

Hanwha Ocean

SUSTAINABILITY REPORT

2023





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About This Report

Overview

This is the first sustainability report published by **Hanwha Ocean** since our incorporation into the **Hanwha Group**. Starting from this year, the format has been changed from the integrated report to the sustainability report. **Hanwha Ocean** aims to transparently disclose our sustainable strategies, activities, and performance in the areas of environment, society, and governance (ESG), and actively communicate with stakeholders through publication of sustainability reports.

Reporting Period

The reporting period for financial performance and sustainability management activities is from January 1, 2023 to December 31, 2023. Certain performance indicators include performance from the first half of 2024 to ensure the timeliness of information and sustainability context. Quantitative data for the most recent four-year period (2020–2023) has been utilized to enable year-over-year trend analysis. **Hanwha Ocean** Sustainability Report 2023 was published on June 28, 2024.

Reporting Scope and Boundaries

The financial and non-financial reporting in this report is based on the scope of the separate financial statements prepared in accordance with K-IFRS. Thus, the scope of data in this report encompasses all domestic business sites of **Hanwha Ocean**. As for non-financial data, some indicators from business sites with physical restrictions on data collection were excluded from the reporting scope. In such cases, please refer to separate footnotes.

Reporting Principles

This report follows the Global Reporting Initiative (GRI) Standards, which outline the global standards for sustainability management reporting. In addition, it incorporates the reporting standards and framework issued by the Sustainability Accounting Standards Board (SASB) and the Task Force on Climate-Related Financial Disclosures (TCFD). The financial data in this report has been prepared in accordance with the Korean International Financial Reporting Standards (K-IFRS).

Credibility of the Report

This report contains financial and non-financial performance from January 1, 2023 to December 31, 2023, assembled in accordance with the GRI standards. To ensure the accuracy and objectivity of reporting content and data, this report has been assured by a third-party agency.

Inquiry

If you have any questions about this report, please feel free to contact us.

Website <https://www.hanwhaocean.com/sustainability/ov/>



COVER STORY

The expanding and spreading waves of the ocean represent the present and future of **Hanwha Ocean**, reinterpreted as a world of (new, potential, infinite, and innovative) possibilities.



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CEO's Message

Dear esteemed stakeholders,

Thank you for your interest and trust in Hanwha Ocean.

Hanwha Ocean has become a new member of the Hanwha family in May last year. Our new name, “Ocean,” conveys “sustainability” and “challenge.” Through frontier spirit and constant innovation, we focus on maximizing the essential competitiveness of the shipbuilding industry while navigating the ocean with over 95% of it completely unexplored. Going further, we aspire to become a global innovator shifting the paradigm of the future maritime industry to provide solutions to the global security and climate crises.

Under the ESG management vision of the “most trusted company enabling sustainable voyage,” Hanwha Ocean has achieved many accomplishments last year.

First, we established the Corporate Governance Charter last year. Our Corporate Governance Charter covers social responsibilities for our stakeholders including protecting shareholder rights, promoting employee welfare, and fostering partnerships with suppliers. Through the charter, we affirmed our commitment to securing trust from all stakeholders and carrying out management activities with sincerity.

In particular, we approved ESG HOST 2030 last December to establish ESG initiatives and specific indicators to grow into a sustainable company. The core indicators selected for ESG HOST 2030 are greenhouse gas (GHG) reduction, conversion to eco-friendly ships, accident prevention, supply chain ESG assessment, and compliance and ethical management assessment. We intend to identify tasks for each indicator and implement them systematically. For greenhouse gas reduction, we plan to achieve a 40% reduction by 2030 compared to 2018 levels, which is the highest level in the industry. We also plan to construct 100% eco-friendly ships powered by low-carbon and zero-carbon fuels, and to expand our range of eco-friendly marine products .

Hanwha Ocean will strive to enrich the lives of humankind through the ocean, the origin of the Earth and life. We ask for your continued support and encouragement in our voyage to a sustainable future.

CEO of Hanwha Ocean
Kwon Hyek-woong

Hanwha Ocean will strive to enrich the lives of
humankind through the ocean, the origin of the Earth and life.
Hanwha Ocean is committed to a sustainable future.

Company Overview

Hanwha Ocean is reinventing itself as a global ocean solution provider leading the paradigm of the future maritime industry based on our outstanding technology. We are leading the changing eco-friendly ship market with diverse products and technologies, and charting the global maritime defense market by building automated smart shipyards and entering into the global offshore wind market.

Company Profile

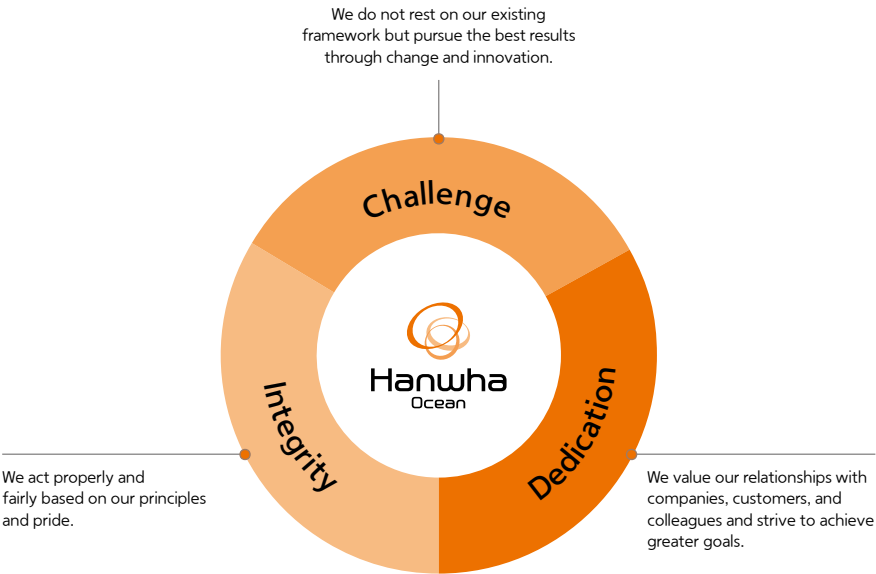
Company		Hanwha Ocean Co., Ltd.	
CEO		Kwon Hyek-woong	
No. of employees ¹⁾		8,892 persons	
Date of establishment		October 11, 1973	
Headquarters		3370 Geoje-daero, Geoje-si, Gyeongsangnam-do	
Credit rating		BBB+ (National Information & Credit Evaluation, corporate credit rating)	
Business sites	Headquarters (Gyeonje)	Business areas	Shipbuilding, marine products, specialty ships, etc.
		Address	3370 Geoje-daero, Geoje-si, Gyeongsangnam-do
	Seoul Office	Business areas	Sales, management support, etc.
		Address	86 Cheonggyecheon-ro, Jung-gu, Seoul
			14 Sejong-daero, Jung-gu, Seoul
	Siheung R&D Campus	Business area	R&D
		Address	Baegot 2-ro, Siheung-si, Gyeonggi-do

1) The data was prepared based on the business report.

Core Values

Hanwha Ocean embarked on a new voyage as a member of the Hanwha Group in May 2023. Hanwha's spirit of "trust and loyalty" serves as our growth engine.

In light of this, we selected the core values of "Challenge, Dedication, and Integrity" and set them as the basis for the mindset and actions of all our employees to strengthen the sense of unity among us as Hanwha people. We do not rest on our existing framework but pursue the best results through change and innovation.



Company Overview

Business Overview

Propelling Specialty Ships as Global Powerhouse

Hanwha Ocean contributes to the export of Korean submarines through the successful implementation of KSS-I to KSS-III projects. We developed a 1,200-ton submarine in the KSS-I project to bolster the capabilities of the Korean Navy. In the KSS-II project, we demonstrated even more enhanced performance and technology with the development of a 1,800-ton submarine. In the recently completed KSS-III project, we developed a 3,000-ton submarine proving our world-class submarine technology. Also, we are engaged in the research and development of diverse innovative technologies such as cutting-edge sonar systems, stealth technology, and autonomous operating systems to establish ourselves as a genuine leader of the global maritime defense industry.

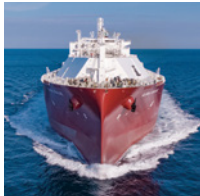


Flagship Products Submarines, destroyers, warships, submarine rescue ships, autonomous underwater vehicles, etc.

We decided to take over the plant and wind power business of Hanwha Corporation in April 2024. We intend to complete the takeover of the plant and wind power businesses in July and October this year, respectively, to secure new drivers for growth based on synergy effects with existing businesses.

Ships with Unparalleled Technologies

Hanwha Ocean possesses unparalleled technologies and market share in the fields of liquefied natural gas (LNG) and liquefied petroleum gas (LPG) carriers, ultra-large crude carriers, and eco-friendly container ships. Specifically, we boast the world's best technological prowess for LNG carriers, including the LNG fuel gas supply system developed through our proprietary technology. Among our many accomplishments was winning an order for constructing Arctic LNG carriers capable of navigating through ice-covered waters. Based on our unrivaled oil tanker construction technology, we hold a significant position in the ultra-large crude carrier market. We are committed to developing green technologies to become a leader in the eco-friendly ultra-large container ship market.



Flagship Products All ships including LNG carriers, LPG carriers, oil tankers, and container ships

Offshore Platforms for Opening New Horizons

Hanwha Ocean focuses on developing innovative systems and platforms in the offshore platform sector by leveraging our best production systems and advanced facilities. Specifically, we built and delivered floating liquefied natural gas (FLNG) facilities for the first time in the world, demonstrating our technological competitiveness and reliability in the offshore platform industry. In addition, we secured the ability to build offshore wind farms promptly and efficiently by developing ultra-large wind turbine installation vessels (WTIVs) for the offshore wind market.



Flagship Products Fixed offshore platforms for the extraction of petroleum or gas, drillships (oil rigs), floating production storage and offloading (FPSO) units, floating production units (FPUs), FLNG facilities, WTIVs, etc.

Company Overview

Construction Performance (No. of vessels)¹⁾

Type of Vessel	No. of Vessel (Ships)
LNG Carriers	249
LNGC	237
LNG-FSRU	12
LPG Carriers	54
Oil Tankers	445
ULCC / VLCC	237
Suezmax TK	77
Aframax TK	35
Others	96
Container Ships	355
Above 15,000TEU	95
5,000 ~ 15,000TEU	145
Below 5,000TEU	115
Bulk Carriers	193
Ro/Ro, Car Carriers	64
Ferries	10
Heavy Lift	4



Commercial Ship(A)
Total : 1,374

Type of Vessel	No. of Vessel (Ships)
FLNG	1
FPSO	7
FPU	5
Fixed Platforms	31
Modular Plants	3
Drillship	29
Semi-Rig	25
Jack-Up	3
Drilling Barge	1
WTIV	2
TLP	4
Others	6
Offshore & Plant (B)	Total : 117
Naval Ships	74
Special Vessels	10
Naval & Specialty Ships (C)	Total : 84
Grand Total (A + B + C)	1,575



Offshore & Plant (B)
Total : 117



Naval & Specialty Ships (C)
Total : 84

Order Backlog¹⁾

Total



KRW 25,657,897 million

Commercial
Vessels

KRW 18,363,814 million

Offshore
Platforms &
Specialty Ships

KRW 7,219,608 million

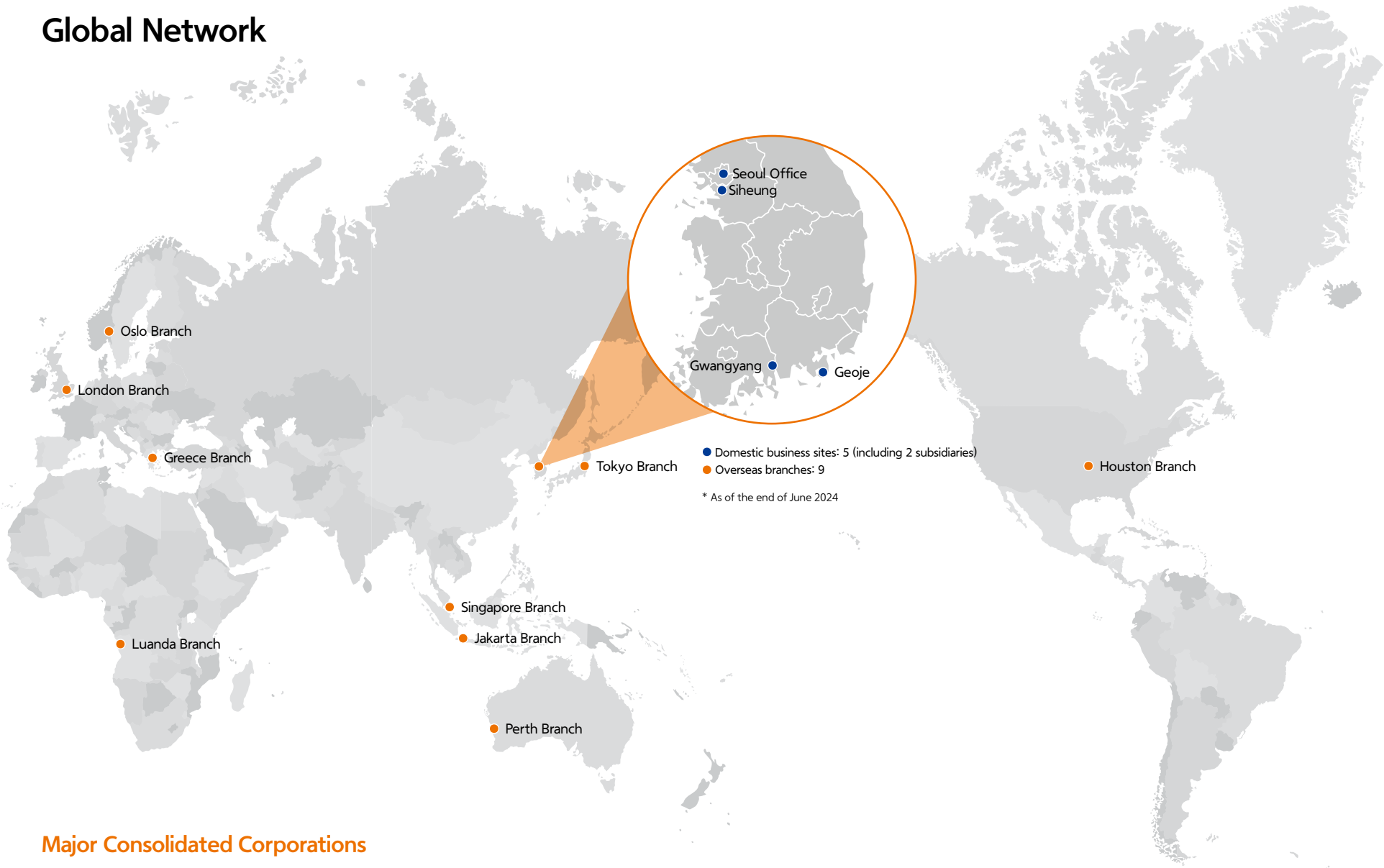
Others

KRW 2,475 million

1) The data was prepared as of December 2023.

1) The data was prepared as of December 2023.

Global Network



Major Consolidated Corporations

Classification	Company	Location	Major business areas
Korea	Hanwha Ocean Ecotech	Gwangyang, Jeollanam-do	Production of ship blocks, tools, and materials
	Hanwha Ocean Digital	Geoje, Gyeongsangnam-do	Integrated consulting and system construction
Overseas	Hanwha Ocean Shandong	Shandong Province, China	Production of ship blocks and related parts
	Hanwha Ocean USA Holdings Corp.	Houston, USA	Investments in securing new growth engines and business management

Highlight 2023



Declaration of ESG HOST 2030

Hanwha Ocean's ESG Committee approved the agenda for ESG management goals in December 2023. The five core indicators selected for ESG HOST 2030 are GHG reduction, conversion to eco-friendly ships, accident prevention, supply chain ESG assessment, and compliance and ethical management assessment. Based on our commitment, we intend to strengthen our efforts for sustainability and social responsibility.



Standardization of GHG Emissions Calculation in the Shipbuilding Industry

Hanwha Ocean joined hands with domestic shipbuilders and KR to form the first carbon footprint team in the Korean shipbuilding industry with the goal of promoting the standardization of scope 3 emissions calculation. This project will not only contribute to the efforts to manage and reduce the carbon footprint of the international shipping and shipbuilding industry, but will also be a significant step in achieving sustainable development goals (SDGs) in the international society.



The First Korean Company to Join FMC

Hanwha Ocean became the first Korean company to join the First Movers Coalition (FMC) in November 2023. FMC is a global coalition of companies in heavy-emitting sectors such as steel, chemicals, and aviation with the aim of creating demand for potential decarbonization technologies and gaining a foothold in the market. We also unveiled our commitment to the decarbonization of shipping at a session titled "The First Fossil-Free Ship on the Water" at the World Economic Forum 2024. As such, we will continue to strengthen collaboration with international companies and constantly develop sustainable decarbonization technologies to lead the way to carbon neutrality.



Establishment of the Corporate Governance Charter

Hanwha Ocean established the Corporate Governance Charter in 2023. Our Corporate Governance Charter covers social responsibilities for our stakeholders including protecting shareholder rights, promoting employee welfare, and fostering partnerships with suppliers. Through the charter, we affirmed our commitment to securing trust from all stakeholders and carrying out management activities with sincerity.



Won the Order for the World's Largest Ammonia Carriers

In November 2023, Hanwha Ocean secured an order for the world's largest ammonia-fueled very-large ammonia carriers (VLACs), capable of using ammonia as fuel. VLACs, which can carry 93,000 CBM of ammonia, are the world's largest vessels of this class ever ordered. Ammonia is a green fuel that emits zero carbon when burned. Thus, VLACs are eco-friendly vessels that allow the shipowner to use carriers that utilize ammonia as fuel, while transporting ammonia.



Labor-Management Joint Declaration Ceremony for Shared Growth

In May 2023, Hanwha Ocean and the Daewoo Shipbuilding and Marine Engineering branch of the Korean Metal Workers' Union held a labor-management joint declaration ceremony at Geojje Shipyard. During the ceremony, Hanwha Ocean agreed to succeed the existing collective agreement and make efforts to provide better working conditions and fair treatment. The union, on the other hand, guaranteed to build rational labor-management relations. The two sides pledged to spare no effort to prevent occupational accidents and build smart sites. Based on the rational labor-management relations, we will continue to lay the groundwork for shared growth and sustainable development of the community.



Obtained AIP for OCCS

Hanwha Ocean obtained Approval in Principle (AIP) for our independent onboard carbon capture system (OCCS). We obtained approvals for the OCCS based on the mineralization process using sodium hydroxide (NaOH) from the American Bureau of Shipping (ABS) and Korea Register (KR), and another approval for amine-based OCCS from Bureau Veritas (BV). Our OCCS technology consumes less energy than other carbon capture technologies and generates relatively less carbon dioxide (CO₂) during operation. Thus, it is expected to make a significant contribution to carbon reduction.



Completion of MWh-class ESS Development

In August 2023, Hanwha Ocean and Hanwha Aerospace completed joint R&D to secure a MWh-class energy storage system (ESS) for large LNG carriers. This ESS features a container-type packaging design that consolidates the control system to effectively reduce the size, and is embedded with an automatic fire extinguishing system for swift fire detection and suppression. When applied to vessels, the ESS can form a hybrid system to serve as an auxiliary energy source, enabling less energy consumption and pollutant emissions.



Declaration of the HSE Management Policy

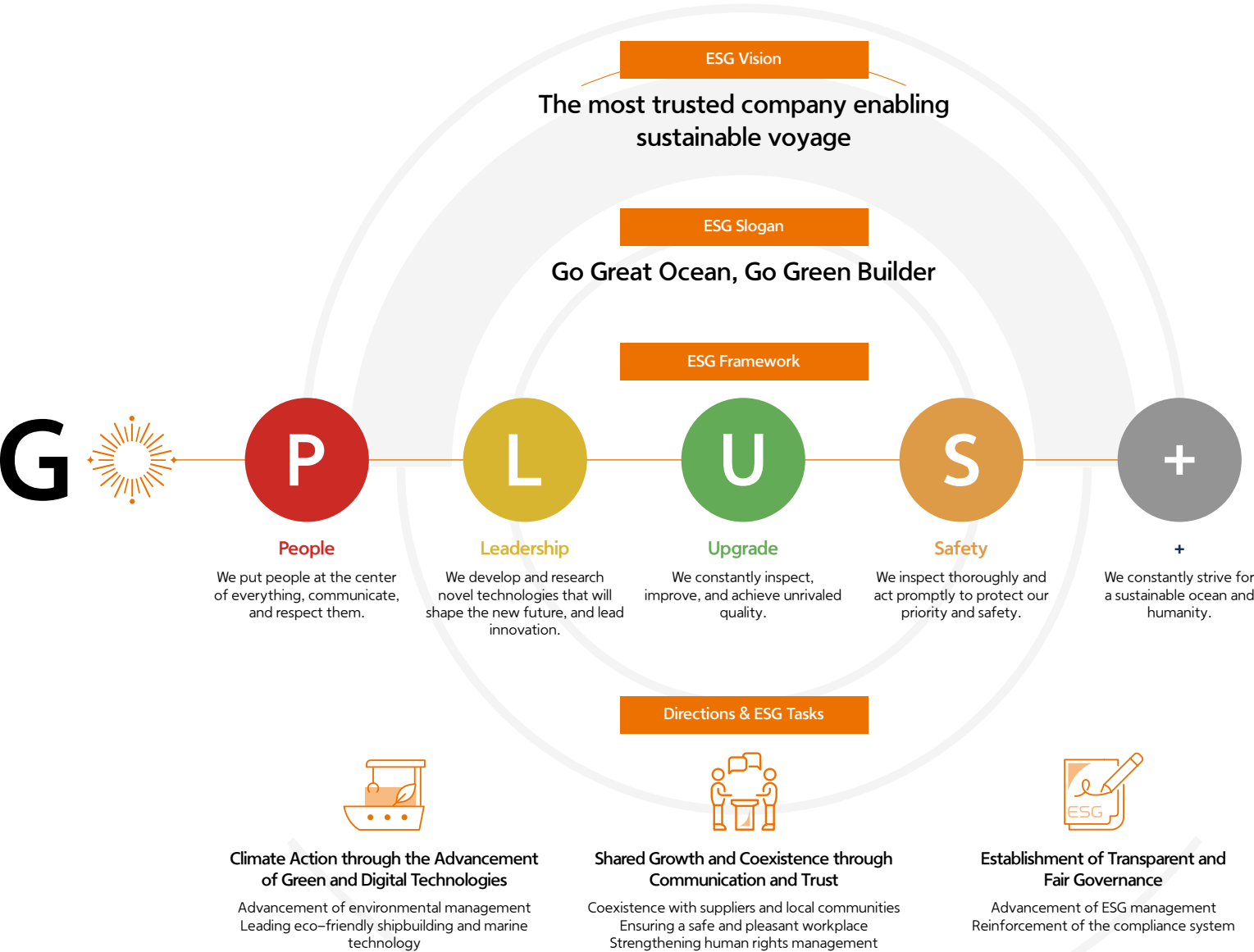
In October 2023, Hanwha Ocean revised our HSE Management Policy that serves as a system to ensure that health, safety, and environment (HSE) remain as our top management priorities and to promote the health, safety, and happiness of all employees. The HSE Management Policy, which applies to all employees and stakeholders, is translated into seven languages, ensuring that every individual is aware of it. We will comply with the revised policy strictly to achieve goals of zero serious accidents and 100% compliance with environmental regulations.

ESG Management

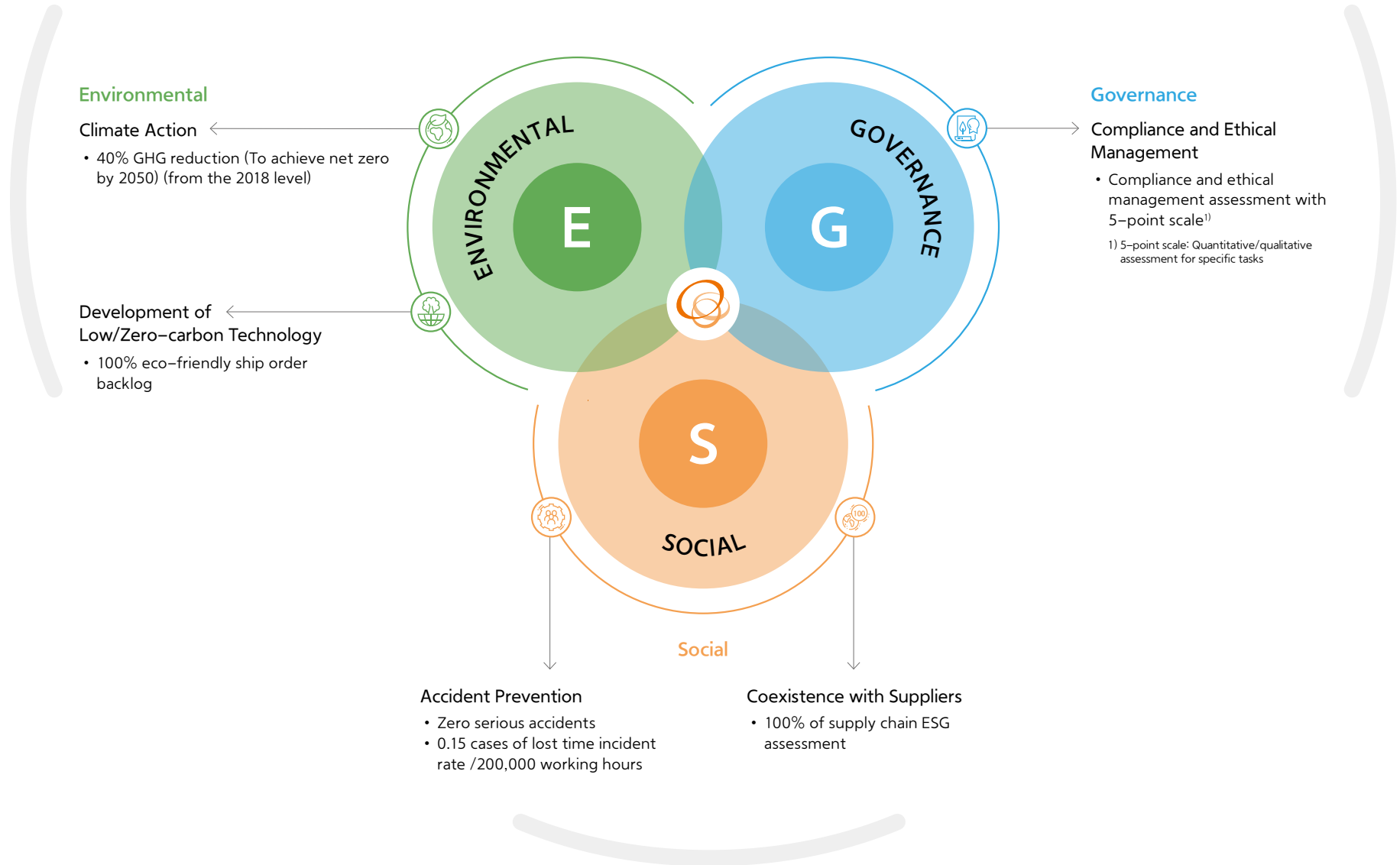


ESG Vision Framework

Hanwha Ocean set a vision of the “most trusted company enabling sustainable voyage” and selected three directions and seven tasks to achieve the vision. We also adopted an ESG framework called GO PLUS+ into our ESG vision to reflect the company’s core values. Our major strategic tasks include climate action, shared growth and coexistence, and establishment of transparent and fair governance.



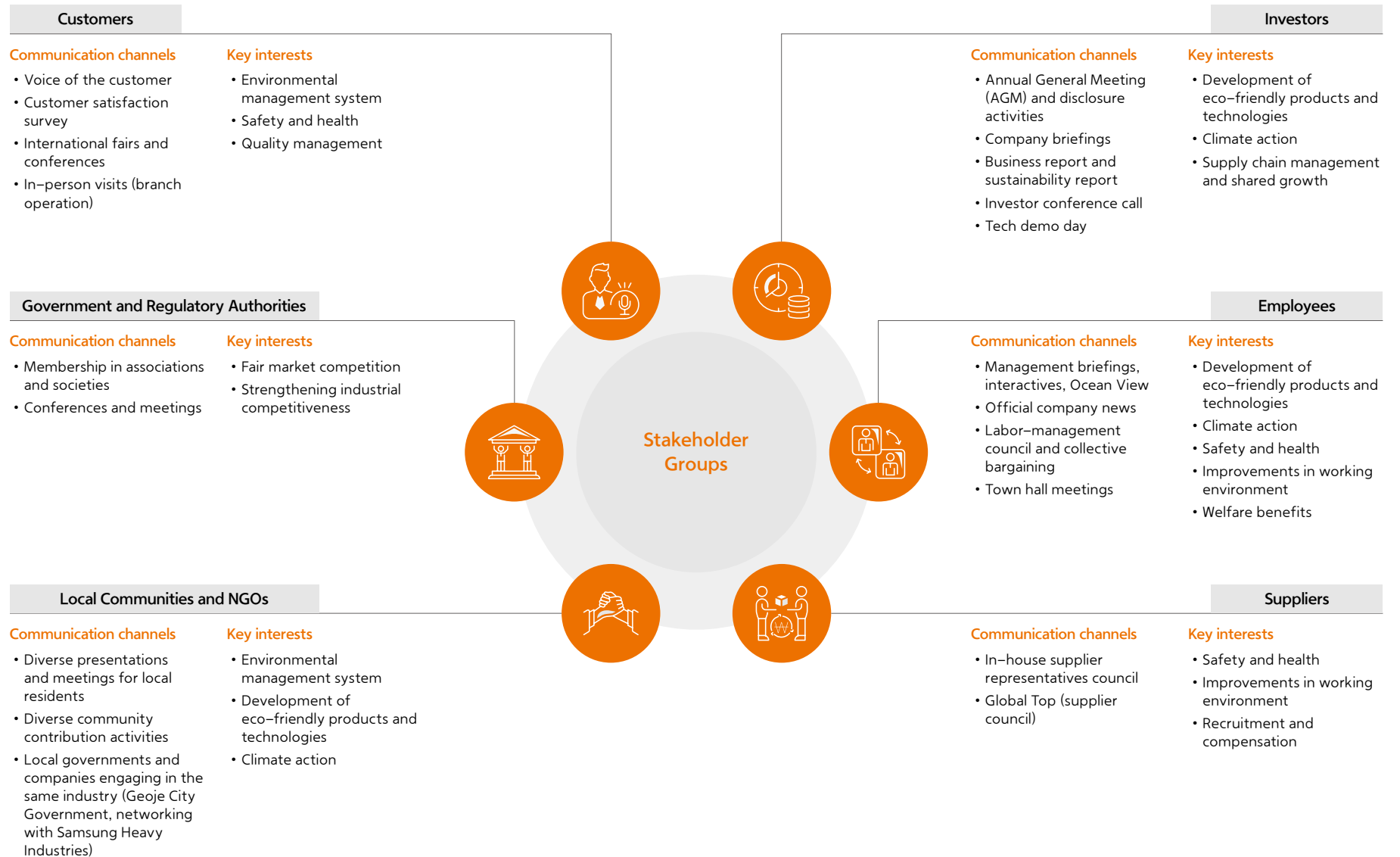
Hanwha Ocean Step-Up Target 2030



Hanwha Ocean established Hanwha Ocean Step-Up Target 2030 to internalize sustainable management and realize our ESG vision framework. We intend to contribute to sustainable economic development and social value creation by setting five core goals and implementing company-wide tasks systematically to achieve specific performance indicators.

Stakeholder Engagement

Hanwha Ocean defines our key stakeholders as customers, shareholders and investors, employees, suppliers, local communities, government, and industries. We operate diverse communication channels in consideration of the characteristics of each stakeholder. Leveraging these channels, we identify what they expect from us. We will remain dedicated to actively communicating with our stakeholders, making sure that their expectations are reflected in our sustainable management strategies.



Double Materiality Assessment

Overview of Materiality Assessment

Each year, Hanwha Ocean conducts a materiality assessment to identify internal and external risks and opportunities that may affect the company and establish ESG management strategies accordingly. For the materiality assessment in 2023, we applied the concept of double materiality adopted by the European Sustainability Reporting Standards under the Corporate Sustainability Reporting Directive. As a result, we identified 24 issue pools based on international standards, media analysis, and industry benchmarking, among others. The selected five material issues, with impact and financial materiality considered, are disclosed in this report.



Our Issue Pools in 2023

Environmental	Social	Governance
<ul style="list-style-type: none">• Environmental management system• Development of eco-friendly products and technologies• Climate action• Pollutant management• Biodiversity protection• Waste disposal and management• Energy management• Water resources management	<ul style="list-style-type: none">• Supply chain management and shared growth• Recruitment and compensation• Improvements in working environment• Labor-management relations• Diversity and inclusion• Safety and health• Human rights management• Formation of local communities	<ul style="list-style-type: none">• Sound governance• Ethics and compliance• Information security• Creating economic performance• Risk management• Securing tax transparency• Enhancement of shareholder value• Quality management

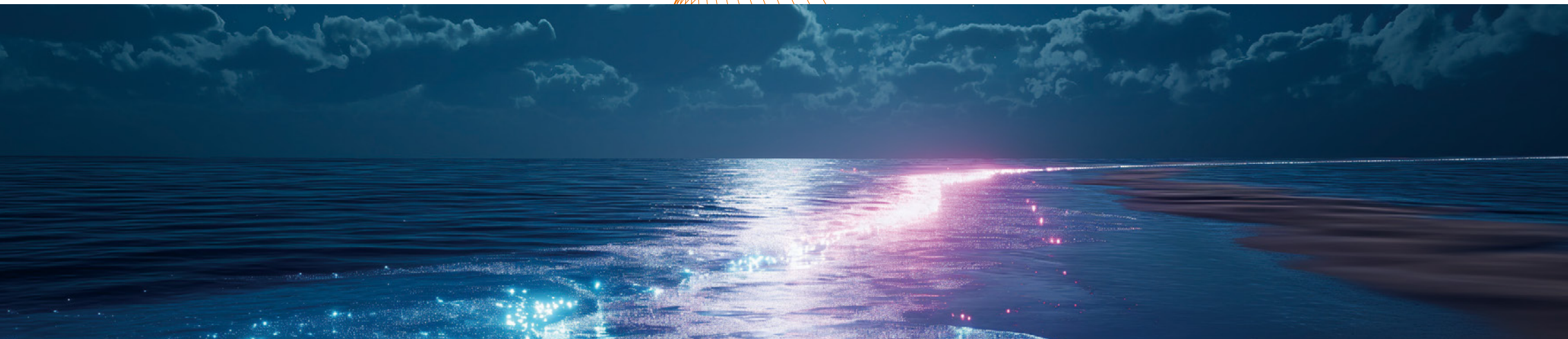
Materiality Assessment Results

Among the total 24 issues identified, five issues, including safety and health, climate action, supply chain management and shared growth, ethics and compliance, and development of eco-friendly products and technologies, were selected as our material issues in 2023. Meanwhile, the remaining four issues out of the top nine issues are managed as issues of interest.

Final Results of the 2023 Materiality Assessment

Classification	Ranking in 2023	Ranking in 2022	Topic	Materiality	
				Impact Materiality	Financial Materiality
Material Issues	1	2	Safety and health	●●●	●●●
	2	3	Climate action	●●●	●●●
	3	7	Supply chain management and shared growth	●●●	●●○
	4	8	Ethics and compliance	●●○	●●●
	5	1	Development of eco-friendly products and technologies	●●○	●●○
Issues of Interest	6	New	Pollutant management	●●○	●○○
	7	9	Waste disposal and management	●○○	●●○
	8	New	Energy management	●●○	●○○
	9	6	Recruitment and compensation	●○○	●○○

Sustainable Solution Provider



Sustainable Solution Provider

“Shipbuilder” to a “Global Ocean Solution Provider” Leading the Paradigm of the Future Eco-friendly Maritime Industry

Since our incorporation into the **Hanwha Group** in May 2023, **Hanwha Ocean** has embarked on a new voyage. By combining our globally recognized expertise in energy production facilities and transportation technologies with **Hanwha Group's** business capabilities in hydrogen, wind power, LNG, and ammonia, we will keep moving forward with our efforts to create a “green energy value chain.” Moreover, we intend to create synergy by embedding **Hanwha's** advanced marine system and eco-friendly ESS technology in our vessel, offshore platform, and specialty ship businesses.



