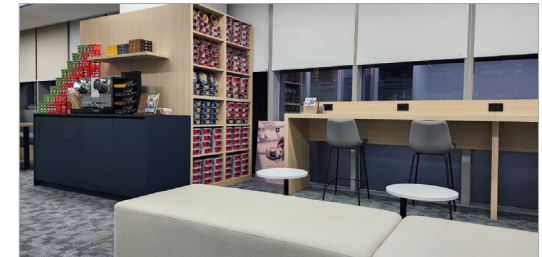
In March 2023, Pan Ocean completed the renovation of the employee lounge to provide a space for employees to relax during work hours. The upgraded lounge is equipped with amenities such as coffee machines and massage chairs, aiming to provide a more comfortable environment for employees to recharge and enhance their work focus.



Second workshop in 2022



First workshop in 2023



Newly renovated Employee Lounge

# Human Resources Management

## Fair Performance Evaluation and Compensation

### Performance Management and Evaluation System

Onshore employee evaluations consist of performance evaluations, competency evaluations, and multi-dimensional evaluations. Performance evaluations involve strategic indicator, growth indicator, and tasks review, while competence evaluations are designed to evaluate their common, leadership, and job competency. We have a process in place to allow subjects to have meetings with evaluators for feedback to better understand the evaluation results and raise an objection if needed. Multi-dimensional evaluations consist of peer and upward evaluations. The results are not disclosed and used for internal management and employee satisfaction. Offshore employee evaluations are categorized into master/chief engineer evaluations and evaluations for other staff. Masters and chief engineers are evaluated by the ship managers for their competency (half-annually) and performance (annually). The evaluators look into masters' and chiefs' overall leadership and provide feedback, including additional training support, if room for improvement is found. Evaluations for other staff are conducted by two senior officers and consist of job evaluations and character evaluations. They are evaluated for their job capabilities and adaptability as offshore employees. In particular, in character evaluations considerations are given not only to their work attitude but also to other factors that influence life at sea, for example ethics, drinking habits, and diligence. Subjects are provided with full details about their weakness and strength and given opportunities to discuss the results.

### Onshore Employee Evaluation System

Since 2022, Pan Ocean has been conducting a thorough review of its personnel system. As of 2023, the company is undergoing consultations to improve the evaluation system and making efforts to establish a fair and reasonable evaluation process in alignment with the restructured position system and roles.

### Offshore Employee Evaluation System

#### Master and Chief Engineer

Category	Competency assessment	Performance evaluation
Evaluation cycle	Biannual	Annual
Evaluator	Fleet and HR manager of offshore employees	

#### Offshore Employees other than Master/Chief Engineer

Category	Regular performance evaluation	offshore employee performance assessment
Evaluation cycle	Biannual	Ad hoc (at the time of disembarkation)
Evaluator	Senior officer on board	

# Human Resources Management

## Improving Productivity at Work

### Motivation for Employees

We provide rewards and encouragement to long-term employees (10 years/20 years/30 years) as a gesture of celebration and appreciation. In addition, we conduct reward programs for outstanding employees and teams within the organization. Similarly, we recognize and reward long-term and exceptional performance among our offshore employees. Long-term employees receive additional benefits such as extra paid leave and long-term service allowances. When they decide to retire after a certain period, we support them with adequate rest through retirement benefits and paid leave. Furthermore, through the recognition of retiring employees, we aim to enhance satisfaction and appreciation for their long-term commitment. Pan Ocean continuously explores ways to improve the efficiency of our members' work and increase organizational engagement.

## Sound Labor-Management Relationship

### Hosting the Labor-Management Council

We strive to establish a mutually beneficial labor-management relationship and achieve shared goals based on mutual trust and cooperation. In order to overcome challenges posed by market conditions, we initiated labor-management conciliation in 2013. Since then, we have made every effort to promote shared growth and maintain a harmonious working environment with zero labor dispute. 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. Through continuous communication, we aim to enhance employee welfare and cultivate a strong corporate culture.

### Vitalizing Labor-Management Communications

In the case of offshore employees, we hold regularly business briefings and group meetings for each level to communicate. Also position-specific promotion training and new officers/ratings training are actively used as communication channels. While on board, we listen to employees' opinions and receive proposals through regular Review Reports from masters, improvement suggestion programs, and non-compliance reporting. Through these various communication channels, Pan Ocean strives to listen to offshore employees' opinions and improve Labor-Management Relations.



2022 Pan Ocean Long-term Service Award for Onshore Employees



2022 Pan Ocean Excellence Award for Offshore Employees

### Offshore employees Union Walking Competition

We provide platforms for direct communication between labor and management, such as organizing events like the Maritime Union Walking Competition. Through these initiatives, we aim to foster a healthy symbiotic relationship and build a strong rapport between the two parties.



Offshore employees Union Walking Competition in 2023



# Safety and Health Management

## Safety and Health Management Policy

### Safety and Health Management Policy

Ensuring the safety and health of our members is a corporate obligation but also a responsibility. Therefore, we recognize the safety and health of employees and stakeholders as the top priority value and has declared the following Safety and Health Management Policy to put it into practice.

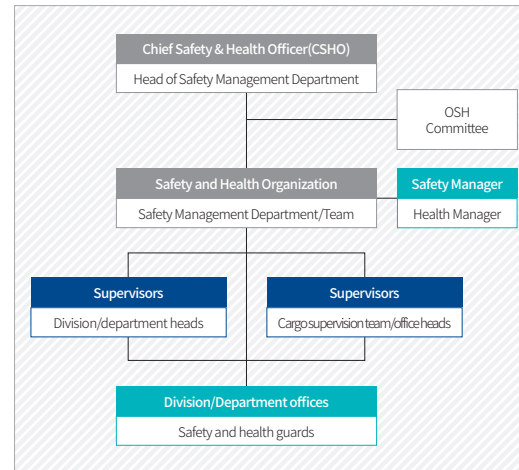
### Developing the Safety and Health Management System

POS SM obtained the ISO 45001 certification on ship management and safety management services to comply with international standards on safety and health management and build an integrated safety and health system. Pan Ocean aims to be certified in 2023 and is carrying out internalization of accident prevention, damage minimization, and safety awareness by developing a safety and health management system. We have also developed basic policies for marine safety and offshore employees' health, for example safety and quality, environmental, health and welfare, social responsibility, cybersecurity, drug and alcohol policies, which are disclosed as a public declaration to indicate management's interest and our willingness for safety and health.

### Health and Safety Management Organization

In compliance with the Occupational Safety and Health Act and the Serious Accidents Punishment Act, we have established a dedicated Safety Management Department. The position of Chief Safety & Health Officer (CSHO) has been appointed to oversee safety and health management decisions. Collaborating with the safety and quality team of POS SM, we annually present safety and health plans to the Board of Directors and ESG Committee for approval. Continuous monitoring and inspections are conducted throughout the year to ensure a safe working environment on both land and sea. We remain committed to ensuring the safe work environment of our employees and will continue our efforts in this regard.

### Safety and Health Management Organizational Structure



### Pan Ocean Safety and Health Management Policy

1. We consider employees' and stakeholders' lives and safety as top priorities in our business activities.
2. We establish a safety and health management system and ensure compliance with relevant laws and regulations.
3. We establish safety goals and conduct education, training and inspections in an organized manner.
4. We continue working to prevent safety failures preemptively and proactively.
5. We strengthen shared growth systems with stakeholders such as subcontractors, service providers, and commissioned services, fulfilling our roles and responsibilities in reducing occupational accidents for employees and stakeholders.
6. We ensure employees' voice and engagement for safety and accident prevention.

### Health and Safety Policy and Guidelines



POS SM ISO45001 Certificate



POS SM DOC LIBERIA



POS SM DOC SINGAPORE

# Safety and Health Management

## Safety and Health Promotion System

### Safety and Health Goal and Performance Management

In order to become a globally leading maritime logistics company prioritizing safety and health, we have established the safety and health goal of 'ZERO Serious Occupational Accidents'. By setting up the key initiatives and detailed action plans to achieve this goal, we have established a safety and health goal management system. To strengthen the safety and health accountability of the Chief Safety & Health Officer (CSHO), supervisors, and the dedicated safety management team, we have defined KPIs and achievement targets, and are managing the progress status and future action plans in relation to the set goals.

#### Safety and Health KPIs

2022 KPI	Target	Result
No. of serious accidents (fatalities) onshore/offshore	0 case	0 case
No. of serious accidents (injuries) at sea	5% reduction	19% reduced
No. of serious accidents (injuries) on land	0 case	0 case
Revision and establishment of safety and health management regulations	4 cases	5 cases
Convening of the OSH committee	4 sessions	3 sessions
Completion rate of safety and health training	100%	100%
Development of safety and health management plans (approved by the board of directors)	Approval	Approved
Establishment of a system for collecting employee opinions	System Establishment	Complete
Number of serious accidents occurred in suppliers	0 case	0 case
Support for safety management measures meetings (offshore)	1 session	2 sessions
Support for work coordination between dedicated teams (offshore)	6 sessions	6 sessions

2023 KPI	Target
No. of serious accidents (fatalities) onshore/offshore	0
No. of serious accidents (injuries) at sea	5% reduction
No. of serious accidents (injuries) on land	0
Revision and establishment of safety and health management regulations	4 sessions
Convening of the OSH committee	100%
Safety and health management plan (approved by the board of directors)	Approval
Number of serious accidents in contracted companies	0
Support for safety management meetings (offshore)	2 sessions
Support for inter-departmental coordination (offshore)	6 sessions
Supervision and inspection by safety managers	6 sessions
Acquisition of professional certifications to enhance expertise in dedicated teams	1 person

### Safety and health medium to long-term goals and targets for 2023

Safety and Health Goal
<ul style="list-style-type: none"> <li>ZERO serious occupational accidents</li> <li>100% resolution rate for safety feedback from contracted workers</li> <li>Zero accident rate for onshore employees</li> <li>23% reduction in average accident rate for maritime employees compared to the past 5 years</li> </ul>
2023 Target
<ul style="list-style-type: none"> <li>Maintenance of ZERO occurrence of serious accidents</li> <li>100% resolution rate for safety feedback from contracted workers</li> <li>Maintenance of ZERO accident rate for onshore employees</li> <li>5% reduction in accident rate for maritime employees compared to the previous year</li> </ul>

#### Yearly target achievement plan

Category	2022 Target (Result)	2023 Target	2024 Target	2025 Target	2026 Target
No. of major accidents reported	0 (0)	0	0	0	0
Resolution rate of safety and health feedback from contracted workers	100% (0 case)	100%	100%	100%	100%
Onshore employee accident rate	0% (0%)	0%	0%	0%	0%
Offshore employee accident rate	0.82% (0.66%)	0.78%	0.74%	0.70%	0.67%

## Conducting Safety and Health Training

### Onshore Employees

In 2022, we officialized regular safety and health training for onshore employees (including supervisors) pursuant to the provisions in the Occupational Safety and Health Act. We also conducted job training for Safety and Health Management Officer and Safety and Health Managers.

### Offshore Employees

Safety management is included as a topic in workshops for master and chief engineers, officers, job training for ratings, and training for new officers. We also have a safety and health manager training course, and an ISO 45001 internal auditor training course, among others.

### Employee Safety Training Completion

Category	Unit	2020	2021	2022
<b>Onshore Employee</b>				
Training hours	hours	-	-	4,694
Training participants	people	-	-	376
<b>Offshore Employee</b>				
Training hours	hours	9,260	17,110	19,772
Training participants	people	794	1,339	2,227

Offshore employees are not subject to statutory training under the Occupational Safety and Health Act. Training time and trainees decreased in 2020 due to COVID-19.

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# Safety and Health Management

## Safety and Health Program

### Accident Prevention and Health Management Program

#### Onshore Employees

<p><b>Health service room</b></p> <ul style="list-style-type: none"> <li>· First aids, self-testing kits, health consultation</li> <li>· High-risk group management including those with symptoms and those who need attention</li> <li>· Automatic blood pressure and glucose meter</li> <li>· Goods and equipment for musculoskeletal disease prevention</li> </ul>
<p><b>Health examinations</b></p> <ul style="list-style-type: none"> <li>· Annual health examinations conducted and results retained for five years pursuant to Article 129 of the Occupational Safety and Health Act</li> </ul>
<p><b>Brain/cardiovascular disease prevention</b></p> <ul style="list-style-type: none"> <li>· Brain/cardiovascular disease risk assessment, plans to offer smoking cessation and responsible drinking programs in cooperation with public health centers</li> </ul>
<p><b>CPR &amp; AED operations and training</b></p> <ul style="list-style-type: none"> <li>· Monthly self-inspections and reporting to the public health center, two first-aid training sessions for employees</li> </ul>
<p><b>Safety management notice board</b></p> <ul style="list-style-type: none"> <li>· For all employees and supplier employees</li> </ul>
<p><b>OSH Committee</b></p> <ul style="list-style-type: none"> <li>· Meetings held at least quarterly</li> </ul>

<p><b>Building fire and disaster response</b></p> <ul style="list-style-type: none"> <li>· Building management's safety and health policy incorporated in the safety and health plans and disaster prevention and damage alleviation plans</li> </ul>
<p><b>Stretching posters and safety and health signs</b></p> <ul style="list-style-type: none"> <li>· Stretching in offices encouraged for health management in daily lives</li> <li>· Warning signs for dangerous places/substances</li> </ul>
<p><b>Security cameras in offices and emergency stairs</b></p> <ul style="list-style-type: none"> <li>· Cameras installed in emergency stairs found as disaster-prone blind spots</li> </ul>
<p><b>Outsourcing and Operation of Counseling Services</b></p> <ul style="list-style-type: none"> <li>· Work stress prevention for employees' mental health</li> </ul>
<p><b>Mental health care</b></p> <ul style="list-style-type: none"> <li>· Work stress assessment and psychological counseling programs</li> </ul>
<p><b>Accident Prevention Incentive System</b></p> <ul style="list-style-type: none"> <li>· Rewards for safety accident prevention goal setting and achievements</li> </ul>
<p><b>Employee Feedback System</b></p> <ul style="list-style-type: none"> <li>· Suppliers: Customer service on the website</li> <li>· Employees: Safety management notice board on the intranet</li> </ul>

#### Employee Mental Health Education

In March 2023, POS SM conducted workplace mental health education for all employees. This education aimed to prevent and manage potential difficulties related to mental health, such as stress and depression, by collaborating with the Busan Jung-gu Mental Health Welfare Center. We invited mental health social workers to provide education on preventing and managing job-related stress for our employees.

During the training, we analyzed external and internal factors contributing to job-related stress and explored physiological, psychological, and behavioral reactions to stress based on different situations. The session also covered techniques for coping with stress, emphasizing lifestyle improvements that do not require excessive cost or lead to secondary issues like addiction. Topics included sufficient stretching in daily life, essential fatty acid intake through Omega-3, breath control to manage emotions, exposure to sunlight, and techniques for improving sleep quality.

