BEYOND BLUE
FORWARD TO GREEN

HDKSOE INTEGRATED REPORT 2023

HD KOREA SHIPBUILDING & OFFSHORE ENGINEERING

About this Report

Report Overview

This report is an Integrated Report of HD Korea Shipbuilding & Offshore Engineering (HDKSOE) and its shipbuilding subsidiaries—HD Hyundai Heavy Industries (HHI), HD Hyundai Mipo (HMD), and HD Hyundai Samho (HSHI)—designed to transparently disclose to stakeholders the financial and non-financial risks faced by the company, as well as the current status and plans for addressing such risks. HDKSOE and its shipbuilding subsidiaries have published an Integrated Report annually, through which we will continue to share management and sustainability information in a transparent manner and actively communicate with various stakeholders.

Reporting Standards and Frameworks

This report adheres to the requirements of the Global Reporting Initiative (GRI) Standards 2021, an international guideline for sustainable management reporting. To reflect key issues related to the shipbuilding and offshore engineering industry, the report complies with the framework of the Task Force on Climate-related Financial Disclosure (TCFD) and the sector disclosure metrics of the Sustainability Accounting Standards Board (SASB). In addition, this report employs the framework of 'Governance – Strategy – Risk Management – Metrics and Targets' for each topic on environmental and social themes, and the IR Framework presented by International Integrated Reporting Council (IIRC).

Reporting Period

This report covers the activities of HDKSOE and its shipbuilding subsidiaries from January 1 to December 31, 2023. To respect stakeholders' right to know and ensure more transparent information disclosure, the report includes some activities and achievements beyond the reporting period. The report also provides quantitative performance and metrics including financial information for the past three years from 2021 to 2023, allowing stakeholders to identify data trends.

Reporting Scope

This report covers HDKSOE, HHI, HMD, and HSHI. While financial performances are presented in accordance with the Korea International Financial Reporting Standards (K-IFRS), non-financial activities and performances are limited to the domestic operations of HDKSOE and its shipbuilding subsidiaries. Some data includes HD Hyundai Vietnam Shipbuilding, a subsidiary of HMD. To focus on the activities and performances in the shipbuilding and offshore engineering sectors, other subsidiaries within the consolidated disclosure scope are excluded from this report.

Third-Party Assurance

The report has received third-party assurance from an external organization to enhance its reliability and quality. Detailed assurance statements can be found on pages 158-159 of this report.

Contact Information

For any inquiries or comments regarding HDKSOE Integrated Report 2023, please contact the ESG Department of HDKSOE.

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Email: ksoe.esg@hd.com
Report Publication Date: (August 2nd, 2024)

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Report Contents Outline

HDKSOE Integrated Report 2023 (hereafter referred to as "the report") represents the ESG (Environmental, Social, and Governance) management commitment of HDKSOE and its shipbuilding subsidiaries (HHI, HMD, and HSHI) as we emerge as leading companies in sustainable management in tune with future paradigm shifts. To enhance user convenience and readability, the report is structured in the following order: Introduction of HDKSOE and its shipbuilding subsidiaries; ESG Management System; Environmental, Social, and Governance; Quantitative ESG data; and Appendix containing information disclosure index and third-party assurance statement.

In particular, to ensure 'systematic information disclosure' suggested in ESG information disclosure principles, standards, and guidelines, the report maintains consistent structures and sequences of Governance, Strategy, and Risk Management for each topic under 'Environmental' and 'Social' themes. Quantitative performance data for each topic is provided in the 'ESG Fact Book' section.

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HD Korea Shipbuilding & Offshore Engineering

We Will Take the Initiative in Green Digital Transformation at the Ocean

HDKSOE CEO
CHUNG Ki-sun

HDKSOE CEO
KIM Sung-joon

Dear Esteemed Stakeholders,

We extend our deepest gratitude for your strong interest and support for the sustainable management of HDKSOE. In 2023, we made tireless efforts with our vision of leading maritime mobility and eco-friendly energy industries and exploring new opportunities at the ocean. As part of these efforts, we achieved meaningful improvements in our performance, including winning orders for 160 ships and returning to profit. In addition, we successfully completed innovation projects such as "Visible and Understandable Shipyard," the first phase of our Future of Shipyard (FOS) project, thereby greatly enhancing process efficiency at our shipyards. Moreover, we made significant advancements in technological innovation for reducing environmental impacts, particularly highlighting the development of ship propulsion systems tailored for fuel conversion to green methanol and ammonia. We sincerely appreciate your warm support and encouragement, which made all these achievements possible.

Over the past three years HDKSOE has made diverse endeavors to establish the ESG governance system. To name a few, we have developed our ESG vision and slogans and formed the ESG Committee under the Board of Directors. Now, as we enter the ESG 2.0 era, we aim to set more challenging goals and create more substantial results. In this regard, we will effectively respond to intensified ESG regulations, do our best to fulfill our commitment to the Net Zero initiative declared in 2023, and support sustainable management not only for HDKSOE but also for our contractors.
Moving forward, we plan to promote ESG management this year with a focus on the following actions.

First, we will actively respond to mandatory ESG information disclosure.

In the midst of tightened global ESG regulations, we plan to prepare sustainability information disclosures on a consolidated basis connected with financial impact assessments of opportunities and risks for each ESG topic as well as our financial reporting. The ESG disclosure will be prepared in accordance with international standards, including the International Financial Reporting Standards (IFRS) for sustainability reporting, the EU's Corporate Sustainability Reporting Directive (CSRD), and the SEC's climate-related disclosures in the United States. During the first half of 2024, we completed an assessment of our ESG disclosure levels together with our affiliates. In the second half of this year, we plan to estimate financial impacts focusing on climate topics and develop internal control measures to collect consolidated data. Through a transparent ESG disclosure, we will build trust with our investors and stakeholders and provide a foundation for sustainable growth.

Second, we will strive to achieve carbon neutrality.

HDKSOE has drawn and publicly announced a carbon neutrality roadmap for the first time in the shipbuilding industry, thus accelerating our efforts to achieve carbon neutrality. We aligned C-Level ESG KPIs with GHG emissions management, strengthening quarterly performance review and management to reduce carbon emissions. Furthermore, to implement the Net Zero strategy, we actively promote the adoption of renewable energy and high-efficiency equipment, and the participation in carbon offset programs. HDKSOE is committed to its goal of becoming a 'Global No. 1 Net-Zero Shipbuilder' that preserves the clean ocean with our shipbuilding and offshore engineering technologies.

Third, we will identify and mitigate potential negative impacts in the supply chain.

HDKSOE is on the right track to foster the sustainability of the supply chain by supporting our contractors in identifying and mitigating potential ESG risks and establishing an integrated ESG management system with fair transaction practices. In 2022, we conducted ESG assessments and improvement activities for the contractors of HHI, while expanding the assessment and due diligence to the contractors of HMD and HSHI in 2023. In addition, we established the supply chain management KPIs for our affiliates in 2023 to improve the supply chain management framework. Moving forward, we will continue to strengthen ESG assessments for contractors to meet customer demands, and effectively enhance our due diligence systems to create a sustainable workplace together.

HDKSOE will strive to become a global shipbuilder that leads the future maritime industry by actively responding to the demands of sustainable management and technological requirements. Through transparent ESG information disclosure, achievement of carbon neutrality, and strengthened supply chain sustainability, we will continue to attain sustainable growth. Furthermore, we will increase our competitiveness by developing innovative technologies, providing tailored solutions to our customers, and establishing a safe and efficient shipbuilding system.

We sincerely request the continued interest and unwavering support of our stakeholders in the course of HDKSOE's long journey toward sustainable growth.

HD Korea Shipbuilding & Offshore Engineering

Introduction of HDKSOE

Overview

HDKSOE, an intermediate holding company managing the whole shipbuilding and offshore business sector of HD Hyundai, is a technology-oriented company equipped with R&D and engineering expertise in the areas of shipbuilding, offshore plant, marine engine and machinery, industrial machines and energy. **HDKSOE** provides a smart and efficient 'Marine Solution' ranging from shipbuilding, ship engines, propulsion systems, and offshore construction to ship life-cycle management services. HDKSOE also plays a pivotal role in charting a course for the group's mid- and long-term development and presenting a growth strategy. In addition, HDKSOE strives to lay the foundation for the group's sustainable growth by developing innovative technologies as a core driver for future growth and recruiting talented research and technology professionals. Furthermore, HDKSOE creates new added values by maximizing the synergies of the affiliates, while simultaneously driving the co-prosperity throughout the entire industrial ecosystem, which includes the group's affiliates and contractors.

Legal name	HD Korea Shipbuilding & Offshore Engineering Co., Ltd
Founding date	Dec. 28th, 1973
Major Business	Shipbuilding, offshore plant, engines & machinery, etc.
Listing date	Aug. 24th, 1999

CEOs	Chung Ki-sun, Kim Sung-joon
Address	477, Bundangsuseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Credit Rating	A (Issuer Credit Rating)
Listing market	Korea Exchange (KRX) KOSPI Market

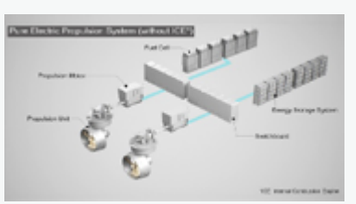
Environmental Impact Reduction Systems

As the world's No.1 shipbuilding company, HDKSOE provides gas solution products such as LNG, LPG, and Methanol, as well as fuel-saving devices. Based on our concept of Total Solution Provider, we control and optimize entire products and services in an integrated manner, thereby building a responsible management system for whole business streams from engineering to service. Furthermore, HDKSOE actively leverages the sales infrastructure of its shipbuilding subsidiaries to secure a stable quantity of orders and strengthen competitiveness based on accumulated technologies and performances. In response to future vessel technology, HDKSOE will continue research on digital platforms such as electric/hybrid propulsion and energy management systems, and future core technologies including fuel cell, water electrolysis, and small modular reactor (SMR).

Fuel supply system for LNG-fueled ship

Low- and Zero-carbon (LZC) Ship Propulsion Solutions

Our products support a seamless transition in the shipping industry through innovative, sustainable, and high-efficiency hybrid and electric propulsion solutions. To name a few, we provide solutions to reduce negative impacts on the environment: 'Direct-drive System' connecting a 4-stroke HiMSEN engine directly to the propulsion unit; and 'Hybrid Propulsion System' combining a 4-stroke HiMSEM engine and onboard power sources (engines, batteries, etc.). HDKSOE also provides electric propulsion solutions: 'Electric Propulsion System' that drives a propulsion motor with onboard engine-based power sources; and 'Pure Electric Propulsion System' that drives a propulsion powered by batteries and fuel cells without an internal combustion engine.



Configuration of Pure Electric Propulsion System

R&D

HDKSOE continues to expand R&D infrastructures and foster excellent research personnel to promote the growth and development of the company and its shipbuilding subsidiaries. HDKSOE also maximizes R&D efficiency through distinct role sharing among the research departments of the intermediate holding company and the affiliates. With an aim to become a technology-driven shipbuilding & offshore company with the world's best R&D and engineering expertise, HDKSOE will further strengthen its competitive edge as the global leading company with the R&D activities being a key driver.

R&D for Future Technologies

Key R&D achievements for 2023

- Developed welding technology for LNG gas tank
- Developed welding automation technology
- Developed economic welding technique/ painting technology
- Developed new material for gas cargo containment system (CCS)
- Developed new hull form for each ship type to improve fuel efficiency
- Developed LZC fuel propulsion/transport technology
- Developed technologies to reduce GHG emissions from ships
- Developed the next-generation CCS and cargo management system for gas carriers
- Developed hybrid electric propulsion design technology
- Developed design technology for nuclear-powered ships
- Developed Smart Ship with digital twin technology
- Automated production process through big data analysis
- Developed detection/analysis technology of safety or fire risk factors

HD Korea Shipbuilding & Offshore Engineering

Business Performance and Financial Status

Business Operations Overview

HDKSOE and its shipbuilding subsidiaries secure rich experience and expertise in shipbuilding, a diverse range of products, extensive trade performances with prominent global clients, and project operation and management capabilities such as in-house production and procurement of equipment. With technological strengths backed by our R&D infrastructure, we continuously respond to market changes.

Order Performances for the Recent Three Years

Category	2021		2022		2023	
	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)
Shipbuilding	216	201.5	189	228.9	158	211.5
LNG Carriers	29		45		39	
LPG Carriers	49		14		35	
Container Ships	72		92		29	
Tankers	53		28		45	
Others	13		10		10	
Naval & Special Ships	3	10.4	7	11.9	1	1.4
Offshore & Plants	3	18.2	-	0.2	1	12.9
Engine & Machinery	-	20.7	-	33.6	-	31.2
Total	222	250.8	196	274.7	318	257.4

Order Status for 2023

(Unit: KRW mil., based on the orders between Jan. 1 and Dec. 31, 2023)

Category	Opening contract balance	New contract amount	Delivered amount	Order backlog
Shipbuilding	50,671,348	27,412,852	17,694,375	60,389,825
Offshore & Plants	1,672,831	1,606,604	1,268,297	2,011,138
Others	3,886,460	3,375,887	2,382,024	4,880,323
Total	56,230,639	32,395,343	21,344,696	67,281,286

Key Financial Data for the Recent Three Years

(Unit: KRW mil., consolidated basis)

Category	2021	2022	2023
Revenue	15,493,382	17,302,020	21,296,206
Shipbuilding	13,240,176	14,561,286	17,694,375
Offshore & Plants	620,532	890,474	1,268,297
Engine & Machinery	739,774	734,501	1,640,906
Others	892,900	1,115,759	692,628
Operating Profit (Loss)	(1,384,816)	(355,561)	282,261
Shipbuilding	(877,862)	(320,485)	119,859
Offshore & Plants	(111,656)	(208,945)	(66,660)
Engine & Machinery	(100,762)	183,452	286,283
Others	(294,536)	(9,583)	(57,221)
Net Profit (Loss)	(1,141,204)	(295,177)	144,930
Total Assets	27,293,094	29,883,476	32,242,568
Total Liabilities	14,879,339	17,571,346	19,872,465
Total Equity	12,413,755	12,312,130	12,370,103

HD Korea Shipbuilding & Offshore Engineering

Market Conditions and Outlook

Shipbuilding Sector

As countries all over the world have resumed their economic activities in the post-COVID-19 era, there has been a rebound in the shipbuilding and shipping markets, resulting in increased investments in new ship constructions by ship owners. This led to growing volumes in new ship orders until 2022, with the strong demands of LNG and LPG carriers leading the way in 2023. In 2024, new ship orders are expected to display a slight decrease compared to 2023. However, the demand for replacing existing ships with high-efficiency dual-fuel ones is forecast to increase in order to respond to global energy supply imbalances and tightened environmental regulations. With a stable order trend, shipyards are maintaining high pricing stances as the ship's production cost has dramatically increased, due to combined unfavorable conditions of slot shortages and global inflation, such as high oil prices and increased raw material costs.

HDKSOE and its shipbuilding subsidiaries have maintained a leading position in the shipbuilding sector based on exceptional technological strengths and rich shipbuilding experience. We aim to move forward to consolidate our presence in the dual-fuel ship market such as LPG, ethane, and methanol. Furthermore, we will continue to review and develop hydrogen carriers and ammonia-fueled vessels, which are gaining attention as next-generation fuels, to meet diverse technological demands from the market and consistently strengthen market dominance with our differentiated engineering capabilities.

Offshore Plant Sector

As OPEC+ countries maintain their voluntary production cuts, accompanied by the U.S.–China trade conflict, the prolonged war between Russia and Ukraine, and the outbreak of the Israel-Palestine war, imbalances in the supply and demand of oil are expected to linger, maintaining high oil prices. Such high oil prices have brought inquiries from North and South America, the Middle East, Southeast Asia, and Oceania, which leads to sustaining high-economy offshore construction orders and intensifying the competition within the industry.

HDKSOE and HHI have strived to improve productivity and save costs through cooperation between ordering clients and manufacturing contractors, such as utilizing not only yards for the corresponding business sector but also overseas yards. Moreover, to gain an upper hand in the market competition, we focus on building trust with clients, adhering to delivery schedules, and ensuring a high level of quality control.

In addition, HDKSOE and HHI are participating in the basic design phase of a new renewable energy project (offshore wind power project) as a new project for the offshore plant sector. On top of that, we are involved in the basic design stages of offshore wind power projects for major oil companies like TotalEnergies and Equinor, seeking opportunities to engage in the execution phases of these projects.

Engine and Machinery Sector

New ship orders for 2024 are initially forecast to slightly decrease due to concerns of an economic downturn and the base effect from large-scale orders over the past three years. However, as shipyards have secured work to do, most of the slots are presently occupied. In turn, such slot shortage has taken the new ship price index to its highest level since 2009. In addition, in line with accelerated moves to tighten regulations on ship carbon emissions such as EEXI and CII, there would be continuous demand from ship owners to replace their fleets with those having high-efficiency and low-carbon engines.

HDKSOE and HHI possess the HiMSEN engine, the only domestic brand of 4-stroke engine for large ships. The HiMSEN engine represents approximately 35% of the market share in the medium-speed engine segment for ship generators, competing with numerous other engine manufacturers. In 2023, in particular, over 65% of the total engine and machinery orders were for highly profitable, energy-efficient, low-carbon engines. We will lead the development of engines fueled by LNG, LPG, methanol, and ethane, as well as engines for new fuels such as ammonia, thereby expanding our presence in the market. Furthermore, we are enhancing the R&D capabilities required to build hybrid systems, integrating batteries to replace the conventional internal combustion engines.

Production Capacity for 2023

Business Sectors	Business Site	Production Capacity (thousand GT)	Remarks
Shipbuilding	HHI	10,000	* The offshore plants sector primarily manufactures offshore plant equipment and participates in a part of ship block construction.
	HMD	2,467	
	HSHI	3,800	
	Hyundai-Vietnam Shipbuilding	502	
Offshore & Plants	HHI	1,200*	Max. capacity when producing ships at H-Dock: 1,200 thousand GT annually
Engine & Machinery	HHI	16,000 thousand BHP	

Business Operation Rate for 2023

Business Sectors	Business Site	Available Operational Hours* (thousand M/H)	Actual Operation Hours (thousand M/H)	Remarks
Shipbuilding	HHI	26,417	21,466	* Merchant ship (shipbuilding), offshore plants, engine & machinery: based on normal activity Naval & special ship (shipbuilding): based on the annual input plan of average production workers
	HMD	9,700	9,101	
	HSHI	14,000	15,621	
	Hyundai-Vietnam Shipbuilding	6,093	5,376	
Offshore & Plants	HHI	6,904	4,740	
Engine & Machinery	HHI	2,291	2,959	

HD Hyundai Heavy Industries

With Sustainable Management, HHI Will Usher in a New Era

HHI President & CEO
LEE Sang-kyun

HHI President & CEO
NOH Jin-yul

Dear Esteemed Stakeholders,

We extend our sincere gratitude for your unwavering support and interest in HHI. Despite the challenging management environment due to the global economic downturn and more stringent international regulations, we have turned crises into opportunities. The sustained growth that we have achieved was only possible thanks to your generous support and encouragement. In 2023, HHI recorded remarkable achievements such as surpassing a cumulative production of 200 million horsepower for large engines for the first time in the world and being selected as the world's best ship for 41 consecutive years, making the year for laying the groundwork for another 50-year journey on the proud history of our past 50 years. In 2024, we still are faced with numerous challenges posed by economic, social, and environmental issues. Against this backdrop, HHI will not be complacent about the achievements up to now, and will further expand sustainable management activities to realize a clean future starting from the sea.

First, we will establish an advanced ESG management system by advancing and internalizing our ESG management framework.

Internalizing ESG management is one of the key strategies of HHI to achieve sustainable growth in the future. To this end, HHI has formed a company-wide ESG management framework, establishes and monitors our ESG strategies and performances such as enhancing ESG governance and strengthening the implementation of the carbon neutrality initiative. We also strive to build a reasonable ESG management system where major activities and achievements can be objectively measured against ESG KPIs. In addition, we intend to raise awareness of ESG management and realize ESG values by providing ESG education and campaigns. HHI also plans to assess the ESG levels and draw an implementation roadmap to ensure a timely response to mandatory ESG disclosure that is looming due to relevant regulations and legislation. As such, HHI will spare no efforts to advance and internalize the ESG management framework, thereby building trust with stakeholders and further consolidating our ESG management system.

Second, we will gear up for a full-fledged LZC ship era.

HHI aims to pioneer a rapidly expanding market by strengthening our technology strengths related to methanol-fueled ships which are currently leading the global shipbuilding industry, next-generation fuel ships using ammonia and hydrogen, and electrification. Responding to climate change is no longer an option, but a must to achieve a company's sustainability. In this regard, we believe that preparing for an era of LZC ships will provide a new opportunity for future development. Following 2023, we will concentrate on constructing LZC ships and developing new technologies in 2024, including building a supersized methanol-fueled container ship. Moreover, year 2024 marks the commencement of the 2nd phase of the 'FOS (Future of Shipyard)' project, a future smart shipyard initiative. Building on the successful completion of the 1st phase, the 'Visible and Understandable Shipyard,' last year, HHI will lay the foundation for successfully implementing the 2nd phase, the 'Connected and Optimized Shipyard' this year.

Third, we will strive to realize the value of Safety First and achieve 'Safety Vision 2027.'

In 2023, HHI achieved a milestone year with zero serious accidents thanks to the active participation of our employees in the safety initiative. This meaningful achievement is the result of our collective efforts to adhere to the firm principle of 'Safety First.' Furthermore, in 2023, HHI established the 'Safety Vision 2027'*, which aims to create a 'workplace where everyone is safe, a company where safety is its brand.' In 2024, we will endeavor to encourage all employees to maintain an on-site safety management system without any loopholes. To this end, HHI will continue to implement the action plans to establish an autonomous safety management system centered on risk assessments, promote a safety-first culture, and realize a smart and safe workplace. Through these activities, we will do our utmost to make 'Safety' represent a symbol of HHI, while being recognized as a safety brand.

Fourth, we will provide a platform to grow together with contractors.

HHI aims to create an environment to establish fair trade practices and promote cooperation so that we can exercise ESG management together with our contractors who have traded with HHI. To this end, we will share our know-how in various areas to provide practical assistance to internal and external contractors, such as management, operation of facility and equipment, safety and environmental management. Moreover, we will strive to establish a sustainable supply chain by sharing the challenges faced by our contractors, including personnel supply, skill improvement, and support for foreign employees. As such, HHI will spread ESG management practices across the entire supply chain through close cooperation with contractors, and create a culture of coexisting cooperation that prepares us for the future by laying the foundation for sustainable development.