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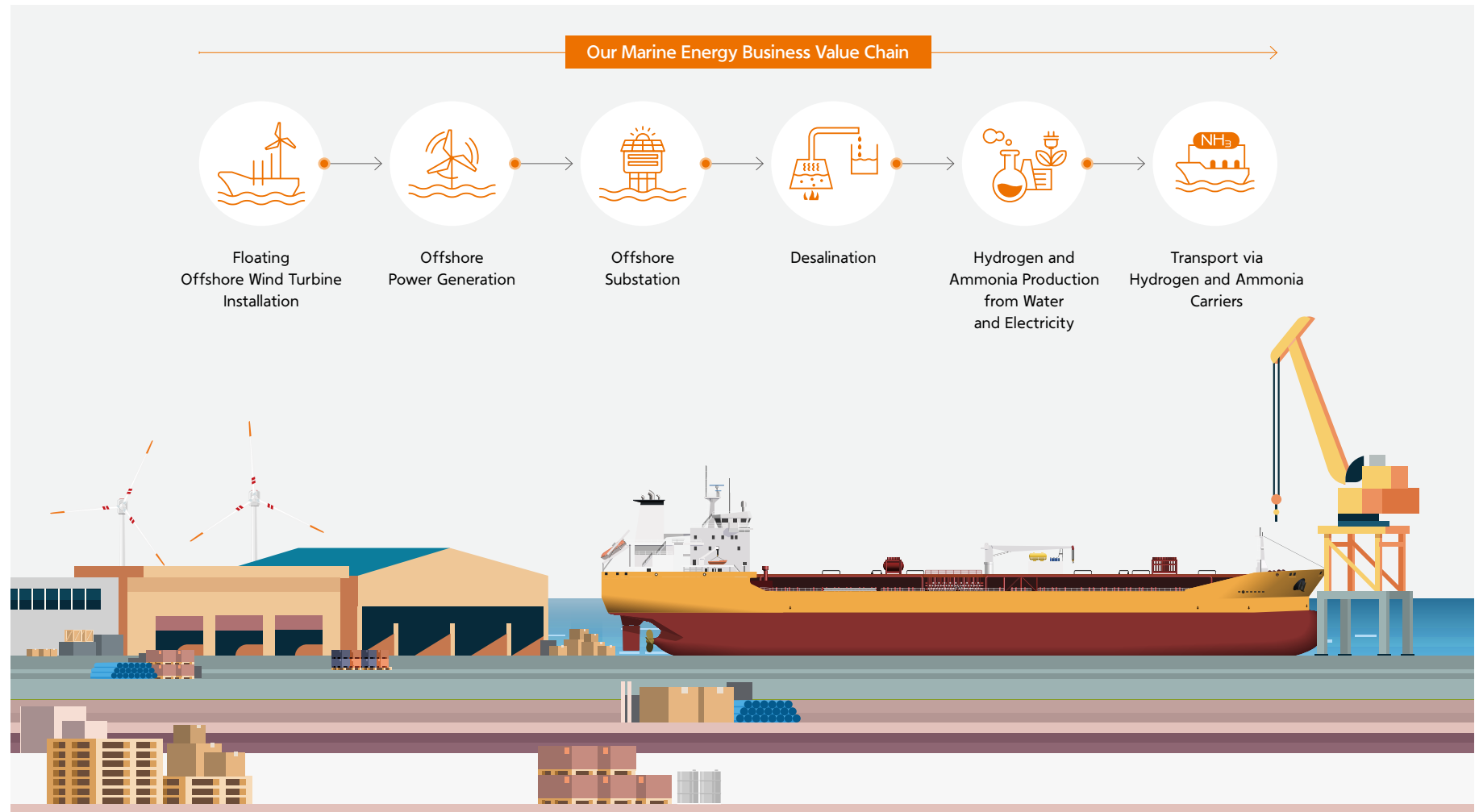
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Building a Green Energy Value Chain for a Sustainable Future

Hanwha Ocean plans to advance our existing business areas, such as WTIV¹⁾ and floating offshore wind turbines, while adopting Hanwha Group's water electrolysis technology and hydrogen storage technology for our offshore platform design and production technologies. Centered on these initiatives, we will develop products related to the production, storage, and transport of ammonia, and create a green energy value chain.

We will further bolster our competitiveness through the acquisition of the wind power business and the plant business of Hanwha Corporation's E&C Division and Global Division, respectively, planned for October 2024. We look forward to achieving outstanding business performance and securing engineering, procurement, and construction (EPC) experts with extensive experience, taking a leap forward to complete an entire offshore wind power value chain from business development to electricity generation and sales.

1) Wind turbine installation vessels



Constant Innovation for a Sustainable Future

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Hanwha Ocean develops competitive green technologies by taking one step ahead in responding to the strict regulation of the International Maritime Organization (IMO) to achieve zero carbon emissions in the shipbuilding and marine sector by 2050. In June 2023, we achieved a meaningful accomplishment by obtaining an AIP for OCCS from the ABS at Nor-Shipping, a world-leading trade fair for the maritime industry. We will continue to be at the forefront of developing technologies that will lead the eco-friendly ship market.

Eco-friendly Solutions for Reducing Our Carbon Footprint

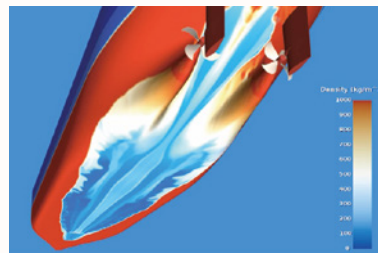


Onboard Carbon Capture System (OCCS¹⁾)

Our OCCS involves capturing and storing carbon emissions from the ship's exhaust gas.

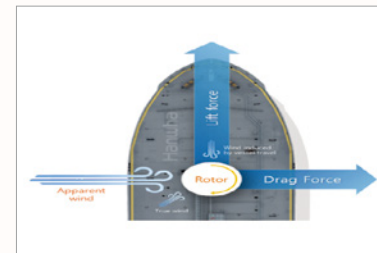
We developed a NaOH-based OCCS (KR AIP) that converts the CO₂ absorbed into a type of mineral and stores it, while regenerating and reusing the absorbed liquid during the CO₂ absorption process. Also, we obtained type approval for amine-based OCCS (BV AIP) that captures CO₂ by using amine in December 2023. Our OCCS has been proven to be more cost-effective as it makes better use of space and consumes less energy.

1) Onboard CO₂ Capture System



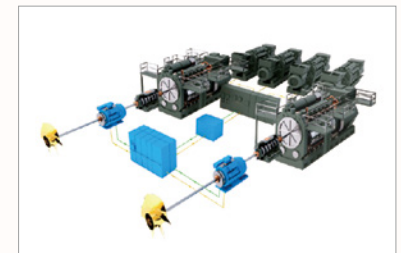
Air Lubrication System (ALS)

ALS is an energy-saving device that forms a layer of air between the hull and seawater, reducing frictional resistance during navigation and improving fuel efficiency. This system reduces fuel consumption by more than 5% compared to existing LNG carriers, and more than 60 LNG carriers and container ships have applied the system since the first delivery of ALS-equipped vessel in 2019.



Wind Assisted Propulsion System

We seek to develop various wind-assisted propulsion systems, including the rotor sail system developed for the first time in Korea, in order to improve fuel efficiency of vessels. Wind-assisted propulsion systems can reduce fuel consumption by 6 to 9%, while cutting carbon emissions.



Shaft Generator Motor

The shaft generator motor system (SGM) is an eco-friendly technology that generates electricity using the rotational force of a ship's propulsion engine shaft. Hanwha Ocean has successfully achieved the industry's first domestic production of this technology. This motor saves fuel and emits less CO₂ and sulfur oxide, as well meets regulations for GHG emissions.



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Constant Innovation for a Sustainable Future

Hanwha Ocean invests boldly in R&D to maintain the world's best technology. We developed high-manganese steel LNG storage tanks and have been recognized for taking a giant step toward the technological independence of LNG cargo holds, a long-awaited goal of the Korean shipbuilding industry. Our LNG dual-fuel container ship with high manganese steel fuel tank won the Presidential Citation at the 2023 Korea Technology Awards.

Our Technological Prowess Enhancing the Competitiveness of the Korean Shipbuilding Industry



High-Manganese Steel LNG Fuel Tank

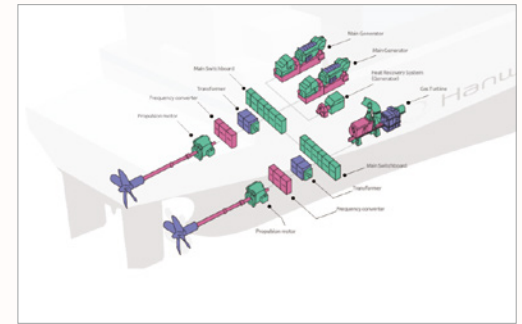
We developed a high-manganese steel cargo tank independent type B (MCTIB) with outstanding performance, strength, and wear resistance even at -163°C as a result of a decade of joint R&D with POSCO. MCTIB is a core equipment of green-fueled ships and is currently applied to more than 20 container ships.



Reliquefaction System

Developed by our proprietary technology, our reliquefaction system applies an eco-friendly technology that boosts the operating efficiency of LNG carriers and prevents methane slip as well. Methane is a potent GHG with a global warming potential 25 times that of CO_2 . Furthermore, we received a BV certification for our reliquefaction system for liquefied CO_2 (LCO_2) carriers in December 2023. As such, we are taking the lead in developing technologies to cut GHG emissions.

Our Unrivalled Carbon-free Technology



Carbon-Free Propulsion System

We are in the process of developing a 100% ammonia-capable gas turbine. To make this happen, we intend to secure a propulsion system with zero carbon emissions and zero methane slip in order to respond to the energy transition. Our initiative also includes developing a hybrid electric propulsion system embedded with fuel cells and ESS for power charge and discharge. At our newly built demonstration facility at the Siheung R&D Campus, we conduct simulations of onboard power systems of a marine vessel to test various functions of the hybrid electric propulsion system.

Building a Green Energy Value Chain for a Sustainable Future

► **Constant Innovation for a Sustainable Future**

Net Zero: Sailing for Carbon-Free Vessels

Siheung R&D Campus, a Center Researching Cutting-Edge Technologies that Incorporate High-Performance and High-Efficiency Eco-friendliness

Hanwha Ocean is leading the future maritime industry by securing sustainable technological competitiveness with multiple R&D facilities. The Siheung R&D Campus is equipped with diverse facilities to support the company's R&D efforts. Some of the notable facilities are a cavitation tunnel to study cavitation performance¹⁾; an acoustic water tank for underwater noise reduction study; a towing tank as a scaled model test facility for ship propulsion, maneuvering, and seakeeping performance in realistic sea conditions; and the HS4 Shore Operations Center equipped with the **Hanwha SmartShip Solution & Service (HS4)**.

1) Cavitation occurs when the underwater pressure changes greatly. In such a case, water changes from liquid to gas, leading to propulsion loss, vibration, and noise.



World's Largest Commercial Cavitation Tunnel

Research on noise reduction and discussions on international regulations are underway as recent studies revealed that noise generated by cavitation may affect the marine ecosystem. Leveraging the world's largest commercial cavitation tunnel, we strive to develop technologies that will provide solutions for noise reduction, propulsion loss, and propeller corrosion caused by cavitation.



Eco-friendly LBTS

Eco-friendly LBTS stands for Land Based Test Site, and it is used for the performance validation of systems to be mounted on ships and vessels by imitating them as they are. **Hanwha Ocean** is the only company in the Korean shipbuilding industry to possess it.



HS4 Shore Operations Center for Smart Ship Solutions

The HS4 Shore Operations Center carries out research for the commercialization of onshore control services, voyage data analysis, optimal navigation consulting, and 3D-based monitoring.



The One-and-Only Acoustic Water Tank in the Korean Shipbuilding Industry

Our acoustic water tank is a research facility that symbolizes the defense construction expertise of **Hanwha Ocean**. Being the only tank of its kind in Korean shipyards, the tank is used for a variety of research projects aimed at developing technology that lessens noise generated by ships.

Building a Green Energy Value Chain for a Sustainable Future

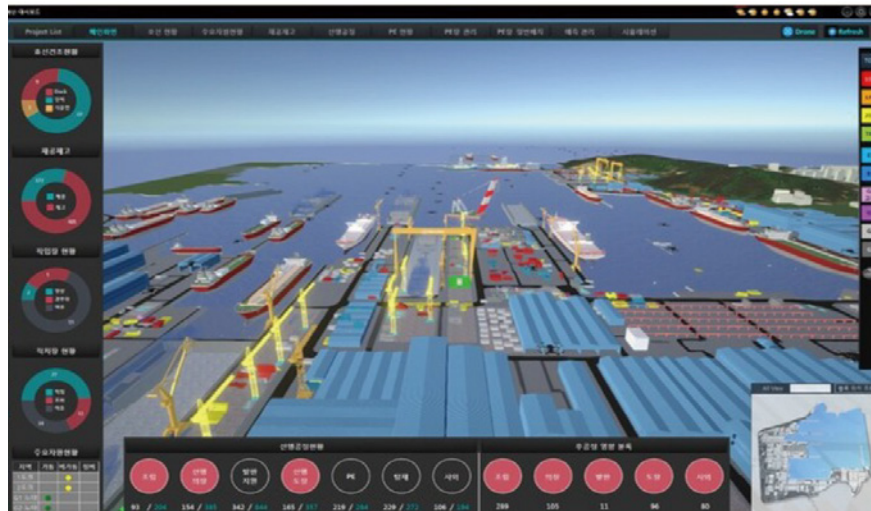
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Constant Innovation for a Sustainable Future

Achieving Our Goal of Smart Shipyard with Geoje Shipyard

Hanwha Ocean is converting the entire shipyard into a giant smart shipyard based on big data by increasing productivity with robots and automation facilities, making it easier and safer for everyone to work. Furthermore, we built a digital production center for the first time in the Korean shipbuilding industry.



It is a smart production management center capable of identifying the location of blocks being built through advanced technology like drones and Internet of Things (IoT) sensors in real-time.



The platform also serves as a smart shipyard demonstration center that collects, stores, and digitizes all data in real-time, from mooring vessels at the quay to commissioning at sea.

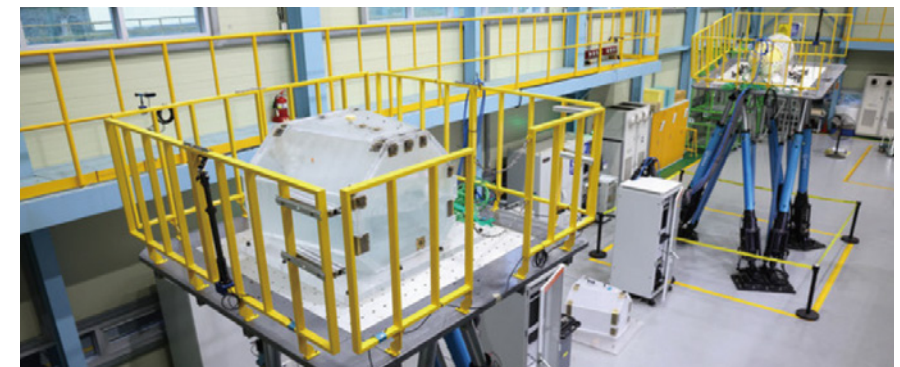
Becoming the World's Largest LNG Carrier Market Share with the Energy Systems Research Center

Hanwha Ocean's competitive edge in constructing LNG carriers originated from its cutting-edge R&D infrastructure installed at the shipyard. Our Energy Systems Research Center is responsible for carrying out the company's overall R&D activities for the commercialization of future green fuels, from LNG to ammonia and hydrogen.



Sloshing Research Center Committed to Leading the Way in Eco-friendly Carrier Development

Hanwha Ocean's Sloshing Research Center has conducted sloshing research on cargo holds of LNG carriers and evaluated the sloshing loads of 98,000 m³ liquefied ethylene carriers and LCO₂ carriers. As a result, we secured sloshing load analysis techniques for cargo holds of various liquefied gas carriers.



Building a Green Energy Value Chain for a Sustainable Future

► Constant Innovation for a Sustainable Future

Net Zero: Sailing for Carbon-Free Vessels

Constant Innovation for a Sustainable Future

Hanwha Ocean's Mid-to Long-Term Roadmap for Green Technology Development



Tech List /
Key Goals &
Directions



Short / Medium
Term



Long Term

Eco-friendly
Solutions

Commercialization of Carbon-Free Solutions
and Electric Propulsion Systems

- Commercialization of ammonia and hydrogen propulsion and storage technology
- Development of future energy carrier technology (ammonia and hydrogen carriers, CO₂ carriers)
- Development and commercialization of hybrid electric propulsion systems (fuel cells, batteries)

Expansion and Advancement of
Carbon-Free Propulsion Technology

- Advancement and expanded application of ammonia and hydrogen propulsion technology
- Advancement and expanded application of hybrid electric propulsion systems (ship types, energy sources)
- Securing orders of large future energy carriers and development of ultra-large ship construction technology

Smart
Solutions

Autonomous Ships Based on Situational
Awareness and Autonomous Judgment

- Autonomous docking and berthing, unmanned loading and unloading
- Optimal navigation solution for fleet management and port linkage
- Condition-based fault diagnosis solution for major equipment
- Equipment and cargo handling automation

Ai-Powered Fully Autonomous Ships
(Unmanned Ships)

- Complete automation of ship and equipment operations
- Onboarding and operation of autonomous ship maintenance robots
- Applying condition-based fault diagnosis solution for all equipment

Smart
Shipyard

Shipyards with Risk Prediction and
Quick Response Capabilities

- Application of mechanization and automation technologies
- Risk prediction through visualized data
- Simulation-based decision-making and prompt response
- Production efficiency improvement through layout reorganization

Sustainable Shipyards that Work
Independently with Digital Twins

- Real-time shipyard monitoring with IoT and digital twins
- Maximizing efficiency and interaction between organizations through proactive decision-making based on AI
- Deployment of lightweight and intelligent robots centering on high-risk tasks and promotion of unmanned operations

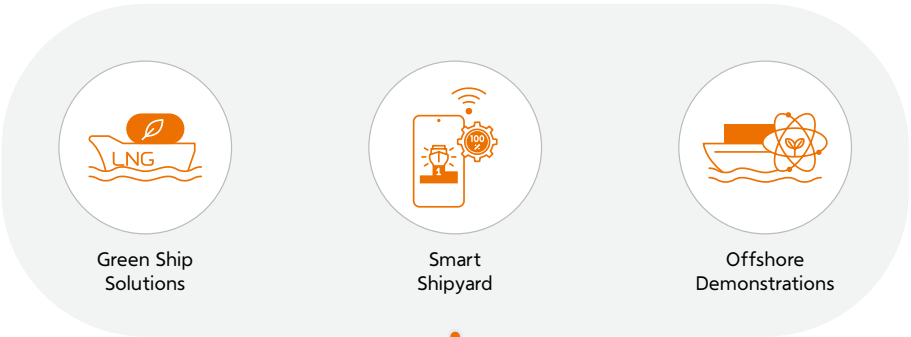
Building a Green Energy Value Chain for a Sustainable Future

Constant Innovation for a Sustainable Future

► Net Zero: Sailing for Carbon-Free Vessels

Net Zero: Sailing for Carbon-Free Vessels

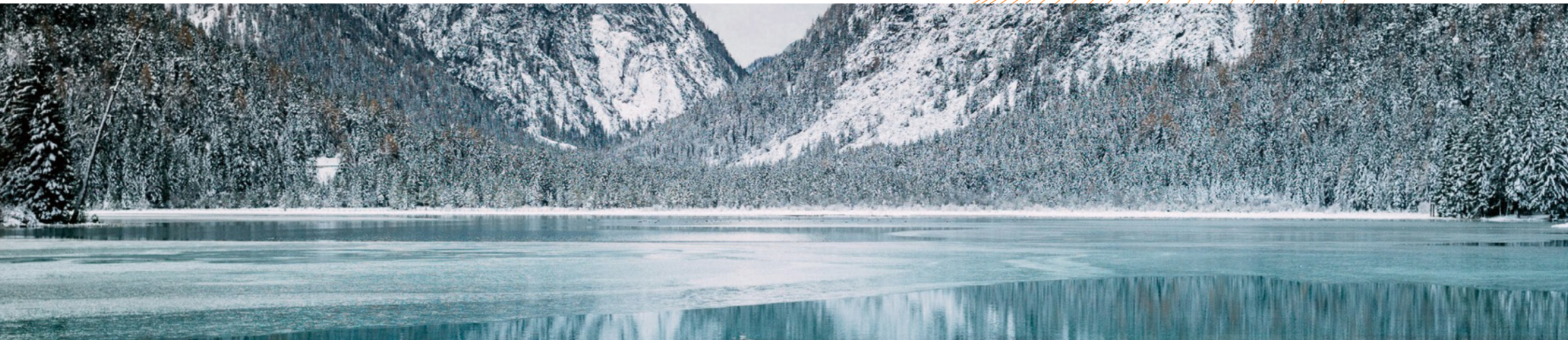
In line with the digital transformation trends, Hanwha Ocean will realize smart shipyards and equip ourselves with eco-friendly low- and zero-carbon solutions preemptively to lead the energy transition. Also, we are developing eco-friendly ships with diverse green ship solutions such as high-manganese steel tanks and rotor sails, as well as constructing carbon-free fuel-powered ships and new types of vessels, in order to contribute to achieving the goal of carbon neutrality. We completed a total shipbuilding solution for eco-friendly ships through the acquisition of Hanwha Engine in February 2024. Going forward, we will preemptively lay the groundwork for the development of green technologies by carrying out offshore demonstrations through our own shipping company, Hanwha Shipping.



Our Solutions for the Transition to the Future of Ships

Partnered with Gaslog for OCCS Development	Won Orders for the World's Largest Ammonia Carriers	Obtained Aips for the World's First Ammonia-Powered LNG Carriers	Completed a Total Shipbuilding Solution to Maximize Synergies in Developing Green Ship Technology through Acquisition of Hanwha Engine	Laid Foundation for Preemptive Development of Green Technology through Offshore Demonstration via Hanwha Shipping
In 2022, we partnered with GasLog, a Greek shipping company, to develop OCCS in earnest. We also obtained an AIP for NaOH-based OCCS from KR in October 2023.	We won orders from an Oceania-based shipping company for constructing the world's largest 93K CBM ammonia carrier in 2023 and again in 2024. The ammonia carriers will be equipped with HS4, our independent smart ship platform, and green technology like SGM, the latest carbon reduction technology.	In September 2023, we won an AIP for ammonia-powered LNG carriers following the approvals for ammonia-powered container ships and very-large crude oil carriers (VLCCs) from BV and Lloyd's Register in 2022.	In February 2024, we acquired Hanwha Engine (former HSD Engine), the world's second-largest low-speed engine manufacturer for ships, to maximize synergies in developing green ship technology and provide a total shipbuilding solution to our customers.	We founded Hanwha Shipping LLC which will serve as a platform for verification of green and digital shipping technology. With the establishment of our own shipping company, we laid the foundation for the preemptive development of green technology from construction to demonstration of carbon-free ships.

ESG Performance





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1. Climate Action

Climate Change Response System

Hanwha Ocean endeavors to cut GHG emissions and save energy in recognition of the significant impact of climate change on our core business and supply chain. We operate an environmental management system anchored in international environmental and energy management standards including ISO 14001 and ISO 50001, and we have energy management regulations and GHG energy management procedures in place. Leveraging these systems, we pursue both environmental protection and sustainable growth. Moreover, we actively put efforts to use less energy, such as electricity, oil, and gas, and reduce GHG emissions as part of our initiative to build eco-friendly and highly energy-efficient business sites. We also conduct regular education programs to raise our employees' awareness of energy-saving and environmental protection.

Governance Framework

Hanwha Ocean is strengthening our governance framework in order to respond preemptively to the changing management environment brought on by climate change. Our ESG Committee under the Board of Directors (BoD) makes final decisions on the company's environmental policy and performance. Addressing a variety of environmental issues such as climate change, energy, biodiversity, and water management, the ESG committee meets regularly four times a year to deliberate and make decisions on diverse environmental and climate-related matters. The CEO has the responsibility and authority for material issues, including establishing climate change response strategies, identifying implementation tasks, and executing investments. Since its launch in 2023, the ESG Committee has been focusing on the deliberation and decision-making on issues related to climate change response. Specifically in December 2023, the committee proposed the approval of ESG 2030 goals, including the GHG reduction roadmap, as an agenda item and concluded as follows.

Sector	Core Indicators	Current Level	2030 Goals	Notes
E	1. GHG reduction rate ¹⁾	3.1%	40% (2050 NetZero)	Renewable energy certificate purchase cost + establishment of an energy management system
	2. Percentage of eco-friendly ship order backlog	87.9%	100%	Eco-friendly ship order backlog: 87 ships / 99 ships

1) The GHG reduction rate is a comparison from the 2018 level.

Climate Change Response Strategy and Key Actions

Hanwha Ocean constantly monitors risks occurring in our business sites in accordance with risk management processes and manuals for each area, including climate change, energy, and environment. In 2023, we analyzed a climate scenario in order to respond to climate change and physical risks caused by climate change. We analyze and respond to risks by dividing them into transition risks and physical risks to understand the financial impact of the climate change-related risks and opportunities. In the short term, our risks include rising price of emission allowances, extreme weather events, and declining demand for fossil fuel-based products, while increasing orders for eco-friendly ships and expansion of offshore wind and new & renewable energy projects serve as our opportunities. In the medium term, we consider low-carbon and decarbonized fuels and propulsion systems as our opportunities, while sea level rise due to rising temperatures and the expansion of extreme weather will be our risks for the long term. Furthermore, we established our countermeasures in consideration of the Representative Concentration Pathways of the IPCC Assessment Report, and the World Energy Outlook of the International Energy Agency (IEA).

1. Climate Action

Climate Scenario Analysis

In an effort to respond to climate change, Hanwha Ocean analyzed climate change scenarios based on the IEA's Net Zero by 2050 (NZE 2050). The NZE 2050 shows a pathway for the global energy sector to achieve net zero CO₂ by 2050. Compared to the IEA's Stated Policies Scenario (STEPS) and Announced Pledges Scenario (APS), the NZE 2050 has a more ambitious reduction target of limiting global warming to 1.5°C.

Against this background, we analyze the financial impact of transition risk based on the NZE 2050. Also, we applied the Global Energy and Climate Model (GECM) to predict carbon and energy source-specific prices through the global energy and climate analysis model presented in the IEA scenarios. We use this modeling approach to predict the price per carbon emission as well as the prices of crude oil and natural gas in 2030, 2040, and 2050.

In addition, utilizing carbon price forecasts allows us to predict the carbon price and estimate the cost of carbon taxes per raw material and the price of emission allowances. Through price forecast by energy source, we can estimate the unit cost of switching to each energy source to operate a green shipyard. Overall, it provides important base data for Hanwha Ocean to establish climate change response strategies and assess the financial impact.

Data Prediction Based on NZE 2050 Analysis

Carbon Price

- We used carbon price forecast to estimate the cost of carbon taxes per raw material and the price of emission allowances.
- The carbon price forecasts are for OECD countries that have announced their net-zero initiatives, and scenario's carbon price is expected to affect carbon taxes and emission allowance prices.

(Unit: USD)

Carbon	IEA STEPS	IEA APS	IEA NZE 2050
2030	42	135	140
2040	67	175	205
2050	89	200	250

Price by Energy Source

- Energy source-specific price projections enable us to estimate transition unit costs for the operation of green shipyards by energy source.
- Price forecasts of crude oil and natural gas are based on global standardized price and emissions data for natural gas, respectively, imported from the U.S. only.

(Unit: USD per barrel) (Unit: USD per BTU)

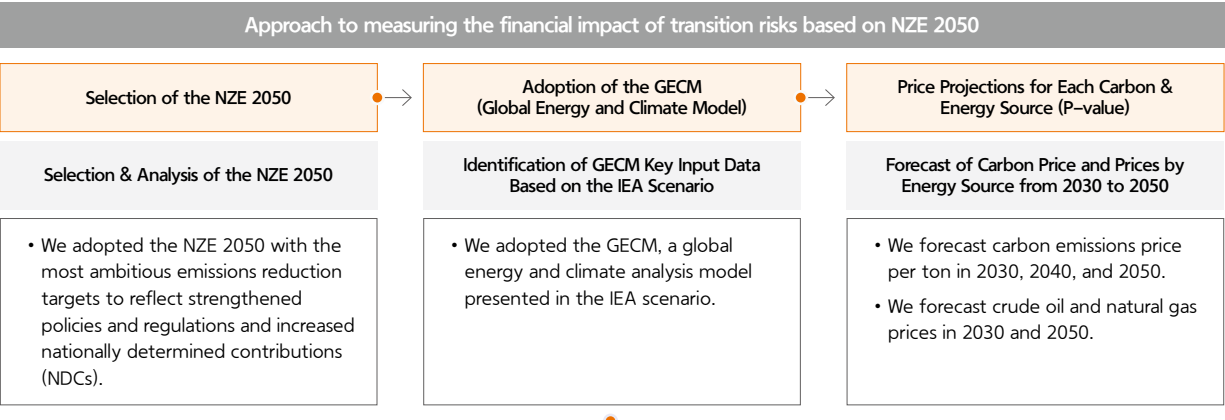
Crude Oil	IEA STEPS	IEA APS	IEA NZE 2050	Natural Gas	IEA STEPS	IEA APS	IEA NZE 2050
2030	82	64	35	2030	4	3.7	1.9
2040	88	62	29	2040	4.3	3.1	1.8
2050	95	60	24	2050	4.7	2.6	1.8

Definition of NZE 2050



- Shows a pathway for the global energy sector to achieve net zero CO₂ by 2050
- An aggressive mitigation scenario limiting global warming to 1.5°C in 2050, compared to the IEA's STEPS and APS scenarios

Financial Impact Analysis Based on the Climate Change Scenario



- We used carbon price forecast to estimate the cost of carbon taxes per raw material and the price of emission allowances.
- Energy source-specific price projections enable us to estimate transition unit costs for the operation of green shipyards by energy source.

1. Climate Action

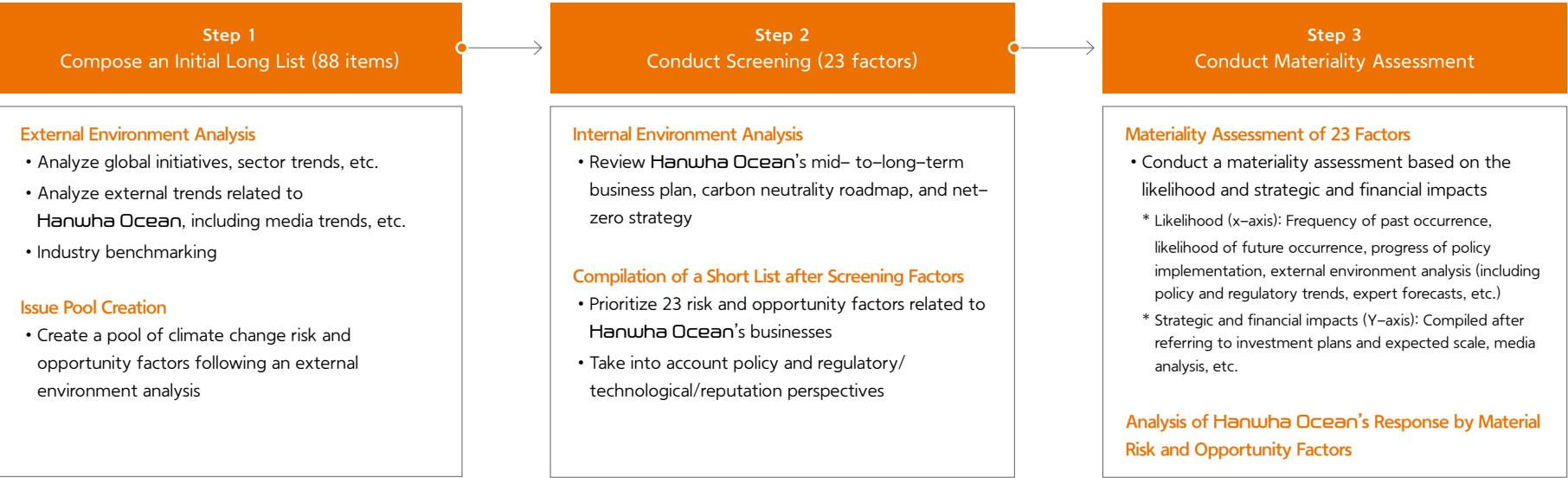
Climate Risk Management

Hanwha Ocean thoroughly reviews climate change risks and opportunities that may pose a significant impact on our business as well as the shipbuilding industry. We undergo a comprehensive consideration of the likelihood, level of impact on our business, and opinions of internal stakeholders and external experts to assess the risks and opportunities. The selected major risks and opportunities are then quantitatively reviewed for their strategic impact.

Risk and Opportunity Identification Process

Hanwha Ocean developed a systematic process to focus on identifying and analyzing various risk and opportunity factors that may affect the company’s operation and strategy. This process largely encompasses collecting extensive data from inside and outside the company, analyzing data to understand potential risks and opportunities, setting priorities, and developing strategies for proper countermeasures.

Risk and Opportunity Identification Process





1. Climate Action

Climate Change Risk Factors

Climate Change Risk Factors					
Classification	Type	Risk Factors	Potential Duration	Business Impact	Our Response and Plan
Transition risk	Regulatory and policy risk	The IMO's reinforced carbon emissions regulations for ships	Short-, mid-, long-term	• Generation of facility investment and R&D expenses to reduce ship carbon emissions in response to the IMO's carbon intensity indicator regulations	• We conduct R&D activities to reduce ship carbon emissions based on our green technology roadmap
		Increased emission allowance prices due to the implementation of the emissions trading system	Short-, mid-, long-term	• Increased emission allowance prices in line with the rise in the paid allocation rate of the cap-and-trade system – Additional purchase costs for shortage in emission allowances	• We are participating in the emissions trading system (430,000 tons of allowance) • We plan to implement a 2030 carbon offset project
		Increased raw material prices due to the implementation of the Carbon Border Adjustment Mechanism	Short-, mid-, long-term	• Increased raw material (steel) prices due to carbon tax burden increase in costs	• We operate an order risk management system – Operation of a risk management system for the stable supply of raw materials – Management of raw material cost in quotations according to order risk verification procedures
	Market risk	Increased costs of recruiting and retaining next-generation fuel tanker experts	Short-, mid-, long-term	• Increased cost of recruiting experts • Increased retention costs (salary, training, etc.) owing to increasing number of employees	• We set targets for securing production technology labs (150 persons) and digital labs (50 persons) • We plan to hire additional 270 staff members for LNG carrier R&D positions over the next three years
Physical risk	Technology risk	Increased costs for green shipyard operations	Mid-, long-term	• Increased facility investment costs for manufacturing process improvement and conversion to eco-friendly utility Increased fuel price due to green fuel purchases • Low-carbon production target management cost (system)	• We established a capital expenditure investment plan for the next five years to operate green shipyards (ongoing)
	Acute	Typhoons	Short-, mid-, long-term	• Loss of fixed costs (labor costs, overhead expenses, etc.) due to disruption of business operations • Increased raw material prices • Costs for restoring business facilities and systems	• We calculate the cost of restoring facilities damaged by a typhoon by aggregating costs, and work to minimize the damage with insurance coverage • We established preventive measures to ensure the operation of business sites upon typhoons
	Acute	Typhoons	Short-, mid-, long-term	• Loss of hourly fixed costs caused by extended employee rest periods • Increased costs in providing essentials to aid in enduring extreme heat in workplaces	• We guarantee mandatory employee breaks in the event of a heat wave • We allocated and executed budget to provide essentials to aid in enduring extreme heat in workplaces

Climate Change Opportunity Factors

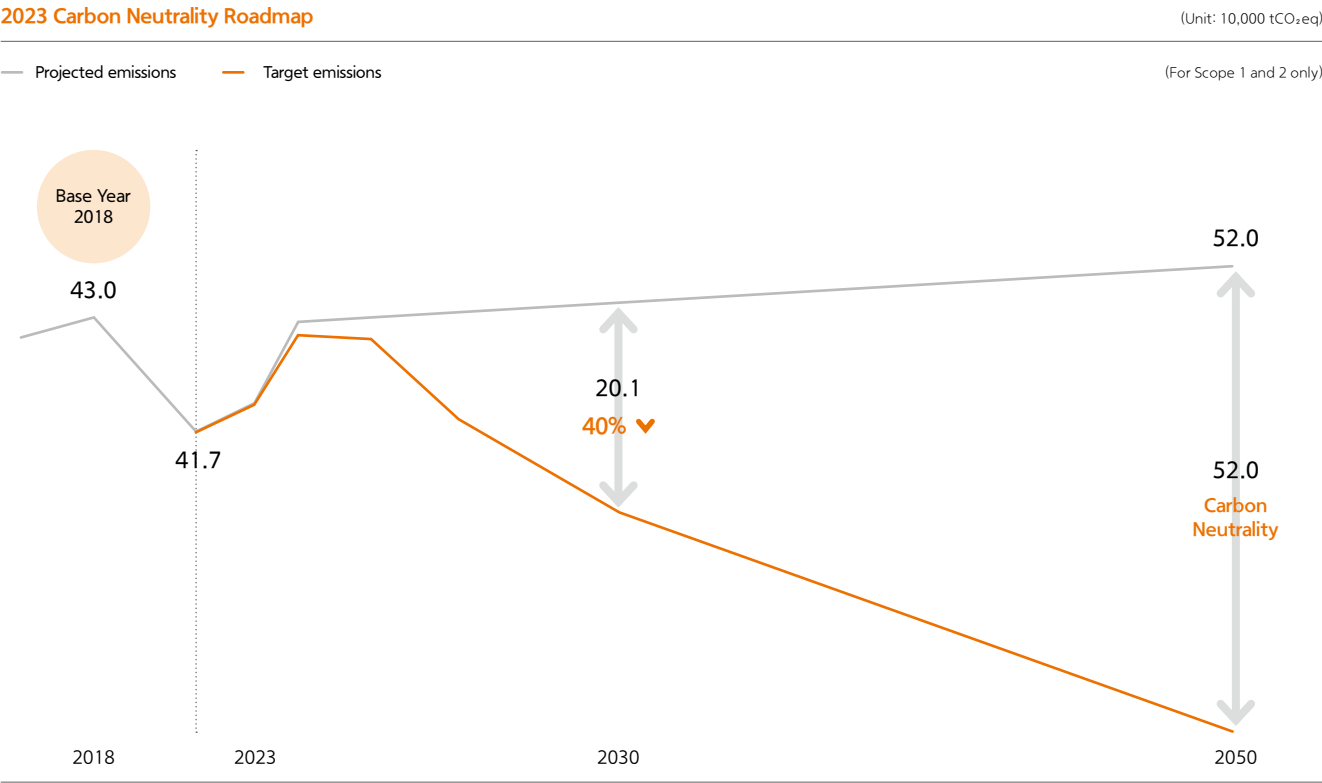
Climate Change Opportunity Factors				
Classification	Opportunity Factors	Potential Duration	Business Impact	Our Response and Plan
Market	Increased customer demand and market size for eco-friendly products	Long-term	• Increased market size and sales of eco-friendly ships (LNG, methanol, ammonia, and hydrogen)	• We continue to receive orders for green fuel-powered ships (dual-fuel vessels) and eco-friendly ships (LCO2 ships) • We promote R&D activities for carbon-free (hydrogen and ammonia) ships
	Increasing new business sales by transforming our business portfolio	Short-, mid-, long-term	• Increased market demand for eco-friendly products such as floating offshore wind turbines, offshore wind turbine substructures, hydrogen tanks, and eco-friendly ship equipment	• We are considering building electricity and green energy infrastructure related to offshore wind power • We are considering embarking on the eco-friendly ship equipment business
Technology	Securing competitive advantage in the market through preemptive development of environmental impact reduction technology	Mid-term	• Increasing sales related to eco-friendly business by securing competitive advantage (with market share increase) through preemptive technology dominance	• We need to accelerate the development of methanol, hydrogen, and ammonia-fueled vessels with the goal of commercializing carbon-free technology in 2030 to dominate the market earlier than competitors

1. Climate Action

Indicators and Reduction Targets

Carbon Neutrality Roadmap

Hanwha Ocean devised a carbon neutrality roadmap and set the goals of cutting 40% GHG emissions by 2030 and achieving carbon neutrality by 2050. Based on our roadmap, we will review and manage the progress of our goals for reducing GHG emissions and saving energy each year. Moreover, we plan to establish a detailed action plan in 2024 and unveil it in the following year.