POS SM recognizes the importance of stress management within the workplace and aims to create a healthy work environment for its employees through regular implementation of such education programs.

# Safety and Health Management

## Safety and Health Program

### Accident Prevention and Health Management Program Offshore employees

<p><b>Maritime emergency medical center</b></p> <ul style="list-style-type: none"> <li>· Connections to the 119 medical center and remote consultation for offshore employees</li> </ul>
<p><b>Health examinations</b></p> <ul style="list-style-type: none"> <li>· Annual health examinations pursuant to Article 53 of the Enforcement Rules of the Seafarers' Act</li> </ul>
<p><b>Psychological counselling for offshore employees</b></p> <ul style="list-style-type: none"> <li>· Organizational Culture Improvement and Counseling for Mental Health Onboard</li> </ul>
<p><b>Resilience activities</b></p> <ul style="list-style-type: none"> <li>· Conducting various group activities among offshore employees to promote communication, empathy, and the development of problem-solving skills through brain exercises, thereby enhancing their ability to cope with stress and daily life issues</li> </ul>
<p><b>Fitness facilities in vessels</b></p> <ul style="list-style-type: none"> <li>· Encouraging offshore employees' physical training and health</li> </ul>
<p><b>Operation of Safety Management Countermeasure Meetings</b></p> <ul style="list-style-type: none"> <li>· Conducted at least twice a year</li> </ul>
<p><b>Safety and health response for individual vessels</b></p> <ul style="list-style-type: none"> <li>· Offshore employees' and vessel managers' safety and health policies incorporated in safety and health plans and manuals</li> </ul>
<p><b>offshore employees employees and Vessel Manager Guidance Inspection</b></p> <ul style="list-style-type: none"> <li>· Conducted at least twice a year</li> </ul>
<p><b>PPE supply</b></p> <ul style="list-style-type: none"> <li>· Essential PPE including a safety helmet, safety shoes, work clothes, and winter jackets</li> </ul>

### Onshore Safety and Quality Meeting

The onshore safety and quality meeting is organized by POS SM's safety and quality team with the aim to review and identify imperfections in the results of onshore safety activities and the appropriateness of business activities and procedures. Key agenda considered at the meeting include accident statistics, safety management system monitoring (quarterly), and amendments to manuals, held in the form of discussions over safety and quality issues. To facilitate communications between onshore employees and offshore employees, we started asking masters and chief engineers off-duty to attend pre-boarding consultation meetings from 2021. Listening to the voices from the field at first hand helps us promote exchange of opinions.

### OSH Committee

The Pan Ocean OSH(Occupational Safety and Health) Committee holds quarterly meetings to facilitate safety and health management. The committee is chaired by the CSHO and has five employee members and five employer members. Its roles include deliberating and making decisions on key matters concerning safety and health such as revising safety and health management rules, developing safety and health plans, conducting safety and health training for employees, health examinations, serious accident investigations, and recurrence prevention plans, etc.

### Joint Land and Maritime Emergency Response Training Conducted

Under the supervision of Pan Ocean's Safety Management Department, POS SM conducted joint onshore and offshore emergency response drills in February and April 2023. These drills involved virtual maritime accidents scenarios to indirectly experience the emergency response and handling process of both ship and onshore accident response teams. The main purpose of these joint drills was to enhance the emergency response and handling capabilities of onshore and offshore personnel, thereby preventing the spread of accidents and minimizing damage in case of actual incidents.

In the event of a ship emergency, the onshore departments also activated their Accident Response Task Force, including the Accident Response Chief, Technical Support Team, Business Support Team, Labor Strategy Team, and External Technical Support Team, based on the Emergency Response Training and Insurance Manual. The entire training process was closely monitored, and the comprehensive evaluation of accident handling was carried out to identify any areas that required improvement. The insights gained from the drills, considering various possible scenarios, will be continually applied and incorporated into future training sessions.

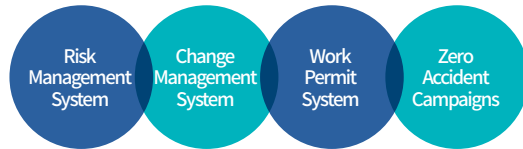
# Safety and Health Management

## Onboard Safety and Health Management

### Onboard Safety and Health Management System

We pursue to establish a robust safety culture by preparing and sharing safety and health manuals. Onboard Safety and Health environment Committee meetings are held regularly, and safety management countermeasure meetings are held in the head office to discuss vessel safety and health issues and to develop and implement accident recurrence prevention measures.

### Onboard Safety Management System



### Onboard Health Management System

- Cleaning, space organization, and personal hygiene onboard
- Onboard pest management and AGM
- Onboard smoking regulations and quit-smoking campaigns
- Onboard noise and vibration measurements and management
- Seafarer mental health management

### Operating the Safe Work Permit System

The safe work permit system aims to clarify work details and relevant safety instructions prior to the commencement of the work, thereby eliminating potential risk factors. The system must be applied to hazardous works conducted in enclosed space, works using heat sources, electrical works, works on piping and pressure vessels, or handling asbestos, other non-regular works, and works designated by the master or the onboard safety manager. For all works subject to the safe work permit system, advance risk assessments must be conducted, and the assessment results and work permit must be posted at the work site. All those involved must attend an onboard Safety and Health environment Committee meeting prior to the commencement of the work.

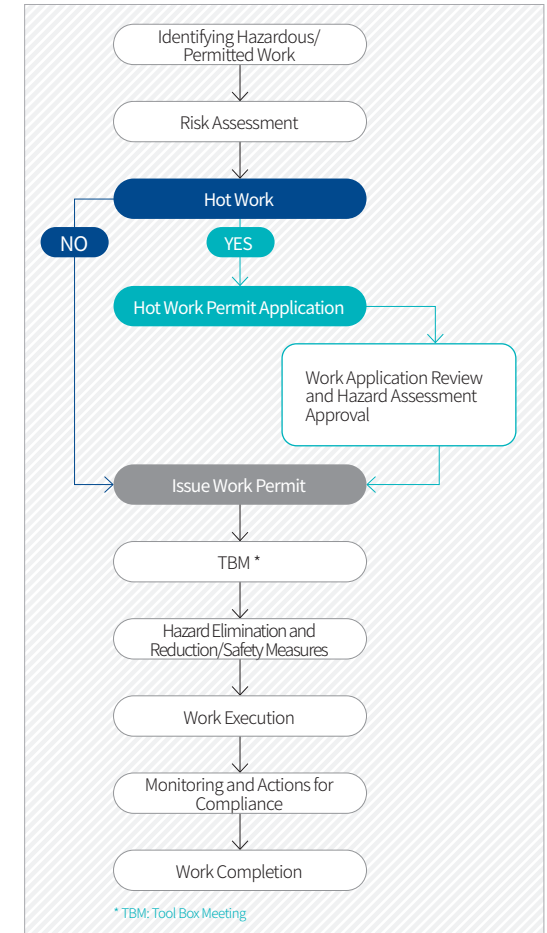
### Offshore employees Fall Protection Device (Safety Block)

The Safety Block, in contrast to the conventional lanyard, allows for controlled descent speed in the event of a fall accident, minimizing the impact and preventing injuries. It has already been installed on five vessels, and we are planning to evaluate its effectiveness before proceeding with the installation on all ships.

### Behavior Based Safety

Behavior-Based Safety (BBS) is an activity that encourages anyone to pay attention to and intervene when hazardous behaviors are observed. POS SM is continuously striving to the identification and correction of unsafe behaviors and conditions through BBS.

### Operating Process of the Safe Work Permit System



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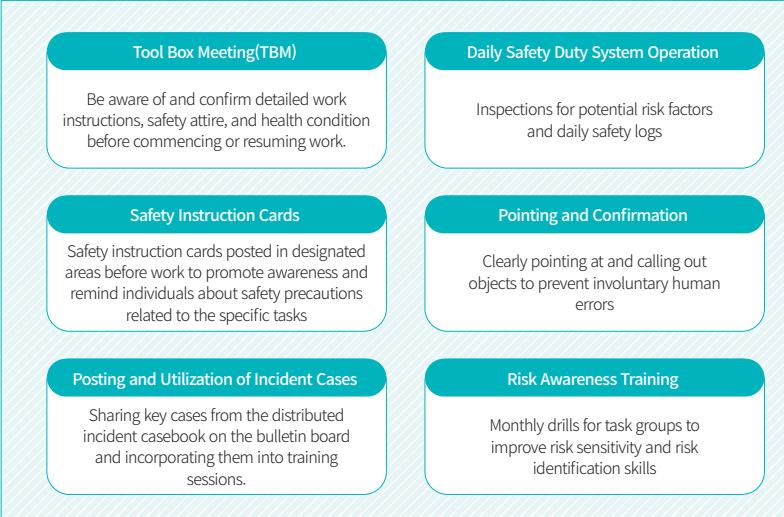
# Safety and Health Management

## Onboard Safety and Health Management

### Zero Accident Campaign (POS-4P)

Pan Ocean is promoting a zero-accident campaign (POS-4P) to foster a safety culture on board and cultivate a sensitivity to risks. This campaign was introduced in accordance with the declaration of a company-wide Total Quality Control (TQC) movement on July 1, 1992, with the aim of achieving accident-free operations for ships and maritime personnel. Additionally, rewards are presented to accident-free vessels every 600 and 4,200 days. The Pan VIVA and Pan JASMINE vessels achieved 4,200 accident-free days in April and June 2022, respectively, while the SUPER INFINITY vessel achieved 4,800 accident-free days, following the accomplishment of the SUPER HERO vessel.

### Zero Accident Campaign details



<p><b>Tool Box Meeting(TBM)</b></p> <p>Be aware of and confirm detailed work instructions, safety attire, and health condition before commencing or resuming work.</p>	<p><b>Daily Safety Duty System Operation</b></p> <p>Inspections for potential risk factors and daily safety logs</p>
<p><b>Safety Instruction Cards</b></p> <p>Safety instruction cards posted in designated areas before work to promote awareness and remind individuals about safety precautions related to the specific tasks</p>	<p><b>Pointing and Confirmation</b></p> <p>Clearly pointing at and calling out objects to prevent involuntary human errors</p>
<p><b>Posting and Utilization of Incident Cases</b></p> <p>Sharing key cases from the distributed incident casebook on the bulletin board and incorporating them into training sessions.</p>	<p><b>Risk Awareness Training</b></p> <p>Monthly drills for task groups to improve risk sensitivity and risk identification skills</p>

### Risk Assessment and Management

We conduct risk assessments to proactively identify and effectively eliminate or mitigate potential hazards present in all operational processes within the ship. Both offshore employees and repair personnel perform risk assessments for all routine and non-routine tasks. The results of these assessments are incorporated into existing risk assessment documents or used to create new risk assessment reports. This approach aims to prevent accidents related to ships and personnel and minimize the likelihood of incidents occurring. In particular, when significant risks are identified, we establish and implement response measures to ensure that the tasks are carried out only after the risks have been mitigated. In October 2022, POS SM conducted risk assessment and accident analysis training for personnel involved in accident investigation. The training aimed to enhance their understanding of Risk Management, methods of risk assessment (such as HAZOP, What-If, Fault Tree Analysis, Event Analysis, etc.), accident investigation, root cause analysis, and the process of implementing corrective actions and preparing accident investigation reports. This training was not only provided to maritime personnel but also extended to onshore staff responsible for managing them. We plan to continue conducting regular training sessions to further improve the job capabilities of both maritime and onshore employees in the area of Risk Management.

### Publication of POS VIEW

POS VIEW is a quarterly newsletter distributed to vessels, containing details on key business issues, safety management activities, health, diseases, etc. It serves as a communication platform that connects onshore and offshore personnel, encompassing significant news related to the vessels, lessons from accidents, conflict resolution between generations, and mental care information. Notably, we share a list of vessels that have achieved accident-free performance through POS VIEW to spread a safety-conscious atmosphere throughout the ship. We also receive reports on near-miss and inappropriate incidents and reward outstanding practices. Recipients of these awards receive certificates and cash prizes from the ship's Safety and health environment committee, and these achievements are featured in POS VIEW. In this manner, Pan Ocean is committed to promoting a strong safety culture within the ships through various activities and emphasizing safety as our top priority across all vessels.

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# Safety and Health Management

## Onboard Safety and Health Management

### Work Stoppage Procedure

All work must be immediately suspended whenever a condition or behavior that has grave influence on people, facilities, or environment is found. All offshore employees and suppliers' personnel working onboard have the responsibility and authority to prevent imminent risks and hazardous situations. No activities take precedence over their safety and health. All personnel at Pan Ocean have the right and obligation not to perform duties and activities that may cause serious risks. We ensure that the Lockout-Tagout procedure be practiced and workers freely exercise their authority to cease works whenever they perceive risks.

#### Management of Critical Tasks and 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 ensure continuous awareness of key points, we display Safety Posters in designated areas. This encourages a constant understanding of essential aspects. Before starting any task or in case of issues, individuals can verify the key points to enable practical checks and, if necessary, facilitate work suspension. We also promote the dissemination of work stoppage policies and foster proactive safety management and leadership.



### ePOS Computer System

POS SM has implemented the ePOS Computer System to enable real-time sharing of safety management activities, including risk assessment and near-miss reporting, across onshore and offshore operations. This system facilitates concurrent safety management at both field and company levels, while ensuring systematic data management through computerization. Key information and guidelines are communicated through the Letter of Company (LOC), and the follow-up function is utilized to monitor and ensure compliance with onboard instructions. Additionally, the system allows for efficient management of vessel maintenance history and facilitates requests for onshore support and necessary actions.

### Work Stoppage Policy

POS SM holds a Work Stoppage Policy and shares it through safety training for new recruits as well as quarterly safety training for onboard offshore employees. Discussions related to the Stop Work Policy are conducted during the monthly vessel SHEQ meetings.



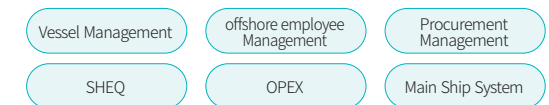
POS SM Work Stoppage Policy



Lockout-Tagout

### Overview of Vessel & Offshore Employee Management System

POS SM implements a Ship Crew Management System as part of its integrated ship management approach, facilitating efficient support between onshore and onboard operations. This system enables seamless online integration, mitigating potential risks arising from physical distance and enabling prompt task management through effective communication. Additionally, POS SM has established a comprehensive ship equipment and supplies database, enhancing the reliability of information.