HHI will usher in a new era based on constant innovation and sustainable management. We deeply appreciate all our stakeholders who have joined our enthusiastic journey, and we promise to create a better future together.

* Safety Vision 2027: Our five-year safety goals, strategies, and initiatives such as achieving a industrial accident rate below 0.15, a fatality rate per 10,000 people below 0.29, a safety culture index above 3.7 by 2027.

HD Hyundai Heavy Industries

Introduction of HHI

Overview

Since its establishment in 1972, **HHI** has evolved into the world's leading shipyard (based on ship orders and construction volume) within a decade and recorded groundbreaking achievements. For example, HHI reached 100 million GT in shipbuilding in 2012, and constructed 2,000 cumulative ships in 2015, the world's first shipbuilder to set records for the highest construction volumes within the shortest time frame. Currently, HHI secures 10 large-scale building docks, 9 ultra-large Goliath cranes, the latest production facilities, an excellent workforce, and exceptional technologies. Moving forward, HHI aims to enhance its competitiveness through technological innovation to proactively meet diverse customer demands. Based on the accumulated technical expertise in the shipbuilding sector, HHI has stretched into the offshore plant and engine & machinery businesses. Growing into a global heavy industries company, HHI has consolidated its status as a global leading company over the past 50 years. Looking ahead, we will focus on energy-efficient, low-carbon ship technologies and digital solutions to lead the maritime mobility market. We will spearhead in exploring the limitless potential of the ocean and pioneer the future of humanity.

Legal name	HD Hyundai Heavy Industries Co., Ltd.
Founding date	Jun. 1, 2019*
Major Business	Shipbuilding, Offshore & Engineering, Engine & Machinery
Listing date	Sep. 17, 2021

CEOs	Lee Sang-kyun, Noh Jin-yul
Address	1000, Bangeojinsunhwan-doro, Dong-gu, Ulsan, 44032, Republic of Korea
Credit Rating	A2 (Commercial paper), A (Corporate bond)
Listing market	Korea Exchange (KRX) KOSPI Market

* Established HHI through the physical division of HDKSOE

Shipbuilding Business

HHI builds a wide range of high-quality ships and delivers to clients on time, which includes ocean development-related ships such as drillships, LNG carriers, LPG carriers, and other ships such as oil tankers, container ships, bulk carriers, car carriers, and ROPAX (Roll-On/Roll-Off Passenger) vessels. In 2024, HHI successfully delivered the world's first methanol-fueled ultra-large container ship, opening up a new horizon for the eco-friendly ship market. We will further solidify our status as the world's best shipyard by proactively and efficiently meeting various demands of the market and clients for eco-friendly and high-efficiency ships and special offshore vessels.

174,000 CBM LNG Carrier

Offshore Plant Business

HHI implements projects involving the design, procurement, construction, transportation, installation, and commissioning of various types of fixed and floating production facilities for oil and natural gas extraction from offshore oil and gas fields. Until now, we have successfully delivered over 170 projects to more than 80 clients all over the world. Moreover, HHI participates in offshore wind power projects initiated by the government and private power developers and develops a renewable energy portfolio to include carbon capture and storage, green hydrogen, the International Thermonuclear Experimental Reactor (ITER), small modular reactors (SMR), and space launch facilities.

Total, Usan FPSO

Naval and Special Ship Business

Starting from developing South Korea's first Indigenous warship, the Ulsan-class frigate in 1975, HHI developed advanced naval vessels using entirely domestic technology, including Aegis destroyers and submarines, and supplied them to the Navy and Coast Guard of South Korea. HHI has also expanded into the global market by signing export contracts with foreign navies. The Naval & Special Business Unit, designated as a defense contractor, is equipped with specialized personnel and cutting-edge facilities required for constructing naval and special-purpose ships. This unit also has advanced technologies essential for warship design and construction. Furthermore, we have outstanding technology strengths in special function areas such as new concept survivability enhancement technologies, improved stealth performance, structural analysis, and noise and vibration reduction capabilities.

HDL-7000 Landing Ship, Tank

Engine and Machinery Business

Since it initiated the engine business in 1978, HHI has supplied a wide range of products, including 2-stroke and 4-stroke engines (HiMSEN engines), environmental impact reduction products, and land-based power generation facilities. Leveraging years of accumulated technology and production experience, HHI has taken the lead in the industry as the world's largest engine maker. In 2023, the 2-stroke engines achieved the remarkable milestone of producing 200 million horsepower, while 4-stroke engines driven by the independently developed HiMSEN engine, have dominated the ship power generation engine market and are expanding into the small and medium direct-drive and electric-powered ship markets. In line with environmental regulations and carbon neutrality trends, we are developing engines for LNG and methanol fuels as well as ammonia and hydrogen generation engines.

World's First Official Sea Trial of the ME-GA Prototype Engine

HD Hyundai Heavy Industries

Business Performance and Financial Status

Business Operations Overview

HHI maintains a leading position in the shipbuilding sector thanks to our extensive shipbuilding experience and know-how, diverse product lineups, trade performances with globally renowned shipping companies, and in-house production and procurement of essential ship components. Leveraging the world's best shipbuilding technology, HHI continuously responds to market changes.

In the offshore plant sector, HHI has secured cost and technical competitiveness through localization and standardization, while continuing to strengthen collaboration with clients and manufacturing contractors. HHI is leading the development of new engines such as methanol and ammonia dual-fuel engines and consistently investing in facilities and developing technologies to keep pace with industry changes.

Order Performances for the Recent Three Years

Category	2021		2022		2023	
	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)
Shipbuilding	71	98.1	60	104.2	56	108.5
LNG Carriers	18		23		30	
LPG Carriers	15		9		20	
Container Ships	27		27		5	
Tankers	10		1		1	
Others	1		0		0	
Naval & Special Ships	3	10.4	7	11.9	1	1.4
Offshore & Plants	3	18.2	-	0.2	1	12.9
Engine & Machinery	-	20.7	-	33.6	-	31.2
Total	77	147.4	67	150.0	58	153.9

Order Status for 2023

(Unit: KRW mil., based on the orders between Jan. 1 and Dec. 31, 2023)

Category	Opening contract balance	New contract amount	Delivered amount	Order backlog
Shipbuilding	25,860,230	14,440,589	7,901,471	32,399,348
Offshore & Plants	1,672,583	1,608,295	1,269,740	2,011,138
Others	5,645,370	4,197,371	2,792,715	7,050,026
Total	33,178,183	20,246,255	11,963,926	41,460,512

Key Financial Data for the Recent Three Years

(Unit: KRW mil.)

Category	2021	2022	2023
Revenue	8,311,276	9,045,480	11,963,926
Shipbuilding	6,320,638	6,467,204	7,901,471
Offshore & Plants	426,442	785,228	1,269,740
Engine & Machinery	1,491,725	1,715,084	2,709,815
Others	72,471	77,964	82,900
Operating Profit (Loss)	(800,263)	(289,151)	178,640
Shipbuilding	(349,310)	(283,648)	(33,586)
Offshore & Plants	(186,977)	(174,868)	(66,413)
Engine & Machinery	170,589	183,250	286,283
Others	(434,565)	(13,885)	(7,644)
Net Profit (Loss)	(814,228)	(352,065)	24,689
Total Assets	15,078,671	16,289,398	17,133,618
Total Liabilities	9,484,647	11,001,579	11,926,178
Total Equity	5,594,025	5,287,819	5,207,440

HD Hyundai Mipo

Creating New Value for Customers, HMD Will Steer Global Shipbuilding Industry

President of HMD
KIM Hyung Kwan

Dear Esteemed Stakeholders,

We extend our deepest gratitude to all our stakeholders for your unwavering support and encouragement. Every time, we encounter various issues in corporate management. However, the year 2023 especially posed considerable challenges that we had to endure, including economic downturns due to high interest rates and inflation, as well as intensified environmental regulations driven by climate change. However, amid such crises, HMD has spared no efforts to meet your expectations and support, and therefore, achieved significant milestones. The achievements included the successful winning of orders for the world's largest eco-friendly liquefied CO_2 (LCO_2) carriers, the delivery of the world's first eco-friendly methanol-fueled container ship, the development of an ammonia DF propulsion ship, and the acquirement of AIP certification. All these accomplishments have further solidified our position in the mid-sized ship market.

In the middle of more extensive ESG regulations encompassing wider issues, corporate ESG management has become an inevitable requirement of the times, with its importance and impact growing significantly. As the initiative to make ESG disclosure mandatory has gained momentum, the attempt to mandate not only ESG management within the company but also oversight and management of supply chain ESG management has become more apparent. In line with such trends, HMD will not focus on short-term performance, but pursue economic performances and social values at the same time from the long-term perspective to attain the goal of sustainable growth. We will enhance response capabilities at the company level to meet the rising external expectations and continuously improve any internal shortcomings, thereby further promoting the internalization of ESG management.

First, we will establish a sustainable management system for HMD.

In tune with global efforts, HMD will establish our own ESG management system and firmly solidify the foundation for enhancing sustainability. First, we will develop a 2030 ESG Roadmap to set performance targets for key management indicators such as GHGs, energy, water, and accident rates, and regularly monitor the implementation of these targets. Furthermore, HMD aims to develop an ESG data management system on a consolidated basis and expand ESG management across the entire company by strengthening transparency in disclosure. In addition, we will further accelerate our steps toward carbon neutrality such as systematic climate risk management, and securing of solar-based renewable energy.

Second, we will develop mid- and long-term strategies for ESG risk management.

Recognizing sustainability as the most significant value in business operations, HMD has made multi-faceted efforts to realize it. First, we formed a dedicated ESG organization to manage overall ESG performances and risks and develop mid- and long-term strategies. In addition, we have designated relevant departments and managers for each ESG category and clearly defined their roles and responsibilities for the implementation of ESG management activities. In 2024, we plan to facilitate resource circulation by newly installing a dedicated organization for waste upcycling. Furthermore, HMD is creating an environment where ESG-related departments can more actively participate in improvement tasks by introducing an 'ESG KPI System' that provides incentives to operational departments based on their ESG performances. We also strive to internalize ESG management throughout the entire company by providing ESG education to employees every year.

Third, we will promote substantial ESG disclosures.

Standards on ESG disclosures, such as the EU's CSRD* and ISSB*, are being officially announced, and the number of organizations participating in TCFD* is consistently increasing. In this context, HMD intends to strengthen the disclosure system centered on ESG strategies to effectively respond to the strengthening of ESG disclosures driven by regulatory authorities and capital markets. We will continue to strive for transparent information disclosure. As such, we will grow into a leading company in ESG management by ensuring transparency and reliability through continuous efforts and improved performances.

Sticking to our initial commitment, HMD will move a step forward to sustainable development. We request your generous interest and support as we pave the way for a better future.

* CSRD (Corporate Sustainability Reporting Directive)
* ISSB (International Sustainability Standard Board)
* TCFD (Task force on Climate-related Financial Disclosure)
* AIP (Approval In Principle)

HD Hyundai Mipo

Introduction of HMD

Overview

HMD is equipped with the strengths of excellent design personnel, a high level of production efficiency, and systematic management capabilities and has received a high reputation from numerous ship-owners based on our market competitiveness accumulated in the medium-sized ship sector under the principle of 'High Quality, Timely Delivery.' HMD has maintained an absolute comparative advantage in the small and middle-sized petroleum tankers and is expanding the market share by developing a high-specification and high-efficiency ship in the small- and medium-sized container ship market. In addition, we successfully entered the high-added-value ship market, including LPG carriers, LNG bunkering vessels, and CON-RO ships, focusing all our efforts on securing stable workloads. HMD is enhancing its competitiveness by expanding the application of fuel-saving technologies for the entire ship types as well as concentrating activities to secure orders for future strategic ship types such as small and medium-sized LNG carriers and combined gas carriers, and car ferries. We are also promptly adapting to market changes by actively responding to the ship owners' demands for ships fueled by LPG, LNG, and methanol as well as electric-powered ships.

Legal name	HD Hyundai Mipo
Founding date	Apr. 28, 1975
Major Business	Shipbuilding
Listing date	Dec. 20, 1983

CEOs	Kim Hyung-kwan
Address	100, Bangeojinsunhwandoro, Dong-gu, Ulsan, Republic of Korea
Credit Rating	A3+ (Commercial paper)
Listing market	Korea Exchange (KRX) KOSPI Market

Major Products

Petroleum Tanker

· Based on the Measurement Tonnage (MT)
25K, 37K, 49K, 50K, 75K class ships

Petroleum Tanker

Container Ship

· Based on Twenty-foot Equivalent Unit (TEU)
1,000TEU, 1,800TEU, 2,500TEU, 2,800TEU class ships

Gas Carrier

Gas Carrier

· LPG Carrier: Based on cargo capacity (㎥) 22K, 23K, 38K, 40K class ships
· LNG Bunkering Vessel: Based on cargo tank capacity (㎥) 7.5K, 12K, 15K, 18K class ships

Car Carrier

· Car/Truck Carriers: Based on the number of cars
3,900Unit, 6,500Unit, 7,700Unit class ships
· RoRo Container Ship: Based on the Measurement Tonnage (MT)
12.4K, 24.4K, 26K, 31.3K class ships

Container Ships

Bulk Carrier

· Bulk Carrier: Based on the Measurement Tonnage (MT)
63K, 82K class ships
· Open Hatch General Cargo (OHGC) Carrier
Based on the Measurement Tonnage (MT) 49.9K, 50.7K class ships

Naval & Special Ship

· Asphalt Carrier: Based on load weight tonnage (TON) other than 6K, 12K, 30K, 37K class ships
· Special ships such as Ro-Pax Vessel, Juice Carrier, Platform Supply Vessel (PSV)

Ro-Pax Vessel

HD Hyundai Mipo

Business Performance and Financial Status

Business Operations Overview

HMD has significantly improved securing orders, centered on mid-sized gas carriers, container ships, and petroleum tankers. Driven by strong orders for LNG, LPG, and methanol-fueled ships, we have achieved an annual order performance of USD 3.6 billion. As a leading company in the mid-sized ship market, HMD focuses on our peerless technology strengths in DF ships and responds to increasing order volumes and demand for new type ships that prepare for IMO's environmental regulations based on profitability. We also concentrate on securing improved ship prices, reflecting raw material costs and increased interest rates.

In addition, starting from mid-sized petroleum tankers in 2023, a total of 15 types of products were selected as world-class products certified by the Korean Ministry of Trade, Industry, and Energy, which include mid-sized container ships, Container/RoRo Carriers, asphalt carriers, mid-sized LPG carriers, car carriers, juice carriers, ethylene carriers, etc. These products have gained recognition for excellent quality and technological strengths.

Order Performances for the Recent Three Years

Category	2021		2022		2023	
	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)
Shipbuilding	100	98.1	81	37.9	60	36.5
LNG Carriers	1		-		-	
LPG Carriers	18		5		11	
Container Ships	39		43		5	
Tankers	32		27		38	
Others	10		6		6	

Order Status for 2023

(Unit: KRW mil., based on the orders between Jan. 1 and Dec. 31, 2023)

Category	Opening contract balance	New contract amount	Delivered amount	Order backlog
Shipbuilding	8,085,708	4,093,895	4,039,066	8,140,537

Key Financial Data for the Recent Three Years

(Unit: KRW mil.)

Category	2021	2022	2023
Revenue	2,887,212	3,716,861	4,039066
Operating Profit (Loss)	(217,325)	(109,066)	(152,916)
Net Profit (Loss)	(160,109)	(43,767)	(138,953)
Total Assets	3,878,320	4,748,245	4,909,071
Total Liabilities	1,674,021	2,572,982	2,893,858
Total Equity	2,204,299	2,175,264	2,015,213

HD Hyundai Samho

A Global Leader of Green & Smart Technologies in Shipbuilding and Offshore Engineering, HSHI Will Lead the Way for a Greener Future

HSHI CEO
SHIN Hyeon Dae

Dear Esteemed Stakeholders,

Taking the opportunity to publish the Integrated Report for 2023, we extend our sincere gratitude for your continued support and trust. Last year, despite uncertain business conditions caused by prolonged global economic downturns, HSHI achieved the best performances among domestic shipbuilders, recording sales of KRW 5.9587 trillion and operating profits of KRW 301.7 billion with innovation and fearless challenges. Moving forward, we will strive to further strengthen our competitiveness for the future and realize sustainable management. To this end, HSHI will make a leap forward as a global leader by advancing the level of ESG management and emphasizing our management philosophy of corporate social responsibility and environmental protection.

First, we will faithfully implement the 2050 Carbon Neutral Strategy.

As environmental problems have gained a global spotlight, the response of a company to environmental issues has become increasingly important to ensure corporate sustainability. HSHI, in response to such challenge, has adopted eco-friendly management as a core growth strategy and has actively contributed to GHG emissions reduction by enhancing energy efficiency through improved facilities, establishing an energy control center, joining K-EV100 for the first time in the shipbuilding industry, and constructing eco-friendly ships. Through these efforts, we will faithfully implement the 2050 Carbon Neutral Goals while moving toward a sustainable future.

Second, we will achieve sustainable co-prosperity with our contractors.

Supply chain ESG management is essential to actively realize ESG management based on stable production activities. With an aim to establish an organizational culture of cooperation and harmony, HSHI establishes a supply chain ESG management system to support transparent management of contractors, and responses to risks in advance based on ESG indicators. Furthermore, we provide self-assessment programs and expert consulting services to in-house subcontractors to identify high-risk contractors in ESG management. As such, we will endeavor to continuously maintain and develop ESG management throughout the entire supply chain of HSHI.

Third, we will practice safety management with our advanced technologies and innovation.

Acknowledging that safety management is an important corporate value, HSHI has secured a leading safety management system. In 2024, we will do our utmost to focus on managing industrial accidents by utilizing an intellectual video analysis in the safety area, digitization of the energy sector, and an integrated safety control center for emergency reporting. We will also strive to establish a more stable production system, integrating DT technologies. Furthermore, to strike a balance between production and safety, HSHI has launched a production headquarters to ensure a leading corporate culture that prioritizes safety management, with an aim to realize a safer and happier workplace for all employees.

Fourth, we will promote transparent and reliable ESG management.

HSHI has established an ESG information disclosure system to enhance the transparency of ESG management. In 2024, we will first select disclosure standards with a primary focus, calculate Scope 3 emissions, and improve the level of verification to preemptively respond to the demands of external institutional investors and other stakeholders. Through these efforts, we will disclose our ESG management performance transparently, thereby securing consistent support and trust from stakeholders every year.

HSHI has been growing as a leading company in the global shipbuilding industry through ESG management and innovation. As we now prepare for another leap forward to a brighter future, we will listen more carefully to the advice and support from our stakeholders. We request your continued support in the journey of HSHI toward a better world.

HD Hyundai Samho

Introduction of HSHI

Overview

Since its establishment in 1998, **HSHI** has evolved into a professional shipbuilding company, securing a shipbuilding capacity of 3.8 million GT and the capability to construct about 40 merchant ships annually including super-sized container ships, tankers such as VLCC, LNG and LPG carriers, PCTC(Pure Car Truck Carrier) and bulk carriers. As HSHI was incorporated into a group company of HDKSOE in 2002, we could maximize synergy from integrated operations of sales, R&D, procurement, and after-sales service. By doing so, we have been highly recognized by customers for our high product quality and technological excellence. HSHI has displayed exceptional capabilities in constructing high-efficiency and low-carbon ships. For example, we built the world's first LNG-fueled crude oil carrier in 2018, constructed the world's first LNG-fueled container ship and bulk carrier in 2020, and built the world's largest LPG-fueled ship (90,000 cbm class) in 2021. Based on this extensive shipbuilding experience, HSHI is promoting the advancement of a business structure by entering the equipment manufacturing sector to develop overseas oil wells.

Legal name	HD Hyundai Samho
Founding date	Nov. 4, 1998
Major Business	Shipbuilding, Production of Industrial Facilities
Listing date	N/A

CEOs	Shin Hyeon-dae
Address	93 Daebul-ro, Samho-eup, Yeongam-gun, Jeollanam-do, Republic of Korea
Credit Rating	A- (Corporate bond)
Listing market	N/A

Major Products

LNG Carrier

This ship compresses, liquefies, and transports methane gas, requiring technology for special cargo hold to maintain cryogenic conditions below -163°C. HSHI has built high-performance and high-quality ships employing energy improvement technology during ship operation and re-liquefaction technology for evaporative emissions.

HN.S970 174K LNGC

LPG Carrier

This ship compresses, liquefies, and transports propane or butane gas, applying a special cargo hold to maintain cryogenic conditions below -42 °C. After completing the special cargo hold at a pre-loading site, HSHI uses One Tank loading method to ensure efficiency and stability.

Container Ship

This ship is specialized in transporting containers. HSHI recently built LNG-fueled container ships with Membrane LNG fuel tanks mounted. HSHI is also constructing methanol-fueled ultra-large container ships.

HN.S990 14,800 TEU CNTR (LNG DF)

Tanker

HSHI has mainly constructed oil carriers (COT, VLCC) to transport crude oil, and oil tankers (PC) to transport refined petroleum products. Recently, HSHI built the world's first LNG-fueled crude oil carrier.

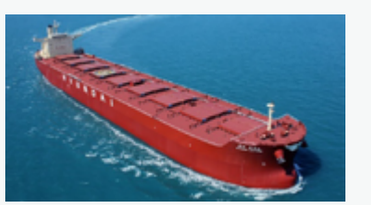
HN.S944 300K DWT VLCC

Bulk Carrier

This ship transports unpackaged cargoes such as grain, ore, and coal. HSHI mainly constructs 325,000 DWT-class bulk carriers and recently built and delivered the LNG-fueled bulk carrier.

PCTC (Pure Car Truck Carrier)

This ship is specialized in transporting passenger cars and trucks. HSHI is currently constructing ultra-large car carriers (8,000 Unit PCTC) with efficient load space and stable resilience.