Classification	Unit	2030	2050
Reduction rate (from the 2018 level)	%	40	100
Projected emissions	10,000 tCO ₂ eq	45.9	52.0
Target emissions	10,000 tCO ₂ eq	25.8	Zero
Emissions reduction target	10,000 tCO ₂ eq	20.1	52.0

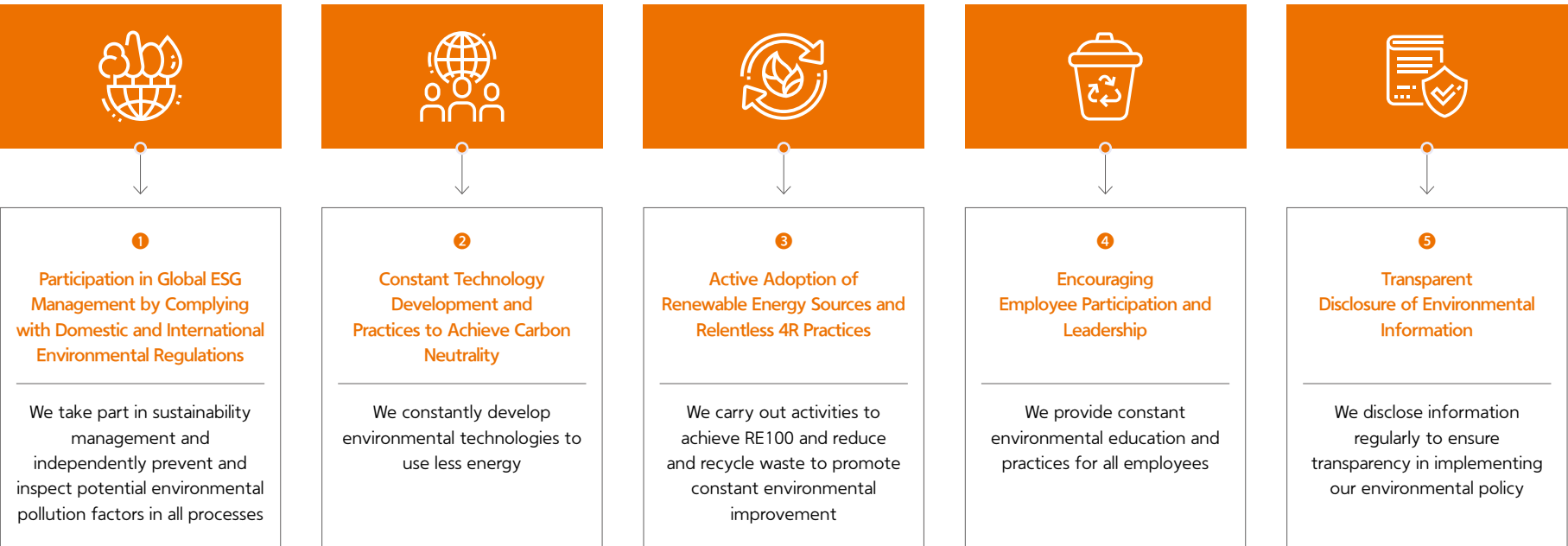
2. Environmental Management System

Environmental Management Promotion System

Environmental Policy

Hanwha Ocean considers that environmental management is a core value of our business operations. In this regard, we carry out a wide range of activities based on our environmental policy. We strictly comply with environmental laws and regulations in all our business activities. Beyond regulatory compliance, we encourage our employees to engage in diverse activities actively for environmental protection and sustainable development. In addition, we operate education programs to raise employees' environmental awareness and provide them with opportunities for active participation in environmental protection activities. Furthermore, we disclose environmental management-related information transparently to build trust with our stakeholders, and constantly make efforts to achieve our shared environmental protection goals. We update our environmental protection performance, environmental management plans and activities, and our responses to environment-related issues on a regular basis, and collect opinions from our stakeholders actively.

Environmental Policy





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2. Environmental Management System

Major Environmental Laws and Our Response

In our efforts toward environmental protection and sustainable management, Hanwha Ocean takes a deep understanding of and thorough compliance with major environmental laws, such as the Clean Air Conservation Act, Water Environment Conservation Act, and Wastes Control Act. To this end, we constantly monitor changes in environmental laws and regulations, and develop response strategies accordingly.

Law	Highlights	Our Response
Clean Air Conservation Act	Compliance with the Clean Air Conservation Act for each process, verification of the operation and maintenance status of pollution control facilities, and no omission of permits including operation of unauthorized facilities	We plan to gradually replace old pollution control facilities to reduce pollutant emissions, and monitor the replacement process to avoid omission of permits
Water Environment Conservation Act	Compliance with the Water Environment Conservation Act and verification of the operation and maintenance status of pollution control facilities	We operate our own wastewater treatment plant to limit the pollutant discharge by up to 30% of the allowance, inspect and improve the plant periodically, and focus on preventing sewage spills through training
Wastes Control Act	Ensuring no violation during the screening, storage, and discharge of industrial waste, and establishment of a recycling policy	We dispose of waste generated during the production process in accordance with legal standards and the Ministry of Environment guidelines, collect and sort them, and recycle resources through 3R activities
Act on Registration and Evaluation of Chemical Substances	The Korean government identifies various chemical hazards and registers new hazardous chemicals each year	We make efforts to handle newly registered hazardous chemicals safely through our chemical management system, while meeting regulatory requirements
Chemical Substances Control Act	Major policy changes are expected to be made along with the amendment of the Chemical Substances Control Act in 2024 (classification of hazardous chemicals, handling standards, etc.)	We plan to obtain a hazardous chemical business license in 2024 since our flagship products are classified as hazardous chemicals We meet the facility standards for hazardous chemicals and train respective personnel to avoid chemical incidents
Soil Environment Conservation Act	Prevention of soil pollution and conducting soil remediation to protect the soil ecosystem and ensure the healthy lives of the people	We monitor and inspect our soil pollution control facilities to avoid environmental pollution
Marine Environment Management Act	Prevention of marine pollution and protecting the health and property of the people by controlling pollutants emitted from ships and marine facilities and regulating oil and hazardous liquid spills	We plan to register intake and discharge facilities at docks as marine facilities in 2024 to preserve the marine environment We constantly invest in pollution control facilities, among others, for preemptive response
Act on the Control and Aggravated Punishment of Environmental Offenses	The penalty system was revised in November 2020 as a response to environmental crimes involving illegal discharge of air pollutants	We ensure regulatory compliance and strict monitoring through the deployment of dedicated environmental inspection personnel, revision of water quality testing check sheets, and so on

Environmental Management Performance

Environmental Investments and Sales

At Hanwha Ocean, we practice environmental management by adopting and developing green technology, and constantly investing in the environmental field. We intend to expand sales in the eco-friendly sector to respond to regulatory regulations and strengthen our business competitiveness.

Indicator	Unit	2020	2021	2022	2023
Environmental investments	KRW 100 million	265.8	93.6	215.9	39.4
R&D cost	KRW 100 million	68.5	96.1	50.7	48.3
Low-carbon & carbon avoidance products	KRW 100 million	30,915	21,774	25,660	43,442

1) The sales are calculated for ships with dual-fuel engines.

Green Procurement

Hanwha Ocean is committed to saving energy and cutting GHG emissions by purchasing eco-friendly products. Specifically, we converted 10 of our corporate vehicles to zero-emission vehicles (ZEVs) in 2022, and we are investing to convert trucks to eco-friendly vehicles by 2030.

Indicator	Unit	2020	2021	2022	2023
Total no. of vehicles	Cars	587	549	690	640
No. of ZEVs	Cars	0	2	12	13
Percentage of ZEVs	%	0	0.4	1.7	2.0

2. Environmental Management System

International Certifications and Environmental Law Violations

In 2020, Hanwha Ocean received an administrative penalty from the Ministry of Environment for failure to follow the hazardous chemicals management procedures during the importing process of chemical products (substances) and neglecting to declare goods for import. Since then, we have complied with the Chemical Substances Control Act and the Act on Registration and Evaluation of Chemical Substances, and reinforced the management of chemical products through compliance with chemical product import procedures. As a result, we have recorded zero violations and subscribed to environmental liability insurance since 2021.

Indicator		Unit	2021	2022	2023
Violations of environmental laws and regulations	Violations	Cases	0	0	0
	Fines and penalties	KRW 1 million	0	0	0
Certifications ¹⁾	ISO 14001	Y/N	Y	Y	Y
	ISO 50001	Y/N	Y	Y	Y
Response to environmental pollution incidents	Environmental liability insurance enrollment	Y/N	Y	Y	Y
	Environmental incident response training	Y/N	Y	Y	Y

1) We obtained ISO 14001 certification for Okpo, Siheung, Anjeong, and Shandong business sites, and ISO 50001 certification for Okpo, which accounts for more than 98% of our energy consumption.

Matters Concerning Environmental Law Violations and Measures to Prevent the Recurrence of Accidents

Classification	Problems	Proposed Improvement
Chemical substance purchase and order process	The person in charge may not mark on the sheet as it is not mandatory to check the inclusion of chemical products upon request for materials procurement	Modified the system to hold the payment step without marking the inclusion of chemical products
	Omission of a request for chemical hazard review upon request for materials procurement	Need to request for chemical hazard review by the design department to confirm product details in the order stage The procurement department coordinates the request for hazard review to confirm the import vendor and chemical product details in the procurement stage
	Hazard review may be omitted due to changes in import and local vendors in the quotation submission stage	Improved the system to deliver the information upon confirming the (local/ import) vendors
Customs clearance for imported goods	Tasks outlined in the Chemical Substances Control Act may be omitted when conducting work according to the Customs Act	The environmental policy team is requested for the review of items suspected of containing chemical substances during customs clearance
	Unable to check the inclusion of chemical substances and the issuance of statement during customs clearance	Reviewed the options for system improvement to register documents related to chemical substances for items confirmed to contain chemicals

Third-party Eco-friendly Certifications

Hanwha Ocean ensures the systematic management of environmental indicators corresponding to international standards. We obtained and renewed ISO 14001 (environmental management system) and ISO 50001 (energy management system) certifications. We are committed to promoting and internalizing environmental management practices across our management.

ISO 14001 (Environmental Management System) Certification



ISO 50001 Certification





2. Environmental Management System

Environmental Management Communication

Our Eco-friendly Social Contribution Activities

Hanwha Ocean practices the value of shared growth and lives up to the expectations as a best corporate citizen through active and continuous social contribution activities. We work to create a warm community by promoting social contribution activities based on employee engagement, as well as volunteer activities that bring empathy and value corporate social responsibility and sincerity.

Underwater and Coastal Cleanup Activities

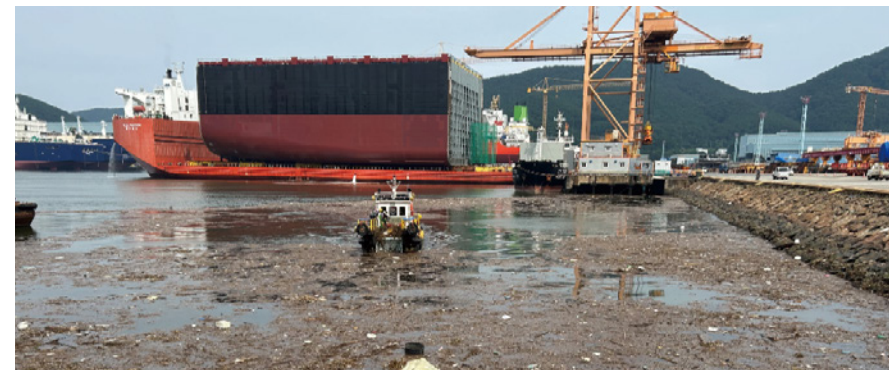
On June 7, 2023, Hanwha Ocean took part in the underwater and coastal cleanup activities organized by the Tongyeong Coast Guard. The program was held near the Haegando Island in Tongyeong in celebration of the 28th World Oceans Day. More than 80 participants from the Tongyeong Coast Guard, Tongyeong City Government, and 12 organizations and civic groups gathered together this day to collect trash along the coast near business sites and clean the beach, showing their strong willingness to protect the sea.



Collecting Marine Waste and Floating Debris During Heavy Rains

Hanwha Ocean collected marine waste and floating debris for about 38 days from July 17 to August 23, 2023 during heavy rain seasons to prevent marine pollution.

During this period, a total of 145 tons of waste were collected, and approximately KRW 20 million was spent on safely entrusting the disposal of the waste.





2. Environmental Management System

Environmental Education

At Hanwha Ocean, we strive to internalize ESG practices throughout the company. We provide ESG education for our employees to help them better understand ESG and enhance their capabilities. The curriculum is designed to provide an in-depth understanding of diverse environmental issues, from basic concepts of environmental protection to climate change, resource circulation, and ecosystem conservation. The programs also include topics on minimizing environmental impacts that may occur during industrial activities, compliance with environmental laws and regulations, and practical ways to take actions for environmental protection.

With multiple programs in place, we expect that our employees recognize the need to protect the environment and be capable of making decisions that benefit the environment while performing their duties.

Program	Period	Objectives
Maintaining a Clean Workplace	Feb.—Jun. 2023 Sep.—Dec. 2023	<ul style="list-style-type: none"> Raising awareness of waste segregation and disposal standards Measures to reduce quay and marine pollution
Environmental Information	Oct. 2023	<ul style="list-style-type: none"> Raising awareness of concentrated occurrence of fish, shellfish eggs, and plankton
Hazardous Chemicals	May 2023	<ul style="list-style-type: none"> Compliance with laws and regulations on handling and storing anti-fouling paints
Enforcement of Environmental Laws and Regulations	Apr. 2023 Aug. 2023	<ul style="list-style-type: none"> Regulatory compliance and raising awareness in line with crackdown on facilities vulnerable to marine pollution by major authorities

Environmental Stakeholder Management

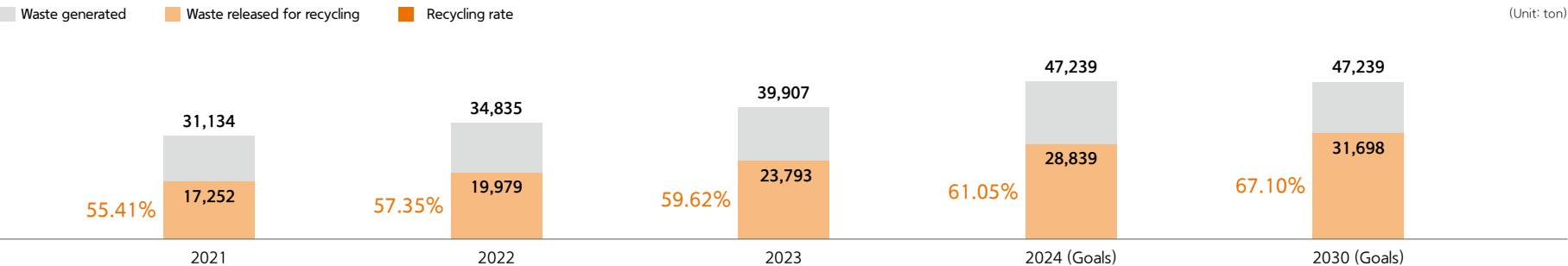
Understanding the value of environmental management, Hanwha Ocean engages with diverse stakeholders to implement environmental management practices. We have identified a wide range of stakeholders as key partners on environmental issues, including public authorities, NGOs, community groups, and internal auditors. This approach serves a pivotal role in building more extensive cooperation and developing effective response strategies for environmental protection.



3. Pollutants

Enhancement of Resource Efficiency

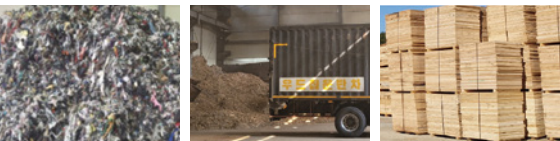
Key initiatives designed to increase the waste recycling rate to 67.10% by 2030 include expanding the sorting process at internal waste collection sites, providing more combustible waste to recycling companies (from 45% in 2023 to approx. 70% in 2030), and adjusting the amount of wood delivered to local residents (50% by 2030 from the current level). We also plan to implement a series of activities to improve our recycling in the long term such as selecting and improving recyclable items among wastes disposed in landfills, reviewing the possibility of partial recycling of designated wastes, and designating recycling companies in advance to release new wastes.



1) The data was compiled based on the Okpo Shipyard.

Special Case 1 Recycling Wood

As an example of waste recycling, Hanwha Ocean selects various types of wastes by property such as synthetic resin, synthetic rubber, wood, and household waste and sends them to recycling companies to produce solid refuse fuel (SRF) and wood chips, plywood, and square timber. The SRF produced by recycling companies using our waste as a raw material serves as a renewable energy source. They are supplied as an auxiliary fuel for power plants, district heating, and industrial use, contributing as a green energy source to replace bituminous coal. Additionally, we promote the circulation of resources and take the lead in environmental protection by producing wood chips, plywood, and square timber from waste wood, and converting them into high-value products.



Special Case 2 Recycling Slag and Dust

Hanwha Ocean sorts slag and dust by property, which are then sent to competitive recycling companies. Recycling companies use these materials to produce cement additives, fillers, and other products as well as moldings that are used as raw materials for metal and steel products. Such recycling process is considered an important example of promoting efficient use of resources and contributing to environmental protection. Our approach contributes to sustainable environmental management and resource circulation by turning industrial waste to valuable resources.



Special Case 3 Recycling Paint Waste and Used Oil

Hanwha Ocean separates waste paint cans and oil drums and sends them to recycling companies for environmental protection and resource recycling. Waste paint cans are converted into raw materials for steel products, and they serve as important resources in the steel industry. On the other hand, waste oil drums are used to produce recycling tubes, adding value as crucial resources. Such recycling activities go beyond the simple activity of reducing waste; they contribute to sustainable environmental management and promote the efficient use of resources.



3. Pollutants

Internal Control Standards for Water Pollutants

In an effort to promote sustainable environment, Hanwha Ocean has established internal management standards that are about 30% stricter than the existing legal discharge level under the Water Environment Conservation Act and the Sewerage Act, taking the lead in the management of water pollutants. Our efforts do not only meet legal requirements but also are designed to implement our corporate responsibility and commitment to environmental protection. Our proactive approach contributes to controlling water pollution effectively and maintaining a clean and healthy water environment.

Facility	Water Quality Control Technology			
	Item	Unit	Legal Standard	Internal Standard (30% of the effluent water quality standards and legal discharge level)
Wastewater treatment plant	pH	pH	5.8~8.6	
	TOC	mg/L	50	25
	SS	mg/L	80	10
	n-H (mineral oil)	mg/L	5	1.5
	n-H (copper)	mg/L	30	9
	T-N	mg/L	60	20
	T-P	mg/L	8	2
	F	mg/L	15	4.5
	ABS	mg/L	5	1.5
	Phenols	mg/L	3	0.9
	Cu	mg/L	5	1.5
	Ni	mg/L	5	1.5
	Mn	mg/L	10	3
	Ba	mg/L	2	0.6
	Zn	mg/L	5	1.5
	Fe	mg/L	10	3
	Cr	mg/L	2	0.6
	Diethylhexyl phthalate	mg/L	0.02	0.006
	Dichloromethane	mg/L	2	0.6
	Toxicity unit (TU)	TU	2	1

Facility	Water Quality Control Technology			
	Item	Unit	Legal Standard	Internal Standard (30% of the legal standard)
Sewage treatment plant	pH		5.8~8.6	
	BOD	mg/L	10	3
	SS	mg/L	10	3
	T-N	mg/L	20	6
	T-P	mg/L	2	0.6
	Total coliforms	mg/L	3,000	900

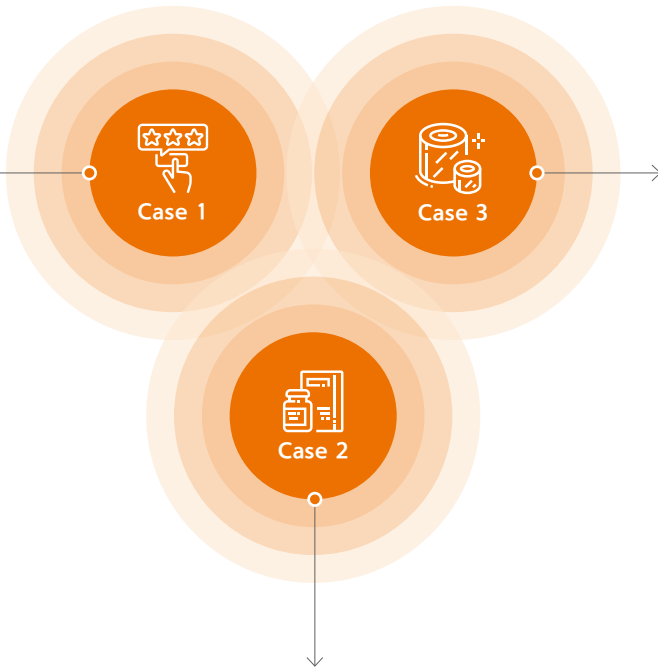
3. Pollutants

Chemical Substance Management

Hanwha Ocean strives to minimize the negative impact of chemical substances used to construct ships on the health of our employees and the environment. Accordingly, we thoroughly manage the entire process from procurement to disposal to ensure the safety of chemical use. In addition, we apply and promote multiple options to reinforce the management of chemical substances, including establishing an automatic check system, developing AI-based research and alarm functions, investigating shipowner and vendor customs clearance items, and manually managing chemical substances.

Failure to Check Chemical Products when Creating Material Codes

We have two options in resolving the issue of failing to check chemical substances due to human errors when creating material codes for products such as paints, welding materials, and oils. First, we plan to build a system that automatically checks the registered chemical products when creating materials codes. Second, we will further reinforce the management of chemical substances by adding the HSE review process to the material code generation process starting from the first half of 2025. These improvement measures will allow us to reduce errors that may occur when generating material codes related to chemical products, and ensure a more systematic management.



Management of Chemical Products Directly by Shipowners and Vendors

We recognized that a legal issue may arise for chemical products purchased directly by shipowners and vendors (customs clearance) as they are not managed by the existing system. To address this issue, we intend to identify the type, quantity, and travel routes of such products, and establish a process of verifying and reviewing their use by October 2024. Also, we will conduct a thorough inspection of all goods cleared through customs by shipowners or vendors, and allow manual management by related organizations. These measures will contribute to strengthening the management of chemical products directly purchased by shipowners and vendors, and reducing ensuing legal risks.

Management of Chemical Products Received as Equipment Components

We found that chemical products received as equipment components (e.g. lubricants, adhesives) were not properly recognized when creating codes. To deal with this issue, we came up with the idea of establishing a system that automatically searches chemical product-related terms and requests a person in charge to review them when creating material codes. Our plan also includes developing and implementing AI-based term search and alarm functions in 2025. We expect that such improvement measures will help us strengthen the management of chemical products received as equipment components and resolve related issues more effectively.

4. Biodiversity Protection

Biodiversity Conservation Efforts

Hanwha Ocean recognizes the importance of protecting and restoring biodiversity, and regards it as a major risk in corporate management and business execution. Biodiversity is an essential element in maintaining the health and stability of ecosystems through complex interactions between living organisms on the planet. In recognition of this, we work to minimize the adverse environmental impacts of our business on the biodiversity of the surrounding areas. We conduct an environmental assessment from the early stage of business, and scrutinize and analyze potential impacts that our business may pose on biodiversity. For environmental risks identified through these investigations, we develop and implement diverse preventive actions. For instance, research activities such as the development of underwater noise reduction technologies during ship operations directly contribute to the protection of marine habitats, which serves greatly for biodiversity protection. Such an approach goes beyond merely complying with environmental regulations. Rather, it is a testament to the willingness of Hanwha Ocean to act responsibly for a sustainable future by making environmental protection a corporate mission. It also reflects our commitment to passing on to future generations a planet full of healthy and diverse living organisms.

Preventing Waste Leakage to the Ocean

Hanwha Ocean, in recognition of the significant impact of the shipbuilding industry's awareness of biodiversity on the marine ecosystem, strives to create a sustainable marine ecosystem. In order to prevent the release of pollutants from ships, we provide preventive measures preemptively at each stage of the shipbuilding process, such as management of anti-pollution items and facility maintenance and inspection of operating conditions. We support the installation of oil fences to prevent oil spills that may occur in ship commissioning, and collect floating debris once a day. Also, we take responsibility for the community and conduct drills regularly in preparation for onshore waste disposal caused by typhoons and other natural disasters and marine pollution instances to protect the ecosystem around our business sites.

Underwater Radiated Noise Reduction Technology

Hanwha Ocean is committed to technology development with the aim of reducing underwater noise radiated from ships. Just as people feel stressed by inter-floor noise these days, underwater radiated noise (URN) is considered a major cause of disturbance in the marine ecosystem. To address this issue, we applied Air Lubrication System (ALS) to successfully reduce noise by 5 dB overall, although the amount of noise reduced varies depending on the frequency band. Also, we analyze the main causes of URN and conduct additional R&D activities based on the analysis. We believe that these efforts will contribute to minimizing the impact on the marine ecosystem during ship operations.



4. Biodiversity Protection

R&D to Minimize Underwater Noise Pollution

Hanwha Ocean continues to carry out R&D activities to tackle the issue of underwater noise pollution. Recently, we completed the performance verification of the Masker-Air System in the cutting-edge acoustic tank and cavitation tunnel at our Siheung R&D Campus. The Masker-Air System is an innovative technology that reduces underwater noise and is expected to have a significant effect of reducing noise when applied to naval and specialty ships. Also, the world's largest towing tank and cavitation tunnel allow us to test and develop various underwater noise reduction technologies. In 2023, in a first for Korea, the Norwegian classification body DNV certified Hanwha Ocean for our ability to measure underwater noise. This certification proves our technology and reliability are internationally recognized, demonstrating the company's commitment to continual improvement and sustainable business performance.

Prevention of Disturbance of Marine Ecosystems due to Ballast Water

Hanwha Ocean is committed to preventing the disruption of marine ecosystems caused by ballast water discharged by ships. Ballast water is taken in one area and discharged in another, and the species it carries with it move from their existing habitats to new ones. Such movement of species disturbs the balance in the ecosystem, with the possibility of threatening the original ecosystem as foreign species thrive in new habitats.

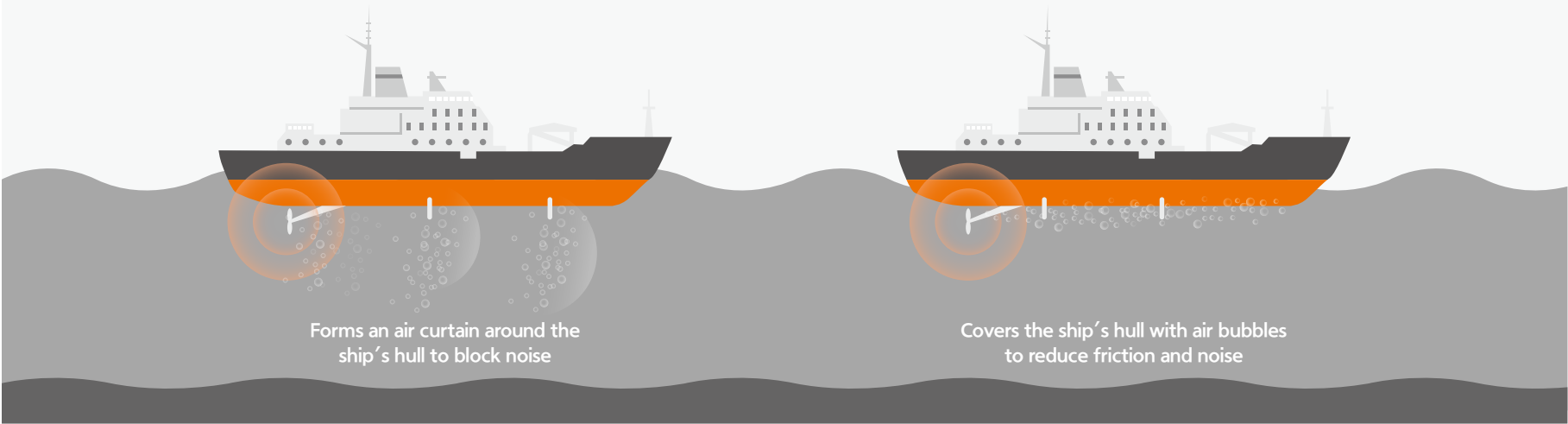
Highly aware of this issue, we intend to use the ballast water treatment technology to prevent the displacement of species during ballast water intake and release. This technology can protect marine ecosystems and improve the safety of ship operations concurrently.

Such an effort demonstrates the company's strategic direction with the goal of protecting marine ecosystems and maintaining sustainable ship operations. Ultimately, this technology plays a crucial role in protecting marine diversity through our environmental responsibility and commitment to sustainable ship operations.

Underwater Noise Pollution Reduction Technology

How can air
make ships quieter?

AIR INJECTION VS. AIR LUBRICATION

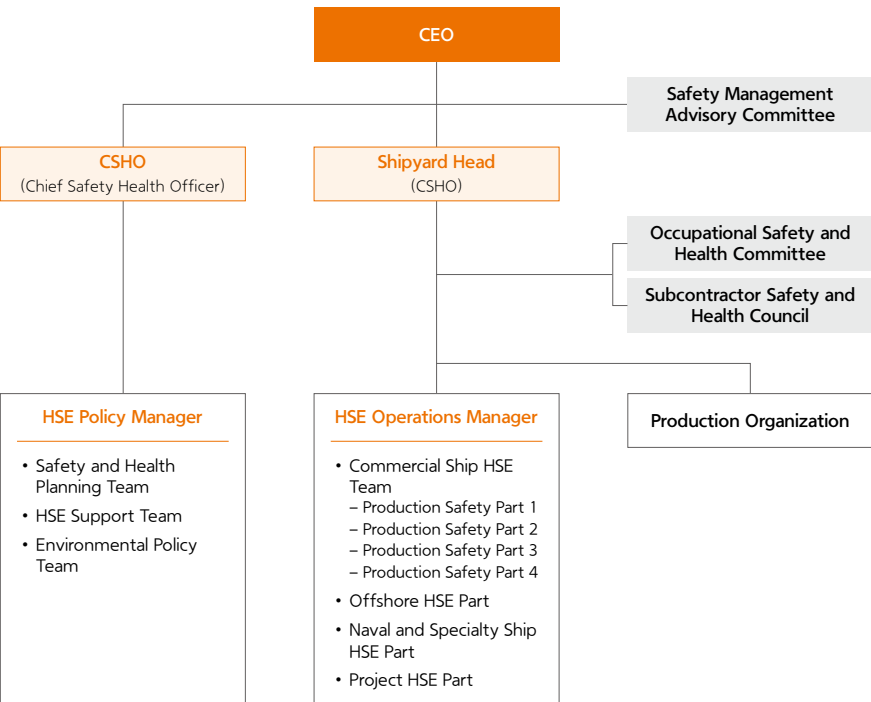


1. Safety and Health

Safety and Health Management System

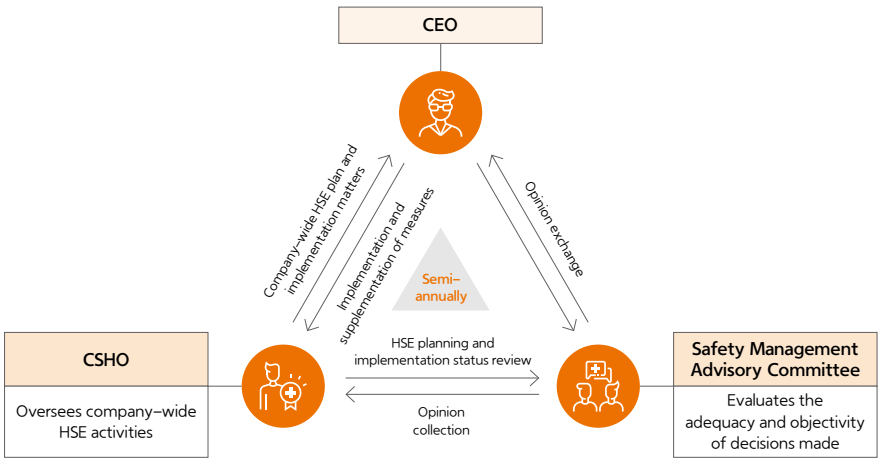
Hanwha Ocean runs an HSE organization that focuses on on-site execution capabilities to ensure that all employees can work in a safe and healthy workplace. Specifically, we appointed a Chief Safety and Health Officer (CSHO) and separated HSE policy and HSE operations to reinforce functions by organization. We also hold a quarterly Occupational Safety and Health Committee to deliberate and resolve important matters regarding safety and health. In addition, safety and health meetings take place with representatives of suppliers each month. We put the safety and health plan on the agenda for the regular BoD meeting held in January for approval since the enforcement of the Serious Accidents Punishment Act in January 2022, and hold a regular HSE management meeting each month under the chairmanship of the CSHO with the attendance of all executives of production departments to present and discuss HSE agendas. The company's overall HSE implementation status is reported and reviewed semi-annually by the Safety Management Advisory Committee consisting of seven external experts.

Safety and Health Management Organization



Safety and Health Promotion System

Operation of the Safety Management Advisory Committee to Evaluate the Adequacy and Objectivity of the Safety and Health Performance System



Position	Key roles and activities
CEO	<ul style="list-style-type: none">Reviews major HSE issuesChairperson of the Safety Management Advisory Committee
CSHO	<ul style="list-style-type: none">Oversees company-wide HSE activitiesInspects and evaluates the HSE implementation status at business sites
Safety Management Advisory Committee	<ul style="list-style-type: none">Reports, discusses, and deliberates on the HSE implementation status, including establishment of HSE management system and checking and improving implementation status

Seven Members of the Safety Management Advisory Committee

- Legal affairs
- Safety
- Health
- Occupational medicine
- Corporate safety
- Medical expert
- Occupational safety expert



1. Safety and Health

Safety and Health Management System

Hanwha Ocean is committed to engaging in faithful communication with each stakeholder. We formed a safety control tower encompassing the team-level safety and health committee, company-wide HSE management meeting, and the Safety Management Advisory Committee composed of external experts to actively discuss and communicate on safety issues and make the best decision on them.