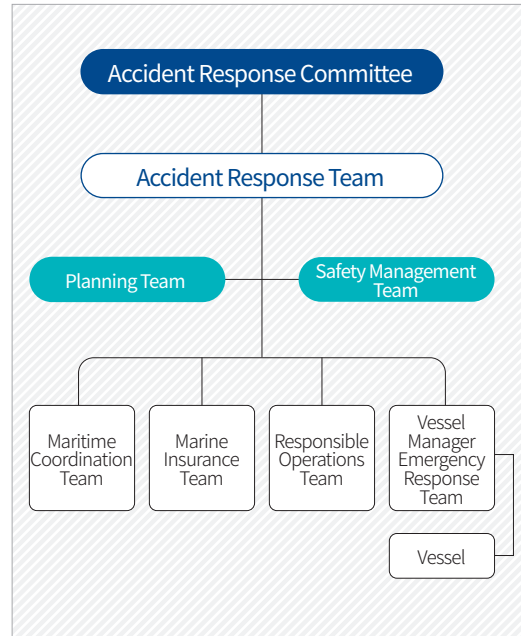
# Safety and Health Management

## Emergency Response System

### Emergency Response Structure and Procedure

In case of ship or personnel accidents, we have established an Accident Response Committee to perform the role of an accident control tower. Under this committee, an Accident Response Team consisting of team leaders from related departments and vessel managers is formed to maintain close communication with the main vessel and handle actual accident response tasks. In addition, we are operating the BCP (Business Continuity Plan) Manual and Emergency Response Manual for Maritime Accidents to ensure swift response and efficient management of accident records. Following these manuals, we activate an immediate and smooth emergency response system in case of emergency situations to minimize damages. In the event of a patient incident or ship accident, we implement emergency measures promptly and conduct post-accident analysis in detail to establish measures for prevention. Through these efforts, we aim to prevent similar accidents, reduce accident risks, and improve safety measures.

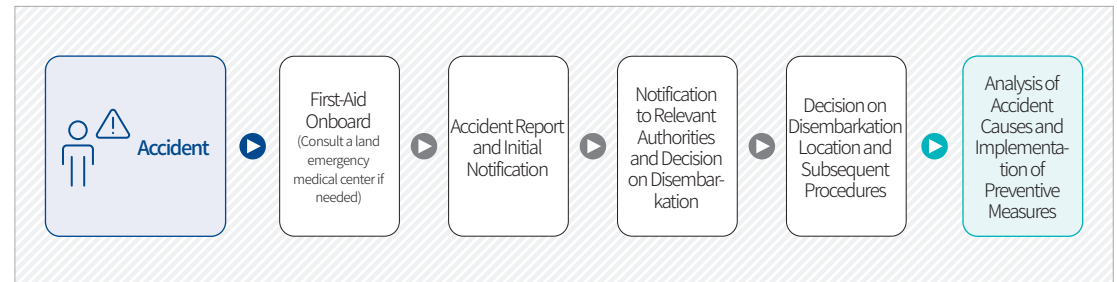
### Emergency Response Organization



### Vessel Accident Emergency Response Process



### Personnel Accident Emergency Response Process





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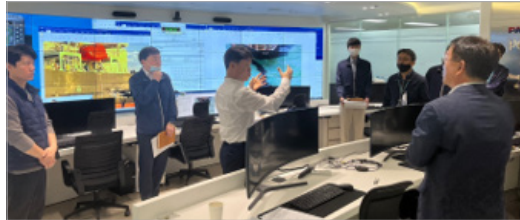
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# Safety and Health Management

## Emergency Response System

### ISO 22301

POS SM operates a Business Continuity Management System to effectively manage business continuity in the event of unexpected crises such as disasters, emergencies, terrorism, and infectious diseases. The system aims to minimize work disruptions and ensure the prompt recovery of key business functions. Mitigation measures have been established based on comprehensive Business Continuity Plans for onshore and vessel operations. In 2022, operational targets were set for both onshore and vessel operations, and a 100% performance rate was achieved. Quarterly joint land-sea exercises and annual disaster training have been conducted to enhance preparedness and response capabilities.



Joint land-sea exercises and annual disaster drills

### Infectious Disease Response System

POS SM identifies risks that may occur in both onshore and offshore environments and selects significant risks to establish corresponding Business Continuity Management plans. For instance, regarding the risk of infectious diseases, which falls under the category of major onshore disasters, an infectious disease response system has been developed. This system involves analyzing the current status, outbreak areas, and trends of emerging infectious diseases, as well as the geographical characteristics of the affected regions. It also includes mitigation measures, specific action plans, and response protocols to address the potential impacts on key processes.

#### Outcome of Infectious Disease Risk

- Rapid spread of the infectious disease leading to multiple casualties.

#### Impact on Key Processes

- Personnel Management: Disruption of operations due to essential staff shortages and insufficient manpower.
- Resource Management: Closure of office facilities to prevent the spread of infectious diseases.

#### RTO(Recovery Time Objective)

- 2 Days

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

#### Mitigation Measures

##### Prevention/Preparation

- 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

- Prioritizing essential tasks in resource reallocation from support functions
- Assigning frontline employees such as retirees or internal auditors to handle routine tasks

##### Responsible Department

- POS SM Management Team Control

# Supply Chain Management

## Supplier Management

We recognize that transparent and stable supply network management is essential for sustainable growth. We categorize and manage suppliers into shipping agents, tug services, materials suppliers, and lashing services. We define core suppliers based on their market share, price competitiveness, financial soundness, and other factors. As of 2022, Pan Ocean has 46 core partners.

POS SM encourages suppliers to comply with Pan Ocean's environmental and ethical management rules and policies. They are asked to familiarize themselves with SHEQ through meetings and sign a written confirmation prior to commencing work onboard.

### Supplier Selection and Evaluation

For supplier selection and evaluation, we employ both quantitative and qualitative methods. In order to enhance sustainable management in our supply chain, we strive to incorporate both financial and non-financial aspects in these evaluations. We consider safety and health compliance as significant factors in supplier assessments, alongside sales, credit ratings, and other indicators of financial stability.

POS SM has established its own criteria for supplier selection, and selected suppliers are invited to participate in tenders through the company's IT system. Suppliers engaged in trading with the company undergo periodic evaluations, conducted at least twice a year, which inform adjustments in trade volume and may prompt necessary warnings.

To foster sustainability management among our suppliers, we are planning to develop measures that assist them in meeting international standards and regulations related to environmental practices, safety, human rights, and ethics. Additionally, we aim to introduce incentives to encourage their active involvement and support in environmental management.

## Suppliers

Category		2020	2021	2022
Navigation cost	Core suppliers	3	3	3
	Regular suppliers	199	200	211
Bunker cost	Core suppliers	7	8	8
	Regular suppliers	19	12	18
Vessel Maintenance cost	Core suppliers	26	30	35
	Regular suppliers	400	482	459

### 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.



### Excellent Ship Management Operator Certification

The Excellent Ship Management Operator Certification System is designed to enhance the management capabilities of ship management operators and promote the development of the ship management industry with growth potential. Pan Ocean has been recognized as an excellent ship management operator, being the first in Korea to receive such recognition, based on its corporate competence in ship management and outstanding service quality. As a result, Pan Ocean may be eligible for priority support in government programs aimed at exploring overseas markets and establishing overseas business networks, particularly in terms of crew education and welfare initiatives. Additionally, when foreign vessels managed by Pan Ocean enter domestic ports, they are eligible for reduced harbor usage fees.



# Social Contribution

## Social Contribution Strategy System

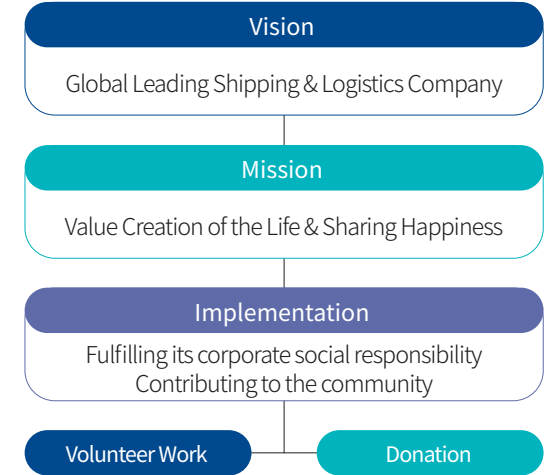
To achieve our corporate vision of being a "Global Leading Shipping and Logistics Company," Pan Ocean has established a mission of "Creating Value in Life and Sharing Happiness." In April 2023, while solidifying our corporate social contribution strategy, Pan Ocean has prioritized "Community Coexistence" as the primary goal for 2023. Through benchmarking our social contributions with other companies and evaluating our current social contributions, we have identified volunteer activities and donation initiatives as specific action plans to expand our commitment to social responsibility and contribute to the local community. Going forward, Pan Ocean will continue its efforts to create social value through diverse social contribution activities.

### 2023 Social Contribution Goals

Program	Type	Details	2022 Result	2023 Target	2024 Target	2025 Target
Eco Clean Volunteer Groups	Volunteer Work	Eco Clean Volunteer Groups Activities	4 sessions	24 sessions	24 sessions	24 sessions
		Employee participation	-	4+ sessions	4+ sessions	4+ sessions
Flower tributes at the Seoul National Cemetery	Volunteer Work	Floral Arrangement and Environmental Cleanup Activities	once	2+ sessions	2+ sessions	2+ sessions
Seoul Senior Welfare Center	Volunteer Work	Meal Distribution Activities	0	2+ sessions	2+ sessions	2+ sessions
	Donation	Donation of Special Meal Ingredients	Twice	Twice	Twice	Twice
Social Contribution Mileage System	Volunteer Work	Annual Volunteering Hours per Person	0	2+ hours	2+ hours	2+ hours
	Donation	Cumulative Mileage-based Donations to Public Organizations	-	New execution	Execution	Execution
Industry-Academic Scholarship for Students	Donation	Scholarships for Students from KMOU / MMU	15 people	20 people	20 people	20 people
Donation to Marine Security Institutions	Donation	Donation of Goods to the Navy/Coast Guard	-	New execution	Execution	Execution

Medium to long-term goal (\*23-25): Gradual expansion and advancement, such as increasing annual targets compared to the previous year's performance

### Social Contribution Strategy



### Promoting Employee Social Contribution Activities

To encourage voluntary participation of employees in social contribution activities, we have established and are operating the "Social Contribution Mileage Program." This program allows individuals to accumulate mileage points for their social contribution activities, and based on their accumulated points, they receive incentives in the form of monetary rewards or gifts. Social contribution activities recognized under this program include blood donation, financial donations, environmental cleanup, talent donations, account donations, other volunteer activities(including in-house volunteer activities), and any other forms of social contributions. Through the implementation of this program, we encourage all of our employees to actively engage in social contribution activities and look forward to their meaningful contributions to society.

# Social Contribution

## Social Contribution Strategy System

### Social Contribution Programs

Pan Ocean is committed to continuously supporting socially vulnerable groups through ongoing initiatives, including floral tributes at the National Seoul National Cemetery and meal distribution volunteering at the Seoul Senior Welfare Center. Despite some limitations caused by the COVID-19 pandemic, we are determined to resume and expand our previous activities. To achieve this, we have developed an annual plan for social contribution activities and established the Eco-Clean Volunteer Group. Furthermore, we will actively promote social contribution activities that are closely linked to the characteristics of the shipping industry.

#### Eco Clean Volunteer Groups

In November 2022, Pan Ocean collaborated with K.D. Tech Co., Ltd, a disabled-friendly workplace, to establish the 'Clean Eco Volunteer Group' as part of its community contribution efforts and to engage with various stakeholders while creating job opportunities. The Eco Clean Volunteer Group conducts regular activities twice a month, such as environmental clean-up activities in parks, tourist sites, and subways, sharing meals with vulnerable groups, and cleaning residences for elderly living alone in the local community. Both disabled individuals and employees actively participate in these social contribution activities together.



#### Meal Distribution volunteering at the Seoul Senior Welfare Center

Pan Ocean conducts volunteering activities at the Seoul Senior Welfare Center, including meal distribution and dishwashing services. During major holidays such as New Year's and Chuseok, we provide special meals to ensure that elderly individuals have a hearty meal.



#### Flower tributes at the Seoul National Cemetery

Through a sisterhood agreement with the Seoul National Cemetery, we conduct activities such as replacing floral tributes at the cemetery's designated areas on Memorial Day and engaging in environmental cleanup efforts as a tribute to the noble spirit of patriotism and devotion.



# GOVERNANCE

A transparent and healthy corporate culture is a steppingstone for us to thrive and earn stakeholders' trust. Pan Ocean pursues transparency based on due process in governance and ethical decision making.

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- 76** Ethical and Compliance Management
- 80** Information Security



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# Governance

## Corporate Governance Charter

As part of its efforts to enhance corporate governance, Pan Ocean established and disclosed the Corporate Governance Charter in February 2022. Based on this Charter, we are committed to protecting the rights of all stakeholders, including shareholders, and striving to establish and enhance a sound corporate governance structure.

### Corporate Governance Charter Preamble

Pan Ocean Co., Ltd., a global shipping company representing Korea, is committed to becoming a global leading shipping logistics company by leveraging its extensive business capabilities in the shipping sector and revitalizing grain distribution and logistics businesses.

With the recognition that corporate governance plays a pivotal role in enhancing shareholder value, building trust with various stakeholders, and safeguarding the rights and interests of all, Pan Ocean Co., Ltd. has established the Corporate Governance Charter. This charter serves as a fundamental framework to guide our corporate governance practices and ensure transparency, integrity, and responsible decision-making throughout our organization.

[Corporate Governance Charter](#)

## Board of Directors

As of June 2023, Pan Ocean's Board of Directors, the highest decision-making body, consists of 3 inside directors and 4 independent directors, meeting the requirements of the Commercial Act. To ensure effective operation through checks and balances, the articles of incorporation specify that the total number of directors should be no less than 4 and no more than 9, with the majority of independent directors forming the board.

### Board composition

As of 2023.06.30

Category	Name	Gender	Tenure	Expertise	Position	Professional experience
Inside Director	Kim Hong Kuk	Male	2015.07.18 ~ 2025.03.28	Business management	CEO	CEO of Harim Holdings Co., Ltd.
Inside Director	Ahn Joong Ho	Male	2020.03.30 ~ 2026.03.29	Shipping	CEO / Chairperson of BOD	CEO of Pan Ocean Co., Ltd.
Inside Director	Cheon Se Gi	Male	2015.07.18 ~ 2025.03.28	Business management	Head, Ethical Management Department	Head of Management Support Team
Independent Director	Jeong Hak Soo	Male	2021.03.30 ~ 2024.03.30	Agriculture/ grain	Chairperson, Internal Transactions / Chairperson, ESG Committee	Chairman of the East Asia Agri. Association
Independent Director	Oh Kwang Soo	Male	2019.03.27 ~ 2025.03.28	Law	Chairperson, Independent Director Recommendation Committee / Chairperson, Remuneration Committee	Lawyer of DR & AJU Law Firm
Independent Director	Ku Ja Eun	Female	2023.03.29 ~ 2026.03.29	Accounting	Chairperson of the Audit Committee	Associate Professor, Department of Business Administration, Suwon University
Independent Director	Kim Young Mo	Male	2023.06.16 ~ 2026.06.16	Finance	-	The Korea Development Bank(KDB)

# Governance

## Board Operations

The Chairperson of the Board is appointed by the Board of Directors, as stipulated in the operating regulations, to ensure strategic and efficient board operations. The Chairperson, who possesses a high level of expertise and understanding in the maritime industry, plays a pivotal role. The Board of Directors holds regular meetings and convenes extraordinary meetings as needed. In 2022, a total of 12 board meetings were held, discussing 52 agenda items. The overall attendance rate for directors was 96%, with 100% attendance for inside directors and 93% for independent directors. Detailed information on the Board's activities is disclosed in the company's annual report and website.