HN.S588 250K DWT VLOC

HD Hyundai Samho

Business Performance and Financial Status

Business Operations Overview

HSHI is equipped with production capacities as follows: Dock 1 (two 600-ton Goliath cranes): Dock 2 (820-ton and 1000-ton Goliath crane each); and onshore construction yard (600-ton and 1,200-ton Goliath crane each). HSHI has also secured a competitive edge that ensures the highest quality and timely delivery of ships and facilities that customer wants, based on an optimal location safe from typhoons, efficient yard layout considering logistics flow, synergy from integrated procurement and R&D at the group level, and a high-level quality control system across the entire design, construction, and delivery processes.

In particular, HSHI actively responds to marine environmental protection and GHG emissions reduction by employing technologies to reduce harmful exhaust emitting from ships, improve energy efficiency, and re-liquefy Boil-off Gas (BOG), focusing on LNG carriers. Furthermore, to enhance the competitiveness of shipbuilding LNG carriers, HSHI strives to gain an upper hand in the competition by concentrating on developing patents related to the load-out system of the onshore construction yard.

Order Performances for the Recent Three Years

Category	2021		2022		2023	
	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)	No. of ordered ship (units)	Amount (USD 100 mil.)
Shipbuilding	45	55.5	48	86.8*	42	67.0*
LNG Carriers	10		22		9	
LPG Carriers	16		0		4	
Container Ships	6		22		19	
Tankers	11		0		6	
Others	2		4		4	

* Including industrial facility performance

Order Status for 2023

(Unit: USD mil., based on the orders between Jan. 1 and Dec. 31, 2023)

Category	Opening contract balance	New contract amount	Delivered amount	Order backlog
Shipbuilding	15,793	6,657	3,882	18,568

Key Financial Data for the Recent Three Years

(Unit: KRW mil.)

Category	2021	2022	2023
Revenue	4,240,967	4,646,421	5,958,697
Sales Profit (Loss)	(335,899)	17,717	301,693
Net Profit (Loss)	(234,132)	2,892	211,165
Total Assets	5,056,500	5,588,328	7,457,336
Total Liabilities	3,388,023	3,927,364	5,625,561
Total Equity	1,668,477	1,660,964	1,831,775

ESG MANAGEMENT

HDKSOE, an intermediate holding company managing the shipbuilding businesses of HD Hyundai, aims to evolve into a technology-oriented shipbuilding and offshore expert group equipped with world-class R&D and engineering capabilities.
To this end, HDKSOE will fulfill its pivotal role in presenting mid- and long-term development directions and growth strategies and recruiting and fostering research and technology personnel who will serve as a critical source of our future growth.

Group ESG Management System

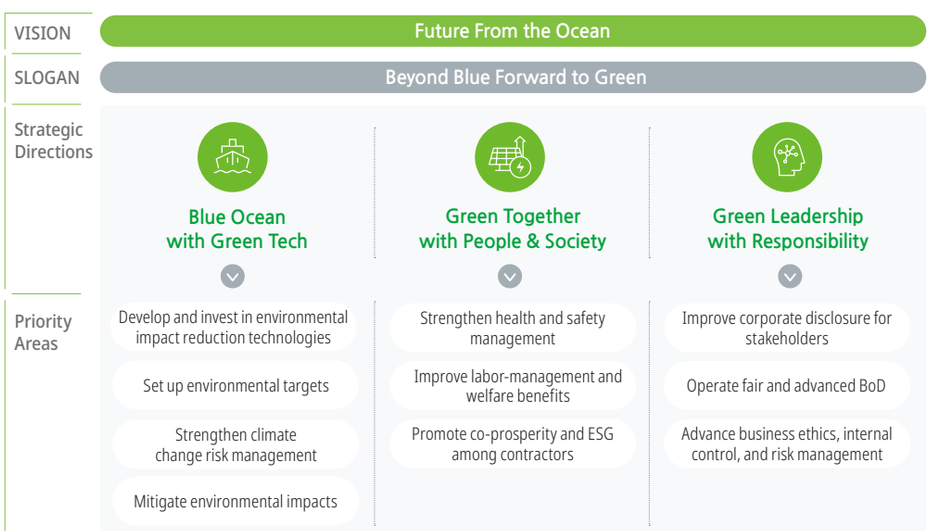
ESG Management Promotion at the Group Level

HD Hyundai ESG VISION

HD Hyundai puts ESG management at the top of the agenda in promoting major businesses of the group. HD Hyundai, with its ESG management vision of 'Future from the Ocean', displays its commitment to achieving this vision by presenting the slogan 'Beyond Blue Forward to Green.'

The ESG slogan reflects not only the identity of achieving technology-centered innovation in the group's main businesses, such as shipbuilding and offshore, oil refining, and construction machinery (Beyond Blue) but also the direction of moving forward to future businesses based on innovative technologies to reduce environmental impacts and emerging as a leading company in sustainable management (Forward to Green).

To achieve its ESG management vision, HD Hyundai has announced ten priority areas under three strategic directions: Blue Ocean with Green Tech; Green Together with People & Society; and Green Leadership with Responsibility. Based on these directions, each group company is laying the foundation for promoting ESG management such as governance, strategy, systems, and performance management models. At the same time, group companies are identifying and implementing tasks to create environmental and social values in their primary business sectors.



HD Hyundai ESG Governance

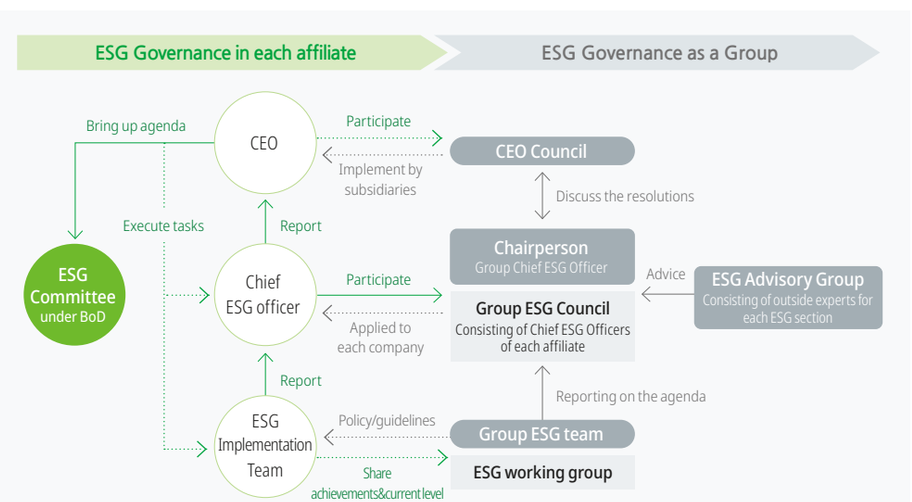
HD Hyundai has established a "Group ESG Council," chaired by the Group's Chief ESG Officer and participated by the ESG Chief Officers from each group company to share ESG issues related to the main businesses of each group company and review mid- and long-term directions, action plans, and performances. In addition, HD Hyundai has launched an 'ESG Advisory Group' consisting of four outside experts in each ESG field including environment, information disclosure, and governance to play a professional advisory role for the agenda presented to the Group ESG Council and provide information on ESG trends. Among the agenda items discussed in the Group ESG Council, critical issues that may significantly impact business operations are reported to the 'CEO Council', attended by the Group CEO.

HD Hyundai Group also operates an 'ESG Working Council' participated by the ESG departments of each company to share their ESG management performances and status.

The ESG Working Council identifies group-level tasks to improve performance and reduce risks for each area including environment, society, and governance, and seeks cooperative measures among group companies to ensure effective implementation of these tasks. Moreover, the Council holds working-level discussions on the establishment and revision of area-specific ESG regulations, policies, and guidelines applicable across the group companies.

Group ESG Council Activities for 2023

Meeting date	Key discussions
Sep. 25, 2023	- Providing education on ESG regulatory trends - Discussing major ESG agendas for the group (ESG information disclosure, carbon neutrality implementation plans, supply chain ESG management, environmental impacts within the value chain) - Sharing ESG implementation cases of each company



HDKSOE ESG Management System

Establishing ESG Foundation for the Shipbuilding and Offshore Business Sector

ESG Management Promotion Plans for 2024

HDKSOE has established ESG management promotion plans based on the ESG management system and roadmap, aimed at producing substantial outcomes with a focus on creating ESG-related opportunities and managing risks. To obtain new business orders and improve financial performances, HDKSOE intends to concentrate on opportunity creation factors that include: securing renewable energy for energy transition; actively using carbon market mechanisms; promoting external GHG reduction projects based on cooperation with small, medium, and large companies; and expanding and obtaining certification for Life Cycle Assessment (LCA).

In addition, to identify and prevent financial stress caused by excessive carbon emissions, HDKSOE is considering strengthening implementation management compared to targets and pursuing an Internal Carbon Pricing (ICP) system. Furthermore, HDKSOE plans to actively manage risks that may arise in the course of shifting to an ESG management paradigm such as internalization of supply chain ESG risk management, development of strategic responses to mandatory ESG information disclosure, and prevention of litigation risks resulting from Greenwashing.

ESG Organizational Structure

Through the ESG Committee under the BoD, **HDKSOE** deliberates on major issues such as ESG strategies, activities, performance, and plans. In 2023, the ESG Committee approved plans to manage non-financial risks including climate change, safety and health, and human rights management.

The ESG Department of HDKSOE primarily performs such roles as identifying market trends, establishing and managing integrated strategies across subsidiaries, and external communication. Furthermore, in consultation with ESG-dedicated departments from its subsidiaries, the ESG Department explores ESG tasks related to their main businesses and supports the implementation of each operational department. Key agenda identified by the ESG Department, the status of integrated ESG strategy management, and the major activities and performances of subsidiaries are reported to the CEO.

HDKSOE ESG Management Promotion Plans for 2024

Opportunity Creation

Achieve Energy Transition through Stable Renewable Energy Supply
- Securing renewable energy by utilizing internal spaces of the group companies
- Securing renewable energy through external resources and equity investments

Promote Cost Reduction through Carbon Market Mechanisms
- Resolving uncertainties in acquiring carbon credits with accurate forecasting
- Setting strategic purchasing targets for carbon credits

Promote External Reductions through coexisting Management with SMEs
- Supporting contractors in energy conservation to acquire carbon credits
- Strengthening measurement of Scope 3 emissions for contractors

Enhance Sales Force Using Life Cycle Assessment (LCA) Results
- Actively responding to customer requests for LCA information.
- Expanding environmental certification for ships and improving LCA capabilities.

Risk Management

Mitigate Financial Burden through Strengthened Carbon Neutrality Management
- Managing the implementation status based on the carbon neutrality roadmap
- Reviewing Internal Carbon Pricing (ICP) for financial impact analysis

Comply with Supply Chain ESG Management Regulations to Minimize Order Risks
- Establishing an integrated ESG management system for the shipbuilding sector
- Enhancing internal capabilities for supply chain ESG evaluation and due diligence

Implement a Strategic Response Roadmap for Mandatory ESG Disclosures
- Enhancing ESG disclosures and data platforms on a consolidated basis
- Identifying and implementing tasks to strengthen climate change disclosures

Prevent Litigation Risks by Avoiding Greenwashing
- Developing procedures and guidelines to check greenwashing risks
- Conducting awareness-raising and training for employees

HDKSOE ESG Management Organizational Structure

* Publishing integrated report separately

HHI ESG Management System

ESG Management Integrated with Business Strategy

ESG Management Promotion Plans for 2024

To brace for potential risks that may arise in the future, **HHI** identified ESG issues from diverse perspectives and implemented priority tasks in relation to 2023 business strategies, thereby establishing a foundation and increasing the level of ESG management. Since 2024, HHI has strived to preemptively respond to global ESG regulations and satisfy the requirements of each regulation, while focusing on advancing and internalizing the ESG management system.

In addition, to effectively implement the carbon neutrality roadmap, HHI considers the introduction and expansion of renewable energy based on the feasibility test from the financial impact perspective, while planning to standardize Scope 3 calculation methodology to broaden the scope of Scope 3 emissions and develop methodologies for LCA of ships. Furthermore, in response to regulations on supply chain ESG due diligence, HHI aims to develop support measures for prior management of high-risk contractors and vulnerabilities. On top of that, HHI plans to come up with measures to develop tasks and implementation measures to ensure a timely response to mandatory ESG information disclosure.

ESG Organizational Structure

HHI has the ESG Organizational Structure where the ESG Committee under the BoD, the Chief ESG Officer, the ESG Promotion Committee, ESG executives, and ESG-dedicated departments play central roles. The ESG Committee is responsible for determining the company's ESG strategic direction, plans, and implementation-related matters. Meanwhile, the ESG Promotion Committee, consisting of the CEO (concurrently as Chief ESG Officer) and executives from relevant departments, discusses main goals and detailed tasks, including performance management based on ESG KPIs, implementation of the carbon neutrality roadmap, supply chain ESG management, and ESG education and campaigns.

In addition, a comprehensive ESG organization is responsible for planning, managing, and cooperating matters to promote ESG management, including establishing ESG implementation strategies to fulfill environmental and social responsibilities linked to HHI's business strategies, determining detailed tasks based on the needs of internal and external stakeholders, and consulting and supporting for task implementation of related departments. Through this, relevant departments at HHI for each ESG field execute risk improvement and performance creation activities and regularly share the progress.

HHI ESG Management Promotion Plans for 2024

Meeting Global ESG Requirements, Advancing and Internalizing the ESG System

Strengthen Carbon Neutrality Implementation
- Reviewing the introduction and expansion of renewable energy to implement the carbon neutrality roadmap
- Analyzing scenarios for renewable energy adoption and assessing feasibility from a financial impact perspective

Advance Carbon Emission Calculation
- Standardizing methodologies for calculating Scope 3 emissions and developing calculation guidelines
- Establishing a Life Cycle Assessment (LCA) methodology in collaboration with external experts

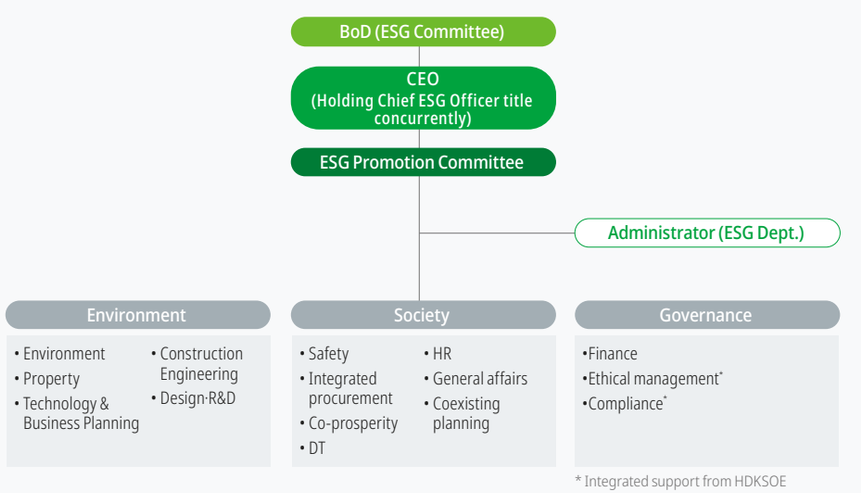
Respond to Supply Chain ESG Due Diligence Regulations
- Developing tailored response measures through guideline analysis and diagnostics
- Conducting vulnerability assessments and developing support measures for high-risk contractors

Advance ESG Governance
- Operating objectively measurable and reasonable ESG KPIs
- Activating the ESG Promotion Committee to share current issues across relevant departments and strengthen collaboration

Timely Response to ESG Information Disclosure Regulations
- Assessing the level of compliance with ESG information disclosure regulations and establishing an implementation roadmap.
- Identifying tasks and implementing measures to comply with mandatory climate change disclosures.

Internalize ESG Across the Organization
- Enhancing understanding of ESG management and increasing interest through internal and external education and information provision.
- Expanding practical ESG activities in daily life to build consensus among employees and increase participation.

HHI ESG Management Organizational Structure



* Integrated support from HDKSOE

HMD ESG Management System

Establishing an ESG Management System Based on the 2030 Roadmap

ESG Management Promotion Plans for 2024

HMD has developed a performance management foundation by benchmarking and analyzing external ESG evaluation models and exploring improvement tasks with identified ESG indicators that HMD is mainly required to follow. Moreover, to expand ESG management to its overseas corporation, HMD has provided ESG education, consulting, and on-site inspections.

In 2024, HMD plans to establish a 2030 ESG Roadmap and set performance targets for key management indicators such as GHGs, energy, water usage, and accident rates and monitor the implementation of these targets. Moreover, together with ESG management and data disclosure on a consolidated basis, HMD promotes tasks including specifying physical risks caused by climate change and securing renewable energy to implement the carbon neutrality roadmap. To this end, HMD is providing a venue for relevant departments to actively participate in improvement tasks, for example, by improving the ESG Point System (granting incentives according to ESG performances).

ESG Organizational Structure

The ESG Committee under the **HMD** BoD reviews and deliberates on matters related to enhancing shareholder value through advanced governance and fulfilling corporate social responsibility. The Committee also receives reports on the progress and plans for ESG activities.

The ESG Promotion Committee (meets twice per year, or when necessary), which is chaired by the CEO and participated by executives from various divisions including environment, safety, HR, education, coexisting cooperation, and procurement, discusses major activities and plans, as well as manages and oversees the status of risk management and performance improvement for each ESG area.

The Head of Safety·Environment·Customer Support Division serves as the Chief ESG Officer and the ESG Promotion Team within the Environment & Health Department is working as a dedicated department in charge of establishing ESG policies and goals, analyzing external trends, responding to evaluation agencies, reviewing general matters, and identifying tasks. HMD designates relevant departments for each ESG area to clearly assign their roles and responsibilities such as carbon emissions reduction, environmental technology development, safety and health improvement, and strengthened human rights management. Furthermore, HMD is establishing an information-sharing system among the relevant departments to ensure efficient implementation of ESG management.

HMD ESG Management Promotion Plans for 2024

ESG Performance Improvement and Risk Management

Implement a carbon neutrality roadmap
- Securing solar-based renewable energy, and developing plans for securing generation capacity in overseas subsidiaries.

Establish a consolidated ESG management system
- Disclosing consolidated ESG data and analyzing the ESG performance of overseas subsidiaries

Manage climate risks
- Assessing physical risks related to climate change and developing response strategies

Establish 2030 ESG goals
- Set management targets for GHG emissions, energy, water usage, and disaster rates for 2030

Internalization of ESG Management

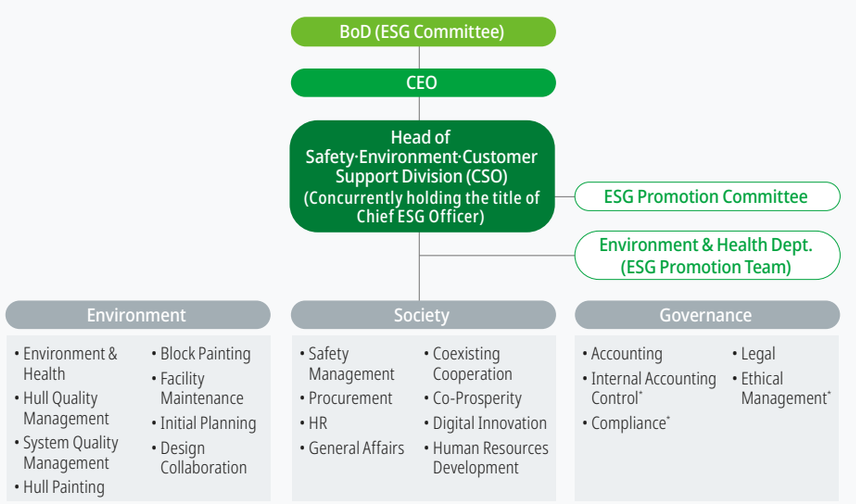
Expand Environmental Management organizations
- Creating opportunities for resource recycling through dedicated waste upcycling organization

Establish ESG Point System
- Enhancing accessibility to the system and activating performance-based incentives

Foster a Culture of Employee Volunteering
- Promoting volunteer activities based on community needs and involving employee participation

Expand Internal Carbon Pricing System
- Establish a culture of voluntary GHG emissions reduction during facility investments

HMD ESG Management Organizational Structure



* Integrated support from HDKSOE

HSHI ESG Management System

Accelerating Performance through ESG Indicator Management

ESG Management Promotion Plans for 2024

HSHI has established annual targets for key indicators in the ESG areas such as GHG emission reduction, social contribution investments, supply chain ESG management, and accident rate reduction and monitored the progress of implementation, thereby building an ESG management foundation that can achieve continuous performance improvement.

In 2024, to produce tangible outcomes for each key ESG indicator, HSHI establishes and implements plans to achieve carbon neutrality, advance integrated control of energy and safety, and strengthen supply chain ESG management.

Furthermore, HSHI implements detailed activities to achieve annual GHG emissions reduction targets, while considering the introduction of renewable energy and Power Purchase Agreements (PPAs) necessary for mid- and long-term GHG emissions reduction. HSHI also advances video control for safety area, intelligent video analysis, and integrated control of emergency reporting to focus on managing industrial accidents, and expands contractors' self-assessment and third-party experts' support to reduce supply chain ESG risks. Besides, HSHI analyzes compliance strategies based on key disclosure standards to proactively respond to the mandatory ESG information disclosure.

ESG Organizational Structure

HSHI forms the ESG Committee under the BoD, which is responsible for determining the company's ESG strategic directions and monitoring performance. The ESG Committee plays a crucial role in approving plans and progress related to carbon neutrality in the shipbuilding and offshore business sectors, safety and health, human rights management, and supply chain ESG, and reviewing the agenda items to be presented to the BoD.

The Head of Safety & Maintenance Division at HSHI (CSO) serves as the Chief ESG Officer, managing and overseeing the activities, including the identification of company-wide ESG risks and development of countermeasures, and spread and internalization of ESG management.

In 2023, HSHI strengthened its ESG management system by clarifying and specifying the responsibilities and roles of relevant departments for each ESG category, and therefore, established a target-based performance management system at the company level.

HSHI is committed to continuously enhancing its ESG management system based on close cooperation among all relevant departments, and active participation of the management.