Shipowners' Joint Regular Safety Council
H.O.M.E (Monthly) (Hanwha Ocean Management Engagement)



Company-wide HSE Management Meeting
(Monthly)



Safety Management Advisory Committee
(Quarterly)



Team-level Safety and Health Committee
(Monthly)



Subcontractor Safety and Health Council
(Monthly)



Labor-Management Occupational Safety and Health Committee
(Monthly)

1. Safety and Health

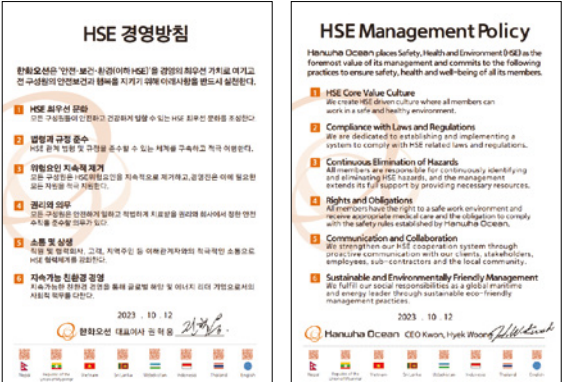
Safety and Health—First Management

To make a fresh start as a member of the Hanwha Group, Hanwha Ocean newly established the HSE Management Policy that outlines basic management principles and general guidelines for decision-making based on the opinions of the Safety Management Advisory Committee consisting of external members, as well as all members of the company (including management, executives team leaders, managers, field workers, and suppliers). With the announcement of the HSE Management Policy, we set our HSE goals clearly and revealed the commitment of our executives to constantly improve and implement HSE management and provide a safe and healthy working environment for all employees.

We held a joint labor-management HSE management policy declaration ceremony (Oct. 12, 2023) and renewed our commitment to implementing HSE as a top priority. The HSE Management Policy was translated into eight languages including Nepalese, Vietnamese, and Thai, in consideration of the growing number of foreign workers. Employees can find the policy in their language immediately by scanning the QR code at the bottom of the HSE Management Policy. To raise awareness and understanding of the HSE Management Policy among all employees, we created about 3,000 frames and posters with the HSE Management Policy and held an event to submit group photos with the HSE Management Policy in the background, as well as photos proving their pledge to the policy. Through such initiatives, we ensured the quick spread of the policy among our employees.



HSE Management Policy Declaration Ceremony held on Oct. 12, 2023

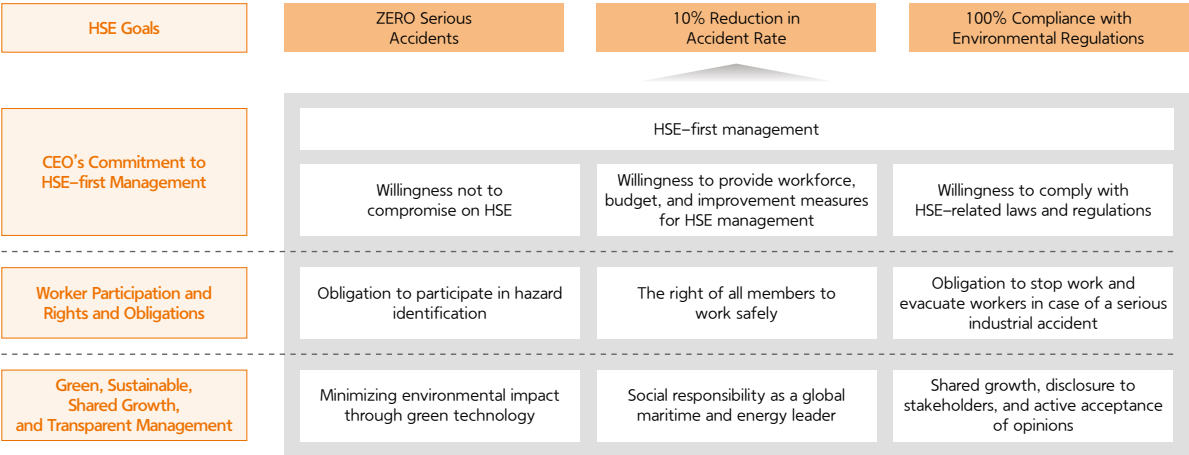


Listening to opinions from all levels regarding the establishment of HSE management policy

Key Opinions on the HSE Management Policy by Position



Linkage between HSE goals and HSE Management Policy



1. Safety and Health

Safety and Health-First Management



Workers proving their pledge to the HSE Management Policy



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Safety and Health Management System

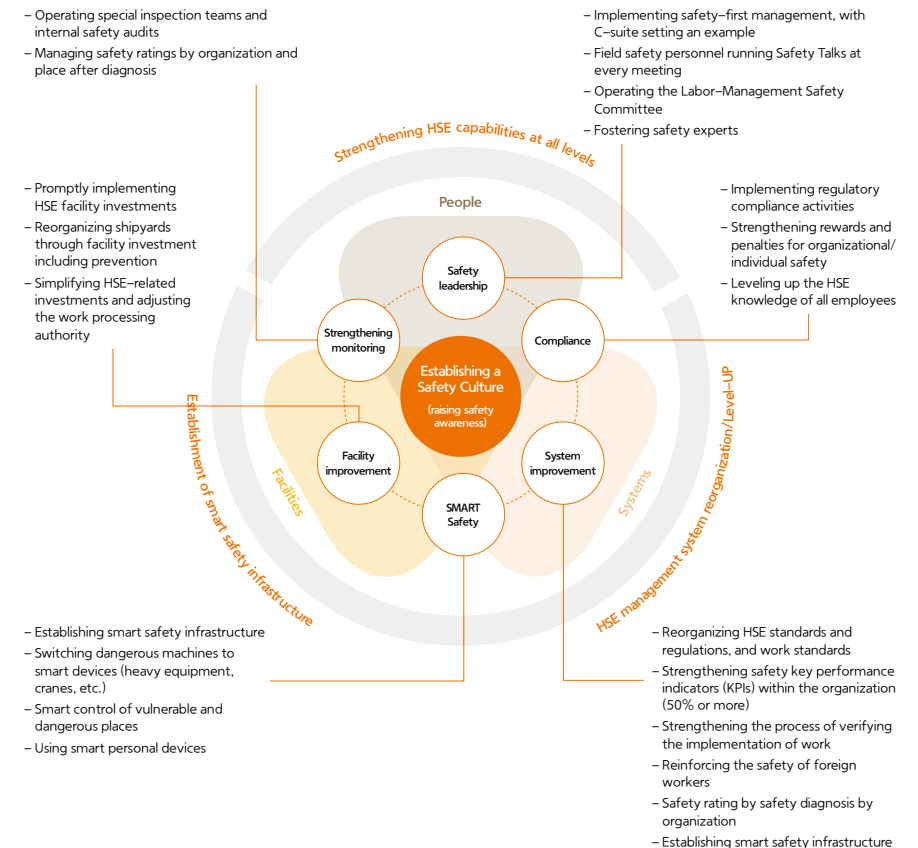
Hanwha Ocean established the latest safety and health management system based on ISO 45001 certification, the international standard for occupational safety and health. Our safety and health policy applies to our employees, suppliers within the company, and visitors who may face risks. The policy is reviewed each year in order to flexibly respond to new safety and health issues and regulatory changes in the industry. As the government reinforces its policies regarding the Serious Accidents Punishment Act and the Occupational Safety and Health Act, we are establishing and expanding the safety and health activity system designed to strengthen the prevention of serious accidents and accidental disasters for preemptive response.



Efforts to Improve HSE Fundamentals

Hanwha Ocean is the first company in the Korean shipbuilding industry to adopt the International Safety Rating System organized by DNV, and we strive to improve the HSE fundamentals after facing the reality as it is. Based on a cool-headed assessment consisting of 500 questions in 15 categories by an external agency regarding our safety and health management level, we recognized the current status of health and safety and provided feedback to lead innovation in the safety and health level. Also, we constantly monitor our HSE management system and execution capabilities as we identified and improved approx. 50 detailed tasks to innovate people, facilities, and systems.

50 Tasks for HSE Improvement Identified from Self-Assessment





1. Safety and Health

Overview of Safety and Health Facilities

Hanwha Ocean operates our own fire brigade available 24/7 (day and night) for quick response in case of emergency. We also have fire-suppression and life-saving equipment such as fire engines, tow trucks, and ambulances in place. The firefighters put in much effort to build their expertise in specialized fields by completing emergency medical technician training and rope access rescue training.

To promote employee health, we run affiliated clinics (2 locations) and occupational accident counseling and health management offices, where doctors and nurses are stationed all the time to offer rapid emergency service. About 200 people visit the affiliated clinics on average each day, and counselors and medical experts at the occupational accident counseling and health management offices take care of patients with musculoskeletal and cerebrovascular diseases and provide health promotion programs.

Also, two professional counselors provide counseling services at the in-house psychological counseling center ("Useuso") to treat post-traumatic stress disorder caused by safety accidents. Our employees, colleagues, and their family members visited the center to attend around 2,000 counseling sessions and conduct other psychological tests per year.



In-house fire brigade



HSE Experience Center



In-house affiliated clinics



Psychological counseling center

1 In-house fire brigade: fire engines, tow trucks, and ambulances

2 In-house health screening center

3 Psychological counseling center

4 HSE Experience Center

5 Seomun Health Center
※ 5 in-house physiotherapy and exercise (therapy) rooms, 21 fitness centers

6 Clear Water Management Center

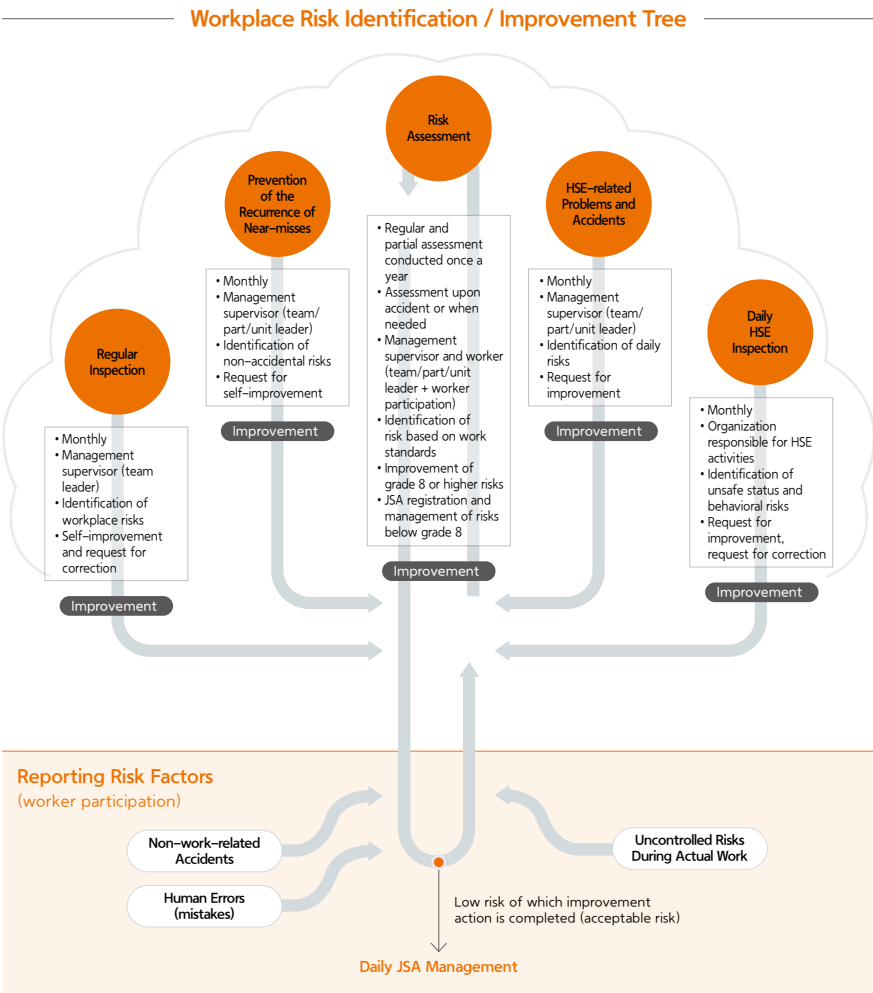
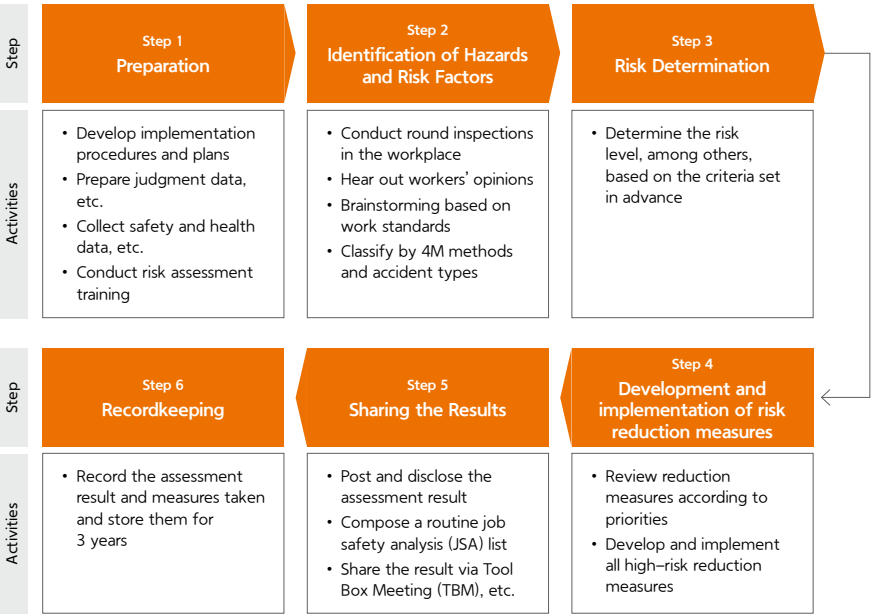
7 In-house affiliated clinics (2 locations) & health management office

8 Waste collection site and recycling center

1. Safety and Health

Occupational Safety and Health Activities

Hanwha Ocean pursues active safety management activities anchored in our safety and health reinforcement policy. In 2023, we conducted a regular risk assessment covering 234 organizations including 129 units under direct management and 105 suppliers. We examined 5,041 tasks and identified 88,003 risk factors, and we are continuously reducing or eliminating the remaining 5,121 risk factors.





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Occupational Safety and Health Activities

Hanwha Ocean is committed to safety and health through various industrial safety and health activities.

First, we are transitioning to a constant on-site inspection system to eliminate risk factors within the yard. The head of the shipyard (CSHO) conducts daily round inspection, while our production organization and safety instructors hold daily theme-based inspection and cross-inspections.

Specifically, to improve the safety execution performance within the shipyard, the shipyard head, production and HSE executives, related employees, and representatives of suppliers are divided into groups to conduct area audits designed to identify risk factors and reduce them in every corner of the business sites. We take actions immediately for actionable risks and otherwise record and monitor them to ensure that not a single risk is left behind.

Next, we reinforce work suspension policies under the supervision of the production organization to practice the HSE-first management value. We authorize anyone to suspend work if any violations of personal protective equipment (PPE) standards, unsafe conditions such as neglect of safety handrails and openings, or violations of the 12 Golden Rules set by the company are found at the production site.



Daily round inspection by the shipyard head



Daily theme-based and cross-inspections

Lastly, all incidents arising from non-compliance with safety regulations or inadequate management are monitored. The CSHO receives one-on-one reports on recurrence prevention measures. In cases of repeated accidents or serious incidents due to the failure of these preventive measures, our own special safety inspection program is initiated. Through the special safety diagnosis program, we conduct an in-depth causal analysis, safety culture and psychological tests, job competency tests, and so on to understand the fundamental cause of the accident from various angles, thereby eradicating the accident by re-establishing recurrence prevention measures and following up the implementation.



Operation of a safety accident recurrence prevention system



Special diagnosis of major and repetitive accidents

1. Safety and Health

Occupational Safety and Health Activities

Hanwha Ocean reorganized our facility and equipment investment system in order to reduce identified hazards and risk factors and create a safe workplace. We secured an emergency budget dedicated to the CSHO (KRW 9.15 billion) to eliminate the hazards and risk factors and reflected it in 2024. Moreover, we adjusted the work processing authority (arbitrary execution of budget less than KRW 1 billion by delegated authority) for prompt decision-making. To be specific, we improved the process of replacing old vehicles and equipment, designated cranes, forklifts, aerial platform trucks, and other industrial vehicles as “equipment with safety risks,” and distinguished them from “general equipment” in terms of investment procedure. When general equipment reaches the end of its useful life, we conduct a diagnosis to determine whether to replace it or reinforce maintenance. However, we skip this process for equipment with safety risks; we immediately proceed with investment (replacement) according to the improved process. Also, we always work hand in hand with the HSE organization to newly adopt or replace machinery with high risks, thus ensuring safety.

At Hanwha Ocean, we developed and operate our own “HSE leading indicators” to prevent safety accidents. Based on our preemptive risk warning system, we identified six indicators linked with safety accidents either directly or indirectly, analyzed changes and trends in indicators to predict the number of potential disasters that may occur by organization, and sent signals of safety accidents to the respective organizations.

HSE Leading Indicators¹⁾

Classification	Composite Index	Risk Index		Process Management Index		Vulnerable Workers Index	
		Predicted No. of Disasters	Improvement Rate per 100 Employees	Process Compliance Rate	Work Suspension Time per 100 Employees	% of Employees with Less Than 3 Months of Service	% of Foreign Workers
Company-wide	3.2	3.0	3.1	3.6	2.6	4.0	3.1
Internal	2.6	1	2	4	2	4	3
Front	2.9	1	4	5	1	4	3
Production 1	3.3	2	3	4	4	4	3
Production 2	2.8	3	2	3	2	4	3
Production 3	2.7	3	3	3	1	3	3
Production Support	3.4	4	3		3	4	3
Marine Production	3.9	4	4	3	5	4	3
Naval & Specialty Ship Production	3.9	5	3	3	4	4	4
Public Affairs	3.1	4	4		1	5	3

1) As of May 2024

Risk Level Classification¹⁾



1) Classified based on the composite index

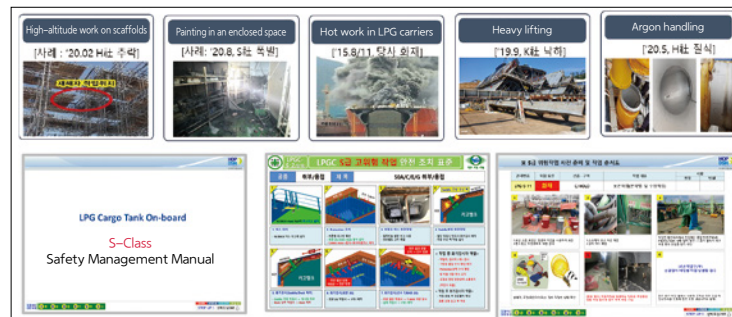
1. Safety and Health

Occupational Safety and Health Activities

At Hanwha Ocean, we are dedicated to controlling and managing high-risk tasks, vulnerable processes, and people. We established Yard Basic Safety 4 Rules and 12 Golden Rules and carry out a number of campaigns and PR and guidance activities. We selected the five most common tasks that may lead to serious accidents in the shipbuilding industry (e.g. work at high altitudes [i.e. scaffolds], painting in an enclosed space, hot work in the cargo hold of LPG carriers, heavy lifting, argon handling work). Accordingly, we reinforced safety training for workers carrying out such tasks and stepped up the management of the pre-work approval system as well as inspection activities by safety instructors, further intensifying occupational safety control and management. In particular, we designated high-risk tasks belonging to class S by production organization and made it mandatory for a supervisor to present and give instructions during the task. We also work to ensure the safety of foreign workers exposed to risks. We hired eight foreign coordinators (from seven countries) to provide professional interpretation and translation services, conduct safety training by country, develop training materials in foreign languages, and offer interpretation service regarding various safety activities.



Yard Basic Safety 4 Rules, 12 Golden Rules



Management of five most common tasks with high risks, and S-class high-risk tasks



Training for foreign workers and new hires



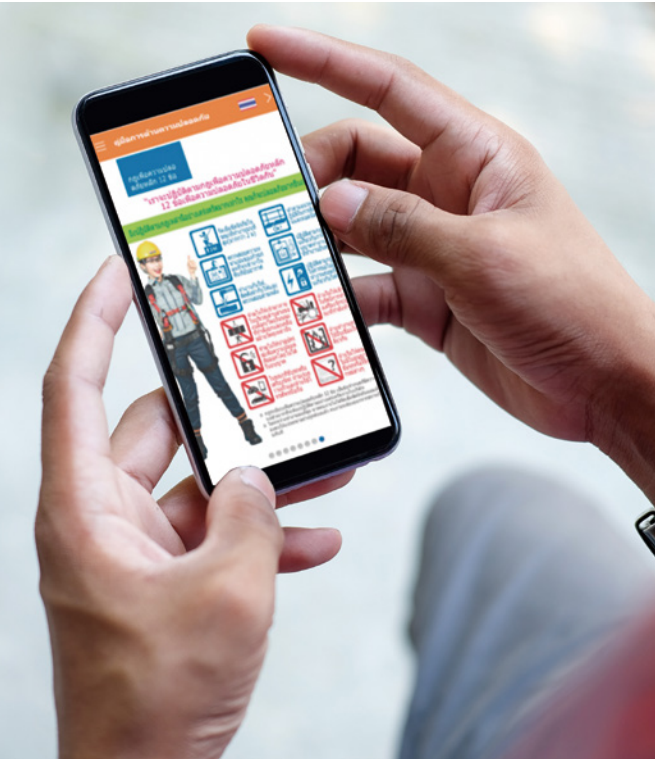
Safety coordinators

1. Safety and Health

Occupational Safety and Health Activities

In an effort to improve the safety infrastructure for foreign workers, Hanwha Ocean developed a dedicated mobile app. This app provides services in eight languages and consists of the company's safety rules; information about daily lives, safety, welfare, and culture; and bulletin boards to help them learn Korean easily. We developed training materials translated into different languages to provide virtual reality (VR) safety training for foreign workers. Also, we improved the visibility of safety signs found throughout the shipyard so that they can recognize risk factors immediately.

We endeavor to constantly develop safety training content for foreign workers including safety training materials for new hires translated into eight languages, safety guidebooks, and simple OX training materials.



Mobile app for foreign workers



VR training for foreign workers



Dedicated tablet PC with training materials for new foreign workers



Improved visibility of safety signs



Examples of basic safety guidebook for foreign workers and OX safety training materials



1. Safety and Health

Occupational Safety and Health Training

Hanwha Ocean classifies new suppliers and our new employees into risk-prone groups, providing them with intensive care and necessary support to avoid the occurrence of major disasters. Indoor and outdoor training facilities are installed in the shipyard to provide diverse programs such as experiencing workplace falls, using a gondola, and VR experience. The curriculum is divided into 13 courses, including both statutory and non-statutory training. 27,713 persons participated in the programs held over 608 sessions until 2023.

Creating The Optimal Educational Environment



- Continuous implementation of an HSE educational environment improvement plan (draft) for 2022 (maximum use of in-house buildings)
- Spatial planning of HSE training facilities

Reorganization of Experiential Education for Vulnerable Safety Groups



- Rapid increase in new hires due to a surge in orders
- Eligibility: New hires + foreign workers
- Objective: To strengthen the safety training focusing on field experience
- Method: Experiential training on risk factors such as height, confined space, gas, and fire

Strengthening Argon Asphyxiation Prevention Education



- Building expertise in argon handling
- Increasing the frequency of argon safety training
- Batch training history management and distribution of training completion stickers

New Forklift Safety Training Program



- Forklift as the no. 1 cause of serious accidents
- Special safety and health training for forklift drivers
- Lecture: Specialized safety and health training institute
- Target: All forklift drivers in the company
- Frequency: Twice a year
- Batch training history management and distribution of training completion stickers



Completed the construction in 2005 (facilities and equipment with a useful life of 15 years)



- Operation of the HSE Experience Center at the South Gate and 18 other in-house safety training centers
- Training method: Indoor (theory), outdoor (hands-on)
 - Main programs: Experiencing workplace falls, using fire extinguishers, cardiopulmonary resuscitation (CPR) training, using scaffolds and ladders, using a gondola (5 courses), and development and operation of VR contents on the five major risks (since 2018)

50

VR Experience Facilities



10

CPR Dummies



50

Tablet PCs for Training

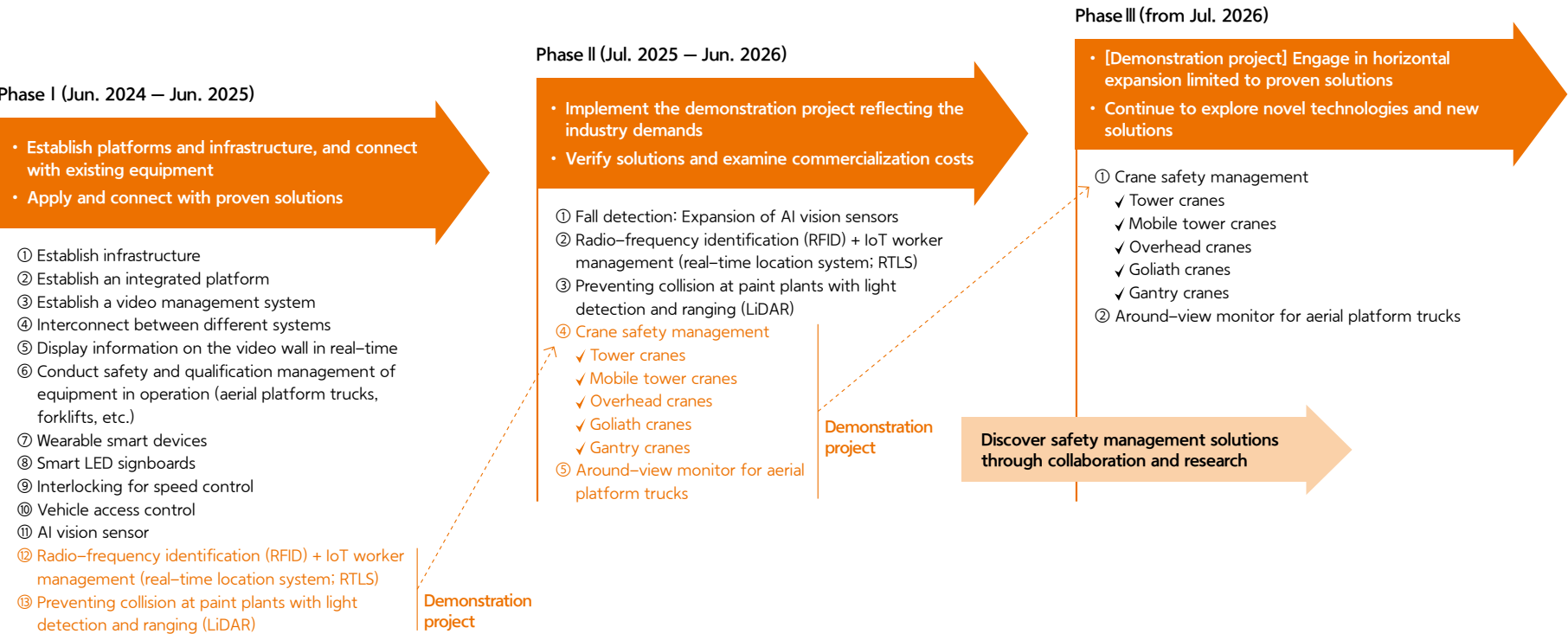


1. Safety and Health

Occupational Safety and Health Innovation

At Hanwha Ocean, we work on digitizing occupational safety and health issues to create a smart safety system. Based on our large-scale investment plan, we carry out a three-year task to build an integrated smart safety control system that visualizes diverse data comprehensively and displays them on a large screen in real-time.

Our Smart Safety Roadmap



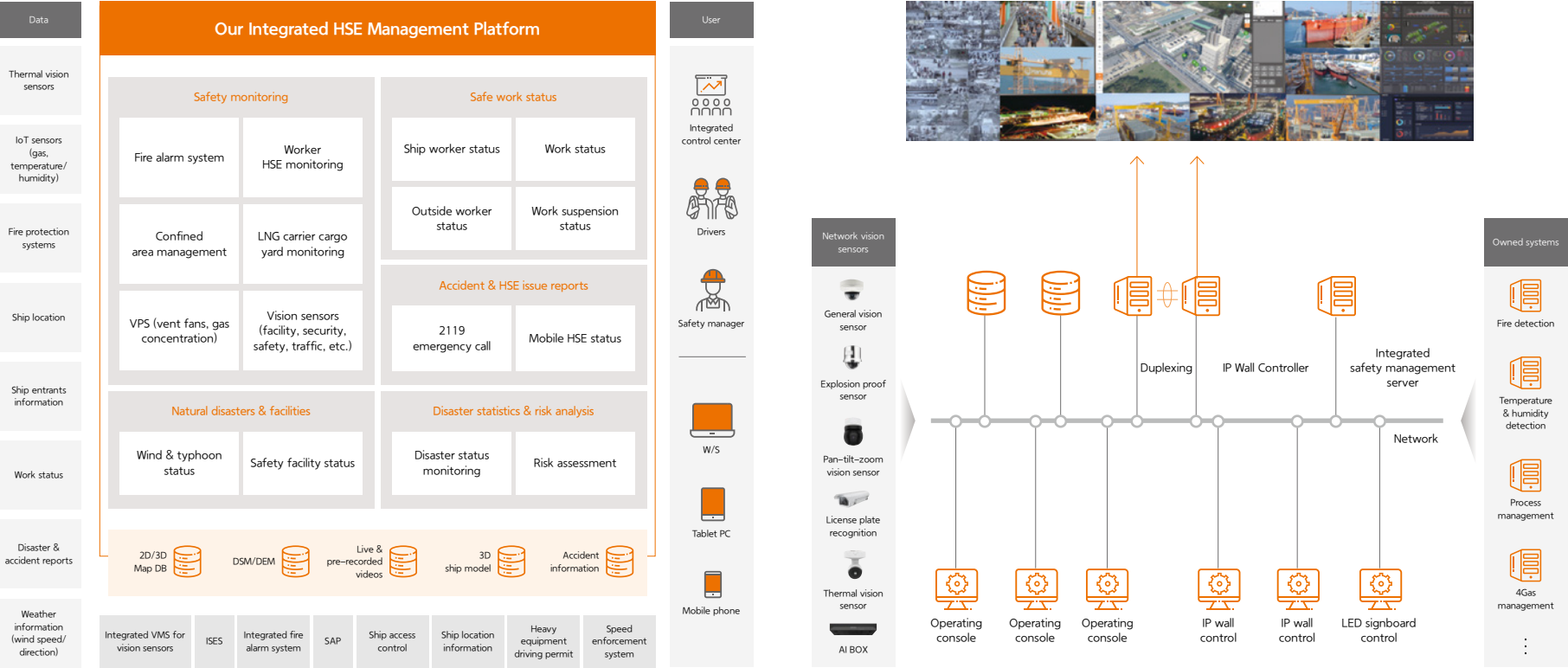
Directions

- Establish an integrated safety management platform and connect with diverse heterogeneous systems (fire detection, vision sensor, weather information, etc.)
- Establish a real-time accident prevention system for workers by improving the infrastructure (network, etc.) and using IoT sensors (location information, biometric data, emergency calls, etc.)
- Establish an advanced safety management system for workers through heavy equipment safety management systems (cranes, aerial platform trucks, forklifts, etc.) and smart devices
- Strengthen safety monitoring of workers by monitoring high-risk area access, facilities, and vehicles by using AI vision sensors and replacing old cameras

1. Safety and Health

Occupational Safety and Health Innovation

Our Integrated HSE Management Platform



1. Safety and Health

Supplier Safety and Health Management

Hanwha Ocean carries out the following activities in an effort to build a safety and health system not only within the company but also with its suppliers.

Safety and Health Qualification Testing for Suppliers

Hanwha Ocean conducts safety and health qualification testing in advance before concluding a contract with internal and external suppliers to evaluate their capabilities and technologies and prevent occupational accidents.

Safety Assessment Consulting

Hanwha Ocean injects approx. KRW 500 million each year to boost the safety capabilities of our suppliers. Additionally, we offer safety assessment consulting services to our internal suppliers through a contract with agencies designated by the Ministry of Employment and Labor (MOEL).



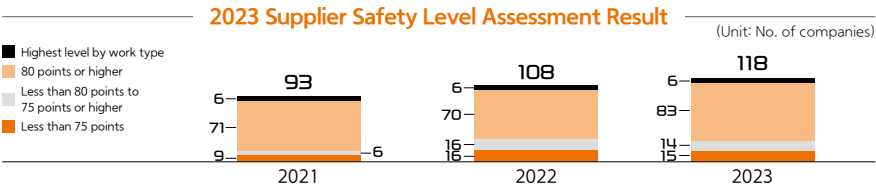
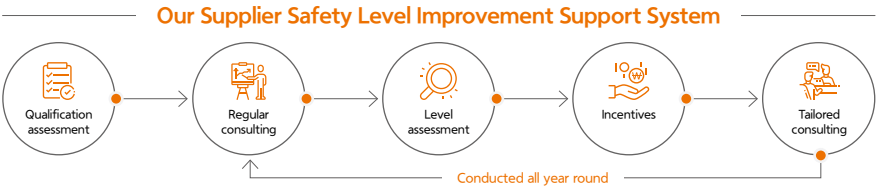
Support for Safety Training

Hanwha Ocean provides quality safety training to our entire members, including employees of internal suppliers, through specialized educational institutions designated as safety and health training agencies by MOEL. Specifically, we hired global coordinators who can provide translation and interpretation services into languages of seven countries, which account for 75% of our foreign workers, to support safety training and translation at our business sites.

Safety and health training activities	General activities including lectures on statutory safety training and safety and health training, operations, curriculum development, and program management	Preventing major accidents, raising safety awareness, and compliance-related activities
Global coordinator activities	Interpretation and translation of safety training and on-the-job requests, and data maintenance for foreign workers from 7 countries	Ensuring safety and quality, and providing support for early settlement

Safety and Health Level Assessment

Hanwha Ocean periodically conducts health and safety level assessments to evaluate the safety awareness of our suppliers and identify the current situation. The assessment is carried out based on HSE management performance, safety diagnosis of suppliers by professional organizations, and other items. For suppliers with poor assessment results, we make sure that they improve their voluntary performance of safety assessments by providing safety consulting services, intensive safety diagnosis, and practical guidance.



Safety and Health Meeting with Suppliers

At Hanwha Ocean, we hold a safety and health council meeting with representatives of our suppliers each month to share and discuss issues on safety, health, and environment. Additionally, we convene a monthly meeting with safety managers of our suppliers to listen to HSE-related grievances and explore solutions. Through these meetings, we aim to create a cooperative system to ensure workplace safety for all members.