 [Board operation rules](#)

## Board Operations

Category	Unit	2020	2021	2022
Attendance, inside directors	%	83	83	100
Attendance, independent directors	%	85	86	93
Attendance, overall	%	85	85	96
No. of BOD meetings	meetings	12	14	12
No. of total agenda discussed	agendas	44	46	52
No. of resolution on key ESG issues by BOD	cases	-	-	2

\* In the previous year, it was calculated using a simple average. However, for this year's data calculation, it has been revised for all three years by calculating the ratio of attendance to the total number of meetings.

## 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. All Committees are composed of a majority of independent directors to ensure independent and objective operations. The ESG Committee was voluntarily established in May 2022 to comprehensively promote and manage sustainable management practices. In the future, the committee will take a leading role in reviewing and supervising Pan Ocean's overall ESG strategy and implementation plans.

 [Board committee operation rules](#)

## Committees within the Board

Committee	Composition				Roles
	Position	Category	Name	Gender	
Independent Director Recommendation Committee (4 members)	Chair	Independent Director	Oh Kwang Soo	Male	To select and consider candidates for the independent directors to be elected at the general meeting of shareholders
	Member	Independent Director	Jeong Hak Soo	Male	
	Member	Independent Director	Ku Ja Eun	Female	
	Member	Independent Director	Kim Young Mo	Male	
Audit Committee (4 members)	Chair	Independent Director	Ku Ja Eun	Female	To conduct audits of overall business management including finance
	Member	Independent Director	Jeong Hak Soo	Male	
	Member	Independent Director	Oh Kwang Soo	Male	
	Member	Independent Director	Kim Young Mo	Male	
Internal Transactions Committee (5 members)	Chair	Independent Director	Jeong Hak Soo	Male	To conduct preliminary reviews of large-scale internal transactions under the Monopoly Regulation and Fair Trade Act and internal transactions subject to board approval under the Commercial Act
	Member	Inside Director	Ahn Joong Ho	Male	
	Member	Independent Director	Oh Kwang Soo	Male	
	Member	Independent Director	Ku Ja Eun	Female	
Remuneration Committee (4 members)	Member	Independent Director	Kim Young Mo	Male	Pre-deliberations on annual remunerations for directors, predeliberations on performance evaluations and performance pay, suggestions on the company's remuneration system and payment
	Chair	Independent Director	Oh Kwang Soo	Male	
	Member	Independent Director	Jeong Hak Soo	Male	
	Member	Independent Director	Ku Ja Eun	Female	
ESG Committee (4 members)	Member	Independent Director	Kim Young Mo	Male	To manage, supervise, evaluate, and review strategies and key issues related to the company's ESG management (environmental, social, and governance)
	Chair	Independent Director	Jeong Hak Soo	Male	
	Member	Independent Director	Oh Kwang Soo	Male	
	Member	Independent Director	Ku Ja Eun	Female	

# Governance

## Expertise and Diversity of the Board

Pan Ocean's independent directors possess expertise in accounting, law, and agriculture/grain, thereby enhancing the knowledge and diversity within the Board of Directors. The Independent Director Recommendation Committee recommends candidates with extensive knowledge and experience in areas such as business management, economics, accounting, law, and relevant technologies. The committee adopts a comprehensive approach to candidate selection, without imposing limitations based on ethnicity, nationality, gender, region, religion, or expertise.

## Independence of the Board

The roles and functions of independent directors are clearly defined to ensure their independent participation in major decision-making processes and oversight of management activities. Independent directors hold a majority in the Board of Directors, and board Committees are also primarily composed of independent directors to facilitate objective and independent decision-making. The Independent Director Recommendation Committee, composed entirely of independent directors, verifies candidates for independent director positions. Subsequently, the candidates undergo board deliberations, receive approval, and are appointed during the general meeting of shareholders.

(unit: KRW million)

Category	No. of people	Total compensation	Average amount per person
Inside Directors	3	2,316	772
Independent Directors	3	161	41
Total	6	2,477	393

· No. of people is based on as of end of 2022.

· The total compensation includes the payments to retiring registered directors, independent directors, and audit committee members during the current fiscal year

## Shareholder Value Improvement

### Encouraging active execution of shareholders' rights

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

### Dividend Policy and Guidelines

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

#### Dividend Policy

Pan Ocean will provide cash dividend to shareholders after allocating financial results in a reasonable and balanced way to secure investment resources maintaining the soundness of financial structure.

#### Dividend Guideline (2021~2023)

Pan Ocean will return 10% to 20% of net profits excluding extraordinary income based on K-IFRS Separated financial statement.



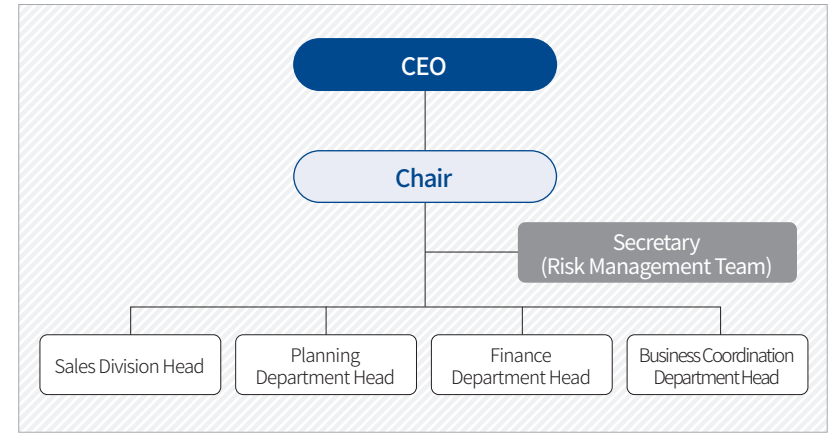
# Risk Management

## Corporate Risk Management System

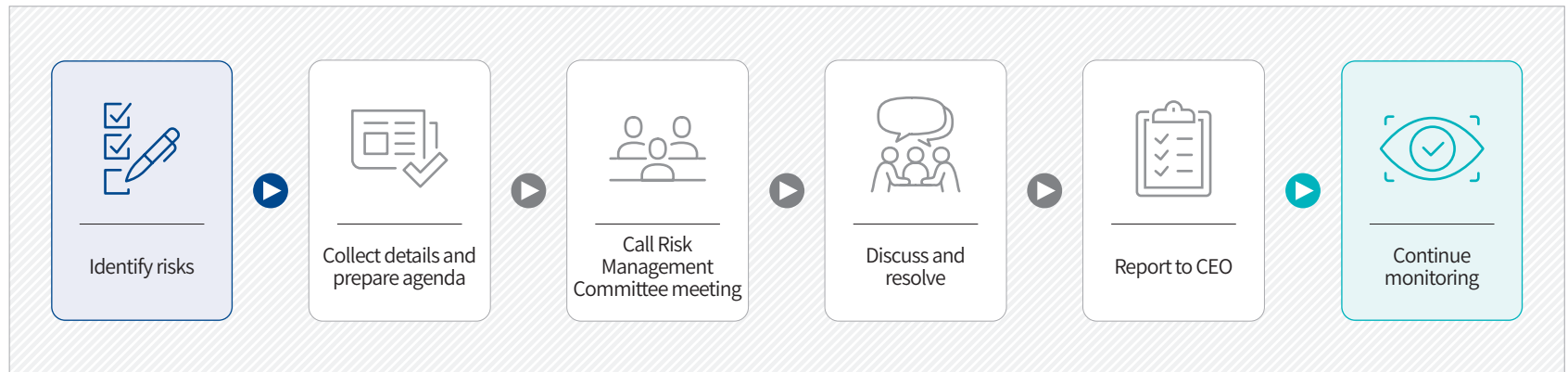
### Risk Management Organization

To comprehensively address various risks associated with our business activities, we operate the Risk Management Committee. The committee consists of a chairperson, representatives from each department, and a secretary, and depending on the agenda, relevant senior managers, directors, or team leaders from related specialized organizations may also participate. The committee meets on a quarterly basis, and ad hoc meetings can be convened as necessary. Its role is to identify and assess risks across the company's operations, formulate key response measures, and develop specific action plans to proactively address potential crises faced by Pan Ocean.

### Risk Management Committee



### Risk Management Process



# Risk Management

## Risk Types and Response Activities

Type	Topic	Response
Account risk	Customer relationship management (CRM)	· Strengthen data- and system-based customer risk management
	Regular credit rating	· Prevent customer risks based on organized customer rating management and information sharing
Financial risk	Financial market and macroeconomic	· Regular monitoring of global economic and financial market trends
	Internal accounting	· Check internal accounting operations and key issues
	Receivables management	· Monitor and take action on receivables
Legal risk	Legal Issues and disputes	· Sharing legal trends/key contractual issues and strengthening response mechanisms
Market condition risk	Changes in market conditions	· Check and manage the fleet position
	Oil price change	· Monitor and respond to oil price fluctuations
	Derivatives	· Manage regulations on forward freight agreements and fuel oil hedge deals
Marine/ environmental risk	IMO environmental regulations	· Continue monitoring developments surrounding the IMO environmental regulations and developing countermeasures
	Fuel oil supply	· Check the fuel oil supply process
Others	Major climate risk	· Monitor and respond to major climate risks such as typhoons, hurricanes, and monsoons
	Cybersecurity risk	· Monitor cybersecurity risks and check the internal response system
	Disclosure rules	· Monitor and respond to changes in disclosure rules
	Vessel operational risk	· Monitoring and responding to operational risk: Country-specific port entry regulations, epidemics, and international political situation changes

## Account Risk Management

Given the presence of ongoing risks associated with accounts, we maintain regular checks and monitoring their status and performance. In the event that a critical account risk is identified, we promptly respond by implementing necessary actions, such as adjusting credit ratings or blocking further commitment. This proactive approach enables us to effectively manage and mitigate potential risks in our accounts.

## Account credit-rating assessment

New accounts and existing accounts with no deals in the last 12 months are subject to assess credit based on internal credit rating criteria. Prior to entering into contracts, credit ratings are conducted for these accounts, which serve as the basis for establishing credit limits for each account.

Category	2020	2021	2022
No. of accounts	522	489	481

## Account credit-rating adjustment

For accounts with transaction records in the past 12 months, regular semi-annual credit rating assessments are conducted.

The process involves an initial evaluation, followed by evaluations conducted by relevant teams and divisions, and concludes with comprehensive assessments to determine the final credit ratings.

Category		2020	2021	2022
No. of accounts	First half	851	940	957
	Second half	876	907	972

# Risk Management

## On/offshore Risk Management

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



**Scope of the BCMS**

<b>Onshore</b>	Vessel management for safe cargo transport and offshore employee management service activities and personnel
<b>Offshore</b>	Safe vessel operations and cargo transport activities and personnel



POS SM ISO 22301 certificate

## Potential Risks and Response Activities

Category	Details	Response
 <b>Account Risks</b>	<p>Increase in customers due to market fluctuations and increase in business activities, and other internal and external factors leading to constant exposure to account risks</p>	<ul style="list-style-type: none"> <li>· Continue account risk management by establishing organized management and foundations for the CRM, constant account monitoring and rating, and developing databases of account details.</li> <li>- Prevent and respond to risks by adjusting account rating and scope through CRM by internal reporting, Risk Management Committee, sharing internal information, notifying the changes, and assessing additional monitoring activities.</li> </ul>
 <b>Environmental Risks</b>	<p>IMO set to gradually introduce carbon emissions regulations to achieve the GHG reduction goals in shipping</p>	<ul style="list-style-type: none"> <li>· Establish a fleet management system to proactively and systematically respond to regulations and develop operational/technical solutions.</li> <li>- Improve fleet performance and establish well-organized operating plans to maximize operating efficiency in response to the vessel rating system slated in 2024.</li> </ul>

# Ethical and Compliance Management

## Ethical Management Vision and System

We have established our ethical management vision as a guiding blueprint for the future, outlining our principles and values. In the pursuit of our vision, “Clean and Healthy Hands Carrying Our Clients’ Dream,” we practice corporate-wide ethical management.

### Ethical Management Vision

\* HANDS: inspired by the concept from Italian "mani pulite"

#### Clean and healthy HANDS carrying our clients' dream



**Integrity · Management**



**Health · Soft Power**



**Customer · Value Creation**



We make our HANDS clean, we make our HANDS stronger, and create value for our customers with our HANDS

#### Build an Ethical Management System

- Substantiate an ethical management system
- Build an effective audit system
- Establish anonymous reporting systems
- Evaluate and improve ethical management activities
- Inspect management transparency

#### Establish an Ethical Culture

- CEO communication
- Vitalize campaigns and community activities
- Educate appropriate ethics in accordance to duty/position
- Promote social contribution activities

#### Practice Self-Regulation System

- Improve client service quality
- Take preventive measures against unfairness
- Establish self-compliance programs
- Link CRM activities
- Utilize Company IR

Client satisfaction survey, employee ethics diagnosis, self-diagnosis of practice of ethical management

### Ethical management organization and operational system

Pan Ocean's Ethical Management Department reports directly to the CEO, and the Ethical Management Team, under its purview, is responsible for ensuring ethical management practices. The ethical management organization formulates and executes audit plans to assess compliance with corrective and improvement measures based on the findings of audits. It also establishes corporate ethical management policies and conducts ethical management activities accordingly. We maintain ongoing monitoring of internal policies and regulations, making necessary improvements as required.