HSHI ESG Management Promotion Plans for 2024

Establish ESG Management Preemptive Response System

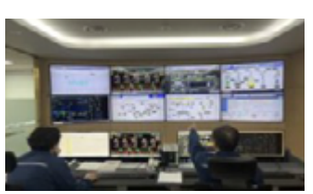
Implement 2050 Carbon Neutrality Strategy
- Achieving GHG emission targets, introducing renewable energy, and implementing PPA

Advance company-wide integrated control system
- Conducting intelligent video analysis for the safety sector, integrated control for the energy sector, including digitization

Strengthening Supply Chain ESG Management
- Conducting self-assessment, providing a third-party expert consulting for in-house subcontractors

Establish ESG disclosure system
- Selecting key disclosure standards, strengthening calculation and verification of Scope 3 emissions

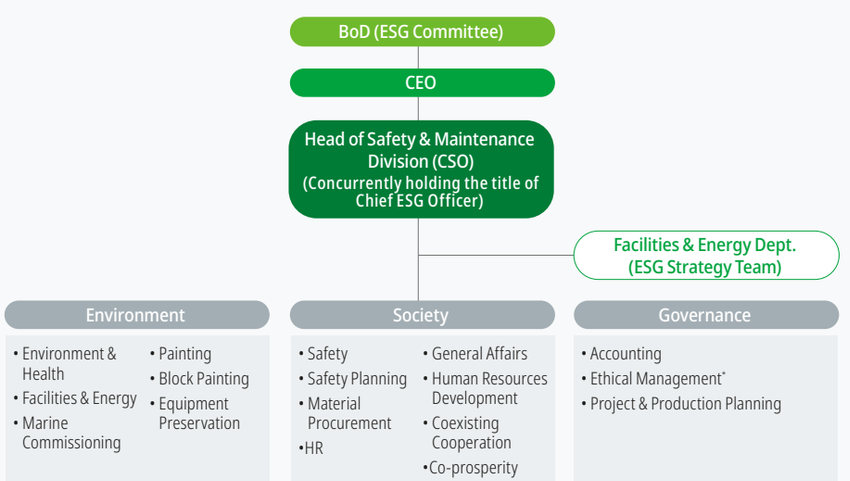
Safety control center



Energy control center

Supply Chain ESG Management consultation

HSHI ESG Management Organizational Structure



* Integrated support from HDKSOE

Implementation of ESG KPIs

Overview of Introducing ESG KPIs

Background

In order to implement the social responsibility management through the ESG management, and create positive impacts on business performance through enhanced management efficiency, **HDKSOE and its shipbuilding subsidiaries** have established performance targets for each organization and reflected these targets into KPIs. By encouraging each organization to perform ESG improvement activities more autonomously, we aim to internalize key ESG factors in management activities at the company level. Furthermore, we will continue to improve ESG-related performances by systematically managing ESG risks and opportunities based on ESG KPIs.

Utilization of ESG KPIs

HDKSOE and its shipbuilding subsidiaries have introduced ESG KPIs to assess and improve major performances in ESG management across the organization, and strengthen responses to ESG risk and opportunity factors. In this context, we have strengthened the management system in a phased manner.

In addition, HDKSOE and its shipbuilding subsidiaries aim to establish, through ESG KPIs, short-, mid- and long-term ESG strategies and goals, identify and implement detailed action plans for each organization to systematically and consistently provide customized ESG performances and information to stakeholders. At the same time, internally, we strive to evolve into a sustainable management company that creates balanced social and environmental values by achieving ESG goals.

ESG KPIs Operational Procedures

ESG KPIs Categories and Indicators

HDKSOE and its shipbuilding subsidiaries have determined the ESG KPIs Pool consisting of over 100 indicators across 4 categories and 28 areas, by combining the results of examining and analyzing capital market regulation trends, indicators and methodologies of major domestic and international ESG rating agencies, ESG management strategies of leading companies in the same industry, with the existing KPIs. HDKSOE and its shipbuilding subsidiaries will continue to monitor and advance areas and categories of ESG KPIs in consideration of external ESG paradigm shifts, and changes in the internal business environment and management system.

Development of ESG KPIs Pool and Guidelines

HDKSOE and its shipbuilding subsidiaries have developed the ESG KPIs Pool, reflecting ESG trends, ESG disclosure standards, ESG evaluation criteria, industry-specific major issues, and demands from stakeholders. Based on this, we have also developed guidelines to set ESG KPIs necessary for our companies by considering strategic alignment, evaluation relevance, and viability. Moreover, we have established detailed definition for each KPI item to provide clear descriptions about definition of each KPI, calculation standards for indicators, target-setting direction, and evidence management, thereby ensuring effective and efficient operation of ESG KPIs.

ESG KPIs Pool (4 categories, 28 areas)

Environment (14 areas)	• Greenhouse Gas Emissions • Energy Management • Air Pollution Management	• Climate Change Response • Water Resource Management • Water Pollution Management	• Raw Material Procurement • Biodiversity • Environmental Impact Reduction Products	• Carbon Footprint • Waste Management • Chemical Management	• Environmental Management • Environmental Investment
Society (9 areas)	• Labor-management Relations • Employee Safety and Health	• Human Rights • Community Relations	• Product Quality and Safety • Human Resource Development	• Diversity and Inclusiveness • Supply Chain Management	• Information Security and Privacy
Governance (4 areas)	• Operation of BoD	• Risk Management	• Ethical Management	• Compliance	
R&D (1 area)	• R&D				

ESG Organizational Structure

Based on the ESG KPIs establishment policies of the group holding company, and the guidelines for establishing ESG KPIs of the group's ESG organization, **HDKSOE and its shipbuilding subsidiaries** develop the items and goals for ESG KPIs by considering ESG management maturity level of each company, urgency of ESG improvement tasks, and the likelihood and impact of ESG risks.

Then, the group holding company and ESG organization evaluate and adjust the ESG KPIs and target-settings for each company, while the Chief ESG Officer and the ESG Committee finally review and confirm the ESG KPIs.

HDKSOE and its shipbuilding subsidiaries go through strict process to assess whether performance improvement activities have been implemented for confirmed ESG KPIs, and whether the set targets have been achieved. These assessment results for each company are reported to the Chief ESG Officer and the ESG Committee.

ESG KPIs-based Performance Evaluation and Compensation

HDKSOE and its shipbuilding subsidiaries consistently monitor the achievement status of performance goals in ESG KPIs. We conduct performance evaluations for the CEO, executives, and departments (teams) by reflecting the level of achievements according to ESG KPIs, and provide compensations for their performances linked to performance evaluation results. As we comprehensively evaluate achievement of strategy (goal) by ESG KPIs, individual and organizational contribution, and management efficiency and innovation, the level of compensation may differ according to the evaluation results.

Application of ESG KPIs

As **HDKSOE and its shipbuilding subsidiaries** incorporated ESG KPIs into the KPIs of CEOs and key executives from the affiliates to evaluate ESG management performances of the organization, some subsidiaries (including HHI) also reflected ESG KPIs to the KPIs of departments and teams. Starting from 2024, ESG KPIs are being applied to the department and team levels across all affiliates.

ESG KPIs Establishment and Evaluation Process

Establishment

- Stage 1: Establish Group KPI Policy
- Stage 2: Set Company-Specific ESG KPIs
- Stage 3: Review and Adjust Group ESG KPIs
- Stage 4: Report Company-Specific ESG KPIs Results (to Chief ESG Officers and ESG Committee of each company)
- Stage 5: Report Group ESG KPIs Results (to Group's Chief ESG Officer and ESG Committee)

Evaluation

- Stage 1: Check the Achievement of Company-Specific ESG KPI Targets
- Stage 2: Check the Achievement of Group ESG KPI Targets
- Stage 3: Report ESG KPIs Performance for each company (to Chief ESG Officers and ESG Committee of each company)
- Stage 4: Report ESG KPIs Performance for the Group (to Group's Chief ESG Officer and ESG Committee)
- Stage 5: Reflect ESG KPI Results

ESG Information Disclosure

ESG Information Disclosure

ESG Website Operation

HDKSOE and its shipbuilding subsidiaries provide the stakeholders with an ESG vision of the shipbuilding and offshore business sectors, a carbon neutrality roadmap, key ESG performance data, and the latest trends and developments of each company through the HD Hyundai ESG website. In addition, respective websites for HDKSOE and its shipbuilding subsidiaries provide ESG management system and strategies and policies for each field.

Group ESG website

Operation of HD Hyundai ESG website

ESG Performance Data Disclosure

HDKSOE and its shipbuilding subsidiaries disclose key ESG performance data in the Integrated Report and on the HD Hyundai ESG website. Information users can access the HD Hyundai ESG website to find quantitative ESG (Environmental, Social, and Governance) information for each group company. We will keep enhancing transparency of the ESG management through systematic accumulation and disclosure of ESG data to stakeholders every year.

HDKSOE and its shipbuilding subsidiaries ESG data disclosure

Publication of Integrated Report

HDKSOE and its shipbuilding subsidiaries publish an annual Integrated Report which compiles our ESG governance, strategies, systems, activities, performance, and goals. The Integrated Report is designed to align with the information needs of key stakeholders while ensuring comparability and reliability. It reflects principles, guidelines, indicators, and standards related to ESG information disclosure and external evaluations. Integrated Reports for each year are available on the HD Hyundai ESG website and the official websites of each company.

Double Materiality Assessment

Double Materiality Assessment Process

Global Indicator Analysis

HDKSOE and its shipbuilding subsidiaries have sorted the external ESG requirements that we are required to observe by compiling those from ESG disclosure initiatives (GRI, SASB, TCFD, etc.), domestic and international ESG evaluation indicators (DJSI, MSCI, Sustainalytics, KCGS, etc.), and sustainability-related laws and regulations. Based on the sorted requirements, we have created our own issue pool for HDKSOE and its shipbuilding subsidiaries, considering the industry sector, main products, value chain, and enterprise-wide risk management processes.

Internal and External Environment Analysis

Over the past four years, **HDKSOE and its shipbuilding subsidiaries** have measured the financial significance by issues based on our major issues and internal ESG management strategies and vision. Furthermore, in order to conduct an external environment analysis, we have analyzed the ESG disclosure status of peer companies in the same industry (GICS: Construction Machinery & Heavy Trucks) that have achieved high scores in domestic shipbuilding and global ESG evaluations.

Double Materiality Assessment Results

HDKSOE and its shipbuilding subsidiaries conduct double materiality assessments annually to identify major issues of the companies and disclose the results of such annual assessments. In 2023, HDKSOE and its shipbuilding subsidiaries have derived the double materiality issues by comprehensively considering the financial materiality from the perspective of corporate value creation and the impact materiality from the perspective of external stakeholders. As a result, "Promotion of OSH" has been selected as the priority material issue for three consecutive years while "GHG Emissions Reduction" and "Climate Risks Management" have been newly derived as double material issues from the double materiality assessments.

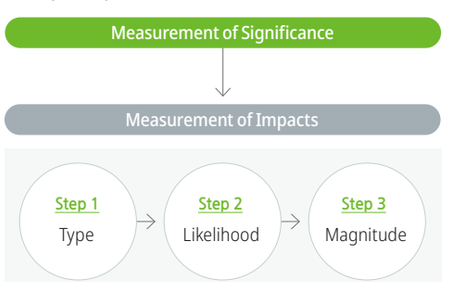
Collecting Internal Employee Feedback

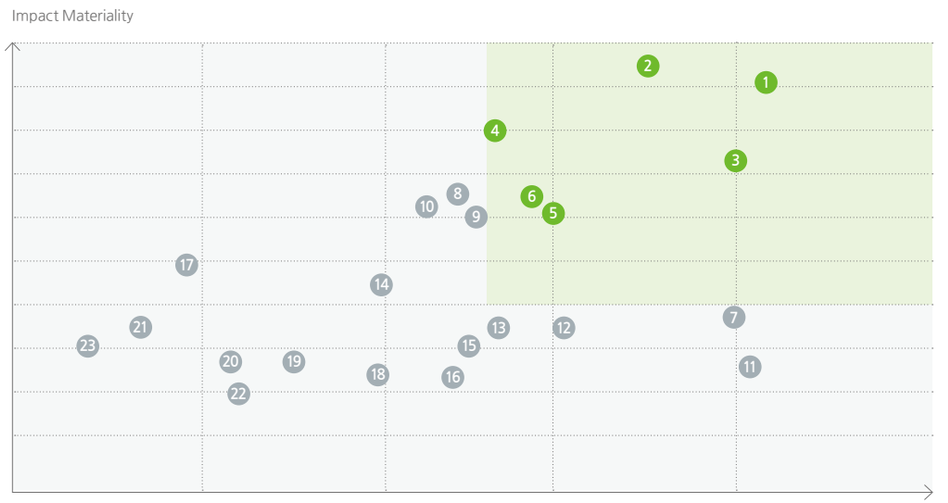
From Jan. 29 to Feb. 2, 2024, **HDKSOE and its shipbuilding subsidiaries** conducted a survey on the employees to measure the significance from the perspective of corporate value creation. Through this survey, we identified major issues having great impacts on our corporate value by ranks of employees and collected feedback regarding the types and magnitude of such impacts and probability for more in-depth analysis.

Collecting External Stakeholder Feedback

Similar to the survey on internal employees, **HDKSOE and its shipbuilding subsidiaries** surveyed external stakeholders to measure the significance from their perspectives. The survey was conducted during the same period, from Jan. 29 to Feb. 2, 2024, and we collected opinions regarding the types and magnitude of impacts, and probability. On top of that, we collected professional opinions through advice from ESG experts and the analysis of about 4,800 news articles.

Survey Composition for Stakeholders





Identified Double Materiality Issues

Double Materiality Issues	1 Promotion of Occupational Safety and Health (OSH)	4 Strengthening Labor-Management Partnership (LMP)
	2 Technology Investment to Reduce Environmental Impacts	5 Supply Chain ESG Management
	3 GHG Emissions Reduction	6 Climate Risk Management
Other issues	7 Strengthening Ethical and Compliance Management	16 Efficient Operation of Committees under BoD
	8 Digital Transformation	17 Expansion of Social Contributions
	9 Enterprise Risk Management	18 Promotion of Resource Circulation
	10 Quality Management and Customer Relations	19 Cybersecurity and Information Protection
	11 Capacity Building and Performance Compensation	20 Advancement of Environmental Management Systems
	12 Improving Organizational Culture	21 Stakeholder Engagement
	13 Promotion of Human Rights Management	22 Management of Water Use and Wastewater
	14 Management of Pollutants and Hazardous Waste	23 Conservation of Biodiversity
	15 Enhancing Diversity and Independence of BoD	

Double Materiality Assessment

Analyzing Impacts of Double Material Issues

① Promotion of Occupational Safety and Health (OSH)

Significance of Material Issues

As intensifying regulations for the safety of workers is a global trend, the need to tighten up the OSH management has also increased in South Korea, with the enforcement of the Serious Accidents Punishment Act in Jan. 2022. In particular, given the labor-intensive nature of the shipbuilding and offshore industry, **Occupational Safety and Health (OSH)** issues hold great significance in creating corporate value.

Business Impacts of Material Issues

OSH-related accidents may have significantly negative impacts on business operations and long-term corporate value creation. In this respect, this serves as a core risk factor for HDKSOE and its shipbuilding subsidiaries, expectedly resulting in reduced competitiveness in obtaining orders, worsened corporate reputation, and the imposition of fines and penalties.

Business Strategy to Material Issues

HDKSOE and its shipbuilding subsidiaries have established company-specific strategies and performed various activities to respond to **Occupational Safety and Health (OSH)** issues. In particular, HHI has utilized HiSEs, its integrated HSE management system to build a database in all sectors such as accident cases, safety education, disaster prevention, and health, which is efficiently applied in business operations. More details are available on pages 62 to 68 of the Integrated Report.

Targets and Achievements

HDKSOE and its shipbuilding subsidiaries disclose the safety and health goals and detailed implementation status for 2024. In particular, HHI, HMD, and HSHI present mid- and long-term goals for safety-related indicators such as accident rates. More details are available on pages 67 to 68 in the HDKSOE Integrated Report.

Performance Compensations for Executive Management in Relation to Material Issues

Category	Executive Management's KPIs related to OSH
HDKSOE	• Accident rates (Zero serious accidents)
HHI	• Accident rates (Zero serious accidents)
HMD	• Accident rates (Zero serious accidents)
HSHI	• Accident rates (Zero serious accidents)

External Impacts of Material Issues

External impacts of **Occupational Safety and Health (OSH)** issues occur in most of value chain for HDKSOE and its shipbuilding subsidiaries, including our work facilities, products and services, and supply chains, usually resulting in negative consequences such as injuries and labor losses in the construction process. Such impacts also affect contractors' employees involved in shipbuilding processes and component manufacturing.

To minimize these negative impacts, HDKSOE and its shipbuilding subsidiaries are making multi-faceted efforts, including obtaining certifications for safety and health management systems and conducting risk assessments at work facilities. In order to assess these impacts, we utilize relevant metrics as the contractors' number of injuries, Lost Time Incidents (LTI), and Occupational Illness (OI), etc.

Double Materiality Assessment

Analyzing Impacts of Double Material Issues

② Technology Investment to Reduce Environmental Impacts

Significance of Material Issues

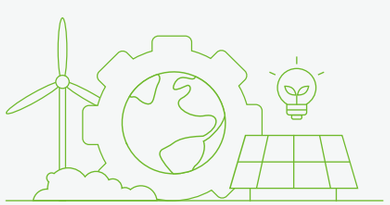
The International Maritime Organization (IMO) has enforced full-fledged regulations related to the Energy Efficiency Design Index (EEDI) and the Energy Efficiency Existing Ship Index (EEXI), which measures carbon dioxide emitted per ton-mile, and the Carbon Intensity Indicator (CII), which quantifies carbon emissions based on annual operational data. As these regulations on ships continue to expand, the demand is also growing for **environmental impact reduction technologies** such as exhaust gas reduction systems, dual-fuel propulsion engines, and auxiliary equipment.

Business Impacts of Material Issues

Environmental impact reduction technologies present highly important opportunity factors for HDKSOE and its shipbuilding subsidiaries in the mid-and long-term. It is expected that we are able to secure stable sources of income, if we expand investments in Low- and Zero-Carbon (LZC) ship technologies and take the initiative in the global market.

Business Strategy to Material Issues

HDKSOE and its shipbuilding subsidiaries are expanding the LZC ship portfolio to better address **environmental impact reduction technologies** and concentrating efforts to develop ammonia- and hydrogen-fueld ships, including ammonia and hydrogen. Further details can be found on pages 44 to 47 of the Integrated Report.



Targets and Achievements

HDKSOE and its shipbuilding subsidiaries have established strategic directions and goals for Low- and Zero-Carbon (LZC) ships and core technologies. In addition, the LNG fuel supply system (Hi-eGAS) and 4-stroke engine (HiMSEN) that we have developed for LZC ships have been highly recognized for their excellence in the global arena. More details are available on pages 44 to 47 of the Integrated Report.

Performance Compensations for Executive Management in Relation to Material Issues

Category	Executive Management's KPIs related to environmental impact reduction technologies
HDKSOE	• Developing LZC ships • Developing fuel cell/water electrolysis system
HHI	• Developing LZC ships
HMD	• Developing LZC ships
HSHI	• Developing intelligent welding technologies

External Impacts of Material Issues

External impacts of **environmental impact reduction technologies** largely arise from the ships constructed by HDKSOE and its shipbuilding subsidiaries, as well as the products mounted on these ships. It is expected that those ships and products employing environmental impact reduction technologies may have positive impacts on the marine environment and customers, including minimized adverse impacts on the environment, and compliance with ship regulations.

To amplify such positive impacts, HDKSOE and its shipbuilding subsidiaries have established systematic R&D organizations at each company and have developed the Low- and Zero-Carbon (LZC) ship technology development process, thereby advancing the level of technology issue management regarding environmental impact reduction. Moreover, we use metrics such as the number of patent applications related to environmental impacts and the execution of Life Cycle Assessments (LCA) for ships to assess the impacts.

Double Materiality Assessment

Analyzing Impacts of Double Material Issues

③ GHG Emissions Reduction

Significance of Material Issues

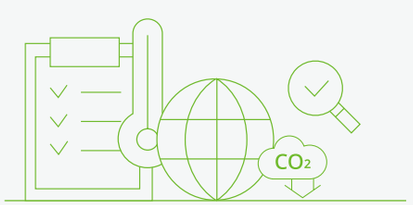
Recently, **GHG emissions** have emerged as a critical issue in the shipbuilding and offshore industry. The IMO has declared a goal of achieving net zero emissions for all ships by 2050. In this regard, the Ministry of Oceans and Fisheries (MOF) has emphasized close cooperation among the shipping, shipbuilding, and energy industries to realize carbon neutrality by 2050. Furthermore, global demands for ships emitting less GHGs are dramatically increasing.

Business Impacts of Material Issues

GHG emissions issue is expected to exercise complicated impacts on the revenues and costs of HDKSOE and its shipbuilding subsidiaries. With the increased global demand for low-emission ships, we can generate more revenues by dominating a new market through a shift in portfolio to Low- and Zero-Carbon (LZC) ships. At the same time, we may require considerable time and costs to expand the measurement categories of Scope 3 emissions and build low-emission shipyards.

Business Strategy to Material Issues

HDKSOE and its shipbuilding subsidiaries have established and operated a GHG management system to address **GHG emissions** issues. Each company implements GHG emission reduction activities based on international certification standards while striving to ensure energy efficiency at work facilities. More details are available on pages 32 to 43 of the Integrated Report.



Targets and Achievements

HDKSOE and its shipbuilding subsidiaries have disclosed the targets for GHG emission reduction respectively. All four companies have set goals for Scope 1 and Scope 2 emissions and energy consumption. Further information is available on pages 42 to 43 of the HDKSOE Integrated Report.

Performance Compensations for Executive Management in Relation to Material Issues

Category	Executive Management's KPIs related to GHG emissions
HDKSOE	• GHG emissions reduction
HHI	• GHG emissions reduction
HMD	• GHG emissions reduction
HSHI	• GHG emissions reduction

External Impacts of Material Issues

External impacts of **GHG emissions** issues arise across most of the value chain of HDKSOE and its shipbuilding subsidiaries including work facilities, products and services, and supply chains. In the short term, these impacts may be mostly adverse, resulting from direct and indirect GHG emissions. However, in the long term GHG reduction efforts will lead to positive consequences, such as contributing to the achievement of net-zero targets domestically and internationally through the group's 2050 carbon neutrality roadmap. Such impacts directly affect the work facilities or surrounding environment and ecosystems. In order to assess these impacts, we utilize relevant metrics as GHG emissions, total energy consumption, renewable electricity consumption, etc.