Reward System

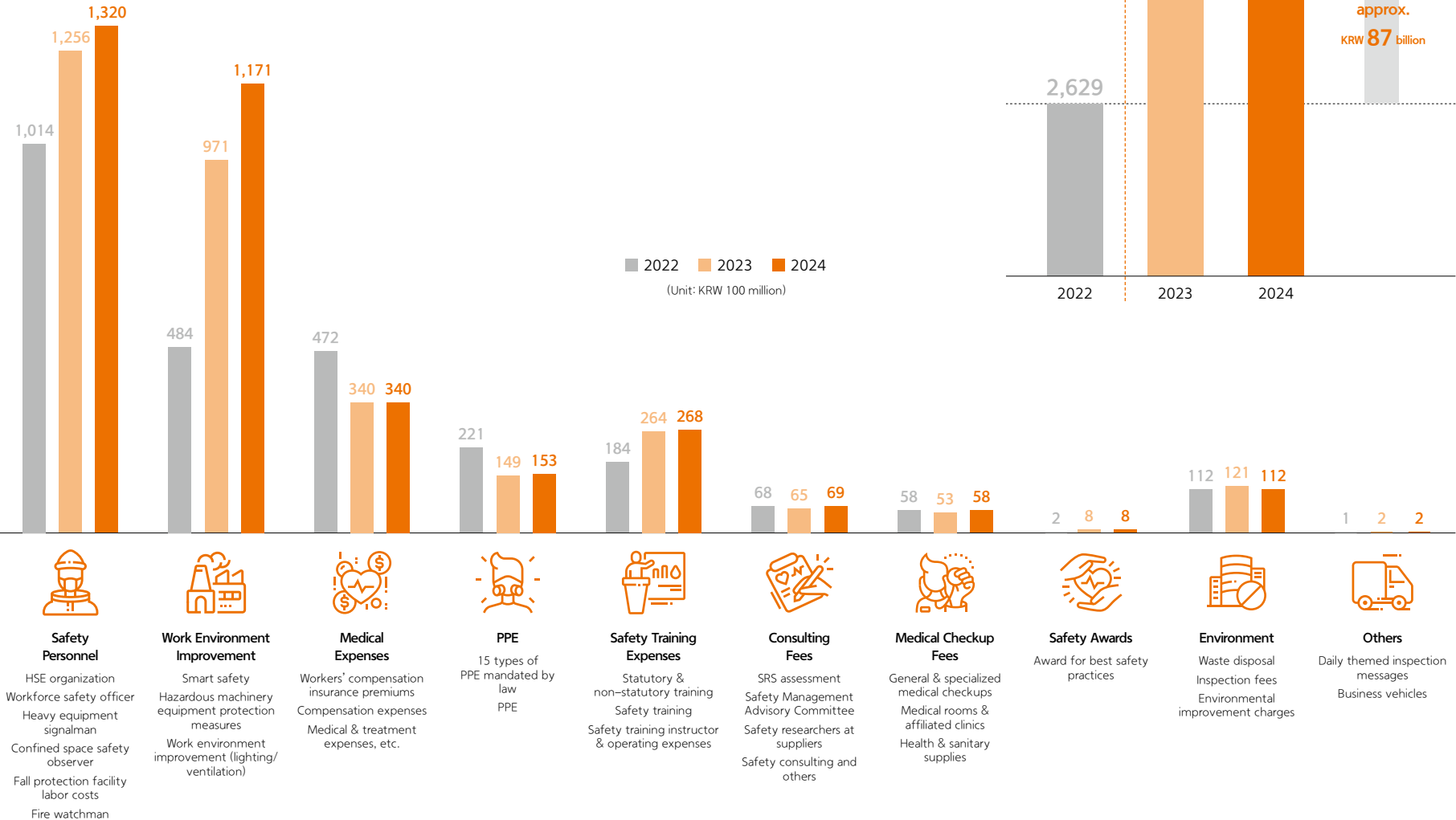
In 2023, Hanwha Ocean rewarded KRW 120 million to encourage all members (including employees of suppliers) to participate in HSE improvement activities. About 1,600 employees of suppliers participated in HSE improvement activities for the year.



1. Safety and Health

Investment in Safety and Health Management

Since its inception, Hanwha Ocean has endeavored to expand our safety and health management budget in earnest, and we intend to inject KRW 350 billion in 2024, an increase of approx. KRW 87 billion from 2022. In particular, we carry out large-scale investments in smart safety (KRW 63 billion for 3 years) and aging facilities and equipment (KRW 320 billion for 3 years), both of which have been underperforming. Additionally, we spare no effort to build smart shipyards with enhanced safety.



Labor–Management Relations

Labor–Management Council

Since our inception in 2023, Hanwha Ocean has been holding labor–management council meetings under the Act on the Promotion of Employees’ Participation and Cooperation so as to strengthen trust and cooperation between labor and management. The labor–management council discusses issues such as management performances and human resources management plans. Agendas raised by the company and issues discussed by the union are also shared during the meetings. The council focuses on increasing welfare benefits for employees to improve labor–management relations. Matters discussed between labor and management are applied to all employees.

Labor–management Joint Declaration Ceremony for Shared Growth

In May 2023, Hanwha Ocean held a labor–management joint declaration ceremony for shared growth with the Daewoo Shipbuilding and Marine Engineering branch of the Korean Metal Workers’ Union at Geosje Shipyard. The objective was to ensure the company’s sustainable development and the employment security of our employees based on mutual trust and understanding between labor and management. Hanwha Ocean agreed to succeed the existing collective agreement, implement the long–term service system of the Hanwha Group, and share the results of our mid–to long–term company development policies. We also promised to improve working conditions and treatment. On the other hand, the labor union pledged to build a reasonable labor–management relationship, and both management and labor affirmed their commitment to work together to prevent occupational accidents and implement smart sites. As such, Hanwha Ocean is joining hands with the labor union to ensure that the company, employees, and local communities grow together based on reasonable labor–management relations.

Labor Union

Hanwha Ocean guarantees employees’ rights to freedom of association and collective bargaining in order to strengthen trust between labor and management. To improve the working conditions of our employees, we renew collective bargaining agreements every two years, carry out wage negotiations each year, and operate the labor–management council for communication and discussion.

Indicator	Unit	2020	2021	2022	2023
People eligible for union membership	Persons	5,478	4,925	4,783	4,737
Union membership rate	%	100	100	100	100
Collective bargaining agreement coverage rate	%	59	57	58	60
No. of labor–management council meetings held	Meetings	1	1	–	1

Types of Labor–Management Consultative Bodies	Major Discussion Items	Frequency
Collective bargaining	Matters related to wages, benefits, and working conditions	Collective bargaining: Once every 2 years Wage negotiation: Each year
Labor–management council	Matters pursuant to Article 20 (Matters for Consultation) of the Act on the Promotion of Employees’ Participation and Cooperation: productivity improvement, performance allocation, worker recruitment, placement, and training, etc.	Quarterly
Serious Grievance Handling Committee	Matters related to handling serious grievances	As necessary
Labor–Management Relations Improvement Committee	Improving production safety, welfare, and labor relations and systems	As necessary
Welfare Improvement Promotion Committee	General matters agreed between labor and management regarding employee welfare benefits: meals, dormitories, working clothes, commuter buses, rest rooms, shower rooms, etc.	As necessary
Occupational Safety and Health Committee	Consultation on ways to promote occupational safety and health	Quarterly

3. Talent Management

Talent Development

Hanwha Ocean developed an education and training system to achieve the company’s management goals under Hanwha’s core values of “challenge, dedication, and integrity.” We also secured a talent development model by linking the employee competency system with the training system. In 2024, we will establish a systematic education and training roadmap to foster talented employees in the short- and medium-term. We conducted an employee satisfaction survey to assess their level of satisfaction every time we provide training by position. As such, we work hard to improve our training programs by managing the performance indicators of the programs.

Training System

As of 2023, Hanwha Ocean has training programs tailored for each position such as associate, senior, and manager.

Indicator	Leadership & Tiered Training	On-the-Job Training	Specialized Training	Career-Parallel Training
Manager	<ul style="list-style-type: none">– Training for new team leaders & part leaders– Training for team leaders & part leaders– Coaching program for team leaders	<ul style="list-style-type: none">– OJT for consortium business– Business language program– Training for in-house instructors– Online training– Training organized by functional organization– Outsourced training	<ul style="list-style-type: none">– Pre-retirement training– Re-employment support services– Training for underperformers	<ul style="list-style-type: none">– Domestic and overseas study and training
	<ul style="list-style-type: none">– Training for key office workers– Training for expatriate candidates– Training for promotion– Onboarding for new hires– Onboarding for transferees between companies	<ul style="list-style-type: none">– OJT for consortium business– Business language program– Training for in-house instructors– Online training– Training organized by functional organization– Outsourced training	<ul style="list-style-type: none">– Pre-retirement training– Re-employment support services– Training for underperformers	<ul style="list-style-type: none">– Domestic and overseas study and training
	<ul style="list-style-type: none">– Training for key office workers– Training for expatriate candidates– Training for promotion– Onboarding for new hires– Onboarding for transferees between companies	<ul style="list-style-type: none">– OJT for consortium business– Business language program– Training for in-house instructors– Online training– Training organized by functional organization– Outsourced training	<ul style="list-style-type: none">– Pre-retirement training– Re-employment support services– Training for underperformers	<ul style="list-style-type: none">– Domestic and overseas study and training
Senior	<ul style="list-style-type: none">– Training for key office workers– Training for expatriate candidates– Training for promotion– Onboarding for new hires– Onboarding for transferees between companies	<ul style="list-style-type: none">– OJT for consortium business– Business language program– Training for in-house instructors– Online training– Training organized by functional organization– Outsourced training	<ul style="list-style-type: none">– Pre-retirement training– Re-employment support services– Training for underperformers	<ul style="list-style-type: none">– Domestic and overseas study and training
Associate	<ul style="list-style-type: none">– Onboarding for new hires– Onboarding for transferees between companies– Onboarding for new office workers	<ul style="list-style-type: none">– OJT for consortium business– Business language program– Training for in-house instructors– Online training– Training organized by functional organization– Outsourced training	<ul style="list-style-type: none">– Pre-retirement training– Re-employment support services– Training for underperformers	<ul style="list-style-type: none">– Domestic and overseas study and training

Participation Status

As of 2023, training hours per employee were 28 hours, achieving a relatively high satisfaction score of 4.65 points.

Indicator	Unit	2020	2021	2022	2023
Training	Training hours per employee	Hours	41.30	45.00	87.02
	Training cost per employee	KRW 1,000	282	246	323
	Satisfaction	Points	4.49	4.41	4.49

Key Training Programs

At Hanwha Ocean, we have a range of training programs in place to help employees improve their job expertise, and we offer opportunities to all employees, including contract workers, to participate in our training programs. We also provide job training and in-house instructor training programs with the aim of strengthening the competitiveness of our workforce in response to changing business environment. We newly opened a post-merger integration (PMI) program with the launch of Hanwha Ocean in 2023 to help our employees adapt to changes and understand the group and its businesses. Through the program, we assisted them in adapting to the new environment quickly and understanding the company’s vision and strategy.

Program for Adapting to Change (PMI program)

In the second half of 2023, Hanwha Ocean conducted a program for adapting to change (PMI program: Start with Hanwha) targeting 3,762 office and technical workers over a six-month period to help them better understand the new group and businesses and adapt to changes more easily. Employees with a high level of understanding and loyalty to the Hanwha Group were selected and trained as in-house instructors, and a total of 69 in-house instructors provided the program in three courses. According to an employee satisfaction survey conducted after the PMI program, the majority of employees considered the new group and changes in vision as an opportunity for further positive change and growth.



3. Talent Management

PMI Program for All Employees

Indicator	M1. Reset the past	M2. Restart the present	M3. Rerise to the future
Objectives	<ul style="list-style-type: none"> Recognize the need for change and identify areas for change Reconsider profit and loss/cost mindset 	<ul style="list-style-type: none"> Understand the Hanwha Group's management philosophy and strengthen the sense of belonging among employees Explore directions for change and synergy 	<ul style="list-style-type: none"> A new vision with Hanwha Embedding change

Photos Taken During the Program



Improvement of Organizational Culture

Hanwha Ocean strives to promote mutual understanding and communication between management and employees and among employees through diverse communication channels and programs. We renewed our previous activities, such as the Junior Board and mutual understanding workshops, to improve corporate culture, and created new programs such as Business & Culture Partner (B&CP) and town hall meetings. B&CP is an activity designed to spread the company's strategy and directions throughout the entire organization aimed at building consensus among employees and supporting open communication within the organization. Town hall meetings provide an opportunity for interactive communication between management and employees to help employees better understand the strategies of each business division. At Hanwha Ocean, we promote management-employee communication by adopting various measures such as online channels, direct communication, and small and large meetings.

	Classification	Description
Management-employee communication	CEO Speech	<ul style="list-style-type: none"> Building a consensus among employees on the corporate vision and directions through the CEO's letter, New Year message and New Year's Eve toast, letter of encouragement, safety message, and so on
	Town hall (Talk-on) meeting	<ul style="list-style-type: none"> A talk show-style meeting where the head of each business division meets with employees and communicate directly <ul style="list-style-type: none"> Objectives: Share the vision and strategies of the business division, create a sense of unity through communication, and understand the unit's goal
	Management briefing	<ul style="list-style-type: none"> Interview with executives on quarterly performance, and spreading the interview contents through in-house newspaper (Ocean View) and broadcasting (Hanwha TV)
Business & Culture Partner Operations		<ul style="list-style-type: none"> Disseminating the corporate vision and strategies throughout the entire organization and fostering a healthy organizational culture where employees are aligned with its direction <ul style="list-style-type: none"> Roles: Operation of open communication channels and promotion of innovative changes within the organization Members: 21 from the Commercial Ship Division and 17 from the Product Strategy & Technology Center Activities: Regular meetings (once every two months); participation in workshops, organizing meetings (town hall meetings) by business division, department, and team; leading communication and change management activities; and sharing the activity result and information through communication channels
Positive employee experience program	Photo Studio in Ocean	<ul style="list-style-type: none"> Providing a new experience for employees to take profile and group photos to capture memories with their colleagues
	Mutual understanding workshop	<ul style="list-style-type: none"> e-DISC diagnosis and understanding the self, colleagues, and characteristics of each behavioral type based on the diagnosis Identifying the strengths of oneself and colleagues, establishing work directions, and finding ways to overcome and maximize obstacles by organization
	Communication Class	<ul style="list-style-type: none"> A moment of expressing gratitude and relaxed communication among colleagues



3. Talent Management

Photo Studio in Ocean



Management Briefing



2023 Town Hall Meeting



Work-life Balance

Hanwha Ocean supports our employees to strike a balance between work and family life through pre- and post-natal leave, parental leave for spouse's childbirth, reduced working hours for childcare, and parental leave to ensure maternity protection as well as a staggered commute system.

Indicator		Unit	2020	2021	2022	2023
Work-life balance	Flextime system usage rate	%	8.8	12.2	22.1	20.7
	Total	Persons	107	180	265	153
No. of people who used parental leave	Male	Persons	77	153	213	118
	Female	Persons	30	27	52	35
Employees who returned to work after parental leave	Male	Persons	76	150	200	92
	Female	Persons	23	24	46	27
Employees who worked for a year or more after returning to work	Male	Persons	74	143	189	143
	Female	Persons	23	22	43	18

Staggered Commute System

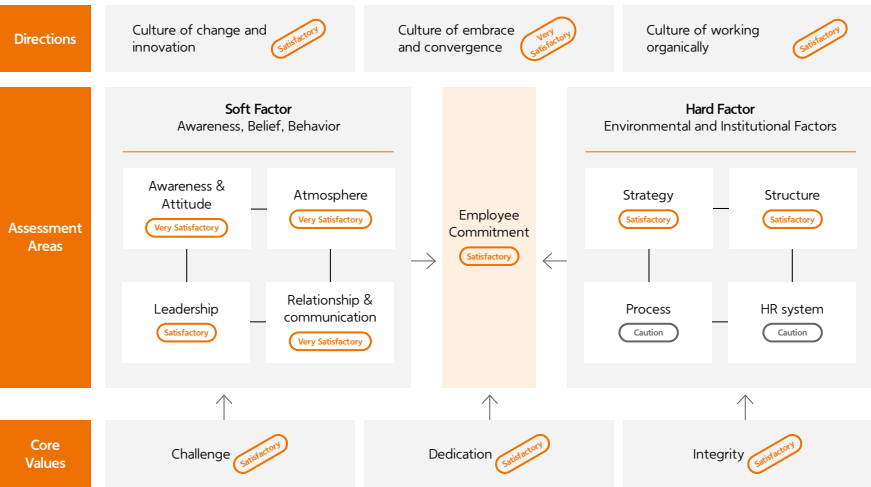
Hanwha Ocean operates a staggered commute system to create a flexible work culture, improve the autonomy and sense of responsibility among employees, and enhance their work engagement and work-life balance. The staggered commute program allows employees to arrive at work at 7, 8, or 9 AM instead of their conventional working hours, helping them strike a work-life balance and take control of their working hours. With the system in place, our employees feel more satisfied at work and can increase a sense of responsibility for their work. By giving them the flexibility to work when they are most productive, it can also contribute to increasing their work efficiency. The staggered commute system, which is available to all employees, was actively used by approx. 47% of our employees as of 2023.

3. Talent Management

Organizational Culture Assessment Survey

The Hanwha Group conducts an organizational culture assessment survey for employees each year to identify the strengths and areas of improvement regarding the organizational culture. The survey largely consists of 56 diagnostic questions covering organizational commitment and eight areas affecting organizational commitment (leadership, atmosphere, awareness & attitude, relationship & communication, HR system, strategy, structure, and process). In 2023, Hanwha Group carried out the survey with 3,600 participants (response rate of 92.0%) among our 3,911 executives, office workers, directors, and managers. All participants assessed the company's current organizational culture objectively through a comprehensive and in-depth diagnosis. We intend to improve and complement the factors that reduce employees' commitment to work and make them feel more satisfied at work. Moreover, as part of our initiative to transform into a healthy and robust organizational culture, we will carry out follow-up activities to change our culture in 2024 based on the diagnosis result.

Organizational Culture Assessment Survey Results



* Survey participation rate
The 2023 survey was carried out with 3,600 participants (response rate of 92.0%) among our 3,911 executives, office workers, directors, and managers.

Welfare Benefits

Hanwha Ocean provides various support and welfare systems as well as related facilities for the welfare of our employees.

Indicator	Unit	2020	2021	2022	2023
Financial assistance for children's tuition fees	KRW 1,000	10,824,543	10,143,124	9,436,989	9,380,131
Medical expense coverage	KRW 1,000	8,557,247	8,543,110	8,780,223	8,862,791
Congratulations and condolence allowance	KRW 1,000	722,300	618,900	745,460	664,800

Classification	Program	Description
Housing support	Housing loans	Assistance in connecting with financial institutions for home purchases and rentals
	Dormitory & Private residence	Supporting dorms and rental apartments to help employees with housing costs
Family support	Financial assistance for children's tuition fees	Financial assistance for preschool, middle school, high school, and college education of employees' children
	Medical expenses	Support for hospitalization and surgical expenses, and dental prosthetics cost for employees and their family
	Group insurance	Subscription of group insurance for all employees to help them pay for future expenses caused by illness or disability (death, cancer, disability, guaranteed issue, etc.)
	Congratulations and condolence allowance	Provision of congratulatory/bereavement leave for employees who lost their spouse, relatives, and other family members; provision of vacation allowances
	Medical checkup	Annual medical checkup (comprehensive biannual checkup)
	Childcare facilities	Childcare center (2 locations)
	Joint wedding ceremony	Financial support for weddings and honeymoon; full payment for a gold ring
Leisure assistance	Long-term service	Provision of a long-term service leave and vacation allowances to boost the morale of employees who served for a long time: 37.5 g gold and 75 g gold are awarded to those who have worked for more than 10 years and 20 years, respectively
	Self-development	Provision of allowance for self-development and lectures for competency development
	Accommodation and recreational facilities	Support for condominiums and recreational facilities
	Labor Day	Provision of gifts
Others	Commuter buses, round-trip buses during the holiday season	Operation of commuter buses (Okpo Shipyard, Siheung R&D Campus), buses during Seollal and Chuseok holidays, and Seoul-bound buses (weekends)
	In-house employee welfare fund	Provision of in-house employee welfare funds to reduce their grievances, support the rehabilitation of their disabled children, and encourage sports and cultural activities
	Employee Stock Ownership Association	Operation of an employee stock ownership plan to help them build wealth, participate in management, and foster a sense of ownership



4. Human Rights Management

Hanwha Ocean strives to build a culture of respect for human rights within the company to ensure that all employees' human rights are protected in various ways, including operating an anonymous reporting center, providing human rights education, and managing human rights risks. Hanwha Ocean operates an anonymous reporting center (Shinmungo) where anyone, including employees and suppliers, can report workplace harassment and sexual harassment issues with confidence. We also run an in-house psychological counseling program at all times to support the recovery of affected employees, as well as a review committee composed of members recommended by the labor union and lawyers to resolve cases in a fair manner.

Human Rights Education

At Hanwha Ocean, we have a number of human rights education programs in place to create a culture of respect for human rights within the company and encourage all employees to practice human rights management. Our programs include sexual harassment prevention, workplace bullying prevention, and disability awareness. Human rights training hours per employee, including statutory training, are 4 hours.

Indicator	Unit	2020	2021	2022	2023
Training hours per employee	Hours	4	4	4	4
Education on sexual harassment prevention	Hours	1	1	1	1
Education on disability awareness	Hours	1	1	1	1
Others	Hours	1	1	1	1

Human Rights Education for Foreign Employees

Human rights education for foreign workers is also available at Hanwha Ocean in addition to the statutory education to foster mutual respect and understanding between local and foreign workers. To help Korean employees understand multiculturalism and remove their prejudice against migrant workers, we focus on educating them on understanding the challenges that foreign workers may face in unfamiliar environments. In 2023, we held four face-to-face sessions for a total of 273 team leaders, department heads, and representatives and administrators from our suppliers, and we expanded the scope of education to include all the employees of Hanwha Ocean and suppliers on a regular basis. Through this program, we extend our support to our suppliers to encourage their participation in human rights education for foreign workers as well.

Human Rights Risk Management

Hanwha Ocean works to prevent human rights violations and mitigate related human rights risks that occur during its business operations. In respect to the human rights of all our stakeholders, we conduct human rights impact assessments at all our worksites. We make sure no discrimination against minority groups takes place within the organization, and we strive to protect the rights of our employees, especially foreign workers and persons with disabilities. Additionally, we strictly prohibit sexual harassment and all types of bullying in the workplace to ensure that all members work in a safe and respectful environment. In the event of human rights violations, we thoroughly protect the identity of the victim and take corrective or disciplinary actions against the perpetrator. We strictly ban inhumane treatment such as human trafficking, forced labor, and child labor, and protect vulnerable stakeholders such as pregnant women and persons with disabilities. We ensure compliance with local labor laws and regulations of countries where our business sites are located. Moreover, we have different measures in place to support for stable life and early adaptation of foreign workers from various countries who are vulnerable to human rights and safety.

Activities to Support the Lives of Multinational Workers	Details
Accommodation improvement	Renovated 9 dormitories at Geoje Shipyard
Distribution of Shipyard Life Guidelines	Developed and distributed guidelines containing tips and information on various amenities at the shipyard such as banks and medical rooms (translated in 7 languages)
Provision of diverse dishes	Provided local diets from 7 countries in dormitory cafeterias and indicated the types of meat (pork, beef, etc.) on meal plans

Human Rights Protection Programs

Hanwha Ocean operates a coordinator program to reach out our hands to multinational workers who are working in an unfamiliar culture and environment, and are exposed to a high risk of safety accidents and potential human rights violations. In the coordinator program, multinational workers who are already accustomed to Korean culture and language are matched with new foreign workers to serve as their mentors. So far, we have appointed eight coordinators from seven countries in total, including Nepal, Uzbekistan, and Vietnam. The coordinators provide Korean language education, culture and safety education, and tailored care for the safe and healthy living of multinational workers. They also engage in interpretation and translation services for safety training materials, and serve as on-site mentors of each group to actively take part in ensuring the safety of multinational workers at business sites. These coordinators also serve as communication channels where multinational workers can deliver their grievances to the company and make suggestions for their settlement. These efforts contribute to better communication with multinational workers and more access to safety training, expanding a positive impact on human rights and the safety of the company.

5. Supply Chain Management and Shared Growth

Hanwha Ocean pursues shared growth with our suppliers to achieve the goal of sustainable development and creating a fair society. We support our suppliers in various aspects, including finance, education, and technology, so as to establish a sound transaction practices and boost their competitiveness. Based on our support, we aim to develop a healthy corporate ecosystem that grows together with our suppliers.

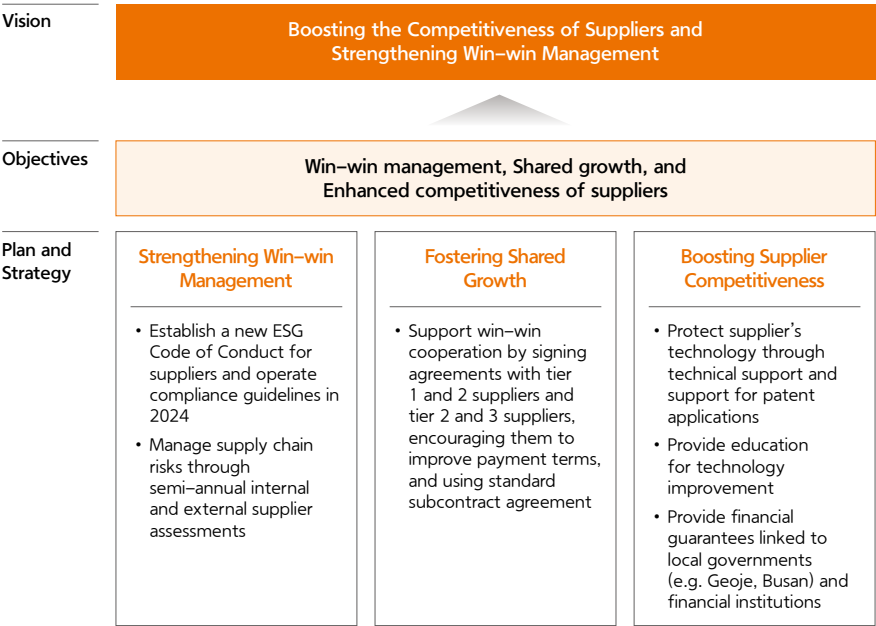
Supply Chain Management System

Hanwha Ocean intends to create a sustainable supply chain with the vision of “building a competitive corporate ecosystem.” In line with this, we operate a supply chain management system to identify key suppliers and manage suppliers with high risks. To manage the supply chain in consideration of business characteristics, we have procurement departments in each business division to promote efficient supply chain management, and the Labor-Management Cooperation Office (executive-level executives) in Geosje Shipyard is committed to forming fair and reasonable business partnerships with internal and external block manufacturing suppliers. In addition, we formed a task force for shared growth led by the procurement organization, the Labor-Management Cooperation Office, and the ESG Secretariat of each business division to implement financial, technical, and institutional support activities. Moreover, we developed communication programs to listen to and reduce grievances of small- and mid-sized suppliers and help them secure global competitiveness.



Supply Chain Management Strategy

Hanwha Ocean aims to reinforce the competitiveness and win-win management of our suppliers for sustainable supply chain management. In terms of win-win management, we encourage our suppliers to actively participate in ESG activities. Our goal is to increase the ESG assessment rate for our key suppliers to 100% by 2030. In 2024, we plan to formulate a new ESG Code of Conduct encompassing human rights, safety and health, environment, ethics, and business management so that all suppliers can agree to and comply with it.





5. Supply Chain Management and Shared Growth

Supplier Regular Evaluation

Hanwha Ocean carries out regular evaluations of our major internal and external suppliers at least once each year. The evaluation is conducted in four areas of production, quality, safety, and finance to assist their voluntary effort to improve their competitiveness. The implementation of supplier ESG assessment is also covered in the periodic evaluation.

Area	Evaluation Items	Points
Production	Process compliance rate, Contribution to output, Production target achievement rate, Volume transfer management, etc.	30
Quality	On-site frequent inspections, quality re-inspection rate, certification (ISO 9001), zero tolerance (critical quality incident management), quality improvement activities	20
Safety	Safety accident management, on-site safety activities of supervisors, TBM risk assessment, safety inspection, safety training, self-improvement activities, etc.	20
Finance ¹⁾	Credit ratings, cash flow ratings, ESG management activities (additional points for conducting ESG assessment through an external agency), loans and allowances for doubtful accounts, etc.	30

1) Additional points are given in "finance" for companies that conducted ESG assessment on our own.

According to the assessment result, Hanwha Ocean categorizes suppliers from S to D for incentives and penalties, etc. We award outstanding suppliers and offer them with ESG consulting services such as ESG level diagnosis and on-site due diligence. To ensure that our supply chain is managed with high quality, we impose a penalty of terminating transactions with suppliers recording poor performance and are rated D more than two times.

	Indicator	Unit	2020	2021	2022	2023
Total suppliers	Total suppliers	Companies	172	178	194	191
	Internal suppliers	Companies	111	108	118	127
	External suppliers	Companies	61	70	76	64
Newly registered suppliers	Newly registered suppliers	Companies	5	13	46	31
	Internal suppliers	Companies	5	6	19	10
	External suppliers	Companies	0	7	27	21
	Key suppliers identified	Y/N	Y	Y	Y	Y
Suppliers with high risks	Suppliers subject to management	Companies	17	24	28	27
	Internal suppliers	Companies	16	21	25	23
	External suppliers	Companies	1	3	3	4
	Percentage of suppliers subject to management	%	10	13	14	14
	Internal suppliers	%	14	19	21	18
	External suppliers	%	2	4	4	6

New Supplier Registration Process

Hanwha Ocean reviews the qualifications of new suppliers before engaging in business transactions with them. We evaluate them in the same four areas (quality, safety, management, and production) as the regular evaluation of existing suppliers. During document screening, we consider basic requirements such as corporate credit rating, financial soundness, existence of unethical practices, and ISO 9001 certification. In the second round of evaluation, we review their business qualifications by evaluating related organizations in safety, quality, production, and management. We also require new suppliers to submit the ISO 14001 certificate for environmental management systems, and we carry out an assessment of ESG factors in consideration of environmental criteria as well as quality and production standards. Our plan for 2024 is to establish and operate an internal review committee for subcontracting transactions to ensure procedural fairness in supplier selection and registration.

Supplier ESG Education

Hanwha Ocean selects outstanding suppliers each year after supplier regular evaluation and provides free ESG consulting services to help them establish ESG management practices and mitigate ESG risks in our supply chain. In 2023, we selected two outstanding suppliers (one internal and one external) and conducted a basic ESG assessment and consulting on environmental, social, and governance issues. As for 2024, we plan to connect the consultation results to an advanced assessment.

5. Supply Chain Management and Shared Growth

Shared Growth Programs

Special Fund for Shared Growth

Hanwha Ocean joined hands with the Gyeongsangnam-do Provincial Government and Busan Metropolitan Government to raise a special fund worth KRW 5 billion for shared growth with the shipbuilding industry. We delivered the fund to shipbuilding and offshore equipment suppliers facing a shortage of work and financial difficulties to help them overcome the challenges and restore their activities in the industry.

Creation of a Specialized Complex for Root (Ppuri) Industries

At Hanwha Ocean, we provide information and encourage our suppliers to register for a specialized complex for root (ppuri) industries (Okpo Industrial Complex for Root Industries) to ensure shared growth between large companies and small and medium-sized enterprises (SMEs). A total of 54 companies belonged to the six major root processes including welding, surface treatment, casting, molding, plastic processing, and heat treatment among our internal suppliers registered as of 2023. We aim to enhance their competitiveness and develop local industries in parallel through the establishment of the HSE training center, renovation of shared amenities, and implementation of industry-academia R&D projects.

Support for Joint Labor Welfare Fund for Suppliers

From 2020, Hanwha Ocean signed an MoU with the Gyeongsangnam-do Provincial Office, declaring active cooperation for the welfare of internal suppliers' employees engaging in the shipbuilding industry. Since then, we have been taking the lead for shared growth for shipbuilding suppliers through the Joint Labor Welfare Fund. The fund lays the foundation for implementing various welfare schemes such as housing subsidies for suppliers' employees, financial assistance for children's tuition fees, scholarships, and livelihood funds. In 2023, we contributed KRW 2 billion to the Joint Labor Welfare Fund and raised KRW 5.4 billion in total. We decided to contribute another KRW 2 billion to the Fund in 2024, which was approved by the board in April 2024.

New Technology Patent Applications of Suppliers

Hanwha Ocean provides financial support for patent applications regarding technologies jointly developed with its suppliers. We provided KRW 27.41 million for 25 patents in 2023, and we plan to expand the support to KRW 30 million for 30 patents in 2024.

Supplier Open Recruitment System

Hanwha Ocean ensures fairness and transparency in the selection of outstanding suppliers. Accordingly, we implement a pooling system of pre-qualified suppliers through open recruitment each year. For our 2023 open recruitment, we added 23 new internal suppliers and four external suppliers to the pool.

Employee Retention Support for Suppliers

From 2021, Hanwha Ocean established an employee retention support policy for suppliers to prevent employee attrition. Since then, we have provided training venues, supported their institutional responses, and shared the suppliers' contributions for employment retention. In 2023, we saw an increase in the number of employees from about 11,700 to 18,000 (approximately 6,300 increased), demonstrating our competitive edge in achieving shared growth with our suppliers.

Localization of Equipment

Hanwha Ocean collaborates with local equipment providers in an effort to produce equipment with our own technology and reduce supply chain risks.

Supplier ESG Support

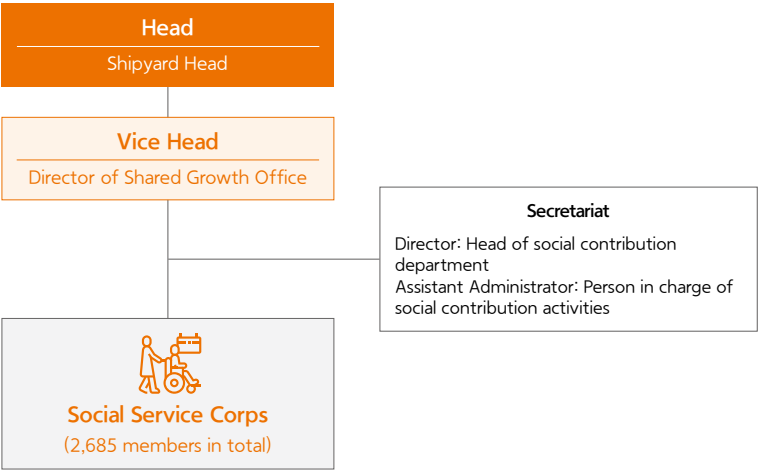
Hanwha Ocean provides support for basic ESG assessments to our internal and external suppliers selected with their outstanding performance after a comprehensive supplier evaluation to help them achieve ESG management independence. We plan to support them in conducting an in-depth diagnosis in 2024.

	Indicator	Unit	2020	2021	2022	2023
Support amount	Financing and funding	KRW 100 million	19	60	10	20
	Human rights & ethical management guidelines	Y/N	Y	Y	Y	Y
Support project	Technology development support and technology protection program	Y/N	Y	Y	Y	Y
	Employee job competency development training	Y/N	Y	Y	Y	Y

6. Coexistence with Local Communities

Community Coexistence System

As part of the “Hope the 1990s” management innovation movement launched in 1993, Hanwha Ocean formed a social volunteer group centering on our employees and constantly implemented a wide range of social service activities for local communities. Our activities include helping those in need, environmental cleanup activities, sponsoring welfare facilities, building facilities, serving people with intellectual and developmental disabilities, and donating sports equipment. Our volunteer groups are actively engaged in carrying out activities in various fields such as sponsoring children with leukemia. To implement such activities in a more organized and systematic manner, we launched the official Social Service Corps in 2023.



Social Service Corps	Objectives	Members
Volunteer group	Engage in social contribution activities to support the underprivileged	1,300 persons
The Sound of Sprouts	Engage in volunteer work to help children suffering from leukemia and cancer	724 persons
Cham Love Welfare Association	Share the joy of life through gatherings for the underprivileged	481 persons
Technology Sharing Volunteer Group	Create a sound community culture through volunteering activities	90 persons
Hope Volunteer Group	Share hope through volunteering activities at welfare facilities	30 persons
Ocean Cleaning Volunteer Group	Preserve marine environments through underwater cleanups	40 persons
Adamjaengi	Improve the quality of life of local residents through voluntary mural painting	20 persons

Community Engagement Roadmap

Hanwha Ocean plans to develop a mid-to long-term roadmap for community engagement through 2024 and manage our activities annually.

Classification	2023	2024
Annual initiatives	<ul style="list-style-type: none">• Implement social contribution activities under the master plan for social contribution activities• Develop community engagement programs for shared growth• Offer programs to encourage employees' participation in social contribution activities<ul style="list-style-type: none">– Exchange with other companies and organizations, use apps, etc.• Maintain and improve existing programs<ul style="list-style-type: none">– Social contribution calendar, donations, etc.	<ul style="list-style-type: none">• Form partnerships with NGOs and civic organizations on social contribution activities• Further enhance community engagement programs for shared growth• Offer programs to encourage social contribution activities with local residents• Maintain and improve existing programs



6. Coexistence with Local Communities

Social Contribution Activities

Technical Training Center

Hanwha Ocean recruits technical interns each year to provide free technical training programs that support the development of specialized personnel in the local community. The courses include CO₂ welding, LNG carrier invar welding, hull assembly and production. Participants are provided with training allowances during the period. Those who showed outstanding performance are given opportunities to work at our best suppliers after completing the programs. In 2023, 2,725 people applied for technical training, with 438 people ultimately completing the program.

Shipyard Tour Program

Hanwha Ocean operates a shipyard tour program each year to promote industrial tourism at the Geoje Shipyard. Visitors can take a tour to our facilities, including 4.9 million m² of land, the world's largest 1 million-ton dock, and a 900-ton Goliath gantry crane. As of 2023, we recorded 13,527 visitors in the Okpo Shipyard, providing them an opportunity to better understand the shipbuilding industry through the shipyard tour program.