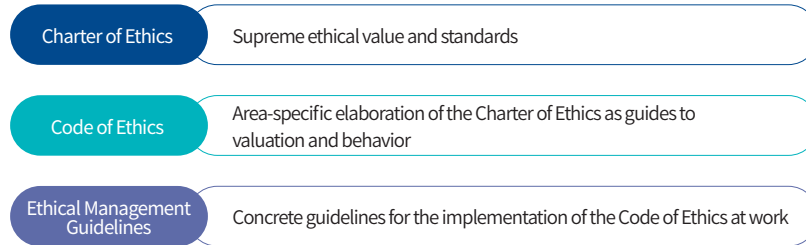
# Ethical and Compliance Management

## Strengthening the Ethical Management System

### Establishing Basic Rules of Ethics

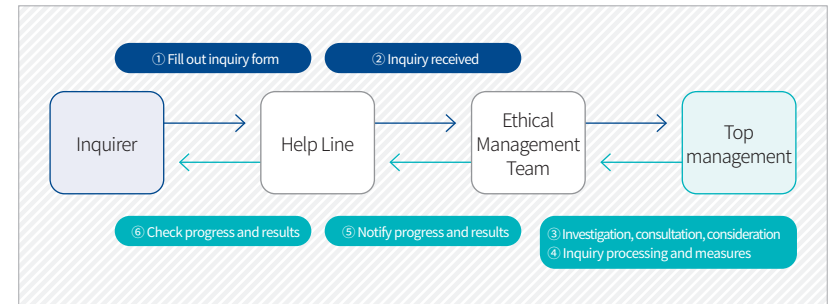
Pan Ocean has implemented several essential documents, the Charter of Ethics, the Code of Ethics, and the Ethical Management Guidelines, to cultivate an ethical culture within the organization. The Charter of Ethics serves as the highest standard and guiding principle for ethical management at Pan Ocean, reflecting the company's strong commitment to achieving its corporate vision. It sets the foundation for ethical conduct throughout the organization.

The Code of Ethics provides a comprehensive elaboration of the principles outlined in the Charter, serving as a practical guide for employees to internalize and embody these values in their day-to-day work. The Ethical Management Guidelines have been developed to support employees in navigating ethical dilemmas that may arise in their professional activities. All these principles are not only shared with our members but also publicly disclosed on our website to demonstrate our commitment to ethical management to external stakeholders.



### Operating the Reporting and Inquiry System

We operate an anonymous reporting system, allowing all stakeholders to freely express their opinions on ethics and compliance-related matters. The system is divided into a helpline for reporting and a compliance Q&A system for inquiries and consultations. Through the helpline, individuals can report actions that violate fundamental ethical values, such as unfair job performance, unjust gain, and behaviors that undermine a sound corporate culture. The compliance Q&A system serves as a platform for our employees to inquire and seek advice on practical ethical dilemmas or situations involving corruption. This system is easily accessible through our website and ensures the strict protection of the reporter's anonymity by being operated through an external third-party service provider.



※ If the inquiry is crucial  
 ① Pre-reporting to top management  
 ② Order investigation and actions on inquiry

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# Ethical and Compliance Management

## Strengthening the Ethical Management System

### Internal Anti-Corruption Program

Pan Ocean recognizes the essentiality of maintaining ethical and transparent business practices to enhance corporate sustainability. As a result, the company has taken the initiative to establish its own Anti-corruption Program (AP) to prevent corruption. Regular anti-corruption risk assessments are conducted to identify potential risks and develop corresponding strategies for proactive prevention and immediate response. The ultimate goal is to establish a system that enables the prevention and swift response to corruption issues.

To achieve this, Pan Ocean is in the process of constructing its unique corruption risk map, taking reference from the "Compliance Program Guidelines" by the Anti-Corruption & Civil Rights Commission and the "ISO 37001 Anti-Bribery Management Systems Guidebook". Starting from the second half of 2023, these measures will be implemented across all business activities and employees of the company.

### Identifying Corruption Risks

Risk Type	No. Identified
Risk of Pursuing Personal Interests	16
Risk of Misconduct in Relationships with Accounts	11
Risk of Financial Misappropriation	6
Risk of Undermining Organizational Culture	8
Risk of Undermining Organizational Culture	7
<b>Completed risk assessment and mitigation measures for a total of 48 items across 5 types of corruption risks.</b>	

### Raising Employee Ethical Awareness

Pan Ocean conducts annual internal campaigns to promote ethical management practices. Through campaigns such as year-end ethical management practice, abstaining from receiving gifts during the Lunar New Year, and abstaining from receiving gifts during the Chuseok holiday, the company strives to internalize ethical awareness among its employees. Since 2022, online video training sessions (utilizing content from the Anti-Corruption and Civil Rights Commission's Integrity Training Institute) on corruption prevention and other unethical behaviors have been conducted at least three times a year, targeting 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 employees' understanding of anti-corruption issues and promote the stable implementation of the ongoing anti-corruption program. Similarly, POS SM has been conducting ethics and compliance training since 2020 and plans to continuously expand the scope and duration of the training to reach a larger audience.

### Implementation of Pan Ocean Ethical Management Campaigns

Category	Unit	2020	2021	2022
Year-end/New Year ethical practices	cases	1	1	1
Abstaining from Receiving Gifts on New Year	cases	1	1	1
Abstaining from Receiving Gifts on Chuseok	cases	1	1	1
<b>Total</b>	cases	3	3	3

### Ethical and Compliance Training Records at Pan Ocean

Category	Unit	2020	2021	2022
No. of trainees	people	-	-	382
Training hours	hours	-	-	312
Completion rate	%	-	-	100.0

Online Ethics Training for All Employees to Prevent Unethical Conduct, starting from 2022

### Ethical and Compliance Training Records at POS SM

Category	Unit	2020	2021	2022
No. of trainees	people	109	136	141
Training hours	hours	576	1,185	523
Completion rate*	%	88.6	100.0	100.0

\* Completion rate = no. of trainees / total employees (excluding part-timers and PJT contract workers)

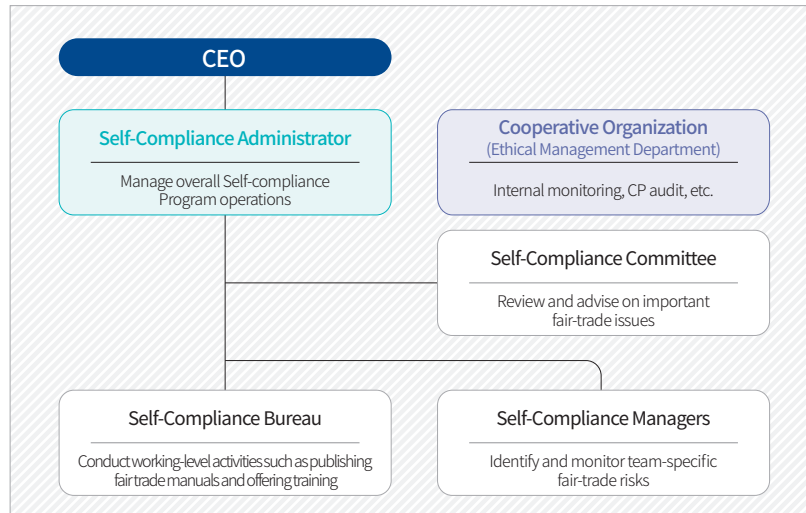
# Ethical and Compliance Management

## Compliance with Fair Trade Practices

### Self-Compliance Program (CP)

Under the strong commitment of the CEO, we are actively promoting a fair trade culture through substantial implementation. To ensure compliance with fair trade regulations, we have voluntarily established and operates an internal control system called the 'Self-compliance Program.' The program is designed to prevent any potential violations of fair trade laws and regulations, with the Self-compliance Administrator taking overall responsibility.

Furthermore, in 2022, we published the Fair Trade Compliance Handbook and distributed it throughout the organization to ensure all employees are familiar with its content. We plan to continuously update the program to reflect legal revisions and new case law, and conduct periodic compliance training through the Self-Compliance Managers to enhance employees' understanding of fair trade practices. Through these proactive program initiatives, we aim to instill a strong sense of compliance among its employees and foster a culture of integrity and fairness.



### Compliance Survey and Monitoring

To conduct team-based self-compliance survey, we review and update the inspection items annually to reflect any necessary modifications. The adequacy of these inspection results is verified through compliance officers. Compliance officers are individuals appointed with the necessary legal qualifications to assess compliance with compliance control standards. They monitor the compliance of management and employees, as well as the legality of company operations, while performing various compliance support activities. Moreover, the inspection results of compliance officers are reported to the Board of Directors on a mandatory basis, and the details are transparently disclosed in the business report.

### Ethical Management and Compliance Pledge

All employees of Pan Ocean pledge to understand and uphold the principles of ethical management. This commitment aims to disseminate a corporate culture that prioritizes ethical and legally compliant business management, promoting a sense of responsibility among all members for achieving responsible management. Pan Ocean actively conducts such initiatives to foster a shared understanding of ethical values and cultivate a sense of legal compliance among its workforce.

### Campaign to Enhance Ethical Awareness

Each month, we produce various materials such as ethical management practice guidelines, posters, webtoons, and Q&A documents as a part of ongoing "Ethical Awareness Campaign.". These materials are disseminated online and prominently displayed within our workplace.



# Information Security

## Information Security Management System

### Information Security Policy and Organization

Pan Ocean's information security organization is tasked with developing and reporting security plans, conducting checks and monitoring of information security activities, and overseeing overall security operations within the company. The Chief Information Security Officer (CISO) and the Chief Privacy Officer (CPO) play key roles in ensuring the stable operation of the security system. Pan Ocean participates as an active member in the CISO Council and maintains an internal team of IT and information protection professionals. Recently, we introduced privacy solutions and leveraged professional maintenance services to establish a stable information security system.

### Building the Information Security Infrastructure

#### Technical Security

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

#### Administrative Security

The security policy and regulations are systematically managed and monitored. This includes the establishment and periodic revision of comprehensive guidelines to ensure continuous improvements. Also, regular user security drills are conducted, including participation in Korea Internet & Security Agency (KISA) simulation tests, to enhance employees' ability to respond to cybersecurity breaches and to promote a heightened sense of security awareness.

## Personal Information Protection

In response to the continuously growing risks of privacy breaches and information leakage, Pan Ocean carries out the following activities to enhance the level of privacy protection.

- Establish and report privacy protection activity and improvement plans
- Train all employees on privacy protection (statutory training)
- Offer privacy protection training courses (CPO and relevant staff)
- Participate in the unique identification information safety measure management survey
- Conduct activities to ensure personal information safety
- Incorporate amendments to the privacy law in our systems
- Clear personal information stored in our systems (retention policy)
- Purchase a privacy damage liability insurance policy

### Information Security Disclosure

In 2022, Pan Ocean began disclosing important information related to security details on its information security disclosure portal. In 2022, the company prioritized investments to replacement of the Main Firewall, Block Non-Business & unsafe site solution, and procurement of personal information liability insurance.

Investment in privacy protection  
(As of 2022)



**530** million KRW

Investment Proportion in Information Security Sector Compared to IT Sector Investment (As of 2022)



**8.7** %



# Information Security

## Vessel Security Management

### Onboard Cybersecurity System

Vessels are exposed to risks of external cyber-attacks on their operation systems. With the widespread adoption of information technologies, such as automation and autonomous vessel operation systems, the potential impact of cyber-attacks on vessels has become increasingly significant. To mitigate these risks, a series of measures are implemented to strengthen the cybersecurity of our vessels. All vessels are equipped with firewalls, and comprehensive cybersecurity plans are included in the vessel administration manual. Also, onboard security officers and managers are designated to prevent security breaches.

### Response to Security Breaches

Security breaches are immediately reported to the CPO and responsible organization upon detection to take instant recovery measures. Access and time logs, and other details about the incident are collected, stored, and used to develop measures to prevent recurrence.

### Security Breach Prevention Activities

#### Security Risk Assessment

Security risk assessments are regularly conducted to identify vulnerabilities and proactively address potential cyber-threats within the onboard IT systems. These assessments aim to identify critical vulnerabilities, potential security breaches, and their potential impact on vessel operations. In particular, risk assessments are carried out when there is an offshore employee change, significant program updates, or in the event of suspected malware infections. In 2022, we developed and implemented an Internal Audit Check List specific to maritime operations.

#### Strengthening Physical Security

In addition to implementing technical security solutions and infrastructure, Pan Ocean has established a security USB system to enhance physical security measures. Workstations are equipped with locks to prevent unauthorized access, and USB ports are kept in a locked state. Only pre-approved portable storages are allowed to prevent data leakage, virus infections, and data deterioration. Visitor protocols are in place to ensure cybersecurity. Visitors receive comprehensive briefings on the company's cybersecurity rules and are required to sign a declaration acknowledging their compliance. Separate workstations, isolated from the main network, are provided for visitors who need to use computers, ensuring the security and integrity of the company's systems. In 2022, we introduced the widespread use of LAN port lock devices for our maritime network equipment.

#### Onboard Cybersecurity Training

Promoting offshore employees' cybersecurity awareness is crucial for the effective prevention of cyber-threats. We conduct onboard cybersecurity training for employees embarking on their first voyage and all offshore employees. In 2022, we conducted information security drills and cyber security campaigns.