Double Materiality Assessment

Communication with Stakeholders

Sector	Interest Issues (Survey Results)	Other Concerns	Main Communication Channels	Response Activities	2023 Highlight
Customer	• GHG Emissions Reduction • Technology Investment to Reduce Environmental Impacts • Promotion of OSH • Quality Management and Customer Relations • Supply Chain ESG Management	• Enhancing Product and Technology Competitiveness • Product Development with Reduced Environmental Impacts and High-added Value • Improving Product Quality and Safety • Increasing Quality Satisfaction	• Expositions, Exhibitions, and Forums • Operation of Overseas Branch • Sales Meetings and Visits to Customers • Customer Satisfaction Surveys	• Participation in Expositions, Exhibitions, and Technology Forums • Visits to Customers and Promotion of Technologies • Advancing Customer Satisfaction Management • Strengthening Initial Equipment/Technology Risk Management	• Participation in CES 2023 • Attended major shipbuilding and shipping exhibitions such as the 2023 World Climate Industry EXPO (WCE), Nor-Shipping, and KORMARINE
Shareholders/ Investors	• Promotion of OSH • GHG Emissions Reduction • Strengthening LMP • Enhancing Diversity and Independence of BoD • Management of Pollutants and Hazardous Waste	• Increasing Shareholder Value • Generating Stable Business Performance • Managing Business Opportunities and Risks • Ensuring Transparent Corporate Governance	• Annual General Meetings (AGMs) • Corporate Briefings • Public Disclosures and Posting on Website • Investor Meetings and Conference Calls	• Quarterly Earnings Announcements and Investor Relations (IR) Material Provision • IR Activities for Analysts and Institutional Investors • Disclosure of BoD Decisions, Order Backlogs, and Major Information • Publishing the Corporate Governance Report	• Issued Monthly/Annual IR News (13 times) • Issued Monthly/Quarterly IR Presentations (16 times)
Contractors	• Promotion of OSH • GHG Emissions Reduction • Strengthening Ethical and Compliance Management • Supply Chain ESG Management • Strengthening LMP	• Promoting Co-prosperity Activities • Enhancing Fair Trade • Supporting Capacity Building for Contractors • Sharing Market Information and Enhancing Communication	• Contractors Meeting • Regular VOC Feedback • Contractors Site Visit and Interview • Operation of Co-prosperity Council • Unfair Trade Reporting Channels for Contractors	• Operating the Integrated Purchasing System (HiPRO) • Providing Online and Offline Training and Recruitment-Linked Education • Financial Support for Contractors • Support for Technology Protection • Quality Assessment and Technical Support for Contractors	• (External Contractors) Held HD Hyundai Integrated Council Once a Year • (External Contractors) Held the HHI Council, HMD Council, HSHI Council Every Quarter or More • (In-house Subcontractor) Held Co-prosperity Council Every Quarter or More
Local Community	• Expansion of Social Contributions • Stakeholder Engagement • Strengthening Ethical and Compliance Management • Technology Investment to Reduce Environmental Impacts • Supply Chain ESG Management	• Revitalizing the Local Community • Attracting and Increasing Local Industry and Employment • Protecting and Improving the Local Environment • Community-Centered Social Contribution Activities • Communication with the Local Community	• Local Government Councils • Visits to Local Public Institutions • Meetings with Local Community Organizations • Meetings with Local Volunteer Groups • Local Community Events • Local Community Welfare Coordination Meetings	• Employee-participated Social Contributions such as Volunteer Activities • Formation and Participation in Local Community Councils • Operation of Talent Development Programs for the Local Community • Investment Support for Local Community Development • Support and Participation in Local Community Events • Monitoring Local Community Welfare Surveys and Indicators	• (HHI) Held Local Community Welfare Councils (three times) • (HMD) Operated Local Community Communication Channels (twice) • (HSHI) Participated in Volunteer Activities at Wolchulsan National Park
Employees	• Technology Investment to Reduce Environmental Impacts • Improving Organizational Culture • Enterprise Risk Management • Digital Transformation • Capacity Building and Performance Compensations	• Fair Evaluation and Compensation • Enhancement of Employee Welfare • Strengthening Employee Competencies • Promoting Labor Relations and Communication • Sharing Company Management Status • Ensuring a Safe Workplace	• Labor-Management Council • Grievance Handling and Reporting System • Intranet and Internal Newsletters • Internal CATV Broadcasting • Meetings with Management • Management Status Briefings	• Holding quarterly Labor-Management Council meetings • Conducting meetings with the CEO • Publishing company magazines and webzines • Operating intranet communication channels • Running talent development programs	• Conducted Labor-Management Council meetings quarterly in each company • (HHI) Held Management Status Briefings quarterly
Government/ National Assembly	• Quality Management and Customer Relations • GHG Emissions Reduction • Promotion of OSH • Technology Investment to Reduce Environmental Impacts • Climate Risk Management	• Legislative Amendment Issues • Safety and Labor Issues • Participation and Support in Government Events • Support for Industry and Business Information • Local Economic Issues	• Visits to the National Assembly and Government Ministries • National Assembly Inspections • Participation in Economic Organization Activities • Policy Meetings • Local Government Council	• Regular and ad-hoc meetings with relevant standing committees and institutions • Attending regular and ad-hoc National Assembly hearings • Participating in major economic organization seminars and forums • Engagement in local government councils and communication with civic groups • Providing surveys and requested data to external organizations	• Attended the Korean Enterprise Federation's ESG Management Committee • Supported the bid for the 2030 World Expo in Busan • Participated in business forums and events organized by economic organizations
Media	• Technology Investment to Reduce Environmental Impacts • Strengthening LMP • GHG Emissions Reduction • Promotion of OSH • Strengthening Ethical and Compliance Management	• Business Performance and Industry Issues • Major Issues Across the Company • Strategic Directions of Major Businesses	• Press Releases • Website Media Center • Media Meetings	• Timely provision of press releases • Support for journalist coverage • Conducting media briefings	• Press releases published on the website (http://www.hd-hyundai.com/press) (https://esg.hd.com/en/news)

Value Creation

HDKSOE and its shipbuilding subsidiaries achieve economic, environmental, and social outcomes by investing six key capitals necessary for business activities. We create values for stakeholders across the entire value chain, thereby contributing to the sustainable growth of our society and ultimately realizing the Sustainable Development Goals (SDGs).

Input

Financial Capital

Total Assets	KRW 32.2426 tril.
Total Equity	KRW 12.3701 tril.

Manufactured Capital

Tangible Assets	KRW 10.5035 tril.
Ship Production Capacity	16.769 mil. GT
Offshore Plant Facility Production Capacity	1.2 mil. GT
Engine Production Capacity	16 mil. BHP

Nature Capital

Energy Consumption	19,117TJ
Total Water Withdrawal	7,887,053 ton
Investment in GHG Emissions Reduction	KRW 2.98798 bil.

Human Capital

HDKSOE	1,192 persons
HHI	13,267 persons
HMD	3,551 persons
HSHI	3,875 persons

Intellectual Capital

R&D Personnel	697 persons
R&D Expenses	KRW 162,437 mil.

Social Relations Capital

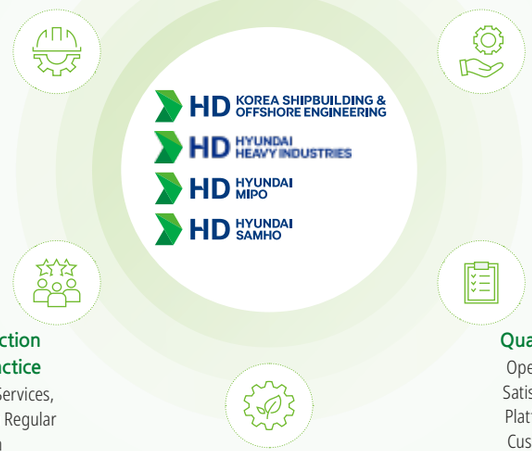
Social Investment Amount	KRW 1.528 bil.
Employee Volunteer Activities	20,858 hours
Social Contribution Expenses	KRW 1.24 bil.
Co-prosperity Fund Operation	KRW 415.1 bil.
· HHI	KRW 284.4 bil.
· HMD	KRW 57.2 bil.
· HSHI	KRW 73.5 bil.

Business Activities

Response to Climate Change & Minimization of Environmental Impact
Carbon Neutrality Declaration and Scope 3 Data Disclosure

Health & Safety
Creation of a Safe Workplace by Establishing On-site Risk Assessment System

Responsible Procurement and Co-prosperity
Development of Supply Chain ESG Evaluation and Assessment System and Support for Improvement of Contractors' ESG Levels



Customer Satisfaction Management Practice
Provision of Products, Services, and Feedback Based on Regular Communication

Quality Management
Operation of a Customer Satisfaction Management Platform, and Creation of Customer Value through Quality Synergies among Group Companies

R&D
MOU Signing, R&D, and Technology Investment to Lead Low- and Zero-Carbon(LZC) Ships and Digital Transformation Market

Output

Financial Capital

Revenue	KRW 21.2926 tril.
Operating Profit	KRW 282.3 bil.

Manufactured Capital

Ships Delivered	136 ships
Production Operating Hours	59.263 mil. M/H
Order Backlog (as of delivery date)	USD 70.702 bil.
· Shipbuilding	USD 58.801 bil.
· Non-shipbuilding	USD 11.901 bil.

Nature Capital

GHG emissions (Scope 1+Scope2)	1,076,487tCO_2eq
Waste Generation	389,332 tons
Waste Recycling	226,430 tons
Wastewater Discharge	6,050 tons
Financial Performance from GHG Reduction	KRW 623.71 mil.

Human Capital

Number of Certified Masters (Cumulative)	2,475 persons
Number of WorldSkill Winners (Cumulative)	104 persons
Percentage of Female Employees	5.0%

Intellectual Capital

Intellectual Property Rights Held	4,929 cases (based on effective rights)
Intellectual Property Rights Applications	823 cases

Social Relations Capital

Community-based Major Social Contributions	
· Holiday Gifts to Underprivileged Neighbors	850 households
· Donation of Recycled Toys	KRW 22 mil.
· Provide Support Package for Low-income Households	210 households
Contractors Supported by Co-prosperity Fund	305 companies

Environmental

Climate Change Response

Governance

Climate Change Response Governance

Management and Oversight of BoD and the Executive Management

Roles of BoD

The ESG Committee under the Board of Directors of **HDKSOE and its shipbuilding subsidiaries** receives reports on the carbon neutrality roadmap, GHG emissions reduction targets and implementation plans, risks and opportunity assessments based on climate change scenarios, and tasks to calculate and reduce GHG emissions. The Committee also oversees that such climate change responses are conducted in an optimal manner and procedure.

The roles and authorities of the BoD are stipulated in the 'Operational Regulations of the ESG Committee', which include review and deliberation on the following: the establishment and implementation of company-wide climate change responses and ESG strategies; matters related to social responsibility; supports required to develop and internalize ESG capabilities including climate change responses.

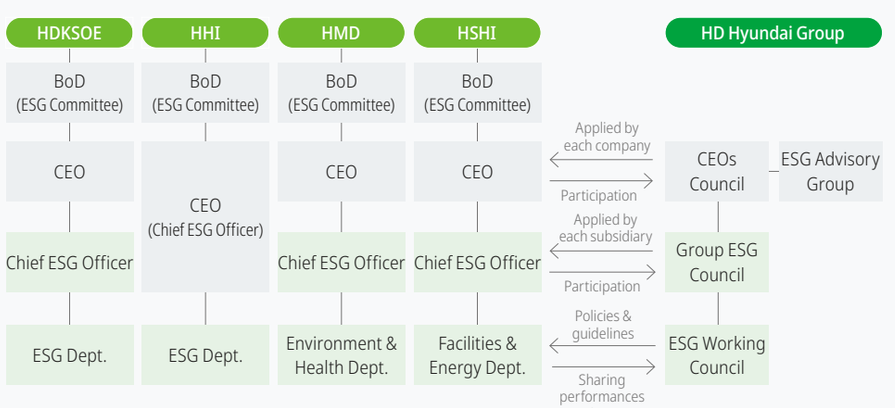
Roles of CEO

The CEO plays a leading role in reviewing and managing carbon neutrality strategies, GHG emissions reduction plans, energy efficiency improvement measures, and climate change responses. In addition, the CEO identifies climate change opportunity factors for developing new growth engines and analyzes risk factors for effective responses. Among the climate change response issues reported to the CEO, those items that are expected to significantly influence business competitiveness are put on the agenda for the BoD (ESG Committee).

Roles of Chief ESG Officer and ESG Executives

The Chief ESG Officer and the ESG management team are responsible for establishing carbon neutrality strategies and managing the implementation of GHG emissions reduction activities. They also monitor transition and physical risks related to climate change and make plans for mitigating related risks and taking advantage of climate change opportunities.

Climate Change Response Governance of HDKSOE and its shipbuilding subsidiaries



Roles of Operational Departments

Departments in charge of climate change responses at **HDKSOE and its shipbuilding subsidiaries** seek various measures to respond to domestic and international climate change-related regulations, policy directions, and responses to industrial trends while exploring initiatives to attain reduction targets according to the carbon neutrality roadmap. Furthermore, they cooperate with other related departments such as business planning and R&D to respond to company-wide transition and physical risks related to climate change.

Related departments also play their roles in expanding Low- and Zero-Carbon (LZC) ships (reduction of Scope 3 GHG emissions, etc.) by developing technologies to use alternative fuels, enhance the efficiency of ship engines, and improve ship structures. On top of that, they perform activities including the establishment and operation of energy management system, and optimization of facilities for energy saving and GHG emissions reduction. Moreover, they are developing measures to respond to transition risks such as building new zero-carbon sea trial facilities, as well as measures for physical risks such as natural disasters.

Roles and Discussions of Group ESG Council

The Group ESG Council, composed of Chief ESG Officers from HD Hyundai Group and its subsidiaries, oversees and manages the establishment and implementation of climate change response strategies. In 2023, the Council discussed TCFD (Task Force on Climate-related Financial Disclosures) reporting, carbon neutrality and related regulations, environmental regulations from the International Maritime Organization (IMO), the introduction of renewable energy, and Life Cycle Assessment (LCA).

Roles and Discussions of ESG Working Council

The ESG Working Council, under the Group ESG Council, discusses strategic planning and detailed action plans for climate change responses at the working level. In 2023, the Working Council discussed measures to implement carbon neutrality, procure renewable energy for the group, and introduce the Internal Carbon Pricing system.

Operation of Climate Change Response KPIs

HDKSOE and its shipbuilding subsidiaries have introduced KPIs for environment and climate change responses, in accordance with the ESG KPIs system, on which the CEOs, responsible executives, and operational departments are based for their evaluation.

The KPIs for the CEOs and responsible executives include 'Achieving GHG Emissions Targets based on the carbon neutrality roadmap' while working-level department heads and team leaders are evaluated based on the climate change response KPIs of the executives and cascading goals tailored to the roles and responsibilities of each department and team.

Climate Change Response KPIs of HDKSOE and its shipbuilding subsidiaries

Category	Major KPIs	Use for Evaluation
CEO	Achieving GHG emissions targets based on the carbon neutrality roadmap	Using KPIs for performance evaluation and wage calculation
Responsible Executives		
Dept. Leader and Team Leaders	Based on executives' KPIs and cascading* goals for each department and team - Reducing GHG emissions - Saving energy - Introducing renewable energy	

* KPIs for department heads and team leaders may differ depending on the conditions of each company, department, and team.

Climate Change Response

Strategy

Climate Change Response Strategies

Directions for Carbon Neutrality

Global Leading Net Zero Shipbuilder

HDKSOE and its shipbuilding subsidiaries do our utmost to evolve into a Global Leading Net Zero Shipbuilder by taking full advantage of advanced shipbuilding and offshore technologies, as well as rich shipbuilding experience and capabilities.

To this end, we implement the 2030 FOS (Future of Shipyard) project to enhance productivity, shorten lead time, and achieve achieve zero waste in process and resource while promoting the reduction of Scope 1 and 2 GHG emissions through improved energy efficiency, transition to low-carbon fuel, and increased use of renewable energy. Furthermore, the cooperation with various stakeholders including customers and contractors will be strengthened to measure and reduce GHG emissions throughout the entire shipbuilding value chain.

In particular, to actively respond to global standards on ship GHG emissions reduction and the growing demands of customers on new ships to meet environmental regulations, we are concentrating our efforts on developing and commercializing LZC ship technologies. The commercialization of these LZC ships will contribute to the reduction of not only Scope 1 emissions but also Scope 3 (Category 11: use of sold products) GHG emissions.

Charting Pathways to Carbon Neutrality

HDKSOE and its shipbuilding subsidiaries established a mid- and long-term carbon neutrality roadmap based on the Intergovernmental Panel on Climate Change (IPCC) and the Shared Socioeconomic Pathways (SSP).

We also charted pathways to carbon neutrality that align with 1.5℃ scenario by using the GHG reduction projections presented in each scenario (SSP 1 - 1.9, SSP 1 - 2.6, SSP 2 - 4.5) considering demographic statistics, economic development, ecological factors, and technology levels of countries where business facilities are located.

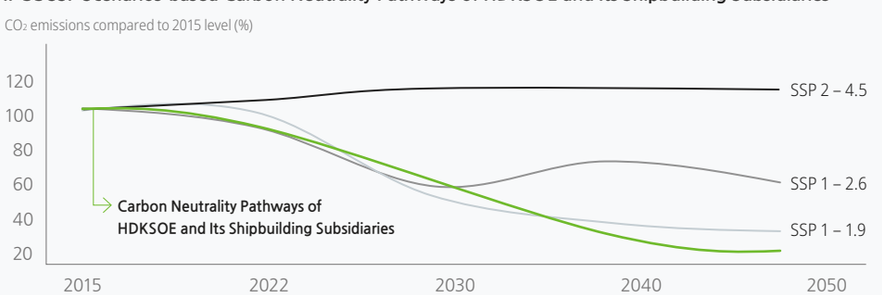
Establishing Carbon Neutrality Roadmap (Scope 1, 2)

HDKSOE and its shipbuilding subsidiaries approved the carbon neutrality implementation roadmap at the BoD (ESG Committee) meeting held in the 1st half of 2023 and made the roadmap public with the '2050 Carbon Neutrality' declaration in May 2023.

Based on the analysis on IPCC SSP scenarios, we established the carbon neutrality roadmap aligning with the 1.5°C scenario. We also set targets for 2030, 2040 and 2050 respectively in consideration of domestic and international climate change-related laws and regulations, market and technology development trends, customer demands, implementation status within the shipbuilding industry, connection to the company's business strategies, and methodology for setting Science-based Targets (SBT).

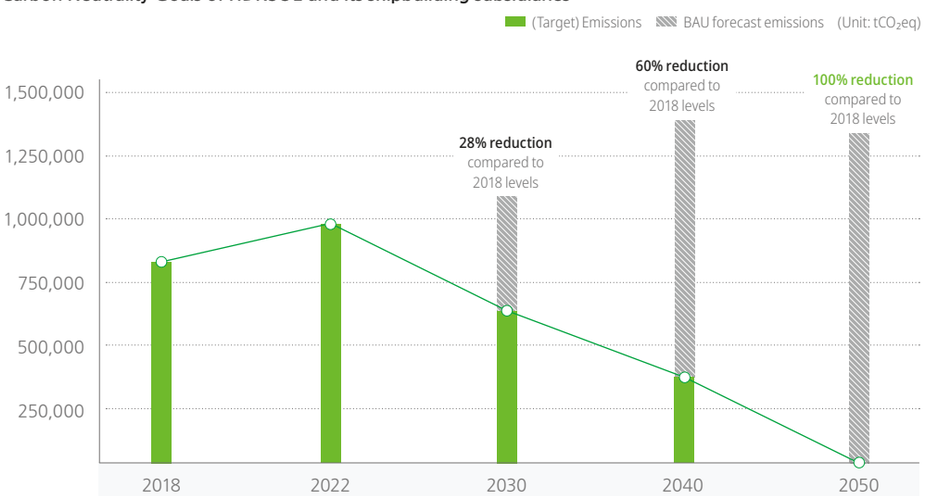
In this context, in order to achieve carbon neutrality, we intend to attain a 28% reduction target by 2030, a 60% reduction by 2040, and a 100% reduction by 2050 of Scope 1 and 2 GHGs emitted from business operations, compared to 2018 levels.

IPCC SSP Scenarios-based Carbon Neutrality Pathways of HDKSOE and Its Shipbuilding Subsidiaries



Scenario category	Ground Surface Temperature Changes between 2021 and 2040		Ground Surface Temperature Changes between 2041 and 2060	
	Best estimate(℃)	Very likely range(℃)	Best estimate(℃)	Very likely range(℃)
SSP 1 – 1.9	1.5	1.2 to 1.7	1.6	1.2 to 2.0
SSP 1 – 2.6	1.5	1.2 to 1.8	1.7	1.3 to 2.2
SSP 2 – 4.5	1.5	1.2 to 1.8	2.0	1.6 to 2.5

Carbon Neutrality Goals of HDKSOE and its shipbuilding subsidiaries



Climate Change Response

Strategy

Climate Change Response Strategies

Carbon Neutrality Implementation Strategies

Carbon Neutrality Implementation Strategies for Scope 1 and 2 Emissions

HDKSOE and its shipbuilding subsidiaries have developed carbon neutrality implementation strategies with a focus on energy efficiency and electrification, a transition to Low- and Zero-Carbon (LZC) fuels, the introduction of renewable energy, and the establishment of a climate change response system.

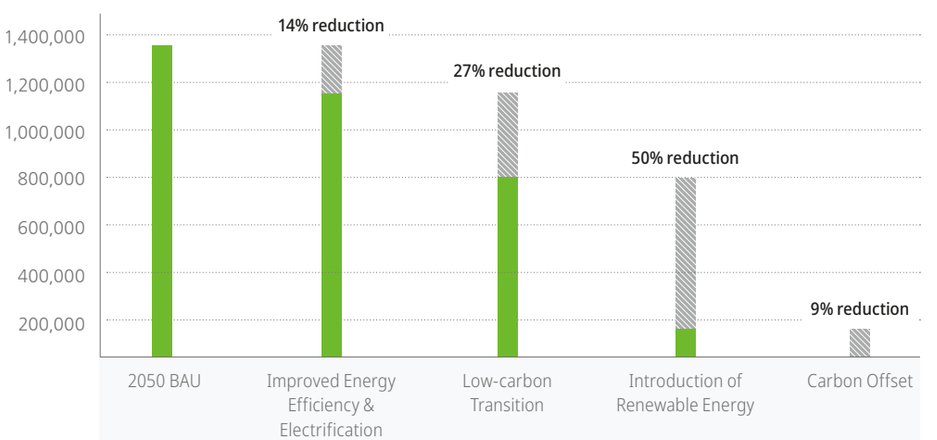
In addition, we are actively exploring Carbon Offset strategies that enable us to gain recognition of the reductions implemented outside organizational boundaries as valid GHG emissions reduction achievements.