Scholarships for Local Educational Institutions

Hanwha Ocean provides scholarships to educational institutions to support quality education for children and youth from vulnerable groups within the region. In 2023, we provided scholarships worth KRW 11.8 million to 69 local educational institutions, including elementary schools, middle schools, high schools, universities, and special needs schools. We will remain dedicated to helping out children and youth in the community to boost their morale and achieve their dreams so that they can pursue their studies and become healthy members of society in the future.

	Indicator	Unit	2020	2021	2022	2023
Scholarship	Elementary schools	KRW 1,000	3,700	3,800	4,000	3,800
	Middle schools	KRW 1,000	3,800	3,800	3,800	3,800
	High schools	KRW 1,000	3,000	3,000	3,000	3,000
	Universities	KRW 1,000	600	600	600	600
	Special needs schools	KRW 1,000	600	600	600	600
Total		KRW 1,000	11,700	11,800 ¹⁾	12,000 ¹⁾	11,800

1) Corrected errors in the previous year data.

Employee Volunteering Activities

Hanwha Ocean operates our own volunteer organization, the Social Service Corps, and 830 employees voluntarily engage in activities such as volunteer work in a farming community, providing necessities for the poor, repairing houses, serving meals at welfare facilities, bathing persons with disabilities, cleaning up the environment, and providing financial assistance for tuition fees. We provide financial support to promote the volunteering activities, and award individuals, groups, suppliers, and clubs in recognition of their outstanding social contribution activities each year. Also, we continue to expand voluntary donations from employees and the company through the employee donation program (donating KRW 11,004 each month), exemplary activities of the leadership, and charity bazaar each year.

Indicator	Unit	2020	2021	2022	2023
No. of participating employees	Persons	2,111	1,167	785	830
Total volunteering hours	Hours	8,719	6,275	3,910	4,205
Volunteering hours per employee	Hours	4.1	5.4	5.0	5.1

1. Sound Corporate Governance

Hanwha Ocean operates the BoD fairly and transparently to establish sound corporate governance. Matters concerning the BoD, such as the appointment of directors, resolutions, and committees, are handled in accordance with the Articles of Incorporation and the BoD regulations, and all board activities are disclosed in our business report. Our BoD of Hanwha Ocean is chaired by the CEO in order to resolve various issues discussed by the board efficiently and incorporate them into management. The board, as the highest decision-making body, also makes decisions on the company’s mid-to long-term strategy, major investment agenda items, and ESG, among others.

Composition of Board of Directors

All directors of Hanwha Ocean meet the qualifications required by relevant laws and regulations, and the Articles of Incorporation. Outside directors consist of experts with practical experience and expertise in respective fields such as accounting, shipbuilding, law, and management. As of December 2023, our BoD is composed of nine members in total (3 inside directors, 1 non-executive director, and 5 outside directors) and meets the minimum statutory standards for outside directors under Article 542-8(1) of the Commercial Act.

Name	Classification	Gender	Age	Position*	Duration of Service (Months)	Expected Expiration Date of Term	Expertise	Career
Kwon Hyek-woong	Inside director	Male	63	CEO & Chairperson of the BoD	7	Date of the 25th General meeting of shareholders	General management	Former Support Division Manager, Hanwha Corporation
Kim Jong-seo	Inside director	Male	56	Representative member of the Outside Director Recommendation Committee	7	Date of the 25th General meeting of shareholders	General corporate management	Former director in charge of Hanwha Aerospace
Jung In-seop ¹⁾	Inside director	Male	54	ESG Committee member	7	Date of the 25th General meeting of shareholders	General corporate management	Former director in charge of Hanwha Aerospace
Kim Dong-kwan	Non-executive director	Male	40	-	7	Date of the 25th General meeting of shareholders	General corporate management	Former Strategy Division Director, Hanwha Corporation
Lee Sin-hyeong	Outside director	Male	56	Audit Committee member, Outside Director Recommendation Committee member, Internal Transaction Committee Chairperson	7	Date of the 25th General meeting of shareholders	Shipbuilding	Professor at the Dept. of Naval Architecture and Ocean Engineering, Seoul National University Former President of the Society of Naval Architects of Korea Former Lead Engineer, Fluent Inc. (USA)
Kim Bong-hwan	Outside director	Male	54	Audit Committee Chairperson, Outside Director Recommendation Committee member, Internal Transaction Committee member	7	Date of the 25th General meeting of shareholders	Accounting	Professor at the Graduate School of Public Administration, Seoul National University Former Financial City Director, Seoul Metropolitan Government Former Assistant Professor at the Dept. of Business Administration, American University (USA)
George P. Bush	Outside director	Male	47	-	7	Date of the 25th General meeting of shareholders	Law	Currently Partner at Michael Best & Friedrich LLP Former Founder, St. Augustine Partners Former Texas General Land Office Commissioner
Hyun Nak-hui	Outside director	Female	44	Audit Committee member, ESG Committee Chairperson, Internal Transaction Committee member	7	Date of the 25th General meeting of shareholders	Law	Associate Professor, Sungkyunkwan University Law School (34th class of the Judicial Research and Training Institute) / New York State Attorney (USA) Former Judicial Researcher, Supreme Court of Korea
Kim Jae-ik	Outside director	Male	61	ESG Committee member	7	Date of the 25th General meeting of shareholders	Management	Outside director at Dong In Entech Co., Ltd. Former CEO of KDB Infrastructure Asset Management Former Head of Risk Management Division, Korea Development Bank

1) Inside director Ryu Du-hyeong took the position of inside director Jeong In-seop in March 2024.

Board Skills Matrix

Inside Directors					Outside Directors				
Classification	Kwon Hyek-woong	Kim Jong-seo	Jung In-seop	Kim Dong-kwan	Lee Sin-hyeong	Kim Bong-hwan	George P. Bush	Hyun Nak-hui	Kim Jae-ik
Leadership	○	○	○	○	○	○	○	○	○
CEO experience	○	○	○	○					○
Global	○	○	○	○	○		○	○	
Industry	○	○	○	○	○				
Management & accounting	○	○	○	○		○			○
Policy & administration						○	○		
Law & regulation							○	○	
Year of appointment	2023	2023	2023	2023	2023	2023	2023	2023	2023
Independence					○	○	○	○	○
Nationality	Korea	Korea	Korea	Korea	Korea	Korea	US	Korea	Korea
Gender	Male	Male	Male	Male	Male	Male	Male	Female	Male
Activity Committee	BoD Chairperson	Representative member of Outside Director Recommendation Committee	ESG Committee		Audit Committee member, Internal Transaction Committee Chairperson,	Audit Committee Chairperson, Internal Transaction Committee member, Outside Director Recommendation Committee member, Recommendation Committee		Audit Committee member, Internal Transaction Committee member, ESG Committee Chairperson	ESG Committee

Ensuring Board Independence and Diversity

Hanwha Ocean reviews the qualifications of directors under Article 382(3) (Appointment of Directors, Relationship with Company and Outside Directors) and Article 542-8(2) (Appointment of Outside Directors) of the Commercial Act. Accordingly, we take actions to ensure fairness and independence by appointing directors through the general meeting of Shareholders. In terms of ensuring board diversity, we comply with Article 165(20) (Special Cases concerning Submission of Business Reports) of the Financial Investment Services and Capital Markets Act. Moreover, we do not set qualification restrictions on gender, age, region, nationality, and other factors when appointing directors. We appointed one female outside director at the 2023 general meeting of Shareholders to ensure diversity and secured expertise and accountability in various fields encompassing accounting, shipbuilding, law, and management.

1. Sound Corporate Governance

Operation of Board of Directors

Hanwha Ocean invites relevant employees or outside persons to attend the BoD meetings to collect their opinions and enable effective and in-depth discussions and decision-making. By doing so, we make sure the agenda items for the board or its committees are resolved under the BoD regulations. Furthermore, we ensure that the board maintains a substantial level of independence from the management and controlling shareholders, and effectively implements checks and balances on management.

Since the launch of Hanwha Ocean in May 2023, a total of nine BoD meetings have been held so far, and approximately 54 agenda items have been resolved and reported.

Indicator		Unit	2020	2021	2022	2023
Meeting and attendance ¹⁾	No. of meetings held	Sessions	12	13	16	9
	Attendance rate	%	98.8	97.8	94.3	93.8
	Attendance rate of outside directors	%	97.9	96.2	91.7	100.0
Opinions by agenda ¹⁾	Agenda for report	Items	22	21	23	0
	Agenda for resolution	Items	23	25	27	54
	Approved	%	98.5	92.6	98.9	100.0
	Opposed	%	1.5	5.7	0.5	0
	Reserved	%	–	0.7	0.5	0
ESG agenda ¹⁾	Climate change and environmental management performance	Cases	–	–	Y	Y
	Materiality assessment	Cases	–	–	Y	Y

1) Calculated after the launch of Hanwha Ocean in May 2023.

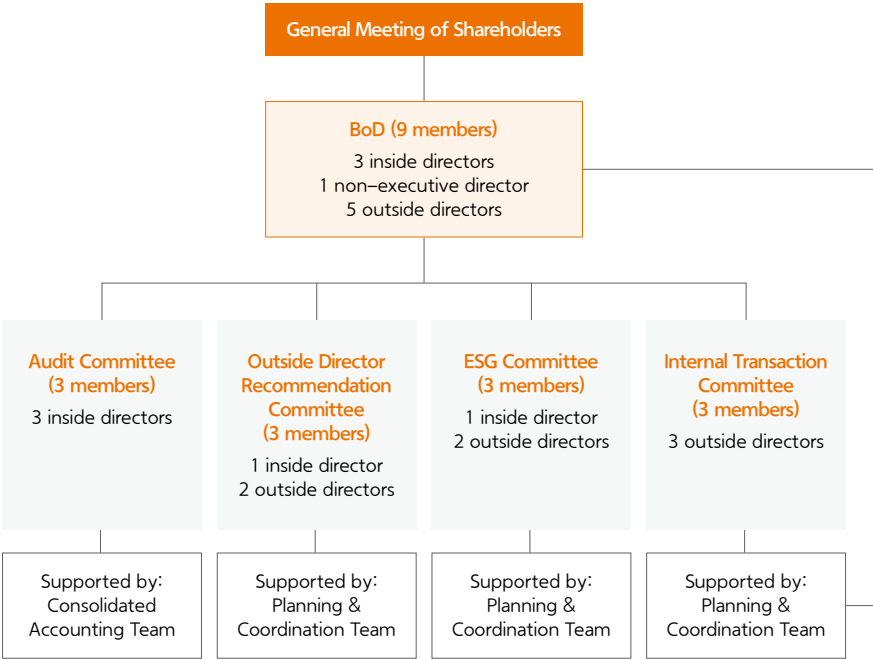
Directors Training

In 2023, Hanwha Ocean conducted the following programs for outside directors to help them conduct their role more efficiently.

Training Date	Training Provider	Attended Audit Committee Members	Training Content
Dec. 11, 2023	Samil PwC	Kim Bong-hwan	Korean governance system, Changes in the BoD for a desirable change
Nov. 8, 2023	Samil PwC	Kim Bong-hwan, Lee Sin-hyeong, Hyun Nak-hui	Roles and responsibilities of the Audit Committee
Jun. 21, 2023	Deloitte Korea	Kim Bong-hwan	Corporate Governance Development Center Seminar
Oct. 27, 2023	Hanwha Ocean	Kim Bong-hwan, Lee Sin-hyeong, Hyun Nak-hui, Kim Jae-ik	Hanwha Ocean's shipbuilding process for commercial ships, offshore business, and specialty ships, Understanding a smart shipyard

Board Committees

Hanwha Ocean's BoD comprises the Audit Committee, the Outside Director Recommendation Committee, the ESG Committee, and the Internal Transaction Committee as of December 2023, ensuring expertise and efficiency in decision-making.



Committee Meetings

Committee	Meetings Held	Agenda for Resolution/ Deliberation	Agenda for Report
Audit Committee	4	4	11
Outside Director Recommendation Committee	1	1	–
ESG Committee	2	2	–
Internal Transaction Committee	8	33	–



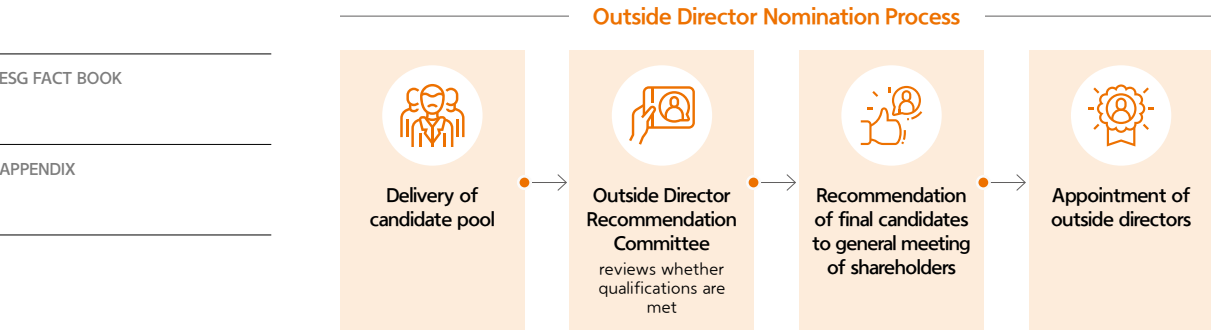
1. Sound Corporate Governance

Audit Committee

All of our Audit Committee members consist of three outside directors capable of building a system that can implement checks and balances on the overall management effectively. The committee carries out activities to supervise the business execution of directors and management, the selection of external auditors, and accounting audits in an independent and practical manner. The committee also reviews and approves the audit plan of the internal audit department. All the committee members have undergone audit-related education from a specialized agency.

Outside Director Recommendation Committee

The Outside Director Recommendation Committee is composed of one inside director and two outside directors. The committee carries out inspections and amendments under its principles of nominating outside directors, and implements procedures for recommending director candidates, as well as managing and verifying the candidate pool. A transparent board composition process is in place by appointing the final director candidates at the general meeting of shareholders.



ESG Committee

The ESG Committee consists of one inside director and two outside directors. The committee reviews and makes decisions on matters related to ESG strategies, plans, and investments to sustainability management by enhancing corporate value in terms of environment, society, and governance. It receives reports on ESG-related activities and performances.

A total of four meetings were held from 2023 to the first half of 2024. Following the establishment of its 2030 goal, the ESG Committee actively carries out activities by establishing plans for 2024 and reporting the results of materiality assessments.

Session	Date	Agenda	
		Classification	Description
ESG-1st	Jun. 23, 2023	Resolution	Appointment of the ESG Committee Chairperson
ESG-2nd	Dec. 19, 2023	Resolution	Approval of ESG 2030 goals
ESG-3rd	Jan. 19, 2024	Report	Report on the 2023 ESG management performance and the 2024 ESG plan
			Report on the establishment of 2024 ESG goals
			Approval of the 2024 ESG management plan
ESG-4th	Apr. 3, 2024	Report	Report on the ESG management performance for 1st Quarter and the ESG plan for 2nd Quarter
			Report on the materiality assessment results
			Report on the establishment of an ethics and compliance management assessment model

Internal Transaction Committee

The Internal Transaction Committee has three members in total, which are all outside directors. The committee examines large-scale internal transactions to enhance the transparency of corporate management through the inspection and monitoring of internal transactions among affiliates under the Monopoly Regulation and Fair Trade Act and its Enforcement Decree.

1. Sound Corporate Governance

Remuneration of Board of Directors

The remuneration and retirement benefits of directors are set by the general meeting of shareholders resolution in accordance with Article 45 of Hanwha Ocean’s Articles of Incorporation.

Classification	Unit	Remuneration Limit	Actual Payment Amount	Average Remuneration per Director
Audit Committee member	KRW 1 million	5,000	275	92
Outside director			118	59
Inside director			4,162	1,041

Strengthening Shareholders’ Rights

At Hanwha Ocean, we ensure that our shareholders are provided with various options to exercise their rights. In February 2024, we introduced an e-voting system through board resolution and adopted a cumulative voting system to reflect the opinions of minority shareholders in selecting and nominating director candidates. To encourage shareholders to exercise their voting rights, we allow proxy voting for all shareholders in the shareholder register as of the end of the business year. We disclose the date, venue, and agenda of the general meeting of shareholders at least four weeks before the meeting. We make sure that the meetings take place during times when there aren’t other meetings going on concurrently. In addition, we submit the financial statements audited by an external auditor two weeks before the general meeting of shareholders within the disclosure deadline to support the efficient exercise of shareholders’ voting rights.

Schemes to Strengthen Shareholder Rights

Classification	e-Voting System	Cumulative Voting System	Solicitation of Proxy voting
Description	Adopted by the board resolution in Feb. 2024	To reflect the opinions of minority shareholders	Shareholders are encouraged to exercise their voting rights
Classification	Four weeks’ Notice of General Meeting of Shareholders	Staggered Schedule for General Meeting of Shareholders	Submission of Financial Statements 2 Weeks before General Meeting of Shareholders
Description	The General meeting of shareholders date, venue, and agenda are disclosed	Shareholders are encouraged to exercise their voting rights	Shareholders’ voting rights are exercised effectively

Hanwha Ocean puts efforts in various ways to protect the rights of shareholders and encourage them to exercise their voting rights effectively. Centered on our initiatives, we strive to improve corporate governance and enhance shareholder value.

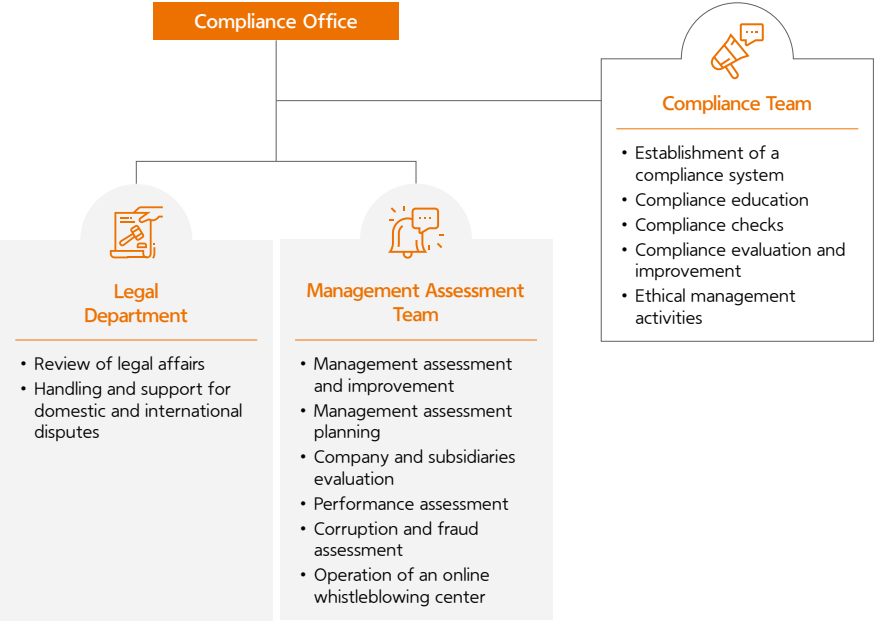
2. Ethics and Compliance

Ethics and Compliance System

Hanwha Ocean, under our effective and transparent system and the Code of Ethics, forms organizations to implement ethical management while fulfilling our stakeholders’ reasonable expectations and demands and corresponding to shared growth and development. Through the operation of a compliance management system and assessment programs, we strive to enhance employees’ awareness of compliance and avoid legal risks.

Ethics and Compliance Organizations

Hanwha Ocean’s ethics and compliance organizations comprise of the Legal Department, the Management Assessment Department, and the Compliance Team under the Compliance Office. The Legal Department reviews legal affairs and responds to domestic and international disputes, whereas the Management Assessment Department conducts management assessment and improvement activities, assessment planning, corruption and fraud diagnosis, and operates an online whistleblowing center. The Compliance Team establishes a compliance system and conducts a series of activities regarding compliance education, inspection, evaluation, improvement, and ethical management.





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2. Ethics and Compliance

Code of Ethics

As part of our efforts to successfully practice ethical management, Hanwha Ocean defines and implements the Code of Ethics and its practice guidelines for all employees. Our Code of Ethics serves as an ethical standard that the company must follow and our promise to our stakeholders. The Code of Ethics consists of six parts including attitude toward shareholders and investors, customers, competitors and suppliers; responsibility to employees and society, and basic ethics of employees. Specifically, Article 6 and Article 7 of the Code of Ethics stipulate principles of fair competition with competitors and fair transactions with our suppliers, respectively. The Code of Ethics Practice Guidelines are composed of six guidelines: fair trade, receiving money, improper solicitation, use of company assets, document manipulation, and basic ethics. These guidelines also provide the basis of judgment regarding ethical decisions and behaviors to our employees and stakeholders. Both the Code of Ethics and its practice guidelines are disclosed on our website and company portal.



Code of Ethics



Code of Ethics Practice Guidelines

Code of Ethics Practice Guidelines

1 Supplier Selection and Fair Trade

Suppliers should be selected rationally based on fair and transparent principles. If restrictions or adjustments to transaction terms are necessary, such restrictions or adjustments should be made following transparent procedures with clear and valid reasons. The company should strictly comply with fair trade and subcontracting laws and regulations when engaging in transactions with its suppliers. The company should not use its superior position to prevent unequal or unfair treatment or unpleasant behavior during transactions.

2

Acceptance of Gifts and Entertainment

Employees should not accept any form of gratuity, entertainment, or convenience provided by stakeholders regardless of the reason, and such instances should be reported to the company when it is inevitable to receive it.

3

Prohibition of Improper Solicitation and Graft

Employees should not engage in any behavior that tarnishes the corporate image by improperly soliciting or providing graft to public officials.

4

Use of Company Assets

Employees must use the company's critical assets, including tangible and intangible assets, confidential information, and company funds, for authorized purposes contributing to sound business activities. Employees should comply with the company's standards and are responsible for preparing for the loss, misuse, and theft of company assets.

5

Documentation—count Manipulation and False Reporting

All information must be recorded and reported accurately and honestly.

6

Other Basic Ethics for Employees

Employees should serve as an example in maintaining a sound organizational culture.

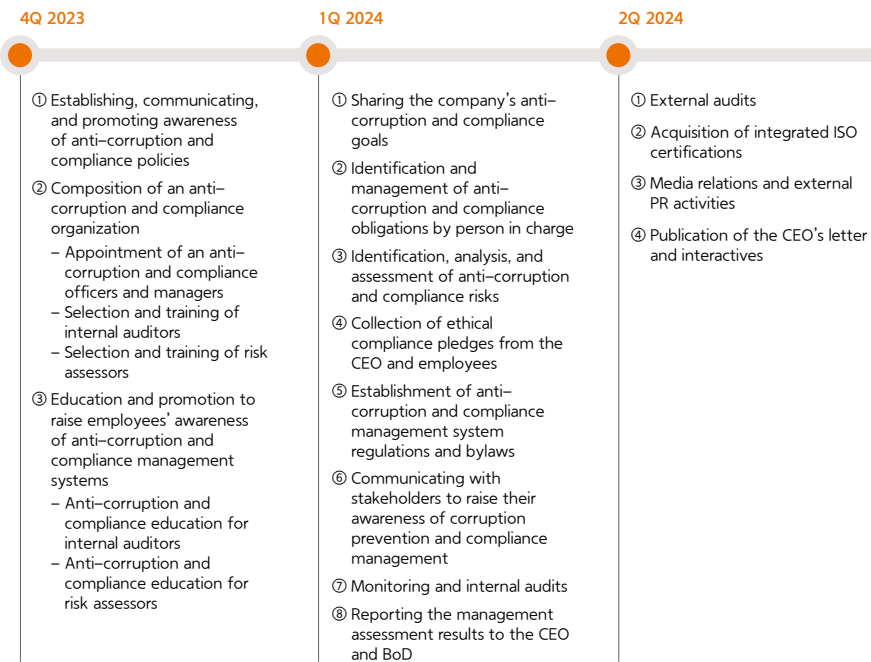
2. Ethics and Compliance

Anti-Corruption and Compliance Management Systems (ISO 37001 & 37301)

Hanwha Ocean pursued the certification of our anti-corruption and compliance management systems to establish and manage a risk prevention system concerning anti-corruption and compliance. The progress on risk identification and improvement is reported to the BoD each year. We recognize this as an important process of contributing to creating a culture of anti-corruption and compliance within the organization and demonstrating organizational transparency and credibility to our stakeholders, going beyond simply acquiring certifications.

In an effort to receive certifications for anti-corruption and compliance management systems, we have analyzed our regulations, identified obligations, and conducted a risk assessment since the second half of 2023. Following an internal review and supplementing problems in April 2024, we acquired the relevant certifications in May 2024.

Progress on Obtaining Anti-corruption and Compliance Management System Certifications



Responsibilities of Officers and Managers

Anti-corruption and compliance officers and compliance teams perform a critical function within organizations. They contribute to nurturing a healthy organizational culture and minimizing legal risks by operating and improving the overall anti-corruption and compliance management systems, providing advice and guidance, managing risks, and assessing performance. Moreover, our internal auditors, monitoring managers, and risk assessors further strengthen the anti-corruption and compliance culture within the organization, and identify and manage risks in advance to minimize legal risks.

Strategy and Tasks

We identified and implemented the following strategic tasks to achieve the goal of establishing a culture of anti-corruption and compliance management systems.

Strategy	Tasks
Sharing policies & goals throughout the company	<ul style="list-style-type: none">• Establishment and dissemination of anti-corruption and compliance policy, and improvement of employees' awareness and understanding• Employees' pledge to practice ethics and compliance• Sharing the company's anti-corruption and compliance goals
Building a management system foundation	<ul style="list-style-type: none">• Establishment of relevant regulations and bylaws• Composition of a relevant organization
Education and promotion to raise management awareness	<ul style="list-style-type: none">• Preparation of educational materials to strengthen awareness• PR activities including campaigns related to anti-corruption and compliance management
Identification of obligations, and analysis and assessment of risks	<ul style="list-style-type: none">• Identification and management of anti-corruption and compliance obligations by person in charge• Identification, analysis, and assessment of anti-corruption and compliance risks
Assessments and improvements based on management system requirements	<ul style="list-style-type: none">• Monitoring by person in charge• Internal audits• Corrective and improvement actions for violations and non-conformities• Reporting the management assessment results to the CEO and BoD
Acquisition and maintenance of ISO 37001 & 37301 certifications	<ul style="list-style-type: none">• Planning and implementing activities to fulfill and upgrade ISO 37001 & 37301 requirements



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2. Ethics and Compliance

Anti-corruption and Compliance Policy

Hanwha Ocean has established and implemented anti-corruption and compliance policies to foster a healthy corporate culture through ethical and compliance management, fulfill social responsibilities, and become a clean and trusted global company.

- Both the company and employees shall comply with all applicable compliance obligations, including domestic and international anti-corruption laws and regulations, as well as internal regulations, and shall not engage in any acts that may violate or appear to violate them.
- Employees shall not give nor receive gifts, entertainment, or bribes to stakeholders in performing their duties, and shall not engage in any corruption or illegal acts.
- Employees are responsible for managing and reporting compliance issues to the compliance manager.
- The company shall establish a system to report a corrupt behavior or non-compliance of employees, keep the contents of the report and the whistleblower's data confidential, and protect them from any form of adverse treatment for making the report.
- The company may take disciplinary action under its regulations if an employee violates their compliance obligations, including corruption, or if they fail to take reasonable actions to avoid after recognizing an employee's violation.
- The company shall grant the authority and independence to the compliance officers for the operation of anti-corruption and compliance management systems, and the compliance officers are obliged to report to the governing body directly on a regular basis.
- The company shall establish and operate effective anti-corruption and compliance management systems capable of achieving the goals and objectives of anti-corruption and compliance management, and shall constantly manage and improve the systems.

Compliance Officers and Compliance Control Regulations

Hanwha Ocean practices compliance management so as to protect the company and our employees. We ensure that our employees comply with relevant laws and regulations required to conduct their duties, thereby preventing violations of laws in advance and minimizing the risk of violations.

We have the Compliance Control Regulations in place to promote fair and transparent execution of duties, secure the company's sound development, and gain customer trust by complying with relevant laws and regulations. Compliance officers are appointed through board resolution in accordance with Article 542-13 (Compliance Guidelines and Compliance Officers) of the Commercial Act. The Compliance Office carries out activities to support the compliance officers. It conducts compliance risk checks, provides education and daily compliance support (legal advice), and operates an online whistleblowing system. The main activities of compliance officers and the results are disclosed in our business reports.

2. Ethics and Compliance

Whistleblowing System

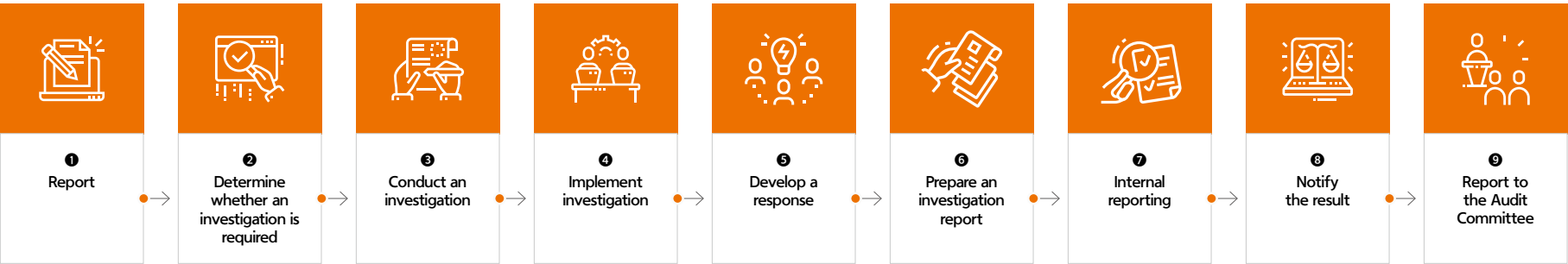
Hanwha Ocean operates a reporting system on unethical behaviors occurring within the company. While offering various channels for reporting and handling procedures, the system ensures the anonymity of the whistleblower and is operated based on a reward system. Anyone can report anonymously or under their real name, while various options are available for reporting, including phone, fax, mail, and e-mail. Employees concerned with the reporting system are required to sign a non-disclosure agreement to protect the identity of whistleblowers. Once we receive a report, we determine whether it warrants an investigation, and if so, we conduct an independent investigation and develop a response. Afterward, we document the investigation result while maintaining confidentiality, notify the final result to the whistleblower, and report it to the Audit Committee.

Whistleblowing & Reporting Center

- Phone: +82-55-735-4400
- Fax: +82-55-734-9102
- Mail: Hanwha Ocean Management Support Unit Team 2, 3370 Geoje-daero, Geoje-si, Gyeongsangnam-do, 53302, Republic of Korea
- E-Mail: ocean.audit@hanwha.com

* Various options are available for reporting in places other than ones stated above.

Report Investigation Process



Whistleblower Protection

Hanwha Ocean makes sure that the anonymity of whistleblowers is protected. The reporter is given the option to choose whether to report anonymously or under their real name. All members of the Management Assessment Team in charge of the whistleblowing system are required to sign a non-disclosure agreement, and only a minimum number of members are allowed to access the whistleblowing system. We prohibit the exposure and search for the identity of the whistleblower under the internal regulations regarding the operation of a reward system for reporting unethical behaviors. Anyone involved in the exposure of identity or unfair treatment of the whistleblower is subject to disciplinary action.

For whistleblowers, we ensure that they can report on misconduct or unethical behavior without fear of having their identity exposed. This protects the reporter by allowing them to come forward without fear of career damage, workplace harassment, or personal retaliation. Such measures to protect whistleblowers make it easier to report and enable more accurate and detailed information to be provided, helping to increase awareness and alertness to unethical behavior within the organization.

2. Ethics and Compliance

Other Ethics and Compliance Systems

Hanwha Ocean operates various ethics and compliance programs to instill a corporate culture of ethics and compliance with the law in its employees. Our main ethics and compliance programs are as follows.

Program	Description
Ethics PR	• Promotion of the company's ethics policy and disciplinary actions against unethical behavior through the in-house newspaper (Ocean View)
Ethics campaigns	• Campaigns against accepting holiday gifts, etc.
Voluntary registration of gifts and solicitation	• Encouraging employees to voluntarily register improper gifts and solicitation provided by stakeholders • The list is used to carry out preventive activities such as identifying problems and managing vulnerable areas
Ethical compliance obligations as contract terms	• Requiring suppliers to implement ethical compliance practices as a condition of the agreement
Sanctions against corrupt and unethical suppliers	• Imposing sanctions such as warnings and suspension of business transactions on corrupt and unethical suppliers who violate ethical management obligations

Management Assessment

To strengthen ethical management, Hanwha Ocean conducts various management assessment activities including compliance checks on regulations and financial records, review of business fairness, and detection of misconduct. The assessment results are reported to the Audit Committee.

Classification	Description
Process and business improvement	Periodic assessment <ul style="list-style-type: none">• Compliance with regulations, policies, and plans• Accuracy of the company's financial records and calculations• Highlights and improvement recommendations on business regulations and systems• Review of the fairness and validity of work performance• Checking on the management status of company assets• Detection of irregularities, errors, falsehoods, etc. * The scope of assessment includes the company and its subsidiaries
	Lifetime assessment <ul style="list-style-type: none">• Management assessment directed by management
	Occasional assessment <ul style="list-style-type: none">• Occasional assessment conducted based on reports on specific tasks or matters deemed necessary after the management assessment
	Implementation check <ul style="list-style-type: none">• Checking the implementation status of improvement items from the previous assessment
Prevention of unethical behavior	Online whistleblowing system <ul style="list-style-type: none">• Receiving and investigating reports of unethical behavior
	Prevention of gift acceptance <ul style="list-style-type: none">• Distribution of guidelines and reporting channels for prohibiting gift acceptance during holidays, etc.
	Activities directed by management <ul style="list-style-type: none">• Investigation of unethical behaviors and risks as directed by management, etc.

Legal Review Process

At Hanwha Ocean, we conduct activities related to legal affairs, including legal reviews and litigations, through our legal system. We prevent violations of laws in advance through legal consultations on a daily basis.



Ethics and Compliance Activities

Hanwha Ocean requests our employees to sign a pledge of compliance, conducts ethics counseling, and provides ethics and compliance education. We work to respond to legal risks in advance and establish a culture of compliance through periodic inspections of legal risks.

Pledge of Compliance

Each year, **Hanwha Ocean** requests our employees to sign a pledge of compliance to check their compliance awareness.

Pledge of Compliance

As a member of **Hanwha Ocean**, I pledge to clearly recognize the core values and ethics and compliance policy of the company and comply with the following in performing my duties.

1. I will fully understand and comply with domestic and international laws and regulations such as the Improper Solicitation and Graft Act as well as company regulations in relation to my duties, and will not instruct, approve, aid, or condone any behavior that violate them.
2. I will faithfully perform my duties based on the principle of good faith, and will give priority to the legitimate interests of the company in the event of a conflict between the company's and personal interests.
3. I will not provide unfair money or entertainment to stakeholders, including public officials and clients, both at home and abroad for the company's business or interests.
4. I will not receive or request any profit in property, whether tangible or intangible, such as graft, gifts, favors, entertainment, and convenience, from suppliers or potential business partners, and will not be a direct or indirect party to any monetary transactions or solicitations.
5. I clearly understand the laws governing transactions with suppliers, vendors, partners, and the like, acknowledge them as equal parties to contracts, and will not take any actions against them.
6. I will not disclose the company's critical information, trade secrets, management data, and personal data of employees and stakeholders without permission or use it for purposes other than business.
7. I will respect the personality and human rights of all employees, will not spread false rumors related to the company or individuals, and will not act or use words that may pose reputational damage to the company.
8. I will actively participate and cooperate with the company's policies, guidelines, training, and practice programs so as to establish an ethics and compliance order.
9. I will immediately notify the company (including business assessment organizations or relevant organizations) if I become aware of employee corruption or hear allegations of irregularities from employees or stakeholders.
10. I will do my best to cooperate, such as providing relevant materials and expressing my opinions, in the event of an investigation into an act that violates or is suspected of violating the Code of Ethics or the Code of Ethics Practice Guidelines.
11. Should I breach the provisions above, I will accept and not object to any reasonable actions taken under applicable laws or company rules.

January 4, 2023
Head of Legal Planning Section, Legal Department [Pledged]

Ethics Counseling

Hanwha Ocean's employees are free to ask questions about the company's Code of Ethics, ethics policy, and other systems, and receive counseling on situations facing ethical dilemmas. Employees can choose to get counseling in public or private under their real name or anonymously through the ethics consultation website.

Ethics and Compliance Education

Hanwha Ocean conducts ethics and compliance education each year to raise compliance awareness among employees. The programs provided in 2023 are listed in the table below. The contents of education include topics related to the Fair Trade Act, the Subcontracting Act, the Unfair Competition Prevention and Trade Secret Protection Act, and anti-corruption and compliance. All the programs are tailored to the characteristics and needs of each organization, and we strive to ensure fair competition throughout our business activities.