Training Period	Topics
<ul style="list-style-type: none"> <li>· Training for employees embarking on their first voyage</li> <li>· Regular half-annual training</li> </ul>	<ul style="list-style-type: none"> <li>· Use of emails and the internet (including Wi-Fi)</li> <li>· Use of personal devices (including portable storage devices)</li> <li>· How to set passwords and manage personal/confidential information</li> <li>· How to respond to and report cybersecurity incidents</li> <li>· Risks for security breaches from visitors</li> <li>· Security system updates, vaccine programs, etc.</li> </ul>

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# ESG Data

## Financial

### Condensed Consolidated Statements of Financial Position

(Unit: KRW Million)

Category	2020	2021	2022
<b>Assets</b>			
Current assets	662,523	1,358,712	1,834,200
Non-current assets	3,996,804	5,130,067	5,714,742
<b>Total assets</b>	<b>4,659,327</b>	<b>6,488,779</b>	<b>7,548,942</b>
<b>Liabilities</b>			
Current liabilities	604,301	1,149,410	1,226,756
Non-current liabilities	1,248,374	1,742,532	1,829,582
<b>Total liabilities</b>	<b>1,852,675</b>	<b>2,891,942</b>	<b>3,056,338</b>
<b>Equity</b>			
Equity attributable to the owners of the Group	2,806,652	3,596,837	4,492,604
Share capital	534,570	534,570	534,570
Capital surplus	717,132	717,132	717,132
Other capital	1,226,301	1,493,821	1,766,202
Retained earning	328,649	851,314	1,474,700
Non-controlling interests	-1,807	0	0
<b>Total equity</b>	<b>2,806,652</b>	<b>3,596,837</b>	<b>4,492,604</b>
<b>Total liabilities and equity</b>	<b>4,659,327</b>	<b>6,488,779</b>	<b>7,548,942</b>

### Condensed Consolidated Statements of Comprehensive Income

(Unit: KRW Million)

Category	2020	2021	2022
Sales	2,497,159	4,616,107	6,420,312
Cost of sales	2,193,226	3,950,376	5,520,365
Gross profit	303,933	665,731	899,947
Selling and administrative expenses	78,721	92,785	110,329
Operating profit	225,212	572,946	789,618
Financial income	17,158	30,118	97,017
Financial costs	64,629	60,049	150,645
Share of profit of associates and joint ventures	5,377	12,639	18,510
Other non-operating expenses, net	-91,162	-5,296	-66,533
Profit before income tax	91,956	550,358	687,967
Income tax expense	1,234	1,053	10,886
Profit for the year	90,722	549,305	677,081
Other comprehensive income	-170,580	267,608	273,347
<b>Total comprehensive income</b>	<b>-79,858</b>	<b>816,913</b>	<b>950,428</b>

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# ESG Data

## Financial

### Economic Value Creation and Distribution

Category		Unit	2020	2021	2022
Sales by business area	Bulk carriers	KRW million	1,757,973	3,569,191	4,823,826
	Containers	KRW million	246,667	353,341	509,420
	Tankers	KRW million	142,671	140,167	305,867
	LNG carriers	KRW million	14,698	93,618	171,762
	Agri-trading	KRW million	376,663	498,182	702,018
	Others (ship management, leasing, etc.)	KRW million	202,489	234,897	266,969
Economic value distribution	Employees	KRW million	193,716	247,950	290,246
	Shareholders and investors	KRW million	66,407	93,552	148,520
	Governments	KRW million	1,234	1,053	10,886
	Local communities	KRW million	1,071	1,427	317

### Government Subsidies and Grants

Category	Unit	2020	2021	2022
Tax exemptions and deductions	KRW million	11,964	10,847	6,520
Subsidies	KRW million	6,609	6,512	7,022
Investment, R&D, and others	KRW million	0	0	0
Rewards	KRW million	0	0	0
Financial supports from export credit agencies	KRW million	0	0	0
Loyalty exemption	KRW million	0	0	0
Financial incentives	KRW million	0	0	0
Others(guarantee)	KRW million	0	0	0

### New Employees' Wage in comparison to Minimum Wage, by Gender

Category	Unit	2020	2021	2022
Pan Ocean				
New employee, male (onshore)	KRW	3,630,500	3,747,200	3,901,200
New employee, female (onshore)	KRW	3,630,500	3,747,200	3,901,200
Minimum wage (onshore)	KRW	1,941,340	1,970,720	2,070,160
% new employee wage in comparison to minimum wage (male)	%	187	190	188
% new employee wage in comparison to minimum wage (female)	%	187	190	188
New employee, male (offshore)	KRW	4,151,819	4,242,113	4,506,625
New employee, female (offshore)	KRW	4,151,819	4,242,113	4,506,625
Minimum wage (offshore)	KRW	1,795,310	1,822,480	2,010,580
% new employee wage in comparison to minimum wage (male)	%	231	233	224
% new employee wage in comparison to minimum wage (female)	%	231	233	224

Category	Unit	2020	2021	2022
POS SM				
New employee, male	KRW	3,188,000	3,284,000	3,416,000
New employee, female	KRW	3,188,000	3,284,000	3,416,000
Minimum wage	KRW	1,795,310	1,822,480	1,914,440
% new employee wage in comparison to minimum wage (male)	%	178	180	178
% new employee wage in comparison to minimum wage (female)	%	178	180	178

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## Financial

### Ethical Code Violations and Disciplinary Measures

Category		Unit	2020	2021	2022
Pan Ocean					
Ethical code violations	Total	cases	1	-	-
	Unlawfulness/fraud	cases	-	-	-
	Petition (complaints, grievances)	cases	1	-	-
	Unfair trade/corruption	cases	-	-	-
	Other unethical conduct	cases	-	-	-
Disciplinary measures	Total	cases	1	-	-
	Heavy sanction	cases	-	-	-
	Light sanction	cases	1	-	-

Category		Unit	2020	2021	2022
POS SM					
Ethical code violation	Total	cases	1	2	4
	Unlawfulness/fraud	cases	-	-	-
	Petition (complaints, grievances)	cases	1	2	2
	Unfair trade/corruption	cases	-	-	-
	Other unethical conduct	cases	-	-	2
Disciplinary measures	Total	cases	-	-	1
	Heavy sanction	cases	-	-	-
	Light sanction	cases	-	-	1

(Based on onshore staffs)

### Ethical Management Practice and Compliance Pledge

Category	Unit	2020	2021	2022
No. of subjects	people	887	931	1,032
No. of signees	people	882	927	1,029
% signed	%	99.4	99.6	99.7

### Compliance Inspection

Category		Unit	2020	2021	2022
Subjects	Teams inspected	teams	49	53	56
	Inspection items	items	143	143	153
Results	Compliance results	%	100.0	100.0	100.0

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## Financial

### Total Annual Salary

Category	Unit	2020	2021	2022
Pan Ocean				
Highest earner's annual salary	KRW million	536	786	1,039
Average annual salary of all employees (excluding highest earner)	KRW million	87	100	111
Highest earner's annual salary rise	%	-1.1	46.6	32.2
Average annual salary rise of all employees (excluding highest earner)	%	6.1	14.9	11.0
Total annual salary increase	%	12.1	24.4	15.1

Category	Unit	2020	2021	2022
POS SM				
Highest earner's annual salary	KRW million	190	213	242
Average annual salary of all employees (excluding highest earner)	KRW million	70	79	83
Highest earner's annual salary rise	%	2.2	11.7	14.1
Average annual salary rise of all employees (excluding highest earner)	%	1.8	12.5	5.3

### Local Workforce in Major Operations

Category	Unit	2020	2021	2022
Locally hired employees	people	150	149	167
Senior workforce hired	people	23	19	19
% senior workforce among locally hired employees	%	15.3	12.8	11.4

### Board Composition

(As of end of each year)

Category	Unit	2020	2021	2022	
Board	Total	people	7	7	6
	Inside directors	people	3	3	3
	Independent directors	people	4	4	3
Registered female executives	people	-	-	-	
CEO-BoD Chair separation	Y/N	N	N	N	

### Shareholder Composition

(As of December 31 2022)

Name	No. of shares	% shares	Relation
Harim Group and affiliated person	292,766,068	54.8	Largest shareholder and affiliated person
National Pension Service	37,978,398	7.1	-
Others	203,825,046	38.1	-
Total	534,569,512	100.0	-

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## Environmental

### Energy Consumption

Category	Unit	2020	2021	2022
Owned vessel's fuel consumption (Scope1)	TOE	758,189	884,038	848,531
HFO(B-C oil)	TOE	302,587	388,916	390,570
LFO(B-C oil)	TOE	412,382	406,961	401,750
DO(B-A oil)	TOE	43,220	54,518	53,870
LNG	TOE	-	33,643	2,341
Corporate vehicles fuel consumption (Scope1)	TOE	17	17	19
Gasoline	TOE	16	16	18
Diesel	TOE	1	1	1
Electricity(Scope2)	TOE	305	293	240
Chartered vessel's fuel consumption (Scope3)	TOE	463,336	711,485	707,854
HFO(B-C oil)	TOE	15,176	42,680	81,489
LFO(B-C oil)	TOE	423,059	622,398	549,357
DO(B-A oil)	TOE	25,101	46,407	77,008
Total energy consumption* (Scope1+2)	TOE	758,511	884,348	848,790
Sales	KRW 100 million	21,029	40,692	57,004
Energy intensity (per unit of sales)**	TOE/ KRW 100 million	36.070	21.733	14.890
Energy saving (per unit of sales)	%	12.7	-39.7	-31.5

\* Includes energy consumption by vessel and domestic operations; Scope 3 excluded from total energy consumption and intensity estimation.  
\*\* (Scope1 + Scope2 energy consumption) / Pan Ocean separate sales

### GHG Emissions

Category	Unit	2020	2021	2022	
Direct GHG emissions (Scope1*)	Mobile consumption	tCO <sub>2</sub> eq	2,382,970	2,757,404	2,669,080
	Vessels**	tCO <sub>2</sub> eq	2,382,921	2,757,356	2,669,026
	Vehicles	tCO <sub>2</sub> eq	49	48	54
Indirect GHG emissions (Scope2***)	Power purchase	tCO <sub>2</sub> eq	569	539	483
Total (Scope1 + Scope2)		tCO <sub>2</sub> eq	2,383,539	2,757,943	2,669,563
Other indirect GHG emissions (Scope 3)	Upstream	tCO <sub>2</sub> eq	1,453,048	2,884,436	3,738,975
	Products and services purchased	tCO <sub>2</sub> eq	-	22,191	9,532
	Leased assets	tCO <sub>2</sub> eq	1,453,048	2,232,155	2,219,848
	Transport and logistics	tCO <sub>2</sub> eq	-	629,965	1,509,302
	Employees business travel	tCO <sub>2</sub> eq	-	42	188
	Employees commuting	tCO <sub>2</sub> eq	-	83	105
Sales	KRW 100 million	21,029	40,692	57,004	
GHG emissions intensity**** (per unit of sales)		tCO <sub>2</sub> eq /KRW 100 million	113.346	67.776	46.831

(Scope 1, 2, 3 estimates include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O.)  
\* Scope1: Pan Ocean's self-owned fleet, corporate car  
\*\* 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  
\*\*\*\* (Scope1 + Scope2 emissions) / Pan Ocean separate sales

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## Financials

### Air Pollutant Emissions

Category	Unit	2020	2021	2022
NOx(nitrogen oxides)	kg	63,851,643	71,729,675	71,249,120
SOx(sulfur oxides)	kg	7,511,958	8,438,785	8,382,249

(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	
Water Withdrawal	Head Office	m <sup>3</sup>	7,465	6,295	5,372
	Busan Office Sales Team	m <sup>3</sup>	292	279	292
	Gwangyang Office	m <sup>3</sup>	-	-	39
	Pohang Office	m <sup>3</sup>	-	-	-
	Dangjin Office	m <sup>3</sup>	-	-	-
	Total	m <sup>3</sup>	7,757	6,574	5,703
Water recycling	m <sup>3</sup>	-	-	-	

(No data available for Pohang and Dangjin Offices' water withdrawal, 100% water supplies, No water recycling, Except for water withdrawal in vessels)

### Waste

Category	Unit	2020	2021	2022	
Waste generation	Total	ton	24,987	28,405	29,695
General waste from vessels (non-hazardous)	Food waste	ton	325	348	350
	Domestic waste	ton	1,684	1,949	2,225
	Cargo residues	ton	-	-	-
	Others	ton	-	-	-
	Total	ton	2,009	2,297	2,575
Designated waste from vessels (hazardous)	Waste oil	ton	20,878	23,437	25,113
	Waste absorbent	ton	628	922	440
	Plastics	ton	1,106	1,306	1,452
	Ashes	ton	366	443	113
	Others	ton	-	-	-
	Total	ton	22,978	26,108	27,118
Office Waste	Head Office	ton	-	2.21	1.39
	Busan Office Sales Team	ton	0.55	0.63	0.56
	Pohang Office	ton	0.08	0.05	-
	Dangjin Office	ton	0.25	0.13	-
	Total	ton	0.88	3.02	1.96
Waste recycling	General waste (non-hazardous) -Office	ton	-	-	-
	Designated waste (hazardous) -Vessel*	ton	7,311	9,604	10,159
	Total	ton	7,311	9,604	10,159
% total waste recycled		%	29.3	33.8	34.2

\* Plastics and sludge from vessels



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### Employees

Category		Unit	2020	2021	2022	
Pan Ocean						
Total employees*	Total	people	1,061	1,135	1,146	
	Onshore		327	352	371	
	Male		246	258	271	
	Female		81	94	100	
	Offshore		734	783	775	
	Male		725	771	759	
	Female	9	12	16		
By employment type	Onshore	people	327	352	371	
	Regular		322	341	350	
	Non-regular		5	11	21	
	Offshore		734	783	775	
	Regular		434	480	484	
	Non-regular		300	303	291	
By age	Onshore	people	327	352	371	
	Under 30		16	34	48	
	30 - 49		272	269	274	
	50 or older		39	49	49	
	Offshore		734	783	775	
	Under 30		248	261	247	
	30 - 49		243	267	284	
	50 or older		243	255	244	
	Onshore		327	352	371	
By geography	Domestic	people	323	348	366	
	International		4	4	5	
	Offshore		734	783	775	
	Domestic		734	783	775	
	International		-	-	-	
			-	-	-	
By position**	Onshore	people	327	352	371	
	Senior Manager		Male	148	156	166
			Female	11	14	12
	Manager		Male	71	73	63
			Female	32	33	35
	Staff		Male	27	29	42
			Female	38	47	53
	Offshore		734	783	775	
	Master/Cheif Engineer		Male	194	226	217
			Female	-	-	-
	Officers		Male	395	418	413
			Female	9	12	16
	Ratings		Male	136	127	129
			Female	-	-	-

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

\*\* Based on the revised personnel system criteria for 2023 (SeniorManager (ex.deputyhead), Head of Division, Head of Department, Manager (ex section chief and deputy section chief), Associates (including administrative support positions))

Category		Unit	2020	2021	2022
POS SM					
Total employees	Total	people	132	150	156
By employment type	Regular	people	115	127	130
	Non-regular		17	23	26
By age	Under 30	people	16	21	17
	30 - 49		105	111	116
	50 or older		11	18	23
By geography	Domestic	people	131	149	155
	International		1	1	1
By position*	Lower level manager	people	16	17	15
	Male		11	12	11
	Female		5	5	4
	Mid level manager		56	56	59
	Male		53	52	54
	Female		3	4	5
	Upper level manager		29	34	32
	Male		29	34	32
	Female		-	-	-
	Others		31	43	50

\* Lower level manager: Associate  
 Middle level manager: Manager  
 Upper level manager: Senior Manager  
 Others: Foreman and PJT supervisor

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### Employees

Category		Unit	2020	2021	2022
Pan Ocean					
New recruitment	Total	people	206	235	169
	Onshore	people	19	39	43
	Male	people	16	24	29
	Female	people	3	15	14
	Offshore	people	187	196	126
	Male	people	185	189	123
	Female	people	2	7	3
Turnover*	Onshore				
	Total turnover rate	%	3.3	3.6	5.4
	Voluntary turnover rate	%	2.5	3.1	4.9
	Offshore				
	Total turnover rate	%	10.2	8.4	9.8
	Voluntary turnover rate	%	8.9	6.8	8.6
Avg. length of service	Total	years	9.2	8.8	8.9
	Onshore(Male)	years	13.2	13.1	13.2
	Onshore(Female)	years	12.6	11.7	11.6
	Offshore(Male)	years	7.6	7.2	7.2
	Offshore(Female)	years	2.3	1.8	2.3

\* Total turnover rate = Employees that resigned within the year / Total employees at the end of the year  
 Voluntary turnover rate = Employees that voluntarily resigned within the year / Total employees at the end of the year  
 Total employees at the end of the year : including overseas offices  
 Employees that resigned : including executives, independent directors, and employees with expiring contracts  
 Employees that voluntarily resigned : excluding executives(except for voluntary resignation), independent directors, and resigned employees with expiring contracts