Improved Energy Efficiency and Electrification

We strive to enhance energy efficiency by replacing the equipment (crane, air compressor, heater, etc.) used in the shipbuilding process with those with high-efficiency energy and installing inverter welders. We also implement an optimization of air pressure at the work site.

Furthermore, we are converting gasoline and diesel vehicles to electric vehicles at our business sites, while switching the fuel for high-pressure test-run equipment from oil to electricity.

2050 Carbon Neutrality Implementation Strategies (Detailed)



Transition to Low- and Zero-Carbon (LZC) Fuels

We will promote the transition from fossil fuel-based (diesel, heavy oil) devices and equipment to electric or hydrogen energy-based ones. Moreover, in line with the IMO's 2050 carbon neutrality regulations for the shipping sector, there will be shifts to ships fueled by LZC energy sources such as ammonia, hydrogen, and electricity. In turn, such a shift will lead to a reduction of GHG emissions caused by sea trials of ships.

Moreover, we reduce GHG emissions by using digital twin technology and switching fuel to onshore power during mooring Trial.

Introduction of Renewable Energy

In line with the plan to use 100% renewable energy by 2050, we will transition grid electricity to renewable energy by introducing self-generating equipment and expanding offsite purchases and investments regarding renewable energy.

We will also establish and operate solar and wind power generation facilities, focusing on the areas with favorable conditions and environments for renewable energy production, thereby increasing the direct use of generated renewable energy.

Moreover, we will review various market mechanisms including the Power Purchase Agreements (PPA), the Renewable Energy Credit (REC), and renewable energy procurement through equity investments in renewable energy producers, and then establish optimal strategies to procure and invest in renewable energy through cost-benefit analysis.

Establishing a Climate Change Response System

To preemptively respond to changing external conditions such as accelerated climate changes and the emergence of new regulations, we will implement activities to mitigate climate change risks, and at the same time, continue to explore business opportunity factors.

Furthermore, we are collaborating with customers and supply chains across the entire value chain to achieve carbon neutrality and seek for efficient carbon reduction measures. We also plan to promote external reduction projects that are effective in acquiring carbon credits.

Our detailed actions on carbon neutrality roadmap and risks and opportunities from climate change will be transparently disclosed to the stakeholders, in accordance with domestic and international disclosure regulations and guidelines (TCFD, etc.).

Supporting Contractors' Carbon Neutrality Efforts

HDKSOE plans to support small- and medium-sized contractors in the shipbuilding industry in reducing GHG emissions by joining the 'Support for SMEs' Transition to Carbon Neutrality' project organized by the Korea SMEs and Startups Agency. To this end, we are providing various support programs to small- and medium-sized contractors including replacing equipment, assistance for repair and maintenance, and solutions for measuring and managing carbon emissions.

Climate Change Response

Strategy

Climate Change Response Strategies

GHG Emissions Management Strategy across the Value Chain

Value Chain Engagement

HDKSOE and its shipbuilding subsidiaries acknowledge the need to manage and reduce GHGs emitted not only within the organization but also throughout the entire value chain from raw material collection, and supply chain, to customer use and disposal.

In this regard, we are establishing and implementing a Value Chain Engagement strategy, an effort to identify and reduce GHGs emitted throughout the entire value chain by calculating Scope 3 emissions and conducting life cycle assessments (LCA).

Calculating Scope 3 Emissions

HDKSOE and its shipbuilding subsidiaries are developing and applying the Scope 3 calculation methodology tailored to the domestic shipbuilding industry based on the standards and guidelines on the calculation of Scope 3 emissions in the GHG Protocol.

Among the 15 categories of Scope 3 emissions, we have selected a total of 10 categories considering the characteristics of the shipbuilding industry's value chain and its GHG-intensive activities, and calculated Scope 3 emissions by using internal data and external indicators that align with calculation methodology for each category. We will continue to cooperate with the customers and the supply chain to expand the scope of data collection required to calculate Scope 3 emissions and strive further to disclose reliable information by advancing the calculation methodology.

Verification of Scope 3 Emissions

HDKSOE and its shipbuilding subsidiaries receive third-party verification for our Scope 3 emissions calculation procedures and results every year.

This verification process checks whether the GHG Protocol has been duly observed for the calculation based on the international standards for GHG verification (ISO 14064-1, ISO 14064-3). Additionally, it examines the characteristics and detailed figures of the data used in the calculation, the methodologies and procedures for calculation (including formulas and emission factors), and significant errors or omissions in the estimation used for the calculation.

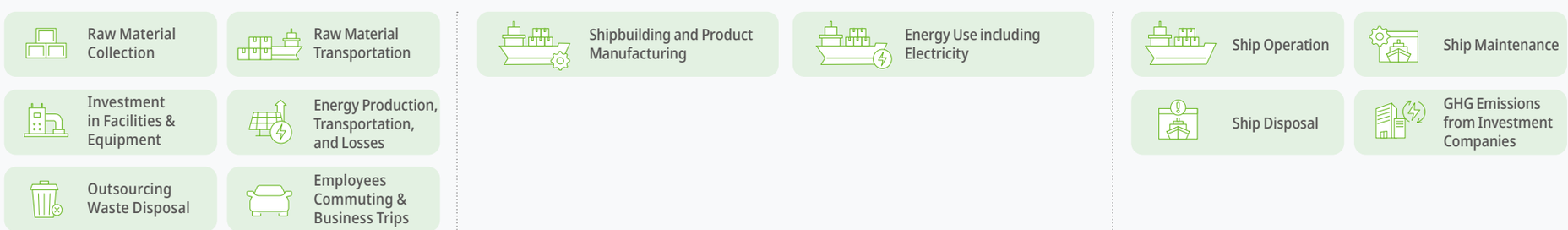
Life Cycle Assessment (LCA)

HDKSOE and HHI conducted a full life cycle assessment (LCA) for a 174,000m³ liquefied natural gas (LNG) carrier in 2023.

Departing from conventional ways of facility-centered GHG emission calculation, we calculated carbon footprints for the entire production process and disclosed the information to the stakeholders, increasing the reliability of our products.

Based on the successful LCA for the 174K LNG carrier in 2023, we plan to expand the scope of LCAs to include not only representative ship types but all of our products in the future.

Analysis of GHG Emissions in the Value Chain



Upstream

Scope 3 GHG emissions for 2023 (5.45%)	(Unit: tCO_2eq)
HDKSOE	17,394
HHI	3,055,146
HMD	1,191,329
HSHI	2,297,032

Business Activity of HDKSOE and its shipbuilding subsidiaries

Scope 1 & 2 GHG emissions for 2023 (0.89%)	(Unit: tCO_2eq)
HDKSOE	7,286
HHI	639,878
HMD	163,100
HSHI	266,223

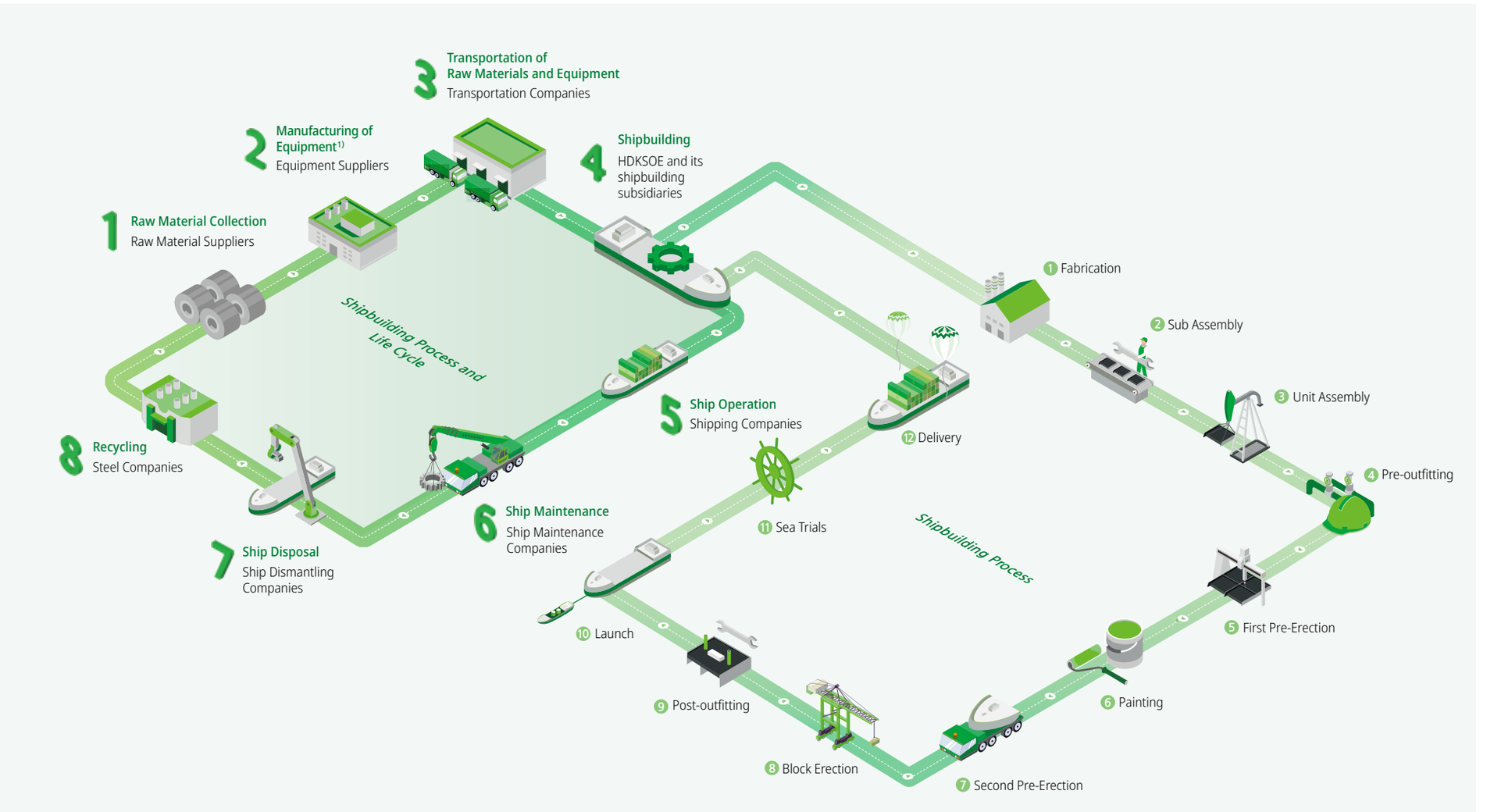
Downstream

Scope 3 GHG emissions for 2023 (93.66%)	(Unit: tCO_2eq)
HDKSOE	98,573
HHI	53,063,145
HMD	24,506,723
HSHI	35,222,432

Climate Change Response

Strategy

Shipbuilding Process and Life Cycle



1) Equipment: Intermediate goods manufactured and produced within the supply chain such as machines, devices, and materials installed on the ship

Climate Change Response

Strategy

BUSINESS CASE **Life Cycle Assessment (LCA)**

Background and Importance of LCA

HDKSOE and its shipbuilding subsidiaries conducted a Life Cycle Assessment (LCA) to calculate GHGs emitted throughout the entire value chain, from raw material extraction and procurement to production, use, disposal, and recycling. The LCA provides essential information to establish GHG emissions reduction strategies for the whole value chain.

In July 2023, the 80th meeting of the IMO's Marine Environment Protection Committee (MEPC) raised the carbon emission reduction target for the shipping sector from 50% to 100% compared to total emissions in 2008, and at the same time, adopted LCA for marine fuels. With the recent revision in the "Guidelines for Reviewing Environmental Labels and Advertisements," the importance of LCA has become even greater due to strengthened regulations on the life cycle of products.

In tune with such moves, **HDKSOE and HHI** conducted LCA for a 174,000 m^3 liquefied natural gas (LNG) carrier in cooperation with the Lloyd's Register (LR) of the UK and the Knutsen of Norway. Through the LCA, we measured the GHG emissions generated from the whole life cycle of ships from raw material extraction and transportation to shipbuilding, operation, dismantling, recycling, and disposal. In particular, we collected data on the actual materials and energy used during the shipbuilding process and used actual operation and maintenance scenarios of ships to increase the reliability of LCA.

LCA Methodology

HDKSOE and HHI used a Full-LCA method to calculate GHGs emitted throughout the life cycle of the ships in accordance with the international standards related to LCA such as the GHG Protocol and ISO 14040 (Principles and Framework for Life Cycle Assessment) and ISO 14044 (Specific Requirements and Guidelines for LCA).

The life cycle of a ship is divided into three phases: raw material collection to production (Cradle to Gate), completed product to end-of-use (Gate to End of Operation), and end-of-use to disposal (End of Operation to Grave).

LCA Procedures

Definition of Goals and Scopes	• Defining goals • Setting system boundaries • Determining functional units
Life Cycle Inventory	• Identifying system-affecting items • Pre-processing and quantifying input data • Reviewing data quality
Life Cycle Impact Assessment	• Selecting modeling types and principles • Selecting impact ranges and indicators
Interpretation and Report of Results	• Evaluating contributions and analyzing uncertainties • Reporting final results

LCA Results

As a result of LCA conducted by **HDKSOE and HHI**, GHG emissions from the Gate to End of Operation phase of a 174,000 m^3 LNG carrier took the largest portion of 93% in the total emissions, while those emitted from the Cradle to Gate phase and from the End of Operation to Grave phase represented 6% and 1% respectively.

In the Cradle to Gate phase, the raw materials for the ship accounted for 92% of GHG emissions, while the emissions from the shipbuilding process represented 8%, of which 59% is caused by the use of electricity.

Based on these findings, **HDKSOE and its shipbuilding subsidiaries** intend to establish strategic priorities according to life cycles to reduce GHG emissions across the entire value chain. First, to reduce the largest emissions generated from the Gate to End of Operation phase, we strive to transition to LZC fuels for the ships. Also, to cut emissions from the Cradle to Gate phase, we plan to implement various strategic activities such as expanding the use of low-carbon steel and shifting to renewable energy to gain electricity for shipbuilding.

KNUTSEN 174K LNG Carrier

LCA Implementation Plan

Climate Change Response

Risk Management

Climate Change Risk Management

Climate Change Risk Management Procedures

Risk Identification

HDKSOE and its shipbuilding subsidiaries analyzed domestic and international regulations and policies, as well as climate change scenarios to correctly identify risk factors and opportunity factors that may arise due to climate change. We examined trends in the IMO, the U.S., and the EU, and referred to the national standard climate change scenario (Korea Meteorological Administration, KMA), and statistics from research institutes in the regions where our business facilities are located. The analyzed scenarios included IEA NZE, SDS, STEPS scenarios and IPCC RCP scenarios.

Based on analysis of regulations, policies, and scenarios, we identified potential or highly probable risk factors (those having negative impacts on business and financial performances), and opportunity factors (those having positive impacts on financial performance through new technologies, products, and services) for each issue.

Risk Assessment

HDKSOE and its shipbuilding subsidiaries are conducting business impact assessments on risk factors and opportunity factors for each issue identified based on the analysis of regulation, policy, and scenario. We assess risks by comprehensively considering the probability of risk and opportunity factors, as well as the magnitude of impact and resilience when such factors occur.

The company's response capabilities to risk factors and opportunity factors for each issue are also reflected in the risk assessment. The response capability assessment is conducted to check the ability to respond immediately in the event of risks, the resilience to mitigate impacts, and the ability to pioneer new markets and secure new growth engines when capturing opportunity factors.

Risk Management

HDKSOE and its shipbuilding subsidiaries determine priority issues related to climate change and develop strategies to manage risk and opportunity factors by comprehensively considering the risk assessment results, the company's risk acceptability, and risk management level.

We establish and implement response strategies and continue to monitor risk and opportunity factors significantly affecting business operations and financial performances. For those risk and opportunity factors with less impact or with low benefits compared to response costs, we continuously monitor changes.

Climate Change Risk Management Procedures

Management Stages	Risk Identification			Risk Assessment		Risk Management	
	Regulations, Policy, and Scenario Analysis	Identification of Risk Factors	Identification of Opportunity Factors	Evaluation of Risk Factors	Evaluation of Opportunity Factors	Risk Management Types	Enterprise-wide Integrated Risk Management
Key Activities	• Utilize national regulations and policies, standard scenarios, and statistics from research & academic institutions > IEA Scenarios - NZE, SDS, STEPS > IPCC RCP Scenarios - 4.5, 8.5	• Analyze intensifying regulations and systems in the regions where business is operated • Review large-scale investment and business restructuring due to energy transitions • Analyze potential physical damage types caused by climate change	• Analyze climate change opportunity factors to consider when implementing mid-and-long-term business strategies • Forecast new markets and changing customer demands due to climate change	• Identify the likelihood of risk factors resulting from climate change • Check the magnitude and resilience of risks • Assess the capability for quick response and mitigation of financial impacts when risks arise	• Identify the likelihood and magnitude of opportunity factors resulting from climate change • Seek opportunities for business creation regardless of the impact assessment of opportunity factors • Confirm the capability to develop new technologies and explore new business areas when opportunities are certain	• High & Moderate: Develop and monitor risk response strategies • Low: Continuously monitor without specific response strategies	• Operate an integrated enterprise risk management system to manage and monitor risk impacts • Conduct periodic risk impact assessments and revise response strategies based on results • Utilize ESG advisory groups for professional and objective risk judgments
Key Considerations	• Which scenarios best represent the climate and environmental characteristics of the regions where the businesses are operated or business facilities are located?	• What climate change-related regulations, market changes, and physical damages negatively impact business operations and financial performance?	• What risks does global society face due to climate change, and what products and services address these issues?	• What impacts do risk factors have on business operations and financial performance?	• Does the company secure the human resources and investment budget to respond to opportunity factors?	• What is the risk level that the company can manage or accept regarding risk and opportunity factors?	• Can the processes and operational methods of the enterprise-wide integrated risk management system include climate change risks?
Implementational Organizations	• Departments in Charge of ESG > Discussion of ESG Working Council, Refer to the Group ESG Council, and Report to the Chief ESG Officers					• Chief ESG Officers > Discussion of the Group ESG Council, Refer to the BoD, and Report to the CEO > Integrated management of non-financial risks	• BoD and its ESG Committee > Integrated management and oversight of financial and non-financial risks > Deliberation on significant financial and non-financial strategies

Climate Change Response

Risk Management

Climate Change Risk Management

Transition Risk Management

Transition Risk

HDKSOE and its shipbuilding subsidiaries identified transition risks based on climate change-related policies and regulations, markets, technology, and reputation, and established a strategic system to preemptively respond to risks by identifying risk and opportunity factors.

Based on this identification, we are exploring response measures to minimize business operations and financial impacts arising from the introduction of policies and regulations. We also strive to actively respond to rapidly changing market demands due to climate change, and take the initiative in the market through the development of new technologies for mitigation and adaptation, as well as transition to low- and zero-carbon products. Moreover, recognizing the increasing need for climate change-related information disclosures from stakeholders, we make our best endeavors to communicate with stakeholders in a transparent manner.

Introduction of Internal Carbon Pricing (ICP) system

HMD has incorporated carbon emissions cost into financial decision-making on product development, facilities investment, etc., and introduced the ICP system to encourage GHG emissions reduction and businesses with improved environmental considerations.

In the early stage, the ICP system was applied to facility investment with over a certain amount of money, on a pilot basis, and then expanded company-wide after technical review.

HMD makes tireless efforts to manage risks and opportunities caused by transition risks in connection with financial performances, by applying carbon prices to the decision-making processes such as purchasing various raw materials, introducing and developing new technologies, investing in equipment and facilities, and preparing regulatory response measures such as carbon taxes.

Identification and Assessment of Transition Risks

Category	Risk	Financial Impact	Possible Occurrence Period*	Risk Factors	Opportunity Factors
Policies and Regulations	Increase in Carbon Tax and Carbon Pricing	High	Short-term, Mid-term, Long-term	• Increased energy and material procurement costs • Increased costs to trade GHG emissions	• Reduction in operating costs and improvement in production efficiency through the transition to high-efficiency energy equipment • Generation of non-operating income through the sale of surplus emission allowances in the emissions trading market
	Strengthening of GHG Emissions Regulations	Medium	Short-term, Mid-term	• Increased costs for technology and product development due to global regulations (IMO and EU, etc.) • Growing demand from customers for ships that reduce air pollution and GHG emissions	• Increased orders for Low- and Zero-Carbon (LZC) ships and high-efficiency & high-value-added ships in accordance with growing demand for replacing old ships
Market	Changes in Energy Sources	High	Mid-term, Long-term	• Decreased sales of fossil fuel-carrying ships • Decreased orders for offshore plants	• Increased orders for new energy source (hydrogen, ammonia, etc.) carrying ships • Expansion of new business portfolio in renewable energy
	Rapid Changes in Ship Demand Patterns	High	Short-term, Mid-term	• Increased costs for developing Low- and Zero-Carbon (LZC) ships	• Increased orders for Low- and Zero-Carbon (LZC) ships
	Growing Demand for Production Methods to Minimize Environmental Impacts	High	Short-term, Mid-term	• Increased demand for raw materials that minimize environmental impact, such as green products • Strengthened requirements to reduce GHG emissions from product manufacturing	• Increased demand for production technologies that improve energy efficiency and reduce GHG emissions
Technology	Increased Demand for Technological Advancement	Medium	Short-term	• Increased investment costs for technology advancement	• Increased sales through the transition to low-pollution, high-efficiency ships
	Increased Need for Next-Generation Technology Development	High	Short-term, Mid-term	• Increased costs for technology development • Decreased market share due to delays in new technology development	• Entry into the Low- and Zero-Carbon (LZC) market and preemptive market share acquisition • Expansion of new business portfolio
Reputation	Changes in Stakeholder Requirements	Medium	Short-term, Mid-term	• Increased costs to comply with investment institution standards and respond to global initiatives	• Securing competitiveness in orders by providing transparent climate change-related information and various solutions that meet stakeholder requirements

* Short-term (1-2 years), Mid-term (3-5 years), Long-term (5+ years).