Content	Eligible Organization	Details
<p>[Fair Trade Act]</p> <ul style="list-style-type: none"> – Unfair support behavior – Precautions on internal transactions among affiliates – Unfair collaborative acts (collusion) – Precautions on consultation with companies in the same industry, etc. 	<ul style="list-style-type: none"> • Key organizations requesting internal transaction review – Procurement, specialty ships, research and planning, HR, support, business management, IT, etc. • Organizations for consultation with companies in the same industry 	<p>Conducted in Nov. 2023 112 persons completed the program</p>
<p>[Subcontracting Act]</p> <ul style="list-style-type: none"> – Legal risk related to the Subcontracting Act – Delivery price indexation system – Precautions on the introduction of the delivery price indexation system 	<ul style="list-style-type: none"> • Organizations under subcontracting agreement – Procurement, shared growth, outside contracting, etc. 	<p>Conducted in Nov. 2023 107 persons completed the program</p>
<p>[Unfair Competition Prevention and Trade Secret Protection Act]</p> <ul style="list-style-type: none"> – Protection of trade secrets – Trade secret guidelines – HR-related (recruitment, in-service, resignation) precautions on compliance with the Unfair Competition Prevention and Trade Secret Protection Act 	<ul style="list-style-type: none"> • Information security office • HR departments • Central Research Institute, etc. 	<p>Conducted in Nov. 2023 28 persons completed the program</p>
<p>[Anti-corruption and compliance]</p> <ul style="list-style-type: none"> – Matters regarding risk assessment 	<ul style="list-style-type: none"> • Internal auditors 	<p>Conducted in Nov. 2023 49 persons completed the program</p>
<p>[Educational broadcasting on the Subcontracting Act]</p>	<ul style="list-style-type: none"> • All companies (self-attendance) 	<p>Broadcasted throughout the year; 456 persons completed the program</p>

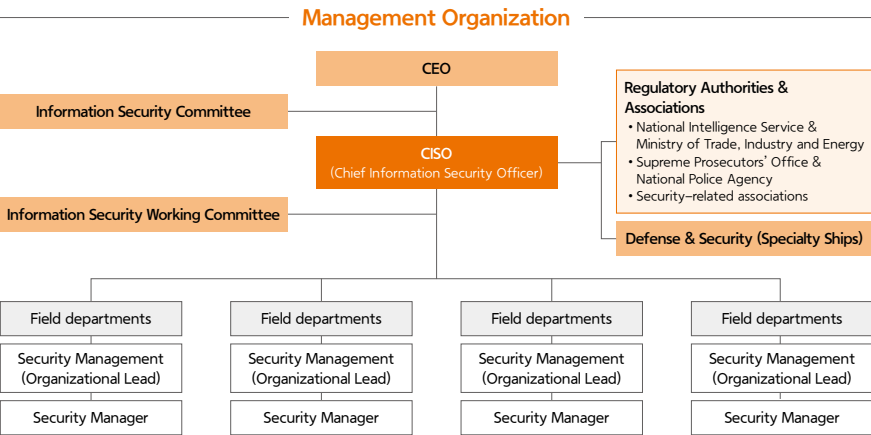
Legal Risk Inspection Activities

Hanwha Ocean checks on the legal risks of the company on a regular basis through subcontractor surveys, review of subsidiaries' legal systems, and voluntary checks on unfair collaborative acts under the Fair Trade Act. In 2023, we early detected risks of violations of the Subcontracting Act through a subcontractor survey and took preventive measures deemed necessary. In addition, we inspected the legal collaboration system between the headquarters and subsidiaries and distributed a checklist for unfair collaborative acts under the Fair Trade Act.

3. Information Security

Information Security Management System

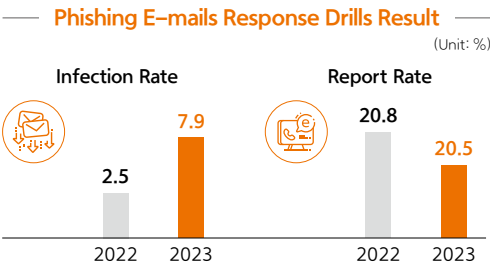
Hanwha Ocean, under our information security management system, implements activities to ensure information security systematically. In particular, we adhere to relevant laws and regulations such as the Personal Information Protection Act and the Act on Promotion of Information and Communications Network Utilization and Information Protection to protect the company's critical information assets and prevent damages such as data breach and system paralysis due to cyberattacks. To this end, we appoint and report to the Chief Information Security Officer (CISO) under the management organization and operate the Information Security Committee.



Key Decision-making Bodies	Information Security Committee	Information Security Working Committee
Operating cycle	Operated by the executives meeting presided by the chairperson	Operated on an ad hoc basis when an issue arises
Chairperson and responsibilities	Chairperson : CEO Roles : <ul style="list-style-type: none">Review of the appropriateness and effectiveness of major security management policiesReview of the incident handling (reward, disciplinary action) following industrial security reportsReview of the transfer of national core technologyReview of the appropriateness of the security level of national core technologyReview of the mid-to long-term security management roadmapOther matters requiring consultation and coordination to conduct information management activities	Chairperson : CISO (Chief Information Security Officer) Roles : <ul style="list-style-type: none">Review and deliberation of key security management policies and issuesOther matters delegated by the Information Security Committee
Scope of the information security management system	Matters relating to design and production technology information	

Security Incident Prevention and Response

Hanwha Ocean has identified leakage of security data by employees and hacking by hacking (spam) mail as major risks, and is strengthening employee education and publicity to prevent them. We designate the first Monday of each month as a company-wide security day, where employees are mandated to read the security training materials to raise their awareness. In addition, we established procedures for reporting spam e-mails, and we conduct mock drills in response to such e-mails to prevent hacking. The results of drills conducted by each department are shared with all employees to raise their security awareness. Additionally, we use the security statement to accurately share company policies and the information assets that need to be protected.



Interactives on tips to detect and report phishing (spam) e-mails

Assets to be Protected	Asset Protection Policy
<ol style="list-style-type: none">The company's confidential information, national core technology, and personal dataCritical business information generated and managed while carrying out businessesFacilities, media, and devices of the information system for providing business supportWork environment related to physical places and equipment related to business operations	<ol style="list-style-type: none">Establish and implement a security management system to protect tangible and intangible assets.Establish and implement administrative, physical, and technical security policies for tangible and intangible assets.Establish and implement training plans to enhance the security policy compliance of all employees.Establish and implement basic measures for security incident management, business continuity, and regulatory compliance.

3. Information Security

Information Security Activities

Since 2022, Hanwha Ocean has been operating the Hanwha Ocean Cybersecurity Operations Center in cooperation with cybersecurity companies for active security control, real-time threat detection, and systematic response. In addition, to prepare for the increasing number of cyber attacks, we are developing a mid-to long-term strategy for information security through security consulting. We are also continuing to invest in improving institutional frameworks and maintaining our systems. The following table summarizes the status of our security system by item using information and communications technology (ICT).

Item	Status of ICT-based Security System
Network	We configure firewalls, detect and prevent intrusions, and operate spam-filtering solutions to prevent cyber intrusions at the source; and fundamentally block the access of unauthorized computing devices to the company network.
Client	We apply file encryption, printout security solution, and media control to prevent external leakage of the company's information assets; install antivirus software; block the installation of unauthorized software; and physically separate the network (separation of business network from the internet) in defense zones to avoid data breaches.
Integrated security control	We established the Hanwha Ocean Cybersecurity Operations Center to perform security control 365/24/7 together with cybersecurity companies. We also operate a real-time integrated security control system that automates and visualizes data breach and external intrusion control tasks to maximize the efficiency of security control.
Subsidiaries and suppliers	We apply the same security policies to all business sites connected via our network (including subsidiaries and internal suppliers) and conduct independent monitoring to block the spread of malware and ransomware.

International Certifications on Information Security

As an industry-leading technology company, Hanwha Ocean establishes various policies and engages in diverse activities to comply with international standards and both domestic and foreign laws to protect critical information, including national core technologies. As the foundation for this, we have obtained and maintained ISO/IEC certifications (27001 and 27017), which are international standards for corporate information security management systems.



Information Security Training

Hanwha Ocean conducts both online and offline information security training for all personnel, including supplier employees, using various training materials. Shipbuilding, which is our core business, is considered a national core technology. Accordingly, we are required to comply with guidelines under the Act on Prevention of Divulgence and Protection of Industrial Technology. Moreover, we work hard to prevent information leakage not only for new hires but also for security personnel and those scheduled to retire. As for our suppliers, we promote internal security inspection regulations and conduct access control for internal security management.

Classification	Target	Description
Offline training	New hires	• Industrial security, national core technology, and phishing email simulation training, and access control
	By job function	• Laws related to national core technologies • Training in preparation for information security management system certifications (ISO 27001/27017) • Phishing e-mail simulation training
	Suppliers	• Internal security management, industrial security, national core technology, and access control • Promotion of security inspection content related to suppliers
Online training	By job function	• Laws related to national core technologies • Phishing simulations • Company regulations on technology protection
Distribution of training materials		• Security training for national core technologies

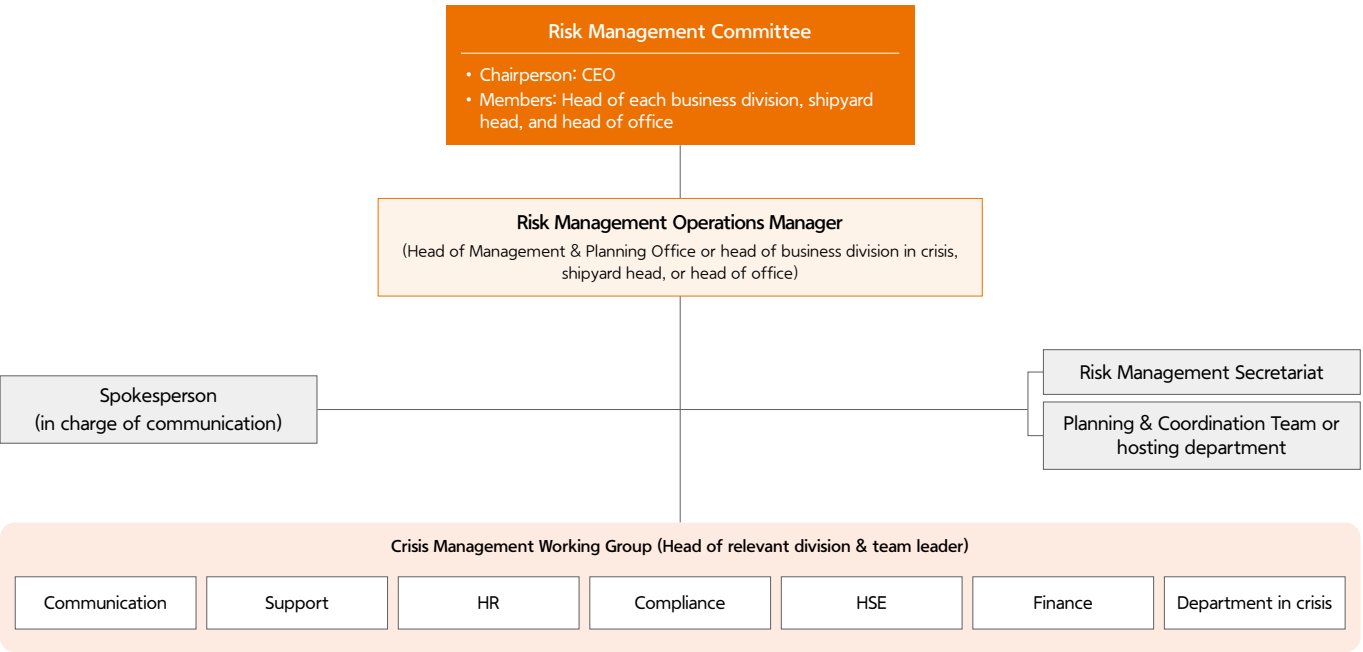
Online Training



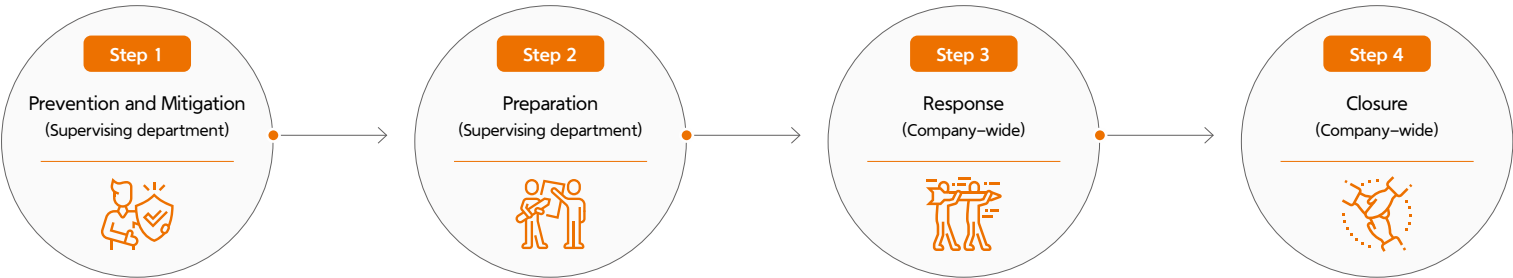
4. Risk Management

At Hanwha Ocean, we have a company-wide risk management manual in place to prepare for extreme crises like disasters, financial crises, and cyberterrorism, which could endanger the company's existence. "Risk management" refers to a series of activities to overcome a crisis following the actual event or incident and where the damage is expected to be substantial. The process is conducted from the declaration of a company-wide crisis until the normalization of corporate management.

Our Risk Management Organization



Our Risk Management System



4. Risk Management

Risk Management by Type

Hanwha Ocean, in consideration of factors that may affect the company's stability and growth, identified a total of 52 risks related to strategy, operation, finance, and compliance, as well as 10 risks related to projects. Afterward, we conducted an assessment on a 5-point scale in terms of impact and possibility for each risk, and categorized them into risks that require intensive management, general management, and monitoring to ensure systematic management.

By 2024, we plan to clearly define and regularize the risk identification, classification, and assessment process to make sure that risk management takes place in a continuous and rigorous manner, instead of a one-time task. In addition, we will report the results of risk management to the ESG Committee and actively incorporate them into future management decisions. As we are highly aware that this is an important step to strengthen corporate sustainability and social responsibility, we believe that risk management centered on ESG factors will eventually contribute to the company's long-term growth and stability.

Risk Assessment Criteria

Impact Score ¹⁾	Assessment Item	1	2	3	4	5
Level of impact		Minor	Moderate	Significant	Severe	Critical
Description	Specific event conditions identified in the assessment period and impact of events that occurred in the last 5 years on average	Resolution stage within the organization	Development of response measures within and between the headquarters	Establishment of response plans and coordination among the top management team	Emergency stage requiring potential disaster prediction	Crisis stage requiring declaration of a company-wide disaster
Financial loss	Amount of financial loss in terms of cost of sales, liquidity, etc.	Less than KRW 10 billion	KRW 10 billion – less than KRW 40 billion	KRW 40 billion – less than KRW 100 billion	KRW 100 billion – less than KRW 200 billion	KRW 200 billion or More ²⁾
Reputation	Media exposure affecting corporate reputation with customers, employees, and suppliers	One-time exposure to local (Gyeongsangnam-do) media	One-time exposure to domestic media	Exposure to major domestic and international media (broadcast & mainstream media for more than 1 week)	Exposure to major domestic and international media (broadcast & mainstream media for more than 2 weeks)	Exposure to domestic and international major media (broadcast & mainstream media for more than 1 month)
Compliance	Internal and external legal sanctions	Reprimand for non-compliance of internal regulations, attention and warning by supervisors	Caution to the executive by the regulatory authority, wage cut under the internal regulations	Warning to the executive by the regulatory authority, temporary suspension of work under the internal regulations	Correction & suspension order of the regulatory authority, suspension & dismissal of employees	Suspension of sales & cancellation of license by the regulatory authority
HSE	Accidents, illnesses, environmental issues in shipyard operations	Environmental issue at the level of a single worksite, occurrence of one worker sustaining a work-related injury requiring 3 or more months of treatment or resulting in permanent disability	Environmental issues occurred at multiple business sites, occurrence of two or more workers sustaining work-related injuries requiring 3 or more months of treatment or resulting in permanent disability from the same incident	Environmental issues occurred at the entire shipyard, occurrence of five or more workers sustaining work-related injuries requiring 3 or more months of treatment or resulting in permanent disability from the same incident	Environmental issues occurred in the community, 1 or more fatalities and 10 or more people with concurrent work-related illnesses	Environmental issues occurred in the country, 3 or more fatalities and 50 or more people with concurrent work-related illnesses
IT/security	IT system error Information security (data breach)	Leakage or damage to company data	Leakage or damage to confidential business data related to company management	Leakage or damage to important trade secrets and confidential data related to company management	Leakage or damage to national core technology/defense technology (military secrets)	Leakage or damage to national core technology/defense technology (military secrets) that may lead to legal sanctions
Operation	Delay in labor supply schedule	Supply rate of more than 90% with a 2 week delay	Supply rate of 80 – 90% with a 2 – 4 week delay	Supply rate of 70 – 80% with a 4 – 8 week delay	Supply rate of 60 – 70% with a 8 – 12 week delay	Supply rate of less than 60% with delay for more than 12 weeks
Quality/performance	No. of quality failures and customer satisfaction score	1 quality failure with customer satisfaction score below 7 points	10 quality failures with customer satisfaction score below 6 points	10 – 100 quality failures with customer satisfaction score below 5 points	100 – 300 quality failures with customer satisfaction score below 4 points	More than 300 quality failures with customer satisfaction score below 3 points
Possibility Score ³⁾	Assessment Item	1	2	3	4	5
Possibility level		Improbable	Unlikely	Possibly	Likely	Probable
Description	Probability of occurrence of a specific event condition identified in the assessment period and average occurrence of the event in the last 5 years	No history of occurrence within the company/industry	No history of occurrence within the company, but there is a history of occurrence within the industry	There is a history of occurrence within the company with a low probability	There is a history of occurrence within the company for the last 3 years with a high probability	High probability of occurrence within the assessment period
Probability of risk occurrence	Individual risk item	0 – 1%	1 – 10%	10 – 30%	30 – 60%	60% or more

* Company-wide risk: Probability of occurrence per year; Project risk: Probability of occurrence per project

1) The threshold input criteria for 1 to 5 points in each assessment item was determined according to the description of the relevant department (finance, PR, safety, IT, quality, etc.)

2) Financial amount equivalent to 25% of average operating profit according to the business plan for the next five years.

3) Applied the description by score and probability of occurrence used by multiple leading EPC companies .

Risk Identification & Classification

Category	Subcategory	Cases	Category	Subcategory	Cases
Strategy	Portfolio change risk	4	Project Risk	Order suitability	1
	Technology	7		Purchase & procurement	1
	Investment	3		Contract	1
	Competitive environment	4		Design	3
	Affiliates	2		Production	4
	Reputation	4	Total		10
	Management & decision-making	2			
	Exogenous macro-environment	1			
	Organization & human resources	3			
	Design	2			
Operation	Production	4			
	Procurement	2			
	ESG	2			
	HSE	3			
	Security & IT	2			
Finance & Compliance	Liquidity	3			
	Macro-financial environment	2			
	Ethics & compliance	2			
Total		52			



27

Strategy

18

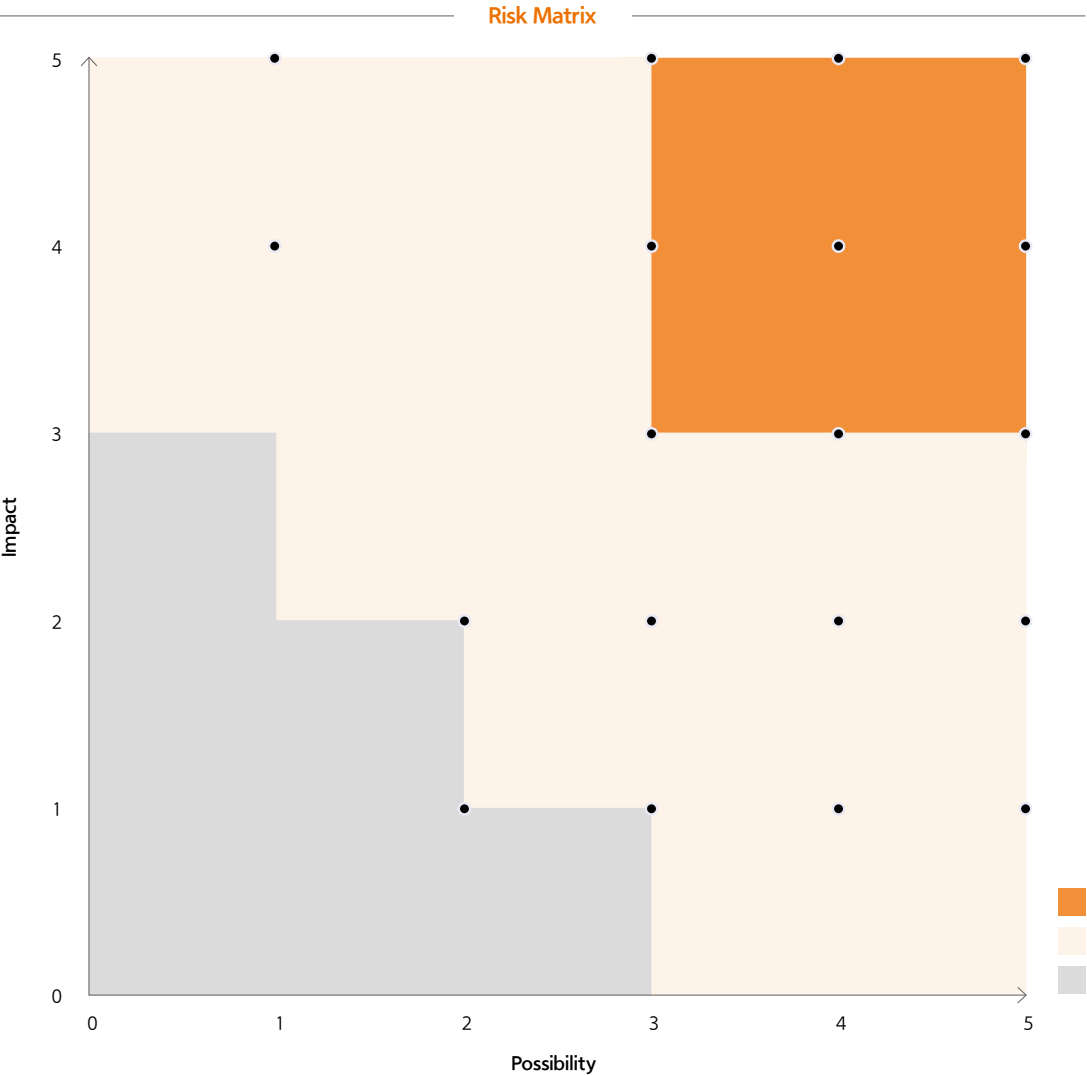
Operation

7

Finance & Compliance

Item 52
(Unit: items)

4. Risk Management



Risks Requiring Intensive Management

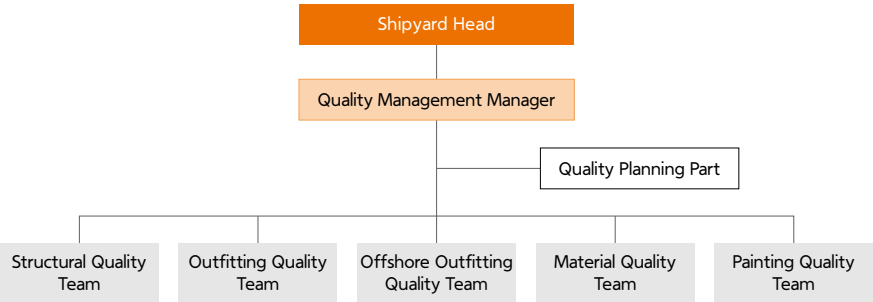
- ① Risk of fluctuations in demand for offshore platforms
- ② Risk of changes in the introduction timeline for key future vessels
- ③ Risk of decreasing competitiveness in operating hours (operational efficiency) of flagship models compared to competitors
- ④ Risk of deterioration in cost structure of flagship models compared to competitors
- ⑤ Risk of poor supply and demand of direct and in-house human resources in production
- ⑥ Risk of fluctuations in steel and nonferrous metal price
- ⑦ Risk of safety accidents
- ⑧ Risk of external cybersecurity breach
- ⑨ Risk of exceeding actual costs from total planned costs

5. Quality Management

Each year, Hanwha Ocean establishes a quality management policy and shares it with our members. Additionally, we are building a system to manage risks and opportunities by reflecting organizational situations and quality-related demands of stakeholders. Our quality management system is operated based on international standards such as ISO 9001, ISO 29001, and ISO 3834, and we constantly improve our processes through periodic assessments of the quality management system. Furthermore, we strive to achieve high quality by providing satisfactory services to our customers throughout the entire product lifecycle, from ship ordering to delivery and maintenance. Additionally, we regularly monitor the quality and result of assessment of products, services, and technologies through our customer communication channels, and actively provide measures to address customer complaints.

Quality management Promotion System

Hanwha Ocean is equipped with an organizational structure dedicated to quality management activities. Accordingly, we offer customer satisfaction services by securing quality based on the performance of roles assigned to each organization.



Organization	Roles
Quality planning	<ul style="list-style-type: none">Quality planning and improvementWelder qualifications managementQuality management system certifications managementNon-destructive testing (NDT) quality management
Structural quality	<ul style="list-style-type: none">Ship and offshore structure quality control and inspection (assembly, erection, and external BLK)
Painting quality	<ul style="list-style-type: none">Ship and offshore painting quality control and inspection (assembly, erection, and external BLK)
Commercial ship outfitting quality	<ul style="list-style-type: none">Outfitting quality control and inspection (tubular steel, electrical equipment, commissioning, machinery, CCS, wood outfitting, insulation)Outside cabin and engine casing
Offshore outfitting quality	<ul style="list-style-type: none">Offshore outfitting quality control and inspection (piping, electrical installation, instrumentation, cabin, ironwork)Offshore construction quality management
Material quality	<ul style="list-style-type: none">Equipment quality inspection and management of quality issuesQuality inspection and evaluation of equipment and material suppliers

Quality Management System Certifications

Hanwha Ocean strives to build a trusting relationship with our customers by establishing a quality management system centered on improving product quality. Based on this system, we conduct risk assessment and monitoring of product safety and quality, as well as reinforce our responsibilities towards customers, including after-sales service after delivery.

Scope Of ISO 9001 and Operating Performance

* Scope of ISO 9001 Certification: Okpo Shipyard, Siheung R&D Campus, Hanwha Ocean Shandong, Seoul Office, Plant Division & Wind Power Division (to be added in Dec. 2024)



ISO 9001



ISO 29001



ISO 3834



5. Quality Management

Quality Management System

Hanwha Ocean selected product safety and responsibilities towards customers as the key issues of quality management for 2023. Accordingly, we took actions by adopting smart quality management approach and listening to customer quality satisfaction.

Key Issues	1. Product safety and quality management 2. Responsibilities towards customers
Our Response	To improve product safety and quality, we implemented a quality management system (ISO 9001, ISO 29001, and ISO 3834 certified), conducted risk assessment and monitoring of product safety, and provided after-sales services after delivery. As such, we demonstrate our efforts to build a trusting relationship with our customers.
Key Activities in 2023	<ul style="list-style-type: none">• We adopted advanced technologies (mixed reality) and digitalized our operations to achieve work efficiency through smart quality management• We renewed ISO 29001 certification (quality management systems for petroleum, petrochemical, and natural gas)
Key Achievements in 2023	<ul style="list-style-type: none">• We are listening to and reflecting customer satisfaction on quality• We took 77 preventive and corrective actions after internal quality management system audits (execution rate: 100%)

Operating Status of Quality Management System

Hanwha Ocean conducts periodic internal and external audits to evaluate the effectiveness of our quality management system, which is constantly improved. The following table details the audits conducted in 2023.

Classification	Target	No. of preventive and corrective actions taken (execution rate)	Anticipated effects
Internal audit	24 organizations in total	79 (100%)	Enhance the process and ensure compatibility through validation of quality system requirements
External audit	26 organizations in total	33 (100%)	

Quality Indicators

Hanwha Ocean holds quality management meetings to review and assess the targets and performance of quality management indicators for production, design, and procurement. Our key quality management indicators include process inspection retest rate, hit rate, and NDT retest rate, etc.

Classification	Indicator (%)	2021		2022		2023	
		Goal	Performance	Goal	Performance	Goal	Performance
Process inspection	Retest rate	1.21	0.75	1.03	0.59	0.64	0.89
	Hit rate	97.37	98.22	97.70	98.05	98.03	97.55
NDT	Retest rate (radiographic test)	1.58	1.71	1.58	2.25	0.99	0.99
	Retest rate (ultrasonic test)	0.54	0.17	0.44	0.22	0.32	0.35

* Indicators related to the shipping business (separate indicators for naval and specialty ships)

Quality Risk Response Activities

Hanwha Ocean carries out preventive actions against quality risks through measures such as pre-inspection and claims analysis for preemptive management.



5. Quality Management

Major Quality Management Activities

Hanwha Ocean selected the following key directions of quality management for 2024: minimizing the cost of failure through quality process innovation, preemptive quality prevention activities and early stabilization of quality, establishing a digital quality management system, securing quality of major equipment and stabilizing quality of suppliers, and creating a culture of responsibility for quality and strengthening quality management capabilities. Based on these initiatives, we work to realize the goal of smart quality management and process improvement to secure both process and quality at the same time.

Key Direction	Key Activities
Minimizing the cost of failure through process innovation	<ul style="list-style-type: none">Innovate quality inspection and management work process (specifications, contracts, inspection & test plans, production work-inspection linkage, etc.)Innovate the quality verification process for first article and locally developed productsConduct a preemptive quality verification of the products of the project's first ship manufacturer to improve completenessPerform system advancement in aggregating the quality failure cost by item
Preemptive quality prevention activities and early stabilization of quality	<ul style="list-style-type: none">Explore preventive activities and processes to prevent quality problems, manage the process quality, and expand the scope of inspections delegated by shipownersRespond rationally to customers and manage quality risks preemptively
Establishing a digital quality management system	<ul style="list-style-type: none">Promote digital transformation by upgrading the integrated quality management systemSelect smart quality inspection items and establish an implementation plan
Securing quality of major equipment and stabilizing quality of suppliers	<ul style="list-style-type: none">Promote the practice of acting as one team to eliminate quality risks throughout the company (commercial & naval ships)Carry out activities to secure the quality of LNG carrier equipmentImprove the quality management system of suppliers and manage the quality of new equipment ordered from foreign suppliersSupport suppliers to enhance their capabilities of technical and quality management and provide training on key quality control points
Creating a culture of responsibility for quality and strengthening quality management capabilities	<ul style="list-style-type: none">Establish a culture of responsibility for quality across the companyBuild a safety culture focusing on quality and establish basic orderImprove quality management capabilities and foster specialized skills

Integrated Quality Management System

Hanwha Ocean established a digital quality management system to improve and manage product quality with data-based approach. Thus, we manage all quality management-related processes through the integrated quality management system. Also, we created an environment where inspectors can directly handle all activities related to inspections on-site by linking with the mobile quality system, which was designed to increase production accessibility. To upgrade the existing integrated quality management system, which is our goal for 2024, we are developing detailed activities, including improving input data logic between processes and expanding the scope of remote and delegated inspections. These activities will lead us to advance our system and build an environment for smart quality inspection, resulting in improved work efficiency. Likewise, we will continue to take on challenges and innovate ourselves to become a “great challenger.”

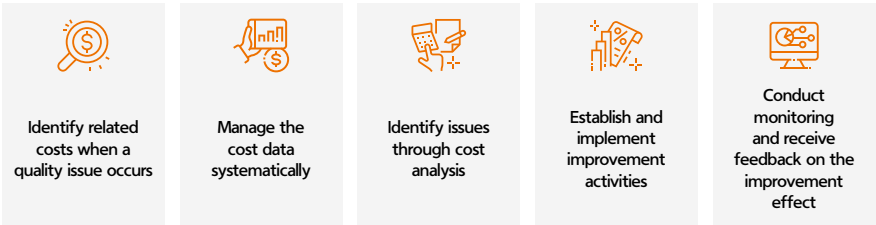


Quality Failure Cost Estimation System

Hanwha Ocean continues to advance and promote improvements by establishing a quality failure cost estimation system to visualize and align the costs incurred due to quality issues. The quality failure cost estimation system allows us to determine investment priorities for quality improvement and estimate the effect of our quality management activities. Leveraging this system, we comprehensively manage costs arising from internal quality issues as well as costs due to customer complaints, constantly pursuing to enhance customer satisfaction and bolster our competitiveness.



Quality Failure Cost Management Process



ESG Fact Book



Environmental

GHG Emissions

Indicator		Unit	2020	2021	2022	2023
Scope 1&2	Total emissions (Scope 1 & 2)	tCO ₂ eq	360,403	296,766	317,725	416,679
	Direct (Scope 1) emissions	tCO ₂ eq	128,236	101,295	122,529	187,855
	Indirect (Scope 2) emissions	tCO ₂ eq	232,167	195,471	195,198	228,824
	GHG emissions intensity	tCO ₂ eq / KRW 100 million	5.13	6.61	6.54	5.61
	Reduction rate (intensity)	%	3.62	-29.03	1.17	14.22
	GHG emissions target (year)	tCO ₂ eq				428,000
	Reduction rate (from the target)	%				2.7
	Other indirect (Scope 3) emissions	tCO ₂ eq	-	134,519	20,606,295	29,030,930
	Purchased goods and services	tCO ₂ eq	-	-	3,176,178	2,952,151
	Capital goods	tCO ₂ eq	-	873	4,201	6,413
Scope 3	Fuel- and energy-related activities	tCO ₂ eq	-	13,004	28,351	27,215
	Upstream transportation and distribution	tCO ₂ eq	-	34,828	41,846	39,697
	Waste generated in operations	tCO ₂ eq	-	52,777	54,898	57,601
	Business trips	tCO ₂ eq	-	3,056	2,180	3,616
	Employee commuting	tCO ₂ eq	-	2,461	3,930	3,886
	Use of sold products	tCO ₂ eq	-	-	17,234,930	25,870,819
	End of life treatment of sold products	tCO ₂ eq	-	-	2,454	4,072
	Investments	tCO ₂ eq	-	28,393	57,327	65,460
GHG verification	GHG verification by third party	Y/N	Y	Y	Y	Y

Energy Consumption

Indicator		Unit	2020	2021	2022	2023
Total energy consumption		TJ	6,436.1	5,417.7	5,731.0	7,395.4
Direct energy consumption		TJ	1,655.6	1,332.2	1,650.8	2,612.3
LNG		TJ	2.2	1.7	32.1	293
Diesel (total)		TJ	690.3	581.8	828.5	1,406.7
Gasoline		TJ	8.7	8.2	9.3	10.4
LPG		TJ	203.5	201.9	237.2	279.4
B-A (total)		TJ	129.9	77.7	91.5	133.8
Indoor kerosene		TJ	178.9	150.4	161.7	176
Indirect energy consumption		TJ	4,780.5	4,085.6	4,080.2	4,783.0
Energy (KRW)		TJ / KRW 100 million	0.092	0.121	0.118	0.100
Reduction rate (KRW)		%	1.279	-31.901	2.334	15.603

Environmental

Environmental Investments and Sales

Indicator		Unit	2020	2021	2022	2023
Environmental investments		KRW 100 million	265.8	93.6	215.9	39.4
	R&D cost	KRW 100 million	68.5	96.1	50.7	48.3
	Low-carbon & carbon avoidance products ¹⁾	KRW 100 million	30,915	21,774	25,660	43,442

1) The sales are calculated for ships with dual-fuel engines.

International Certifications and Environmental Law Violations

Indicator		Unit	2020	2021	2022	2023
Violations of environmental laws and regulations	Violations	Cases	1	–	–	–
	Fines and penalties	KRW 1 million	1	–	–	–
Certifications ¹⁾	ISO 14001	Y/N	Y	Y	Y	Y
	ISO 50001	Y/N	Y	Y	Y	Y
GHG verification	Environmental liability insurance	Y/N	Y	Y	Y	Y
	Environmental incident response training	Y/N	Y	Y	Y	Y

1) We obtained ISO 14001 certification for Okpo, Siheung, Anjeong, and Shandong business sites, and ISO 50001 certification for Okpo, which accounts for more than 98% of our energy consumption.