Category		Unit	2020	2021	2022
POS SM					
New recruitment	Total	people	36	55	39
	Male	people	25	37	32
	Female	people	11	18	7
Turnover*	Total turnover rate	%	12.1	24.0	19.9
	Voluntary turnover rate	%	2.3	5.3	7.7
Avg. length of service	Male	years	9.8	9.9	9.2
	Female	years	6.8	4.5	6.5

\* The calculation formula for total turnover rate and voluntary turnover rate is the same as that used in the headquarters of Pan Ocean (including executives, PJT contract workers, part-timers)

### Retiree Re-employment

Category		Unit	2020	2021	2022
Master		people	20	29	28
Chief Engineer		people	31	38	50
Ratings	Deck	people	19	18	23
	Steward	people	12	13	12
	Engine	people	18	19	25
Total		people	100	117	138

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## Social

### Education Training | Time and Costs

Category		Unit	2020	2021	2022
Pan Ocean					
Training time	Total training time	hours	22,153	30,410	32,804
	Onshore	hours	13,777	17,470	19,082
	Offshore	hours	8,376	12,940	13,722
	Avg. training time per person	hours/person	21	27	29
Training costs	Total training costs	KRW	687,364,863	866,257,292	986,456,029
	Onshore*	KRW	283,162,863	342,157,292	423,031,029
	Offshore**	KRW	404,202,000	524,100,000	563,425,000
	Avg. training costs per person	KRW/person	647,846	763,222	860,782

(Training declined in 2020 due to COVID-19)  
\* Total training costs + self-development (Welfare Card)  
\*\* For Korean offshore employees

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

(Training declined in 2020 due to COVID-19)  
(Employees total at the end of the year; those on leaves, PJT contract workers, part-timers excluded)

### Education Training | Human Rights Training

Category		Unit	2020	2021	2022
Workplace disability awareness	Pan Ocean				
	Onshore				
	No. of trainees	people	347	374	394
	Completed	people	347	374	394
	% completion	%	100.0	100.0	100.0
	Offshore				
	No. of trainees	people	734	783	775
	Completed	people	734	783	775
	% completion	%	100.0	100.0	100.0
	POS SM				
	No. of trainees	people	115	151	154
	Completed	people	114	151	154
% completion	%	99.1	100.0	100.0	
Workplace sexual harassment prevention	Pan Ocean				
	Onshore				
	No. of trainees	people	347	374	394
	Completed	people	347	374	394
	% completion	%	100.0	100.0	100.0
	Offshore				
	No. of trainees	people	734	783	775
	Completed	people	734	783	775
	% completion	%	100.0	100.0	100.0
	POS SM				
	No. of trainees	people	115	159	168
	Completed	people	115	159	168
% completion	%	100.0	100.0	100.0	
Workplace bullying prevention	Pan Ocean				
	Onshore				
	No. of trainees	people	Replaced with posting of training materials	374	393
	Completed	people		374	393
	% completion	%		100.0	100.0
	Offshore				
	No. of trainees	people	734	783	775
	Completed	people	734	783	775
	% completion	%	100.0	100.0	100.0
	POS SM				
	No. of trainees	people	-	142	146
	Completed	people	-	142	146
% completion	%	-	100.0	100.0	

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### Information Security Training

Category		Unit	2020	2021	2022
Pan Ocean					
Information security training	Total training time	hours	347	374	393
	No. of trainees	people	347	374	393
POS SM					
Information security training	Total training time	hours	345	135	153
	No. of trainees	people	115	135	153

### Client Information Protection

Category		Unit	2020	2021	2022
Complaints on client information breaches		cases	0	0	0
No. of client information breaches		cases	0	0	0

### Employee Diversity

Category		Unit	2020	2021	2022
Pan Ocean					
% female employees	Total	%	8.5	9.3	10.1
	Onshore	%	24.8	26.7	27.0
	Offshore	%	1.2	1.5	2.1
People with disabilities	Total	people	4	4	32
	% employees with disabilities	people	4	4	4
	KD-TECH*	people	-	-	28
	% employees with disabilities	%	0.4	0.3	4.3
Foreign internationals		people	-	-	-
Veterans		people	6	6	6
Board diversity					
Gender	Male	people	4	4	3
	Female	people	-	-	-
Age	Under 30	people	-	-	-
	30 - 50	people	-	-	-
	50 or older	people	4	4	3
% base salary and compensation, female to male**		%	100.0	100.0	100.0
POS SM					
% female employees	Total	%	21	25	23
People with disabilities	Total	people	-	-	-
	% employees with disabilities	%	-	-	-
Foreign internationals		people	-	-	-
Veterans		people	-	-	-
Gender	Male	people	104	112	122
	Female	people	28	38	34
Age	Under 30	people	16	21	17
	30 - 50	people	105	111	116
	50 or older	people	11	18	23
% base salary and compensation, female to male**		%	100.0	100.0	100.0

\* Recognizing a total of 50 individuals when considering a 2% weightage for severe disabilities in accordance with the Act on the Employment Promotion and Vocational Rehabilitation of Persons with Disabilities, as a Standard Business Facility for Persons with Disabilities

\*\* Same base salary for male and female employees; no differential rates apply.

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### Parental Leaves

Category	Unit	2020	2021	2022	
No. of employees that used parental leaves	Pan Ocean				
	Male, onshore	people	1	1	1
	Female, onshore		2	4	5
	Male, offshore		4	6	8
	Female, offshore	-	-	-	
	POS SM				
Male	people	-	1	5	
Female		2	2	2	
No. of employees that returned from parental leaves	Pan Ocean				
	Male, onshore	people	-	-	1
	Female, onshore		3	3	2
	Male, offshore		3	5	6
	Female, offshore	-	-	-	
	POS SM				
Male	people	-	1	1	
Female		-	2	2	
% employees returning from parental leaves	Pan Ocean				
	Male, onshore	%	-	-	100
	Female, onshore	%	50	100	67
	Male, offshore	%	75	83	80
	Female, offshore	%	-	-	-
	POS SM				
Male	%	-	100	100	
Female	%	-	50	100	
No. employees that served for 12 months or more after parental leaves	Pan Ocean				
	Male, onshore	people	-	-	-
	Female, onshore		3	3	2
	Male, offshore		2	2	-
	Female, offshore	-	-	-	
	POS SM				
Male	people	-	1	-	
Female		-	-	-	
% employees serving for 12 months or more after parental leaves	Pan Ocean				
	Male, onshore	%	-	-	-
	Female, onshore	%	100	100	100
	Male, offshore	%	100	83	100
	Female, offshore	%	-	-	-
	POS SM				
Male	%	-	-	-	
Female	%	-	-	-	

### Employees Subject to Regular Performance and Career Development Review

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

\* Excluded: CEO/Executive Directors/Independent Directors, employees with less than 6-month 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

### Welfare and Benefits

Category	Unit	2020	2021	2022
Pan Ocean				
Total welfare and benefit costs	KRW million	37,538	44,502	51,016
Welfare and benefit costs per person	KRW million	35	39	45
POS SM				
Total welfare and benefit costs	KRW million	1,323	1,695	1,938
Welfare and benefit costs per person	KRW million	10	11	12

(Based on separate financial statements in the Business Report)

### Labor Union Membership

Category	Unit	2020	2021	2022
No. of employees eligible	people	243	250	279
No. of Union members	people	203	207	241
% membership	%	83.5	82.8	86.4

(As of January each year)

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## Social

### Lost Time Incidents

Category		Unit	2020	2021	2022
Onshore	Working hours *	hours	886,824	954,624	1,006,152
	Lost time incidents	cases	1	-	-
	Lost time incident rate (LTIFR)	Lost time incidents per million hours	1.13	-	-
	Deaths	people	-	-	-
Offshore	Working hours **	hours	1,840,872	1,963,764	1,943,700
	Lost time incidents	cases	11	8	9
	Lost time incident rate (LTIFR)	Lost time incidents per million hours	5.97	4.07	4.63
	Deaths	people	-	-	-

(A lost time incident involving lost time of multiple employees counted as a single incident)  
 \* Working hours: No. of employees at the end of the year \* Monthly ordinary wage calculation base (226 hours) \* 12 months  
 No. of employees based on the year-end Business Report  
 \*\* Working hours: No. of employees at the end of the year \* Monthly ordinary wage calculation base (209 hours) \* 12 months  
 No. of employees based on the year-end Business Report (domestic only, foreign nationals excluded)

### Social Responsibility Activities

Category		Unit	2020	2021	2022
Pan Ocean					
Social Contribution Investment Amount		KRW million	0.1	-	42
Total donations		KRW million	1,070	1,325	214
Employees' fundraising		KRW million	-	-	1.7
Volunteer activities	Total volunteers	people	20	-	84
	Total hours	hours	40	-	247
	Hours per person	hours	2.0	-	2.9
POS SM					
Total donations*		KRW million	1.0	2.4	2.4

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2-10	Nomination and selection of the highest governance body	72	
2-11	Chair of the highest governance body	70-71	
2-12	Role of the highest governance body in overseeing the management of impacts	71	
2-13	Delegation of responsibility for managing impacts	71	
2-14	Role of the highest governance body in sustainability reporting	71	
2-15	Conflicts of interest	77	
2-16	Communication of critical concerns	73	
2-17	Collective knowledge of the highest governance body	70	
2-18	Evaluation of the performance of the highest governance body	71	
2-19	Remuneration policies	71	
2-20	Process to determine remuneration	71	
2-21	Annual total compensation ratio	-	Disclosed in the Business Report

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# GRI Contents Index

Disclosure		Location	Explanation
<b>GRI 2: General Disclosures 2021</b>			
Strategy, policies and practices			
2-22	Statement on sustainable development strategy	Letter to Stakeholders	
2-23	Policy commitments	76	
2-24	Embedding policy commitments	77-79	
2-25	Processes to remediate negative impact	44, 77	
2-26	Mechanisms for seeking advice and raising concerns	44, 77	
2-27	Compliance with laws and regulations	27	
2-28	Membership associations	107	
Stakeholder engagement			
2-29	Approach to stakeholder engagement	23	
2-30	Collective bargaining agreements	56, 93	
<b>GRI 3: Material Topics 2021</b>			
3-1	Process to determine material topics	19	
3-2	List of material topics	19-22	
3-3	Management of material topics	20-22	



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Disclosure		Location	Explanation
<b>GRI 201: Economic Performance 2016</b>			
201-1	Direct economic value generated and distributed	84	
201-2	Financial implications and other risks and opportunities due to climate change	38	
201-3	Defined benefit plan obligations and other retirement plans	-	Disclosed in the Business Report
201-4	Financial assistance received from government	84	
<b>GRI 202: Market Presence 2016</b>			
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	84	
202-2	Proportion of senior management hired from the local community	86	
<b>GRI 203: Indirect Economic Impacts 2016</b>			
203-1	Infrastructure investments and services supported	68	
203-2	Significant indirect economic impacts	51, 68, 84	
<b>GRI 204: Procurement Practices 2016</b>			
204-1	Proportion of spending on local suppliers	-	
<b>GRI 205: Anti-corruption 2016</b>			
205-1	Operations assessed for risks related to corruption	78	
205-2	Communication and training about anti-corruption policies and procedures	78-79	
205-3	Confirmed incidents of corruption and actions taken	85	
<b>GRI 206: Anti-competitive Behavior 2016</b>			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	Disclosed in the Business Report (sanctions)
<b>GRI 207: Tax 2019</b>			
207-1	Approach to tax	-	[Not Applicable] No tax policy
207-2	Tax governance, control, and risk management	-	[Not Applicable] No tax policy
207-3	Stakeholder engagement and management of concerns related to tax	-	[Not Applicable] No tax policy
207-4	Country-by-country reporting	-	[Information Unavailable] Not disclosed

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Disclosure		Location	Explanation
<b>GRI 301: Materials 2016</b>			
301-1	Materials used by weight or volume	-	[Not applicable] given the type of business
301-2	Recycled input materials used	-	[Not applicable] given the type of business
301-3	Reclaimed products and their packaging materials	-	[Not applicable] given the type of business
<b>GRI 302: Energy 2016</b>			
302-1	Energy consumption within the organization	87	
302-2	Energy consumption outside of the organization	-	[Information Unavailable] No consumption outside of the organization
302-3	Energy intensity	87	
302-4	Reduction of energy consumption	87	
302-5	Reductions in energy requirements of products and services	-	[Not Applicable] given the type of business
<b>GRI 303: Water and Effluents 2016</b>			
303-1	Interactions with water as a shared resource	31	
303-2	Management of water discharge-related impacts	-	[Information Unavailable] given the type of business
303-3	Water withdrawal	88	
303-4	Water discharge	-	[Information Unavailable] given the type of business
303-5	Water consumption	-	[Information Unavailable] given the type of business
<b>GRI 304: Biodiversity 2016</b>			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	31	
304-2	Significant impacts of activities, products, and services on biodiversity	31	
304-3	Habitats protected or restored	31	
304-4	IUCN Red List species and National Conservation List species with habitats in areas affected by operations	31	

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Disclosure		Location	Explanation
<b>GRI 305: Emissions 2016</b>			
305-1	Direct (Scope 1) GHG emissions	87	
305-2	Indirect (Scope 2) GHG emissions	87	
305-3	Other indirect (Scope 3) GHG emissions	87	
305-4	GHG emissions intensity	87	
305-5	Reduction of GHG emissions	87	
305-6	Emissions of ozone-depleting substances (ODS)	-	[Information Unavailable] No ODS Emissions
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	88	
<b>GRI 306: Waste 2020</b>			
306-1	Waste generation and significant waste-related impacts	30	
306-2	Management of significant waste-related impacts	30	
306-3	Waste generated	88	
306-4	Waste diverted from disposal	88	
306-5	Waste directed to disposal	-	[Information Unavailable] Unable to verify vessel waste disposal after landing; treatment commissioned to general waste recycling services
<b>GRI 308: Supplier Environmental Assessment 2016</b>			
308-1	New suppliers that were screened using environmental criteria	66	
308-2	Negative environmental impacts in the supply chain and actions taken	66	

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Disclosure		Location	Explanation
<b>GRI 401: Employment 2016</b>			
401-1	New employee hires and employee turnover	90	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	53	
401-3	Parental leave	93	
<b>GRI 402: Labor/Management Relations 2016</b>			
402-1	Minimum notice periods regarding operational changes	56	Communicating through Labor-Management Council
<b>GRI 403: Occupational Health and Safety 2018</b>			
403-1	Occupational health and safety management system	57	
403-2	Hazard identification, risk assessment, and incident investigation	62	
403-3	Occupational health services	58	
403-4	Worker participation, consultation, and communication on occupational health and safety	60	
403-5	Worker training on occupational health and safety	58	
403-6	Promotion of worker health	58-60	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	59-63	
403-8	Workers subject to an occupational health and safety management system	57	
403-9	Work-related injuries	94	
403-10	Work-related illness	-	[Information Unavailable] None reported
<b>GRI 404: Training and Education 2016</b>			
404-1	Average hours of training per year per employee	91	
404-2	Programs for upgrading employee skills and transition assistance programs	48-49	
404-3	Percentage of employees receiving regular performance and career development reviews	93	
<b>GRI 405: Diversity and Equal Opportunity 2016</b>			
405-1	Diversity of governance bodies and employees	92	
405-2	Ratio of basic salary and remuneration of women to men	84	