Climate Change Response

Risk Management

Climate Change Risk Management

Transition Risk Response Strategy

HDKSOE and its shipbuilding subsidiaries have implemented three major strategies 'Green Product, Green Shipyard, and Green Partnership' to effectively respond to climate change transition risks.

GREEN PRODUCT

To preemptively respond to changes in the ship market and meet customer needs, **HDKSOE and its shipbuilding subsidiaries** are focusing on developing technologies to construct ships powered by low- and zero-carbon fuels.

For LNG DF (dual fuel) propulsion ships, we are improving engine efficiency and promoting the development of methane slip technology that prevents the release of not-fully-burned methane into the atmosphere. In addition, we are pursuing GHG emissions reduction for large ships through the development of zero-carbon fuels such as ammonia and hydrogen, and hi-tech development related to large-capacity fuel cells and electric propulsion. Furthermore, we aim to take the lead in the era of carbon neutrality by combining related technologies such as ship electrification and automation, and energy efficiency-specialized hull form, propeller, and wind-assisted propulsion system.

We also make tireless efforts to develop technologies related to On Board Carbon Capture & Storage (OCCS) and LCO_2 (liquefied carbon dioxide) carrier to dominate the CCUS (Carbon Capture, Utilization & Storage) market, which has emerged as a way to achieve carbon neutrality throughout the industry.

GREEN PARTNERSHIP

Recognizing that the climate change responses require collective efforts of the entire shipbuilding value chain, **HDKSOE and its shipbuilding subsidiaries** are pursuing cooperation with domestic and overseas supply chains to develop low-carbon steel for ships, low volatile organic compound (VOC) paints, and low- and zero-carbon fuels. In particular, **HMD** has strengthened the partnership with supply chain contractors by supporting the verification of small and medium-sized producers of electric propulsion equipment mounted on electric-powered ships.

GREEN SHIPYARD

HDKSOE and its shipbuilding subsidiaries are implementing the FOS (Future Of Shipyard) project to promote digital-based raw material management and optimize production processes. In particular, the industrial IoT is used to measure the flow rate, status, and pressure of energy sources as LNG, while the big data is analyzed to cut energy costs and prevent safety accidents. We will keep exploring and implementing effective GHG emissions reduction items based on real-time measurement and data analysis of diverse energy resources and GHG emissions.

BUSINESS CASE

GREEN PRODUCT

Obtained an order for the world's first medium-sized ammonia-fueled ship (Oct. 2023)

Won an order for the world's largest LCO_2 carrier (Jul. 2023)

GREEN PARTNERSHIP

Signed an MOU with Woodside Energy (Australia), MOL (Japanese shipping company), and Hyundai Glovis to develop a value chain for the maritime transportation of liquefied hydrogen (Feb. 2024)

Concluded an MOU with Korea East-West Power and the Korea SMEs and Startups Agency to implement 'Joint Cooperation Project for GHG Emissions Reduction in the Shipbuilding Industry' (Apr. 2024)

GREEN SHIPYARD

Signed an MOU with Siemens in Germany on 'Joint Development of Innovative Manufacturing Platform to Integrate Design and Production' (Oct. 2023)

Concluded an MOU with Team Naver to promote the 'AI and Cloud Transition Project' (Oct. 2023)

Climate Change Response

Risk Management

Climate Change Risk Management

Physical Risk Management

Physical Risk Status

HDKSOE and its shipbuilding subsidiaries analyzed scenarios to identify types of physical risks resulting from climate change, estimate potential damages due to physical risks by each type, and establish response measures. We defined the types of physical risks based on the research report of the regional research institute (Ulsan Research Center) where our business facilities are located, and the climate change forecast for the Korean Peninsula prepared by KMA according to the national standard climate change scenario. Then we analyzed the likelihood of physical risks and their impacts on work facilities. We also evaluated the analysis results of these risks and management capabilities to manage the risks based on the classified four risk levels: very high, high, medium, and low.

HDKSOE and its shipbuilding subsidiaries used the simulator provided by the Korea Ocean Environment Corporation to identify expected sea level rise and potential flooding areas according to the IPCC (Intergovernmental Panel on Climate Change) RCP (Representative Concentration Pathways) 4.5 and RCP 8.5 scenarios and assess the level of property damages for work facilities and surround areas. In addition, we seek response measures to minimize the level of damage.

Physical Risk Response Strategy

Establishing a Preemptive Response System to Physical Risks

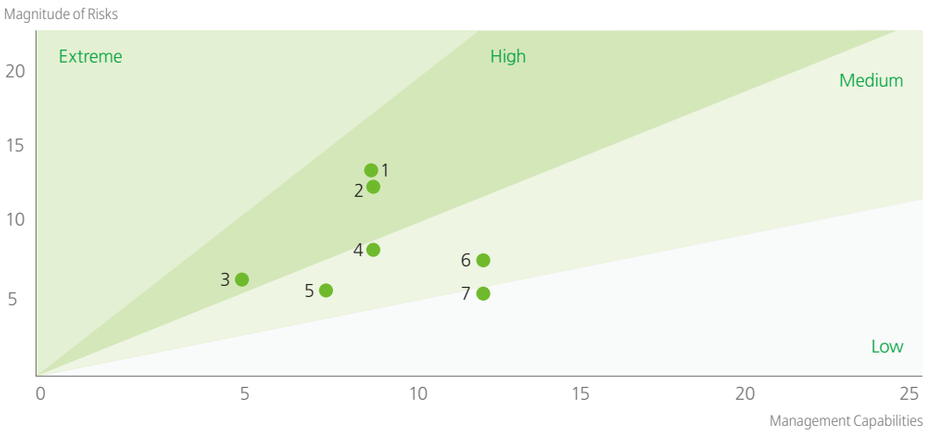
Among the climate change physical risks, **HDKSOE and its shipbuilding subsidiaries** are exposed to risks such as typhoons, heavy rain, strong winds, river flooding, and flooding due to sea level rise. When any of these risks occur, there might be potential damages to ships and structures, as well as casualties and property loss, eventually having negative impacts on business operations and performances of the companies.

To preemptively brace for these physical risks, HDKSOE and its shipbuilding subsidiaries have established a system to prevent and quickly respond to possible damages. Based on our weather forecast system and typhoon management system, we forecast weather conditions to minimize damages and ensure effective work performance. Furthermore, we use these systems to predict strong winds, heavy rain, heavy snow, and cold waves in advance, thereby implementing preemptive measures and providing instructions to employees. We also conduct a drill to respond to typhoons and develop company-wide manual to ensure the prevention of typhoon-related damage, systematic management, and prompt recovery.

In particular, **HHI, HMD, and HSHI** have obtained certification as Excellent Weather Management Companies from the KMA and carried out preemptive management to actively respond to physical risks due to climate change.

Excellent Weather Management Companies Certification

Physical Risks Assessment Results



Physical Risks Assessment Results and Response Measures

No.	Climate Factors	Exposure Location	Potential Events	Expected Damage	Risk Level	Response Measures
1	Typhoon - Heavy Rain	Rivers	Flooding due to external water inflow	Human and property damage	Very High	• Establish a company-wide typhoon management system • Creation of Typhoon Response Manual and Implementation of Simulation Training
2	Typhoon - Heavy Rain	Facilities	Flooding due to poor drainage	Human and property damage	High	
3	Typhoon - Strong Winds	Facilities	Damage to Ships	Property damage, project delays	High	
4	Typhoon - Strong Winds	Facilities	Structural damage	Property damage, project delays	Medium	
5	Typhoon - Tsunami	Coast	Low-lying area flooding	Human and property damage	Low	
6	Sea Level Rise	Coast	Coastal erosion and loss	Property damage	Medium	• Analyze flood-prone areas using sea-level rise simulators, conduct regular checks of levee reinforcements
7	Heavy snow, cold waves	Roads	Traffic accidents	Human life damage	Low	• Introduce and operate the weather management system

1) A company-wide typhoon management system has been established to systematically manage typhoon information and prevention measures, share real-time information on typhoons, manage statistics on damages and recovery, ensuring prompt responses and follow-up actions in the event of an actual typhoon.

Climate Change Response

Metrics & Targets

GHG Emissions Management

Management of Scope 1 & 2 GHG Emissions

Management Status of Scope 1 & 2 GHG Emissions

Though **HDKSOE** is not subject to the GHG Target Management System (TMS) or Emissions Trading Scheme (ETS), it calculates and manages GHG emissions according to the domestic guidelines on GHG emissions calculation. Moreover, HDKSOE monitors GHG emissions every month for not only main work facilities but also other property buildings including a research building, a hotel, a theater, etc.

HHI operates its own GHG management system called HGMS based on international standards such as IPCC Guidelines and domestic guidelines on GHG emissions calculation. To effectively respond to the ETS, HHI uses the HGMS to measure GHG data, analyze expected emissions, calculate BAU estimation, and manage the trading and allocation of carbon credits. In addition, based on the HGMS, HHI strengthens the completeness of emission calculation plans through monitoring of renewable energy status and steam management and secures accuracy and transparency through third-party verification of GHG emissions.

Using the GHG inventory based on IPCC Guidelines, **HMD** monitors GHG emissions for each emitting facility and reports the monitoring results to the executive management meetings. It receives verification by a third party on the effective operation of GHG inventory, and reliability of collected data based on inventory.

HSHI calculates GHG emissions by using the IPCC Guidelines and effectively identifies energy-saving and emissions-reduction factors through a real-time internal data monitoring system called Twin-Fos. Moreover, HSHI has secured accuracy and reliability through the verification by a third party for GHG emissions.

Scope 1 & 2 GHG Emissions Reduction Activities and Plans

HDKSOE has advanced its energy usage management to reduce energy consumption. Through optimal heating and cooling operation, automatic turn-offs of unnecessary lights, and automatic transition to a power-saving mode of monitors, HDKSOE has saved energy and continues to practice various energy-saving ideas.

HHI has reduced GHG emissions through transitioning from fossil fuels, improving motor systems, managing power demand for high-efficiency lighting, installing LED illuminance sensors, and utilizing solar energy and waste heat (steam). In alignment with the carbon neutrality roadmap, HHI has set a GHG emissions reduction target of 684,586 tCO_2eq for 2024 and continued to identify and promote activities that align with carbon neutrality strategic directions including expanding renewable energy procurement and use, enhancing energy efficiency and electrification, and transitioning to LZC fuels.

HMD has established a system for automatic control and operation of energy-intensive facilities, in connection with temperature and humidity, screen doors, processes, and paint flow. This system is expected to achieve a reduction of 2,178 tons of GHG emissions and 1.2 tons of nitrogen oxides annually.

HSHI identifies and promotes items to reduce GHG emissions including advancing ship trial methods and conducting simultaneous sea and gas trials for LNG carriers (LNGC) and LNG dual-fuel (DF) Ships. Furthermore, to achieve the K-EV100 initiative, HSHI plans to transition 100% of the in-house vehicles to zero-emission vehicles by 2030, and according to this plan, 27 zero-emission vehicles and 24 slow-charging stations will be constructed by 2024.

* Since the figures are associated with the roadmap, they may change according to changes in the roadmap.

Scope 1 & 2 Emissions and Targets (Unit: tCO_2eq)

Climate Change Response

Metrics & Targets

GHG Emissions Management

Energy Management

Establishing Energy Management System

HDKSOE has established an energy management system and monitored monthly energy consumption for not only the company's work facilities but also other property buildings such as the research building, company-owned hotels, theater, etc. Furthermore, its **shipbuilding subsidiaries** operate an ISO 50001-based energy management system.

HHI has established an integrated energy management system called Hi-energy by upgrading the Factory Energy Management System (FEMS). Through Hi-energy, HHI systematically manages energy (electricity, gas) consumption for each factory and building, and actively promotes activities to save energy such as an Energy-saving Target Initiative and energy-saving idea contests. **HMD** has established and upgraded an energy control system to remotely and automatically control the energy consumption of energy-intensive facilities. **HSHI** has operated 'Energy Control Center' within the integrated control center and established a data-based management system using FEMS to connect all energy facilities for effective management.

Energy Efficiency and Energy-saving at Work Facilities

HDKSOE analyzes energy usage patterns and continuously searches ideas to improve energy efficiency and economize energy consumption, such as optimal optimal heating and cooling, automatic lights-out, automatic power-saving of monitors, and shared services.

HHI has promoted initiatives for energy efficiency such as using high-pressure power facilities for sea trials, improving the efficiency of air compressor facilities, and introducing gas heating blowers. It has also pursued a transition to low-carbon fuels and strived to attain its goal of '1% reduction in energy intensity in 2024.

HMD has pursued improved energy efficiency by replacing outdated facilities as air compressors, boilers, and motors, and by adopting remote control and monitoring for pre-painting equipment and cooling and heating systems.

HSHI has reduced energy consumption by 3,000 kWh annually through the installation and operation of ESS (Energy Storage Systems). HSHI also performs various energy-saving activities including improving HVAC systems at painting facilities with high energy consumption, and the operational management of the "Air Corp."

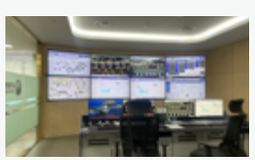
Energy Management System Third-Party Certification Status

Category	Certification Standard	Certifying Agency	Validity Period
HHI	ISO 50001:2018	SGS	Nov. 2022~Nov. 2025
HMD	ISO 50001:2018	LRQA	Sep. 2022~Sep. 2025
HSHI	ISO 50001:2018	DNV	Sep. 2023~Sep. 2026

BUSINESS CASE

Energy Control Center

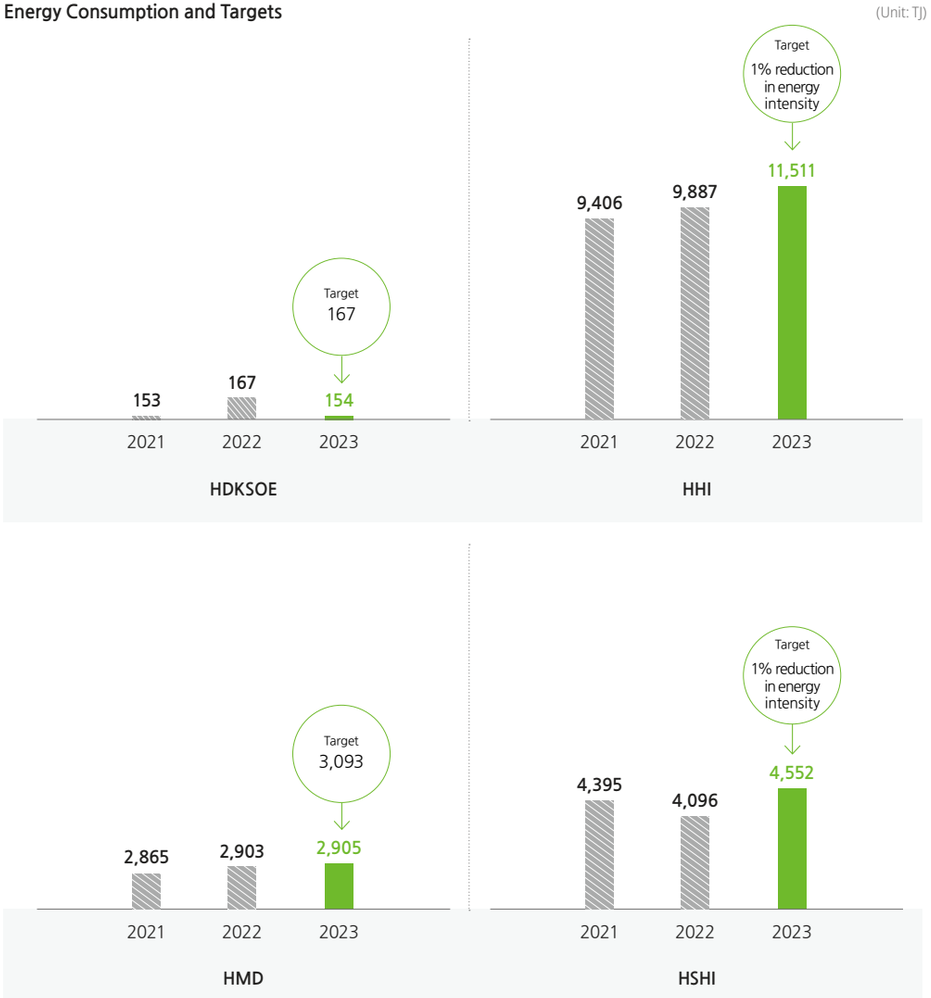
HSHI opened an Integrated Control Center in 2023 to advance ESG management and especially formed the 'Energy Control Center', a dedicated energy management body designed to strengthen energy use and carbon neutrality policies. This center serves as a control tower for company-wide energy-saving by monitoring energy consumption at the company level and managing relevant data.



Energy Control Center

Energy Consumption and Targets

(Unit: TJ)



* HHI: Improved energy intensity (total energy consumption/revenue) by 11.73% in 2023 compared to 2022
** HSHI: Improved energy intensity (total energy consumption/revenue) by 13.34% in 2023

Environmental Impact Reduction Technologies

Governance

Governance of Environmental Impact Reduction Technology

Roles and Responsibilities

R&D Organization

HDKSOE and its shipbuilding subsidiaries strive to drive the future of the shipbuilding and offshore industries with the aim to 'secure super-gap technology to become the world's best shipbuilding and offshore engineering company.' To this end, each company has established R&D governance and formed area-specific professional organizations to maximize the efficiency of R&D efforts. To secure market competitiveness by developing leading technologies, HDKSOE and its shipbuilding subsidiaries will continue to expand support for nurturing R&D personnel and related infrastructure.

R&D Status

Category	R&D Cost	R&D Personnel	Major R&D Performance
HDKSOE	KRW 162,437 mil.*	435	· Developing Integrated Smartship Solution (ISS) Annual Efficiency Ratio (AER) Prediction System in response to Carbon Industry Indicator (CII) regulations · Completing demonstration of 200kW prototype of Modular Multilevel Converter (MMC) propulsion drive for large ships · Submitting and passing the amendments to alleviate the risks of violating environmental laws, and developing/applying hypoallergenic painting (for ballast tank and engine room)
HHI	KRW 116,733 mil.	233	· Developing linear optimization by ship type considering CII Grade · Advancing LNG Carrier slushing load and BOR prediction technology considering actual operating conditions · Developing Liquid Carbon Dioxide (LCO_2) Cargo Hold
HMD	KRW 22,326 mil.	39	· Developing cable data retrieval program · Advancing knowledge asset platform · Developing a 3D-based weight calculation program
HSHI	KRW 50,944 mil.	17	· Developing welding automation technology for enclosed spaces based on cooperative robot · Optimizing pre-treatment of an external surface of ship compartments and establishing pre-treatment standards · Developing Intelligent 3F Carriage responsive to curved blocks

* HDKSOE reports its R&D cost on a consolidated basis.

BUSINESS CASE

HD Hyundai Europe R&D Center

HDKSOE established a research branch in Düsseldorf, Germany to dominate future technologies and converted it into a local corporation named 'HD Hyundai Europe R&D Center. With this Center serving as a pivotal hub and collaborating with research institutes, the companies plan to secure the next-generation ship technologies such as hydrogen-, fuel cells-, ammonia-propulsion and electric-powered ships and expand technical cooperation networks to key European countries.

Opening Ceremony of HD Hyundai Europe R&D Center

R&D Organizations and Research Areas for Each Group Company

Organization

- **HDKSOE** — Advanced Research Center
  - Decarbonized Ship Research Laboratory
  - Green Energy Technology Laboratory
  - Digital Research Laboratory
  - Manufacturing Innovation Laboratory
  - Electrification Center
  - AI Center
  - Technology Consulting Center
  - HD Hyundai Europe R&D Center
- **HHI** — Corporate Research Institute
  - Ship & Offshore Research Institute
  - Engine Research Laboratory
  - Naval Ship Technology Center
- **HMD** — Digital Manufacturing Innovation Center
  - Design Innovation Platform Team
  - Manufacturing Innovation Platform Team
  - Automation Innovation Team
- **HSHI** — Automation Innovation Center
  - Automatic Welding and Painting Innovation Team
  - Automatic Welding Development Team
  - Technology Management Team
  - Robot Control Development Team

Key research areas

- **HDKSOE**
  - Realization of decarbonized ship technologies
  - Production, storage, and application technologies of low- and zero-carbon future energy
  - Digital twin technology and next-generation ship operation systems
  - Establishment of smart yard and super-gap production technologies
  - Development of super-gap electrification technologies for products across group affiliates
  - Development of intelligent and autonomous solutions and AI platforms
  - Engineering solutions for the prevention and resolution of design and production process issues
  - Expansion of overseas R&D networks for the group
- **HHI**
  - Development of optimal design and analysis technologies for ships and marine structures
  - Development of external ship components
  - Development of product design technologies including diesel/DF engines and water electrolysis
  - Enhancement of stealth performance and optimal design technologies for warships
- **HMD**
  - Creation of digital manufacturing environment for design and production consistency
  - Promotion of production mechanization and automation
  - Development of CAD/PLM-based design APIs
- **HSHI**
  - Development of robotic welding systems
  - Automation and mechanization development for welding and painting
  - Improvement and development of assembly methods
  - Development of new welding techniques and composite material processes
  - Development of production jigs and fixtures

Environmental Impact Reduction Technologies

Strategy

Technology Development Strategies to Reduce Environmental Impacts

Low- and Zero-carbon (LZC) Ships

Total Solution Provider

As a shipbuilding and offshore company leading the world's most innovative technologies, **HDKSOE and its shipbuilding subsidiaries** have been fully committed to developing various super-gap future technologies. We are concentrating capacities on developing not only LNG DF ships and Methanol DF Ships, which are gaining attention as low-carbon ships, but also on developing zero-carbon fueled ships such as ammonia and hydrogen that are in the spotlight as future fuels. Moving forward, HDKSOE and its shipbuilding subsidiaries will evolve into a company that can respond to diverse market demands for future ships as a 'Total Solution Provider.'

BUSINESS CASE

Investment in Fuel Cell Development

HDKSOE signed an investment contract worth of EUR 45 million (about KRW 64 billion) with Elcogen, an Estonian fuel cell manufacturer. Through this investment, HDKSOE will enter the green hydrogen market in a full-fledged manner by advancing the Solid Oxide Fuel Cell (SOFC) system.