Green Procurement

Indicator		Unit	2020	2021	2022	2023
Total no. of vehicles		Vehicles	587	549	690	640
No. of zero emission vehicles		Vehicles	–	2	12	13
Percentage of zero emission vehicles		%	–	0.4	1.7	2.0

Raw Materials Consumption

Indicator		Unit	2020	2021	2022	2023
Commercial ships		KRW 1 million	3,156,680	2,413,663	3,651,628	4,318,697
		%	82.9	85.9	89.6	74.3
Naval and specialty ships		KRW 1 million	652,085	396,459	418,211	1,490,854
		%	17.1	14.1	10.3	25.7
Others		KRW 1 million	18	16	4,449	3
		%	0.0	0.0	0.1	0.0

Environmental

Waste¹⁾

Indicator		Unit	2020	2021	2022	2023
Total waste generated ¹⁾		ton	50,579	33,659	36,264	41,493
General waste treatment	Total general waste treatment	ton	46,487	30,659	33,346	37,686
	Landfill	ton	6,847	4,873	6,015	7,247
	Incineration (heat recovery)	ton	13,610	6,998	6,920	6,655
	Recycled	ton	24,863	17,841	19,515	23,021
	Others & physico-chemical treatment	ton	1,167	946	895	763
Hazardous waste treatment	Total hazardous waste treatment (designated waste)	ton	4,092	3,000	2,919	3,807
	Landfill	ton	118	16	55	40
	Incineration (heat recovery)	ton	1,360	1,136	1,014	1,484
	Recycled	ton	2,515	1,846	1,844	2,274
	Others	ton	99	2	6	9

1) Calculated based on Okpo, Siheung, Anjeong business sites.

Water

Indicator		Unit	2020	2021	2022	2023
Water	Total water withdrawn ¹⁾	ton	2,639,266	2,401,847	2,318,810	2,765,135
	Service water (for shipyards)	ton	2,639,266	2,297,929	2,216,945	2,682,168
	Groundwater	ton	0	52,013	66,555	69,353
	Service water (others)	ton	n/a	51,905	35,310	13,614
	Withdrawals	ton	25,669	15,692	16,474	18,197
Water stress	Water withdrawal rate	%	1.0	0.7	0.7	0.7
	Service water (Seoul)	ton	n/a	3,553	5,690	6,607
	Service water (Siheung)	ton	25,669	12,139	10,784	11,590
Wastewater treatment	Total wastewater treatment	ton	27,121	19,294	23,558	25,299
Sewage	Total sewage flow	ton	997,475	771,445	843,352	1,006,056
	Recycled sewage	ton	261,975	162,025	89,087	176,128
	Recycled sewage rate	%	26.3	21.0	10.6	17.5

1) Total water withdrawals: Water withdrawals from Dumo Dormitory, Nongso Research Institute, Neungpo Dormitory, Seomun Sports Center, and Anjeong Industrial Complex were added alongside water withdrawals from the Okpo Shipyard since 2021.

2023 Water Consumption by Business Site

Indicator	Unit	Total	Okpo Industrial Complex	Anjeong Industrial Complex	Dumo Dormitory	Sport Plaza	Others ¹⁾
Total water consumption	ton	2,765,135	2,682,168	8,722	19,273	51,680	3,292
Service water	ton	2,695,782	2,682,168	8,722	1	2,386	2,505
Groundwater	ton	69,353	–	–	19,272	49,294	787

1) Total water consumption of Neungpo Dormitory, Seomun Sports Center, and Admiral Residence.

Chemical Substance Management

Indicator	Unit	2020	2021	2022	2023
Amount of hazardous chemicals used	ton	0	0	0.05	913.8

Air Pollution Management¹⁾

Indicator		Unit	2020 ²⁾	2021	2022	2023
NOx	Nitrogen oxide (NOx) emissions	ton	8.793	6.896	8.107	9.012
	NOx emissions intensity	ton / KRW 100 million	0.000125	0.000154	0.000167	0.00012
SOx	Sulfur oxide (SOx) emissions	ton	1.138	0.023	0.124	0.47
	SOx emissions intensity	ton / KRW 100 million	0.000016	0.000001	0.000003	0.000006
VOCs	Volatile organic compound (VOC) emissions	ton	3,245	1,871	1,257	1,375
	VOC emissions intensity	ton / KRW 100 million	0.046158	0.041702	0.025863	0.01856
PM	Particulate matter (PM10) emissions	ton	21.86	13.54	13.50	13.36
	PM10 emissions intensity	ton / KRW 100 million	0.00031	0.000302	0.000278	0.00018

1) Calculated based on Okpo, Siheung, Anjeong business sites.

2) Data modified due to changes in calculation criteria.

Water Pollution Management

Indicator		Unit	2020	2021	2022	2023
TOC	Total organic carbon (TOC) emissions	ton	0	0	0.145	0.259
	TOC emissions intensity	ton / KRW 100 million	0	0	0.000003	0.000003
COD	Chemical oxygen demand (COD) emissions	ton	0.25	0.16	Changed to TOC	Changed to TOC
	COD emissions intensity	ton / KRW 100 million	0.0000036	0.0000036	Changed to TOC	Changed to TOC
SS	Suspended solid (SS) emissions	ton	0.04	0.035	0.031	0.019
	SS emissions intensity	ton / KRW 100 million	0.00000058	0.00000078	0.00000064	0.00000026

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Safety and Health Training

	Indicator	Unit	2020	2021	2022	2023
Employees	Participants	Persons	9,051	8,684	8,375	8,833
	Training hours	Hours	185,988	202,810	169,858	179,892
	Training hours per employee	Hours	21	23	20	22
	Participation rate	%	100	100	100	99
Suppliers	Participants	Persons	11,911	10,424	12,056	15,574
	Training hours	Hours	345,598	290,166	355,214	515,292

Safety Management and International Certifications

	Indicator	Unit	2020	2021	2022	2023
Safety management	Regular risk assessment	Sessions	1	1	1	1
	Occasional risk assessment	Sessions	52	82	71	80
	Supplier safety prevention management	Y/N	Y	Y	Y	Y
	International certifications	ISO 45001	Y	Y	Y	Y

Occupational Accidents

	Indicator	Unit	2020	2021	2022	2023
Employees	Fatalities due to work-related injury ¹⁾	Persons	0	0	0	1
	Lost time incident (LTI)	Cases	34	29	18	26
	Lost time injury frequency rate (LTIFR)	Cases / 200,000 working hours	0.29	0.28	0.21	0.19
	Occupational accident rate	%	3.59	3.04	3.57	3.06
Suppliers	Fatalities due to work-related injury ¹⁾	Persons	0	0	3	0
	Lost time incident (LTI)	Cases	38	25	29	41
	Lost time injury frequency rate (LTIFR)	Cases / 200,000 working hours	0.15	0.13	0.18	0.20
	Occupational accident rate	%	1.14	1.67	1.86	2.14
Total recordable incident rate	Total recordable incident rate (TRIR)	%	0.19	0.32	0.43	0.35
Fatality rate	Fatality rate (fatality rate per 10,000 workers)	%	0	0	1.28	0.36
Near-miss frequency rate	Near-miss frequency rate (NMFR)	%	22.62	26.04	25.25 ¹⁾	24.98
	NMFR (Regular employees)	%	35.04	38.66	33.55	31.06
	NMFR (Non-regular employees)	%	16.23	18.56	19.83	21.42

1) Data modified due to changes in calculation criteria.

Employee Status

	Indicator	Unit	2020	2021	2022	2023
Total	No. of employees	Persons	9,445 ¹⁾	8,808 ¹⁾	8,635 ¹⁾	8,900 ¹⁾
By age	Below 30	Persons	601 ¹⁾	539 ¹⁾	605 ¹⁾	598
	30—49	Persons	5,860 ¹⁾	5,599 ¹⁾	5,203 ¹⁾	5,265
	50 or older	Persons	2,984 ¹⁾	2,670 ¹⁾	2,827 ¹⁾	3,037
	Regular employees	Persons	9,042 ¹⁾	8,662 ¹⁾	8,315 ¹⁾	8,423
By employment type	Male ²⁾	Persons	8,739	8,364	8,008	8,107
	Female ²⁾	Persons	303	298	307	316
	Non-regular employees	Persons	403 ¹⁾	146 ¹⁾	320 ¹⁾	477
	Male ²⁾	Persons	322	70	226	381
	Female ²⁾	Persons	81	76	94	96
	Total no. of female employees	Persons	384	374	401	412
Female employees	Senior management (executives)	Persons	1	—	—	1
	New hires	Persons	13	11	60	38
	Head of organization ²⁾	Persons	—	—	2	4
	Office roles ²⁾	Persons	378	369	394	402
	Production roles ²⁾	Persons	5	5	5	5
Minorities	Persons with disabilities	Persons	518	305 ¹⁾	268 ¹⁾	266
	National veterans	Persons	202	212	220	217
By nationality	US	Persons	2	2	1	3
	Vietnam ²⁾	Persons	—	—	—	32
	Philippines	Persons	1	1	2	—
	New Zealand	Persons	1	1	1	—
	Russia	Persons	1	1	1	—
	India	Persons	3	3	6	—
	Canada ²⁾	Persons	—	—	—	1
	Australia	Persons	2	1	—	1
Non-employed workers ²⁾	Total	Persons	11,087	9,209	14,108	16,357
	Male	Persons	9,937	8,212	11,979	14,750
	Female	Persons	1,150	997	2,129	1,607

1) Data modified due to changes in calculation criteria.

2) Newly added.

3) Including 8,892 people, 3 inside directors, and 5 outside directors based on the 2023 business report.



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Labor Union

Indicator	Unit	2020	2021	2022	2023
People eligible for union membership	Persons	5,478	4,925	4,783	4,737
Union membership rate	%	100	100	100	100
Collective bargaining agreement coverage rate	%	59	57	58	57
No. of labor-management council meetings held	Cases	1	1	–	1

Recruitment and Retention

	Indicator	Unit	2020	2021	2022	2023
Employment	Total	Persons	415	141	574	326
	Entry-level employee	Persons	86	76	304	174
	Experienced employee	Persons	329	65	270	152
Employee turnover	Total number of employee turnover	Persons	463	392	663	371
	Voluntary turnover	Persons	71	109	469	172
	Turnover rate	%	5.9	5.5	8	4.2
	Voluntary turnover rate	%	0.79	1.26	5.65	1.93
Retention	Average employee tenure	Years	18.3	19.0	19	18.5
	Male	Years	18.7	19.4	19.5	19.0
	Female	Years	8.2	9.1	8.6	8.4

Training hours

	Indicator	Unit	2020	2021	2022	2023
Training	Training hours per employee	Hours	41.30	45.00	87.02	28.00
	Training cost per employee	KRW 1,000	282	246	323	319
	Satisfaction	Points	4.49	4.41	4.49	4.65

Evaluation and Remuneration

	Indicator	Unit	2020	2021	2022	2023
Wage	Average wage	KRW 1,000	72,514	67,912	73,665	83,000
	Male	KRW 1,000	73,551	68,901	74,685	84,000
	Female	KRW 1,000	48,053	45,624	52,589	58,000
CEO and employee remuneration	Total CEO remuneration	KRW 1 million	486	378	370	892
Performance evaluation	Target	Persons	3,671	3,650	3,546	3,660
	Eligible employees	Persons	3,593	3,580	3,414	3,651
	Evaluation ratio	%	98	98	96	99.8

Work-life Balance

Indicator	Unit	2020	2021	2022	2023	
Work-life balance	Usage rate of flexible working options	%	8.8	12.2	22.1	20.7
No. of people who used parental leave	Total	Persons	107	180	265	153
	Male	Persons	77	153	213	118
	Female	Persons	30	27	52	35
Employees who returned to work after parental leave	Male	Persons	76	150	200	92
	Female	Persons	23	24	46	27
Employees who worked for a year or more after returning to work	Male	Persons	74	143	189	143
	Female	Persons	23	22	43	18



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Welfare Benefits

Indicator	Unit	2020	2021	2022	2023
Financial support for children's tuition fees	KRW 1,000	10,824,543	10,143,124	9,436,989	9,380,131
Medical expense support	KRW 1,000	8,557,247	8,543,110	8,780,223	8,862,791
Congratulatory and condolence allowance	KRW 1,000	722,300	618,900	745,460	664,800

Human Rights Education

Indicator	Unit	2020	2021	2022	2023
Training hours per employee	Hours	4	4	4	4
Education on sexual harassment prevention	Hours	1	1	1	1
Education on workplace bullying prevention	Hours	1	1	1	1
Education on disability awareness	Hours	1	1	1	1
Others	Hours	1	1	1	1

Supplier Management

	Indicator	Unit	2020	2021	2022	2023
Total suppliers	Total suppliers	Companies	172	178	194	191
	Internal suppliers	Companies	111	108	118	127
	External suppliers	Companies	61	70	76	64
Newly registered suppliers	Newly registered suppliers	Companies	5	13	46	31
	Internal suppliers	Companies	5	6	19	10
	External suppliers	Companies	0	7	27	21
	Key suppliers identified	Y/N	Y	Y	Y	Y
Suppliers with high risks	Suppliers subject to management	Companies	17	24	28	27
	Internal suppliers	Companies	16	21	25	23
	External suppliers	Companies	1	3	3	4
	Percentage of suppliers subject to management	%	10	13	14	14
	Internal suppliers	%	14	19	21	18
	External suppliers	%	2	4	4	6

Supplier ESG Support

	Indicator	Unit	2020	2021	2022	2023
Support amount	Financing and funding	KRW 100 million	19	60	10	20
Support project	Human rights & ethical management guidelines	Y/N	Y	Y	Y	Y
	Technology development support and technology protection program	Y/N	Y	Y	Y	Y
	Employee job competency development training	Y/N	Y	Y	Y	Y

Donation

	Indicator	Unit	2020	2021	2022	2023
Scholarship	Elementary schools	KRW 1,000	3,700	3,800	4,000	3,800
	Middle schools	KRW 1,000	3,800	3,800	3,800	3,800
	High schools	KRW 1,000	3,000	3,000	3,000	3,000
	Universities	KRW 1,000	600	600	600	600
	Special needs schools	KRW 1,000	600	600	600	600
Total		KRW 1,000	11,700	11,800 ¹⁾	12,000 ¹⁾	11,800

1) Corrected errors in the previous year's data.

Employee Volunteering Activities

	Indicator	Unit	2020	2021	2022	2023
No. of participating employees		Persons	2,111	1,167	785	830
Total volunteering hours		Hours	8,719	6,275	3,910	4,205
Volunteering hours per employee		Hours	4.1	5.4	5.0	5.1

Data Breach

	Indicator	Unit	2020	2021	2022	2023
Total no. of data protection violations		Cases	0	0	0	0
No. of customer data protection violations		Cases	0	0	0	0
Total amount of data breach fines and penalties		KRW 1,000	0	0	0	0

International Certifications and Investments in Information Security

Indicator	Unit	2020	2021	2022	2023
Percentage of ISO 27001 certification	%	100	100	100	100
Percentage of information security investments	%	0	2.14	3.80	3.70

Information Security Training

	Indicator	Unit	2020	2021	2022	2023
General employees	Participants	Persons	9,555	8,903	8,779	8,732
	Training hours	Hours	19,234	18,166	22,393	21,982
	Training hours per employee	Hours	2.01	2.04	2.55	2.52
	Participation rate	%	100	100	100	100
Training programs	Personal data protection training	Y/N	Y	Y	Y	Y
	Information security training	Y/N	Y	Y	Y	Y

Quality Management Promotion

Indicator	Unit	2020	2021	2022	2023
ISO 9001 certification	Y/N	Y	Y	Y	Y
ISO 29001 certification	Y/N	Y	Y	Y	Y
ISO 3834 certification	Y/N	Y	Y	Y	Y

Production Output

Indicator	Unit	2020	2021	2022	2023
Production output by product category	Ships, equipment	Total 30 ships:	Total 40 ships:	Total 19 ships:	Total 35 ships:
		9 LNG carriers,	18 LNG carriers, 5	4 LNG carriers,	3 LNG carriers,
		7 container ships,	container ships,	5 container ships,	8 container ships,
		11 tankers,	9 tankers,	6 tankers,	11 tankers,
		2 production equipment,	1 production equipment,	2 LPG carriers, 1 drillship,	6 LPG carriers, 3 drillships,
		1 surface combatant	5 surface combatants,	1 production equipment,	1 production equipment,
			2 underwater vehicles		2 surface combatants,
					1 underwater vehicle

Membership Fees

Indicator	Unit	2020	2021	2022	2023
Total membership fees	KRW 100 million	15.3	12.6	12.5	14.5
Korea Offshore & Shipbuilding Association	KRW 100 million	9.7	6.3	7.1	9.3
Korea Defense Industry Association	KRW 100 million	3.7	3.6	3.0	4.9
Korea Enterprises Federation	KRW 100 million	0.6	0.6	0.8	0.8
Geoje Chamber of Commerce and Industry	KRW 100 million	0.5	0.5	0.5	0.5
Korea Gas Union	KRW 100 million	0.3	0.3	0.1	0
Korea LNG Bunkering Industry Association	KRW 100 million	0.2	0.4	0.3	0.3

Customer Satisfaction

Indicator	Unit	2020	2021	2022	2023
Customer satisfaction score	Points	7.8	8.0	7.4	6.6
No. of customers responded	Companies	11	12	13	17



Governance

Board of Directors Composition

	Indicator	Unit	2020	2021	2022	2023
Independence ¹⁾	Ratio of outside directors	%	57	57	57	56
	No. of other external position allowed	Positions	2	2	2	2
Diversity	Ratio of female directors	%	–	–	14	11
	No. of female directors who are neither the controlling shareholders nor relatives of registered directors	Persons	–	–	1	1
Expertise	No. of outside directors with industry experiences	%	43	43	43	44
	Financial expert	Persons	1	1	1	1
Reduction or exclusion of liability	Subscription of liability insurance	Y/N	Y	Y	Y	Y
	Occurrence of leadership risk	Cases	0	0	0	0

1) Corrected errors in the previous year's data.

Board of Directors Operation Status

	Indicator	Unit	2020	2021	2022	2023
Meeting and attendance ¹⁾	No. of meetings held	Sessions	12	13	16	9
	Attendance rate	%	98.8	97.8	94.3	93.8
	Attendance rate of outside directors	%	97.9	96.2	91.7	100.0
Opinions by agenda ¹⁾	Agenda for report	ea	22	21	23	0
	Agenda for resolution	ea	23	25	27	54
	Approved	%	98.5	92.6	98.9	100.0
	Opposed	%	1.5	5.7	0.5	0
ESG agenda ¹⁾	Reserved	%	–	0.7	0.5	0
	Climate change and environmental management performance	N/Y	–	–	Y	Y
	Materiality assessment	N/Y	–	–	Y	Y

1) Calculated after the launch of Hanwha Ocean in May 2023.

Outside Director Recommendation Committee

Indicator	Unit	2020	2021	2022	2023
No. of members	Persons	5	5	5	3
Ratio of outside directors	%	80	80	80	66.7
No. of meetings held	Session	1	1	1	2
Attendance rate	%	100	100	75	100
No. of agenda items approved	Items	1	1	1	2

Audit Committee

Indicator	Unit	2020	2021	2022	2023
No. of members	Persons	3	3	4	3
Ratio of outside directors	%	100	100	100	100
Financial expertise of chairperson	Y/N	Y	Y	–	Y
Accounting expert	Persons	2	2	1	1
Industrial expert	Persons	–	–	3	1
No. of meetings held	ea	12	10	13	11
Attendance rate	%	100	97	100	100
No. of agenda items approved	ea	9	6	14	11
No. of agenda items reported	ea	33	34	39	23
No. of against or amendment	ea	–	–	–	–

Remuneration Committee

Indicator	Unit	2020	2021	2022	2023
No. of members	Persons	3	3	3	–
Ratio of outside directors	%	66.7	66.7	66.7	–
No. of meetings held	Sessions	–	1	1	–
Attendance rate	%	–	100	100	–
No. of agenda items approved	Items	–	1	1	–

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Indicator		Unit	2020	2021	2022	2023
No. of members		Persons	–	–	5	3
Ratio of outside directors		%	–	–	80	66.67
No. of ESG experts		Persons	–	–	2	–
Attendance rate		%	–	–	100	100
No. of meetings held		Cases	–	–	2	2
No. of agenda items approved		Cases	–	–	1	2
No. of agenda items reported		Cases	–	–	3	–
No. of against or amendment		Cases	–	–	–	–

Code of Conduct

Indicator		Unit	2020	2021	2022	2023
Adoption of the Code of Conduct	Employee Code of Conduct adoption ratio	%	100	100	100	100
Audit	Reporting and disciplinary actions audit	ea	91	45	44	42

Ethics and Compliance Education

Indicator		Unit	2020	2021	2022	2023
Ethics education	Training hours per employee	Hours	0.42	0.42	0.52	0
	Participation rate	%	42	42	52	0
	No. of education sessions	Sessions	4	15	23	0
Compliance education	No. of participants	Persons	3,968	3,884	3,853	801

Violation of Law

Indicator		Unit	2020	2021	2022	2023
No. of non-monetary sanctions related to anti-corruption		Cases	2	–	3	9
Fines and settlements related to anti-trust/competitive business practices		KRW 100 million	–	159	–	–

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Memberships in Key Associations

Financial Performance (Summary of Consolidated Financial Statements)

(Unit: KRW million)

Classification		24th Term (As of Dec. 31, 2023)	23rd Term (As of Dec. 31, 2022)	22nd Term (As of Dec. 31, 2021)	21st Term (As of Dec. 31, 2020)
Current assets		9,096,136	7,738,158	6,419,035	5,892,256
	Cash and cash equivalents	1,770,497	633,464	1,748,495	1,330,484
	Trade receivables and other receivables	334,564	403,486	345,269	675,488
	Contract assets	2,481,791	2,515,400	1,919,963	2,158,917
	Inventories	2,852,678	2,190,744	910	110,496
	Others	1,656,606	1,995,064	2,404,398	1,616,871
Non-current assets		4,407,021	4,308,672	4,021,762	4,260,874
	Investments in associates and joint ventures	22,931	2,931	3,677	2,185
	Long-term trade receivables and other receivables	272,709	201,864	103,840	77,417
	Property, plant and equipment	3,755,172	3,709,725	3,375,716	3,590,483
	Others	356,209	394,152	538,529	590,789
Total assets		13,503,157	12,046,830	10,440,797	10,153,130
Current liabilities		7,382,284	10,586,129	7,375,444	5,097,551
Non-current liabilities		2,075,933	816,841	937,703	1,288,802
Total liabilities		9,458,217	11,402,971	8,313,147	6,386,353
Equity					
	Issued capital	1,536,794	541,453	541,453	541,453
	Other paid in capital	2,623,327	-714,455	-714	-741
	Hybrid bonds	2,332,832	2,332,832	2,332,832	2,332,832
	Other equity items	553,559	554,497	316,311	306,701
	Retained earnings	-3,001,572	-2,784,208	-1,062,232	586,505
Total equity		4,044,940	643,860	2,127,650	3,766,777

(Unit: KRW million)

Classification		24th Term (As of Dec. 31, 2023)	23rd Term (As of Dec. 31, 2022)	22nd Term (As of Dec. 31, 2021)	21st Term (As of Dec. 31, 2020)
Sales		7,425,979	4,817,662	4,485,486	7,041,551
Operating profit (loss)		-238,505	-1,643,301	-1,736,267	152,360
Net income (loss)		109,832	-1,767,320	-1,673,121	114,537
Earnings (loss) per share					
	Basic earnings (loss) per share	465	-16,703	-15,823	844
	Diluted earnings (loss) per share	453	-16,703	-15,823	694

(Unit: KRW million)

Classification		24th Term (As of Dec. 31, 2023)	23rd Term (As of Dec. 31, 2022)	22nd Term (As of Dec. 31, 2021)	21st Term (As of Dec. 31, 2020)
Current assets		9,217,524	7,822,464	6,481,079	5,953,237
	Cash and cash equivalents	1,799,308	659,721	1,778,940	1,343,559
	Trade receivables and other receivables	332,547	404,742	345,122	675,749
	Contract assets	2,517,851	2,566,075	1,936,517	2,175,886
	Inventories	2,890,783	2,202,076	1,139,096	963,311
	Others	1,677,035	1,989,850	1,281,404	794,732
Non-current assets		4,727,249	4,413,201	4,142,130	4,367,537
	Investments in associates and joint ventures	4,243	3,695	3,989	4,578
	Long-term trade receivables and other receivables	273,802	203,539	103,932	77,524
	Property, plant and equipment	4,062,171	3,786,680	3,469,403	3,667,875
	Others	387,033	419,287	564,806	617,560
Total assets		13,944,773	12,235,665	10,623,209	10,320,774
Current liabilities		7,459,444	10,672,486	7,464,468	5,162,709
Non-current liabilities		2,173,171	818,207	941,158	1,289,095
Total liabilities		9,632,615	11,490,693	8,405,626	6,451,804
Owners of the parent company		4,307,452	744,972	7,464,468	3,868,970
	Issued capital	1,536,794	541,453	941,158	541,453
	Other paid in capital	2,747,030	16,929	8,405,626	16,929
	Hybrid bonds	2,332,832	2,332,832	7,464,468	2,332,832
	Other components of equity	558,953	554,468	941,158	302,489
	Retained earnings	-2,868,157	-2,700,710	8,405,626	675,267
Non-controlling interests		4,704	-	7,464,468	-
				941,158	
Total equity		4,312,157	744,972	8,405,626	3,868,970

(Unit: KRW million)

Classification		24th Term (As of Dec. 31, 2023)	23rd Term (As of Dec. 31, 2022)	22nd Term (As of Dec. 31, 2021)	21st Term (As of Dec. 31, 2020)
Sales		7,408,312	4,860,150	4,486,586	7,030,175
Operating profit (loss)		-196,498	-1,613,565	-1,754,651	153,437
Net income (loss)		160,044	-1,744,778	-1,699,829	86,573
Owners of the parent company		159,886	-1,744,778	-1,699,829	86,573
Non-controlling interests		158	-	-	-
Earnings (loss) per share	Basic earnings (loss) per share	736	-16,493	-16,072	584
	Diluted earnings (loss) per share	659	-16,493	-16,072	525
No. of consolidated subsidiaries		6	4	4	4

GRI Content Index

GRI 1 : Foundation 2021

Statement of use	Hanwha Ocean adheres to the GRI standards to disclose our information regarding sustainability management for the reporting period (Jan. 1—Dec. 31, 2023).
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard	No adoptable GRI Sector Standards are available as of now.

GRI 2: General Disclosures 2021

Topic	No.	Disclosure	Page
The organization and its reporting practices	2-1	Organizational details	6, 9
	2-2	Entities included in the organization's sustainability reporting	9
	2-3	Reporting period, frequency, and contact point	2
	2-4	Restatements of information	89, 90, 92, 94 (Modified data is indicated as a footnote)
	2-5	External assurance	2, 103, 104
Activities and workers	2-6	Activities, value chain, and other business relationships	6~9
	2-7	Employees	90
	2-8	Workers who are not employees	90
Governance	2-9	Governance structure and composition	68~71
	2-10	Nomination and selection of the highest governance body	68~71
	2-11	Chair of the highest governance body	68~71
	2-12	Role of the highest governance body in overseeing the management of impacts	68~71
	2-13	Delegation of responsibility for managing impacts	68~71
	2-14	Role of the highest governance body in sustainability reporting	68~71
	2-15	Conflicts of interest	68~71

Topic	No.	Disclosure	Page
Governance	2-16	Communication of critical concerns	68~71
	2-17	Collective knowledge of the highest governance body	68~71
	2-18	Evaluation of the performance of the highest governance body	68~71
	2-19	Remuneration policies	71
	2-20	Process to determine remuneration	71
	2-21	Annual total compensation ratio	91
Strategy, policies, and practices	2-22	Statement on sustainable development strategy	12, 13
	2-23	Policy commitments	26, 31, 43, 63, 72, 78
	2-24	Embedding policy commitments	26, 31, 43, 63, 72, 78
	2-25	Processes to remediate negative impacts	74, 75
	2-26	Mechanisms for seeking advice and raising concerns	48, 55, 62, 75~77
	2-27	Compliance with laws and regulations	95
	2-28	Membership associations	106
	2-29	Approach to stakeholder engagement	14, 35
Stakeholder engagement	2-30	Collective bargaining agreements	57



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GRI 3 : Material Topics 2021

Topic	No.	Disclosure	Page
Disclosures on material topics	3-1	Process to determine material topics	15
	3-2	List of material topics	15
Safety and health	GRI 3: Material Topics 2021	3-3	Management of material topics
	Occupational Health and Safety 2018	403-1	Occupational health and safety management system
		403-2	Hazard identification, risk assessment, and incident investigation
		403-3	Occupational health services
		403-4	Worker participation, consultation, and communication on occupational health and safety
		403-5	Worker training on occupational health and safety
		403-6	Promotion of worker health
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships
		403-8	Workers covered by an occupational health and safety management system
		403-9	Work-related injuries
		403-10	Work-related ill health
Climate action	GRI 3: Material Topics 2021	3-3	Management of material topics
	Energy 2016	302-1	Energy consumption within the organization
		302-2	Energy consumption outside of the organization
		302-3	Energy intensity
		302-4	Reduction of energy consumption
		302-5	Reductions in energy requirements of products and services
	Emissions 2016	305-1	Direct (Scope 1) GHG emissions
		305-2	Energy indirect (Scope 2) GHG emissions
		305-3	Other indirect (Scope 3) GHG emissions
		305-4	GHG emissions intensity
		305-5	Reduction of GHG emissions
		305-6	Emissions of ozone-depleting substances (ODS)
		305-7	NOx, SOx, and other significant air emissions



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GRI 3 : Material Topics 2021

Topic		No.	Disclosure	Page
Supply chain management and shared growth	GRI 3: Material Topics 2021	3-3	Management of material topics	15
	GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	64
		308-2	Negative environmental impacts in the supply chain and actions taken	64
	GRI 3: Material Topics 2021	3-3	Management of material topics	15
	GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	64
		414-2	Negative social impacts in the supply chain and actions taken	64, 92
Ethics and compliance	GRI 3: Material Topics 2021	3-3	Management of material topics	15
	Anti-competitive behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	76
	GRI 205: Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	73, 74, 77
		205-2	Communication and training about anti-corruption policies and procedures	73, 74, 75, 77
		205-3	Confirmed incidents of corruption and actions taken	95



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The signatories to the Paris Agreement set targets for cutting GHG emissions and pledged to implement global efforts to combat global warming in 2015. In December 2015, the Financial Stability Board (FSB) established the TCFD in response to global social movements and demands. The TCFD encourages companies to identify climate change-related risks and opportunities directly and disclose their financial impacts.

Topic	Recommendations	Page
Governance	Describe the board's oversight of climate change-related risks and opportunities	26
	Describe management's role in assessing and managing climate change-related risks and opportunities	26
Strategy	Describe the climate change-related risks and opportunities the organization has identified over the short, medium, and long term	28,29
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	28,29
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	27,29
Risk Management	Describe the organization's processes for identifying and assessing climate change-related risks	28
	Describe the organization's processes for managing climate change-related risks	28,29
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	28,29
Metrics and Targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	89
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks	87
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	30



INTRO	Topic	Code	Metric	Unit	2023
			(1) Total energy consumed	Gigajoules (GJ)	7,395.4
OVERVIEW	Energy Management	RT-IG-130a.1	(2) Percentage grid electricity	Percentage (%)	65
			(3) Percentage renewable	Percentage (%)	0
ESG MANAGEMENT	Employee Health and Safety	RT-IG-320a.1	(1) Total recordable incident rate (TRIR)	-	0.35
			(2) Fatality rate	-	0.36
SUSTAINABLE SOLUTION PROVIDER			Near miss frequency rate (NMFR) for (a) direct employees and (b) contract workers	-	(a) 31.06 (b) 21.42 (3) 24.98
		RT-IG-410a.1	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	Liters per 100 ton-km	N/A
ESG PERFORMANCE		RT-IG-410a.2	Sales-weighted fuel efficiency for non-road equipment	Liters per hour	N/A
	Fuel Economy and Emissions in Use Phase	RT-IG-410a.3	Sales-weighted fuel efficiency for stationary generators	Kilojoules per liter	N/A
ESG FACT BOOK			Sales-weighted emissions of: (1) NOx and	Grams per kilojoule	9,012
		RT-IG-410a.4	(2) PM for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines	Grams per kilojoule	(2) 13.36 a. b. c. d. n/a (ton is used as the unit of quantitative data)
APPENDIX	Materials Sourcing	RT-IG-440a.1	Description of the management of risks associated with the use of critical materials	N/A	36p
	Remanufacturing Design and Services	RT-IG-440b.1	Revenue from remanufactured products and remanufacturing services	Currency	N/A
Financial Performance	Activity Metric	RT-IG-000.A	Number of units produced by product category	Number	Total 35 ships: 3 LNG carriers, 8 container ships, 11 tankers, 6 LPG carriers, 3 drillships, 1 production equipment, 2 surface combatants, 1 underwater vehicle
GRI Content Index		RT-IG-000.B	Number of employees	Number	8,900
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To readers of Hanwha Ocean Sustainability Report 2023

Introduction

Korea Management Registrar (KMR) was commissioned by Hanwha Ocean to conduct an independent assurance of its Sustainability Report 2023 (the “Report”). The data and its presentation in the Report is the sole responsibility of the management of Hanwha Ocean. KMR’s responsibility is to perform an assurance engagement as agreed upon in our agreement with Hanwha Ocean and issue an assurance statement.

Scope and Standards

Hanwha 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 2, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact, and the reliability of the information and data provided using the Global Reporting Initiative (GRI) Index provided below. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team.

Confirmation that the Report was prepared in accordance with GRI standards 2021 was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process. We also confirmed that the report was prepared in accordance with the TCFD recommendations and SASB.

- GRI Sustainability Reporting Standards 2021
- Universal Standards
- Topic Specific Standards
 - GRI 205 : Anti-corruption
 - GRI 206 : Anti-competitive behavior
 - GRI 302 : Energy
 - GRI 305 : Emissions
 - GRI 308 : Supplier environmental Assessment
 - GRI 403 : Occupational Health and Safety
 - GRI 414 : Supplier Social Assessment
- SASB Sustainability Disclosure Topics & Accounting Metrics
- TCFD recommendations

As for the reporting boundary, the engagement excludes the data and information of Hanwha Ocean’s 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 Hanwha 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.

GHG Emissions Assurance Statement



GREENHOUSE GAS EMISSIONS VERIFICATION OPINION

Hanwha Ocean Co., Ltd.

Introduction

DNV Business Assurance Korea Ltd. ("DNV") was commissioned by Hanwha Ocean Co., Ltd. (here after "Company") to perform third party verification for the Company's Greenhouse Gas Inventory ("the inventory"). The Company is responsible for the preparation of the GHG emissions data on the basis set out within the guidelines on the operation of GHG emissions trading scheme (ETS) (Notification No. 2023-221, Korean Ministry of Environment) based on 'ISO 14064-1: 2018'. Our responsibility in performing this work is to the management of the Company only and in accordance with terms of reference agreed with them. DNV expressly disclaims any liability or responsibility for any decisions, whether investment or otherwise, based upon this verification opinion.

Objectives and scope of verification

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

- Organizational Boundary: Hanwha Ocean Co., Ltd.'s domestic business Sites in Korea
- Operational Boundary: Scope 1(Direct emissions), Scope 2(Indirect emissions) (fugitive emissions from refrigerant are excluded)
- Reporting period: 2023.01.01 ~2023.12.31

Verification Approach

The verification has been conducted in accordance with the verification principles and tasks outlined in the guidelines on the operation of GHG ETS (Notification No. 2023-211, Korean Ministry of Environment) and the verification guideline for GHG ETS (Notification No. 2021-211, Korean Ministry of Environment) based on 'ISO 14064-3:2019'. We planned and performed our work so as to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a verification opinion under reasonable assurance with 5% materiality level, concerning the completeness of the emission inventory as well as the reported emission figures in ton CO₂ equivalent. As part of the verification process, we have reviewed as follows;

- The GHG emissions report for the calendar year 2023
- Process to generate, aggregate and report the emissions data

Conclusions

We confirmed that the company's GHG emissions have been appropriately calculated and reported in accordance with the reporting standards above.

- DNV presents an 'Unmodified' opinion on Greenhouse Gas Emissions

(Unit: ton CO₂-eq)

Yr 2023	Direct emissions (Scope 1)	Indirect emissions (Scope 2)	Total emissions
Hanwha Ocean Co., Ltd.	187,855	228,825	416,679

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

14 June 2024
Seoul, Korea

Jang-Sub Lee
Country Representative
DNV Business Assurance Korea

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

AO_PRJN-690100-01-2024-AST-ENG



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Societies and Associations

Korea Offshore & Shipbuilding Association

Korea LNG Bunkering Industry Association

Korea Defense Industry Association

Korea Listed Companies Association

Korea Project Management Association

The Korean Society of Ocean Engineers

The Society of Naval Architects of Korea

The Korean Association for Industrial Technology Security

Korea Customs Logistics Association

Korea Enterprises Federation Industrial Safety & Health Committee

Korea AEO Association

Ministry of Trade, Industry and Energy Emergency Plan Committee

Gyeongnam Industrial Security

Gyeongnam Industrial Security Executive Council

Geoje Security Cooperation Committee

Gyeongnam Defense Industry Security Council

Geoje Chamber of Commerce and Industry