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Disclosure	Location	Explanation
<b>GRI 406: Non-Discrimination 2016</b>		
406-1	Incidents of discrimination and corrective actions taken	44
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	- None
<b>GRI 408: Child Labor 2016</b>		
408-1	Operations and suppliers at significant risk for incidents of child labor	43-44 -
<b>GRI 409: Forced or Compulsory Labor 2016</b>		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	43-44 -
<b>GRI 410: Security Practices 2016</b>		
410-1	Security personnel trained in human rights policies and/or procedures	44, 91 Human rights education for all employees regularly
<b>GRI 411: Rights of Indigenous People 2016</b>		
411-1	Incidents of violations involving rights of indigenous peoples	- [Information Unavailable] None
<b>GRI 413: Local Communities 2016</b>		
413-1	Operations with local community engagement, impact assessments, and development programs	67-68
413-2	Operations with significant actual and potential negative impacts on local communities	31
<b>GRI 414: Supplier Social Assessment 2016</b>		
414-1	New suppliers that were screened using social criteria	66
414-2	Negative social impacts in the supply chain and actions taken	66
<b>GRI 415: Public Policy 2016</b>		
415-1	Political contributions	- No political contributions
<b>GRI 416: Customer Health and Safety</b>		
416-1	Assessment of the health and safety impacts of product and service categories	- [Not Applicable] No assessment
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	- None
<b>GRI 417: Marketing and Labeling 2016</b>		
417-1	Requirements for product and service information and labeling	- [Not applicable] given the type of business
417-2	Incidents of non-compliance concerning product and service information and labeling	- [Not applicable] given the type of business
417-3	Incidents of non-compliance concerning marketing communications	- None
<b>GRI 418: Customer Privacy 2016</b>		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	92

# SASB Index

## Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE	Pan Ocean (2022)
Greenhouse Gas Emissions	Gross global Scope 1 emissions	Quantitative	Metric tons (t) CO <sub>2</sub> -e	TR-MT-110a.1	2,669,080
	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	Discussion and Analysis	N/A	TR-MT-110a.2	(p31-34)
	(1) Total energy consumed		TOE		848,790 TOE (Scope 1+2)
	(2) percentage heavy fuel oil	Quantitative	%	TR-MT-110a.3	390,570 TOE (HFO, 46%)
	(3) percentage renewable		%		No renewable energy consumed
	Average Energy Efficiency Design Index (EEDI) for new ships	Quantitative	Grams of CO <sub>2</sub> per tonnage mile	TR-MT-110a.4	Confidential
Air Quality	(1) NOx (excluding N <sub>2</sub> O)				71,249
	(2) SOx, and	Quantitative	Metric tons (t)	TR-MT-120a.1	8,382
	(3) particulate matter (PM10)				5,317
Ecological Impacts	Shipping duration in marine protected areas or areas of protected conservation status	Quantitative	Number of travel days	TR-MT-160a.1	Uncountable
	Percentage of fleet implementing ballast water (1) exchange and (2) treatment	Quantitative	%	TR-MT-160a.2	(1) 8% (2) 92%
	(1) Number and (2) aggregate volume of spills and releases to the environment	Quantitative	(1) Number (2) m <sup>3</sup>	TR-MT-160a.3	(1) None (2) None
Employee Health & Safety	Lost time incident rate (LTIR*)	Quantitative	Rate	TR-MT-320a.1	Onshore: 0 Offshore: 4.63
Business Ethics	Number of calls at ports in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative	Number	TR-MT-510a.1	0
	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	Quantitative	Reporting currency	TR-MT-510a.2	0
Accident & Safety Management	Number of marine casualties, percentage classified as very serious*	Quantitative	Number, Percentage (%), People	TR-MT-540a.1	Accident: 0 Accident ratio: 0% Casualties: 0
	Number of Conditions of Class or Recommendations	Quantitative	Number	TR-MT-540a.2	30
	Number of port state control (PSC**) (1) deficiencies and (2) detentions	Quantitative	Number	TR-MT-540a.3	(1) 239 (2) 4

\* LTIR: (lost time incidents) / (1,000,000 hours worked)

\*\* including marine hazards associated with death or serious injury, disappearance, complete loss/significant damage to the vessel, and serious environmental damage

\*\*\* PSC: A system in which a port country checks whether foreign ships entering its port do not meet the safety standards prescribed by international agreements and takes necessary measures, such as detentions, for ships with defects

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# SASB Index

## Activity Metrics

(Based on owned vessels)

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE	Pan Ocean (2022)
Number of shipboard employees	Quantitative	Number	TR-MT-000.A	775
Total distance traveled by vessels	Quantitative	Nautical miles (nm)	TR-MT-000.B	6,650,416
Operating days	Quantitative	Days	TR-MT-000.C	40,453
Deadweight tonnage	Quantitative	Thousand deadweight tons	TR-MT-000.D	13,128.771
Number of vessels in total shipping fleet	Quantitative	Number	TR-MT-000.E	110
Number of vessel port calls	Quantitative	Number	TR-MT-000.F	3,281
Twenty-foot equivalent unit (TEU) capacity	Quantitative	TEU	TR-MT-000.G	6,041

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Category	Recommendation Disclosures	Page
Governance	a. Describe the board's oversight of climate-related risks and opportunities	37
	b. Describe management's role in assessing and managing climate-related risks and opportunities	37
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term perspective	38
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	38
	c. Describe the resilience of the organization's strategy, taking different climate-related scenarios, including a 2°C or lower scenario into consideration	38
Risk Management	a. Describe the organization's processes for identifying and assessing climate-related risks	37
	b. Describe the organization's processes for managing climate-related risks	37
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	37
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, 39-41, 87
	b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks	41, 87
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	28, 39-41



# Third-party Verification Statement

## Independent Assurance Statement

### To readers of Pan Ocean 2023 ESG Report

#### Introduction

Korea Management Registrar (KMR) was commissioned by Pan Ocean to conduct an independent assurance of its 2023 ESG Report (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 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 205: Anti-Corruption
  - GRI 302: Energy
  - GRI 305: Emissions
  - GRI 401: Employment
  - GRI 403: Occupational Health and Safety
  - GRI 404: Training and Education
  - GRI 405: Diversity and Equal Opportunity
  - GRI 406: Non-discrimination
  - GRI 407: Freedom of Association and Collective Bargain
  - GRI 408: Child Labor
  - GRI 409: Forced or Compulsory Labor
  - GRI 411: Rights of Indigenous Peoples

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 2023 Seoul, Korea



CEO E. J. Hwang

# GHG Verification Statement

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## DNV BUSINESS ASSURANCE

### 온실가스 배출량 검증 성명서

No.: AS\_PRJN-529649-2023-AST-KOR

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### 팬오션(주)

**서문**  
 ㈜디엔비비즈니스어슈어런스코리아(이하, DNV)는 팬오션(이하, 팬오션)의 2022년도 온실가스 배출량에 대해 제한적 보증 수준 하에서 검증을 수행하였습니다. 팬오션은 'ISO 14064-1:2018(온실가스-제 1부: 온실가스 배출 및 제거의 정량 및 보고를 위한 조직 차원의 사용 규칙 및 지침)', 'WRI/ WBCSD GHG Protocol: A Corporate Accounting and Reporting Standard' 및 'IPCC Guidelines:2006'에 명시된 원칙에 근거한 온실가스 배출량 자료를 준비할 책임이 있으며, DNV는 본 검증성명서와 관련하여 계약 조건에 따라 검증 계약당사자를 제외한 제 3 자에 대하여 어떠한 책임도 지지 않습니다.

**검증 범위**  
 본 검증에서 다루어진 온실가스 배출량은 재무통제기준에 따라 설정된 팬오션의 조직경계 내에서 수집된 활동데이터를 바탕으로 산정되었으며, 직접 배출(Scope 1 배출), 에너지 간접배출(Scope 2 배출)과 기타간접배출(Scope 3 배출)을 포함하고 있습니다.

- 조직경계: 팬오션 국내사업장 - 본사(서울), 부산사무소, 포항사무소, 광양사무소
- 운영경계: 직접배출(Scope 1), 간접배출(Scope 2), 기타간접배출(Scope 3)

**검증 방식**  
 본 검증은 2023년 4월 12일부터 6월 7일까지의 기간 동안 'ISO 14064-3:2019(온실가스-제 3부: 온실가스 성명서에 대한 타당성 평가 및 검증을 위한 사용 규칙 및 지침)'의 검증 원칙과 기준에 따라 수행되었습니다. DNV는 팬오션이 보고한 온실가스 배출량과 온실가스 인벤토리의 완성에 대한 검증 의견을 제시하는데 필요한 정보와 데이터를 얻기 위하여 검증 계획을 수립하고, 검증을 실시하였습니다. 검증 절차의 부분으로 다음 사항을 확인하였습니다.

- 팬오션의 2022년 온실가스 배출량 보고서(엑셀 산정 틀)
- 팬오션의 온실가스 데이터 관리 및 수집, 배출량 산정 및 보고 프로세스

**결론**  
 상기와 같이 수행된 프로세스와 절차에 따라, 온실가스 배출량 선언과 관련된 데이터 및 정보가 상기 기준의 적용 측면에서 부적절하다는 점은 발견하지 못하였습니다. 팬오션의 2022년 온실가스 배출량은 아래와 같이 확인되었습니다.

**팬오션의 2022년 온실가스 배출량** (단위: ton CO<sub>2</sub>e)

2022	직접배출(Scope1)		간접배출(Scope2)	기타간접배출(Scope3)	총배출량(Scope1,2,3)
	선박	차량	전기		
팬오션	2,669,026	54	483	3,738,975	6,408,538

\*상기의 온실가스 배출량은 정수로 보고하기 위한 반올림처리로 인해 ± 1 tCO<sub>2</sub>e 미만의 차이가 발생할 수 있음  
 \*기타간접배출(Scope3): 구매한 제품 및 서비스, 임스트림 임차자산, 임스트림 물류, 출장, 등근

이장섭  
 대표이사  
 ㈜디엔비비즈니스어슈어런스코리아

본 위검증인의 검증성명서는 발행일(2023년 6월 9일) 현재로 유효한 것입니다. 성명서 발행 이후 본 성명서를 열람하는 시점 사이에, 온실가스 배출량 산정에 중요한 영향을 미칠 수 있는 사건이나 상황이 발생할 수 있으며, 이로 인하여 본 검증성명서가 수정될 수도 있습니다.

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## DNV BUSINESS ASSURANCE

### VERIFICATION STATEMENT

### GREENHOUSE GAS (GHG) EMISSIONS

No.: AS\_PRJN-529649-2023-AST-KOR

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### PAN OCEAN CO., LTD.

**Introduction**  
 DNV Business Assurance Korea Ltd. ("DNV") was commissioned by Ocean Co., Ltd. ("Pan Ocean") to verify the Pan Ocean's Greenhouse Gas Inventory for the calendar year 2022, based upon a limited level of assurance. Pan Ocean is responsible for the preparation of the GHG emissions data on the basis set out within the 'ISO 14064-1:2018 (Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals)', 'WRI/WBCSD GHG Protocol', and '2006 IPCC Guidelines for National Greenhouse Gas Inventories'. Our responsibility in performing this work is to the management of Pan Ocean 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 assurance statement.

**Scope of Assurance**  
 The emissions data covered by our examination comprise Direct emissions (Scope 1 emissions), Indirect emissions (Scope 2 emissions) and Other indirect emissions (Scope 3) within the Pan Ocean's domestic business sites;

- Organizational boundary: Pan Ocean's domestic business sites (Headquarters (Seoul), Busan Office, Pohang Office, Gwangyang Office)
- Operational boundary: Direct emissions (Scope 1), Indirect emissions (Scope 2) and Other indirect emissions (Scope 3)

**Verification Approach**  
 The verification has been conducted by DNV from April 12<sup>th</sup> through June 7<sup>th</sup>, 2023 and performed in accordance with the verification principles and tasks outlined in the "the ISO 14064-3:2019 (Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions)". We planned and performed our work to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a verification opinion, concerning the reported emission figures in ton CO<sub>2</sub>e equivalent. As part of the verification process;

- We have reviewed and verified the Pan Ocean's GHG Inventory Tool (Excel based)
- We have reviewed and verified the process to generate, aggregate and report the emissions data

**Conclusions**  
 Based on the process and procedures conducted, there is no evidence that the GHG assertion is not materially correct and is not a fair representation of GHG data and information, and has not been prepared in accordance with a related standard on GHG quantification, monitoring and reporting. The GHG Emissions of Pan Ocean for the year 2022 were confirmed as below;

**Greenhouse Gas Emissions of Pan Ocean for Yr 2022** (Unit: ton CO<sub>2</sub>e equivalent)

2022	Direct emissions (Scope1)		Indirect emissions (Scope2)	Other indirect emissions (Scope 3)*	Total emissions
	Vessel	Vehicle	Electricity		
Pan Ocean	2,669,026	54	483	3,738,975	6,408,538

\* In order to report the GHG emissions as an integer, the rounded number on the statement might be different from the number on the system with ± 1 tCO<sub>2</sub>e eq  
 \* Other indirect emissions (Scope3) reported: Purchased goods & services, Upstream leased assets, Upstream transportation and distribution, Business travel, Employee commuting

9<sup>th</sup> June 2023  
 Seoul, Korea  
 Jang-Sub Lee  
 Country Manager  
 DNV Business Assurance Korea Ltd

This Verification Statement is valid as of the date of the issuance 9<sup>th</sup> June 2023. Please note that this Verification statement would be revised if any material discrepancy which may impact on the Greenhouse Gas Emissions of organization is subsequently brought to our attention. In the event of ambiguity or contradiction in this statement between English version and Korean version, Korean shall be given precedent.

**APPENDIX**

# Association Memberships and Awards Achievements

## Membership

People
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 Liners 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

Year	Awards	Organizer
2022.12.07	2022 12th AEO Case Sharing Competition (AEO Best Practice Competition)	Korea Customs Service
2022.12.13	2022 Good Relationship Sponsorship Category Jongno District Member of National Assembly Award	Seoul Senior Welfare Center
2023.06.29	One hundred Million Tonnage Shipping' Award	Ministry of Oceans and Fisheries



# PAN OCEAN

2023 ESG Report