HDKSOE - Elcogen Signing on Investment Contract

LZC ships portfolio

Category	Descriptions	Major Performances for 2023
LNG DF Ship	Liquefied Natural Gas (LNG) has the advantage of reducing sulfur oxide (SOx) emissions by 99%, nitrogen oxide (NOx) emissions by 90%, and carbon dioxide emissions by 30% compared to conventional bunker C oil. While LNG itself belongs to the fossil fuel category, it is the most realistic low-carbon ship in response to strengthened maritime regulations, considering the speed of technology development and fuel supply port infrastructure.	• Developed advanced fire-resistant design technology for LNG DF 180K B/C's E/Casing • Completed development of STS bunkering technology for the first LNG DF fueled ships in Korea • Applied new construction methods to improve efficiency in membrane LNG DF tank construction
Methanol DF Ship	Methanol is one of the marine fuels that is in the spotlight along with ammonia and hydrogen, and has the advantage of emitting 25% fewer GHGs than existing ship fuels such as bunker C oil. In addition, it can reduce not only GHGs but also sulfur oxide (SOx) emissions by 99% and nitrogen oxide (NOx) emissions by 80%. Because of this, methanol DF ships are attracting attention as next-generation ships that can overcome shipping environmental regulations.	• Optimized Methanol DF insulation material and ventilation fan for fuel supply pipe • Establishment of pre-treatment standards for interior painting of Methanol DF Tank
Ammonia-fueled Ship	Ammonia does not contain carbon in its molecular structure, resulting in zero carbon emissions. It can also be applied to fuel cells and is relatively easy to transport and store because it liquefies at temperatures as low as -33.3 degrees Celsius. However, due to its strong toxicity, it is important to properly manage fuel leakage incidents.	• Successfully demonstrated absorption-type gas treatment systems for ammonia-fueled ships and obtained class certification • Relaxed the upper limit of yield strength for LPG cargo hold materials compatible with ammonia • Received orders for mid-sized ammonia DF ships (45K LPG Carrier)
Electric-powered ship	Electric-powered ships are driven by motors powered by electricity stored in batteries, making them the next-generation future ships that are more efficient than liquid-based fuel ships.	• Developed and commercialized DC electric propulsion systems (Hi-EPS) • Completed initial package testing for Low Voltage Alternating Current (LVAC) electric propulsion systems
Hydrogen carrier and Hydrogen-fueled ships	Hydrogen carriers utilize the hydrogen system installed on the ship to use the evaporative gas generated during navigation as fuel for an electric propulsion system consisting of hydrogen engines and fuel cells.	• Secured AIP for large-scale hydrogen carrier systems and selected Shell as a development cooperation partner through competitive bidding

LNG DF Ship

Methanol DF Ship

Ammonia-fueled Ship

Electric-powered Ship

Hydrogen Carrier and Hydrogen-fueled Ship

Environmental Impact Reduction Technologies

Strategy

Technology Development Strategies to Reduce Environmental Impacts

Enhancing Competitiveness of Environmental Impact Reduction Technologies

Development of Future Ship Technologies

HDKSOE and its shipbuilding subsidiaries have drawn a systematic roadmap for developing super-gap technologies to enhance market competitiveness based on advanced technologies. The roadmap focuses on establishing and practicing empirical R&D goals such as propulsion technologies using zero-carbon (ammonia, hydrogen) and low-carbon (LNG, methanol, biofuel) fuel as well as technologies for GHG emissions reduction through post-processing of exhaust gases.

External Recognition of Technological Competitiveness

Hi-eGAS

HDKSOE and HHI have jointly established and operate Hi-eGAS (Hyundai High-efficient Gas Supply System)', a new concept LNG supply system. Hi-eGAS saves fuel consumption by heating LNG fuel with the waste heat from ship engines. This system acquired the Approval in Principle (AIP) from DNV, the Norwegian classification society, and LR, the U.K. classification society.

LNG/Hydrogen Hybrid HiMSEN Engine

HHI has proved the safety and exceptional performance of the self-developed 1.5MW LNG/Hydrogen Hybrid HiMSEN engine at the demonstration in 2023. This engine employs combustion optimization technology for each fuel, allowing for selecting a blend of diesel and LNG, or a blend of LNG and hydrogen, thus significantly reducing air pollutants and GHG emissions.

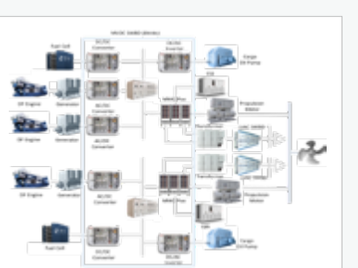
Low-carbon Electric Propulsion System for Large Ships

HDKSOE and HHI have successfully completed the independent design of 30MW zero-carbon electric propulsion system for large ships such as a 170,000-ton gas carrier and a 300,000-ton super-sized tanker. Combining dual-fuel power generation engines and large-capacity fuel cells, this system provides higher propulsion efficiency than larger engines even without carbon emissions. Compared to the existing system, energy integration efficiency has been improved, along with overall weight reduction by 20% and power quality improvement by 40%. In recognition of this outstanding performance, basic design certification for the system was obtained from LR in October 2023.

Super-gap Technology Development Roadmap

Super-gap Technologies	Key Goals and Directions	Short-term Goals (2022~)	Mid-term Goals (2025~)	Long-term Goals (2028~)
Ammonia-propulsion	· Secure technological superiority in ammonia-fueled Ships in response to global Net-Zero trends · Differentiate ammonia-fueled Ships	· Develop medium-sized ammonia engines · Develop ammonia fuel supply/ cargo handling systems	· Develop large ammonia engines · Advance ammonia fuel supply/ cargo handling systems	· Develop ammonia-fueled ships
Electric-propulsion	· Lead the ship propulsion solutions market by developing the next-generation high-efficiency electric-powered systems	· Commercialize hybrid electric-propulsion systems		· Commercialize 50MW class hybrid electric-propulsion systems
Fuel cell-propulsion	· Preoccupy the next-generation power generation/ propulsion systems for ships · Maintain super gaps in the LZC ship market	· Develop fuel cell-propulsion systems for small and medium-sized ships		· Develop fuel cell-propulsion systems for large ships
SMR	· Preoccupy the market for SMR-applied maritime propulsion/power generation systems	· Develop next-generation SMR application technology for maritime use		· Complete design certification for nuclear-powered ships/power generation systems
LCO_2 Carrier	· Gain technological leadership in LCO_2 Carrier in response to the Net-Zero trend and ship market changes · Lead the LCO_2 Carrier market	· Commercialize LCO_2 CHS technologies (Cargo Handling System)		
Hydrogen Carrier	· Build hydrogen carriers through differentiated technology · Enter into new businesses of the hydrogen economy with core hydrogen technology development	· Conduct conceptual design of liquefied hydrogen carriers · Develop large-scale liquefied hydrogen storage tanks	· Receive orders for liquefied hydrogen carriers · Manufacture large-scale liquefied hydrogen storage tanks	· Recieve orders for large-scale liquefied hydrogen carriers
GHG Emissions Reduction from Ships	· Commercialize new and existing ship businesses through developing proprietary models for ship environmental facilities · Enhance competitiveness of environmental impact reduction solution technologies	· Develop and validate proprietary models for CO_2 capture/processing/storage systems for ships · Develop and validate methane slip reduction devices · Validate and commercialize proprietary models for wind-assisted propulsion systems		

LNG/Hydrogen Hybrid HiMSEN Engine



Basic Design Concept of Zero-carbon Electric-powered System

Environmental Impact Reduction Technologies

Strategy

Technology Development Strategies to Reduce Environmental Impacts

Enhancing Competitiveness of Environmental Impact Reduction Technologies

Environmental Impact Reduction Ship Systems

HDKSOE has developed systems like 'Hi-ERSN (LNG Re-liquefaction System)' and 'Hi-ALS (Next-Generation Air Lubrication System)' to increase the energy efficiency of ships. Hi-ERSN fully re-liquefies the Boil Off Gas (BOG) from the LNG cargo hold using nitrogen refrigerant, improving energy efficiency compared to existing systems. In addition, Hi-ALS reduces friction resistance by creating an air layer on the surface of the hull's bottom, thereby decreasing fuel consumption and carbon emissions.

Methanol Dual-Fuel HiMSEN Engine

HHI signed a contract to supply methanol dual-fuel HiMSEN engines and nitrogen oxide reduction devices in a package to container ships built at Korean, Chinese, and Japanese shipyards, proving its outstanding competitiveness to the outside. This engine selectively uses methanol and diesel fuels and is characterized by less emissions of GHGs and other harmful exhaust gases. Following the development of a 32-class methanol engine, HHI also developed a 22-class methanol engine suitable for tankers and bulk carriers in 2024, expanding the technology range to more diverse ship types.

Developing Ammonia Dual-Fuel Propulsion Engine

HDKSOE successfully secured the order for the world's first ammonia-fueled ship. This ship is designed to transport ammonia as well as LPG, where ammonia can be used as an engine fuel. The ship will be built at HMD, with its delivery scheduled for May 2026.

Development Process of Environmental Impact Reduction Technology

Application and Expansion of Environmental Impact Reduction Technology

HDKSOE and its shipbuilding subsidiaries thoroughly analyze market outlook and technology trends through the development process of environmental impact reduction technology. Based on such analysis, we establish strategies and explore specific response measures for developing environmental impact reduction technologies. Such developed technologies are applied to actual ships and any defects or shortcomings are immediately addressed upon detection. Through this, we pursue continuous innovation and development, leading the technology development in ships.

Development Process of Environmental Impact Reduction Technology

1st stage	2st stage	3st stage	4st stage	5st stage	6st stage
Analyzing market and technology trends	Establishing strategy for technology development	Developing strategic measures and R&D tasks	Reviewing selection of technology development tasks	Implementing tasks	Conducting mid-term and final reviews
· Continuous monitoring and internal consultation of regulations, market, and technology · Identifying and selecting environmental impact-related issues	· Conducting workshops for each technology to identify key development items · Discussing responses to future fuels and establishing strategies	· Drawing a roadmap for shipbuilding technology development · Conducting technology development strategy meetings	· Setting a quantitative decarbonization target upon completion · Managing investment portfolios for each sub-technology	· Applying technological achievements to actual ships · Optimizing application and reflecting improvements on a real-time basis	· Interacting about progress and outcomes

Application of Environmental Impact Reduction Technology

Steel pre-treatment and cutting	Assembly	Preliminary Painting	Dock work	Inspection	Sea trials
· Installing pollution prevention facilities to minimize pollutant emissions · Automating the pre-treatment painting process · Applying steel-cutting simulation techniques	· Advancing LUG management to improve recycling rates · Applying high-efficiency welding techniques	· Developing and applying low volatile organic compound (VOC) paints · Advancing management of coating thickness and painting process · Introducing clean rooms in painting factories · Establishing an integrated control system for painting factories	· Expanding the application of dust collection/ventilation systems within ships · Developing and applying shatter-proof equipment and technologies for outdoor painting	· Minimizing wastewater by changing pressure testing methods · Virtualizing container demo tests for container ships · Replacing radiographic testing with PAUT*	· Using onshore high/low voltage power facilities during docking sea trials · Minimizing exhaust gas pollutants by applying pollutant reduction facilities · Enhancing operational efficiency by optimizing boiler air-fuel ratio

Common measures

· Minimizing power consumption by using LED lighting
· Optimizing heavy equipment fuel usage through virtual simulation
· Establishing an integrated control system for air compression facilities
· Operating in-house navigation systems

* PAUT(Phased Array Ultrasonic Testing)

Digital Transformation

Establishing Smart Shipyard

2030 Smart Shipyard Strategy

HDKSOE and its shipbuilding subsidiaries are jointly promoting the 'FOS (Future of Shipyard)' project to build a super-gap smart shipyard by 2030. By applying the Fourth Industrial Revolution technologies such as Digital Twin, AI-big data, AR/VR, and robotics to complex and dangerous shipyard processes and working environments, the Smart Shipyard will dramatically increase manufacturing competitiveness by eliminating highly repetitive and chronic problems such as wasted time, inefficient processes, and risk factors caused by heavy dependence on manpower. Since 2021, have completed major tasks under the FOS Phase 1 to make a 'Visible and Understandable' shipyard, and secured a stable foundation for transitioning to the Phase 2 of the 'Connected and Optimized' shipyard.

FOS Phased Goals

FOS Phase 1 Goals (2023)

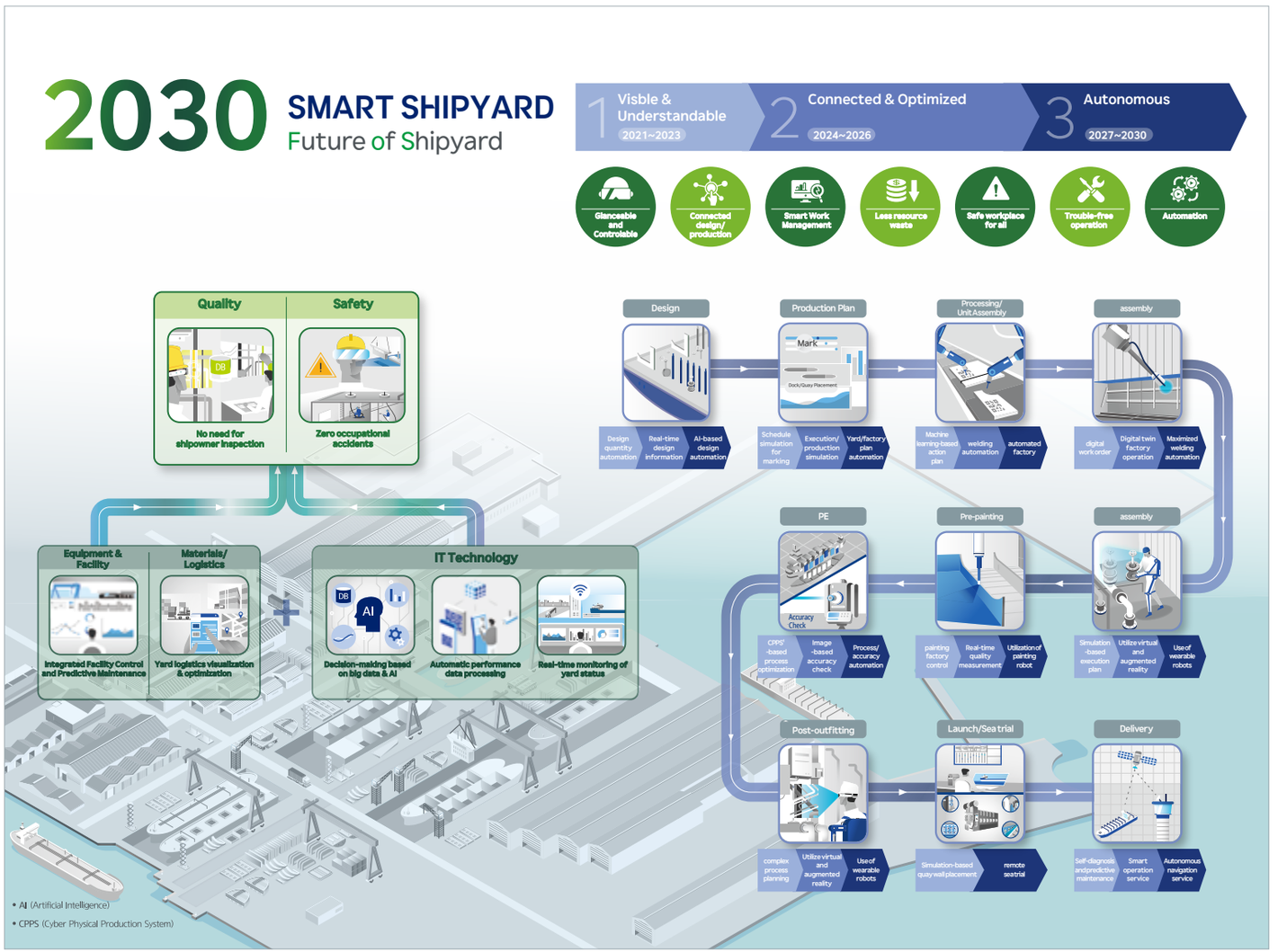
- Increase the work efficiency through 'Digitization' of a great amount of manually managed data and establishment (advancement) of field-specific visualization systems
- Improve productivity by 10% and reduce time waste and lead time by 10%

FOS Phase 2 Goals (2026)

- Build a shipyard that enables to integrate and connect a considerable amount of data collected during the shipbuilding process, to improve work productivity through analysis and simulation, and to remove risk factors in advance through preemptive prediction management
- Achieve an estimated cost-saving effect of about KRW 70 billion

FOS Phase 3 Goals (2030)

- Establish a shipyard that can reduce unnecessary process delays and inventories through Comprehensive Simulation Verification (CPS) in all processes from ship design to delivery, thereby minimizing human intervention by using up-to-date smart technology and robots
- Enhance productivity by 30%, shorten lead time by 30%, and achieve Zero waste in process and resource



Digital Transformation

FOS Goals and Activities

Visible and Understandable Shipyard ~2023

HDKSOE and its shipbuilding subsidiaries have successfully performed key tasks of the first phase of FOS, the 'Visible and Understandable' shipyard. Its key achievement is 'Twin FOS', a digital twin integrated information platform. The Twin FOS visualizes actual conditions of the shipyard in 3D model information, including work site (plant), ships and blocks under construction, facilities, logistics, etc. so that anyone can understand the workflow of the shipyard at a glance from the computer. At the same time, the platform provides information and indicators for each area such as process, materials, quality, and safety. The Twin FOS is expected to optimize the entire process in a virtuous circle, as it enables executives to make fast and reasonable decisions, managers to deliver effective plans and directions, and workers to cooperate with easier access to necessary information.

In the past, field managers empirically distributed the daily workload to each worker and manually managed office work such as performance, attendance, and safety guidelines. Currently, however, a digital work order system has been established to enable data-based work planning and visualized, efficient work management.

Also, we have established and expanded an integrated monitoring system for transport facilities (equipment) such as cranes, transporters, and forklifts to operate them at an optimal rate, which are crucial to the productivity of shipbuilding.

Connected and Optimized Shipyard ~2026

HDKSOE and its shipbuilding subsidiaries push ahead with the tasks under the Phase 2 of FOS, the 'Connected and Optimized' shipyard by 2026 to make a dramatic leap forward in production performance and cost competitiveness. The Phase 2 will complete the system that integrates and connects vast amounts of shipbuilding data that was already accumulated and will continuously be collected. The system then conducts simulation and analysis on the data integrated with AI-Big Data technology, thereby preemptively managing waste and loss or risk factors. Furthermore, the AI system will learn measures to achieve optimal costs in each area and propose solutions to an extent that are applicable to actual work.

To this end, HDKSOE and its shipbuilding industries have continuously strengthened the foundation of the 'Visible and Understandable' shipyard, including advancing the Twin FOS, improving 3D design information service, expanding visualization of materials and logistics, and facilitating area-specific data collection and access.

Furthermore, we promote connection among core sectors for a design information HUB, automatic check on defect-free design data, automated production planning linking preceding and subsequent processes, and automated quantity calculation. In particular, to increase the efficiency of diverse work areas and leverage big data analysis technology based on AI learning capability for optimization of practices, they concentrate on expanding analyzable data from every source including mobile devices, IoT, drones, ultra-fast communications, and automatic recognition of manual data.

Autonomous Shipyard ~2030

Through the FOS Phase 1 and 2, **HDKSOE and its shipbuilding subsidiaries** aim to provide timely monitoring of yards and unit work sites, optimally operate production factors such as workforce, materials, capital, schedules, and facilities based on AI-Big Data analysis, and achieve a Logical Automation (LA) system enabling reasonable and swift decision-making on management issues. Moreover, we will establish an 'Autonomous' shipyard by 2030, a complete model for FOS where the LA System and Physical Automation (PA) factors such as advanced robots and automated facilities are perfectly connected and realized together.

The intelligent and autonomous shipyard will ensure optimal operation through sophisticated communication between highly educated logical and physical systems, minimizing human intervention and creating an safe and efficient work environment.

Through the completion of the FOS Phase 3, HDKSOE and its shipbuilding subsidiaries will achieve improved productivity by 30%, shortened lead time by 30%, and achieve Zero waste in process and resource.

Physical automation connected with the Digital Twin system

BUSINESS CASE Major Achievements in FOS

Welding Monitoring System

HHI operates a welding quality monitoring system that applies wired and wireless communication technologies to digital welding machines. In the past, one should conduct an onsite inspection to check whether welding quality parameters such as current, voltage, and welding material feed rate met the standards, which was inefficient and hard to manage. Now, the monitoring system helps to check real-time data to confirm whether welding requirements are properly maintained and to take prompt actions when necessary. Moreover, it plans to accumulate additional welding data and use them to improve productivity such as increasing arc rate (actual welding rate).

Remote Inspection Platform

HMD has established a 'remote inspection platform', a smart inspection system that allows for remote inspection without the presence of ship owners and classification society. The platform can save waiting time and costs related to ship owners. Also, transparent inspection based on video data ensures efficient quality management and helps to build trust with ship owners. It aims to gradually reduce the scale of the ship owner's residence site within the yard, ultimately achieving inspection without the ship owner.

AR Marker Recognition Vision Sensor System

HSHI secures highly reliable process and logistics data by printing block identification information (AR marker) on the steel plate used in block production and conducting real-time monitoring of the progress and locations of each process through dedicated recognition sensors. This system eliminates the possibility of distorting or omitting process information caused by manual input. It also generates segmented data by time or work units to be used for evaluating and predicting processes and logistics through big data analysis.

Digital Transformation

Smart Ship Development

Major Technologies of Smart Ships

HDKSOE and its shipbuilding subsidiaries are enhancing the safety and efficiency of ship manufacturing by employing smart technology and establishing smart shipyards. In particular, employing AI technology is expected to resolve labor shortages in the shipping industry and to improve stability by eliminating human errors. we have received external recognition for major process performance automation technology, and plan to further advance the analysis system based on accurate data accumulation and big data/AI technologies.

Autonomous Navigation Solution for Ships

While actively adopting autonomous navigation solutions for ships to increase their competitiveness in bidding, **HDKSOE and its shipbuilding subsidiaries** strive to enhance the safety, convenience, and environmental impact of ships. Our recently built ships adopt 'HiNAS' as a standard, which is an autonomous navigation solution developed by **HD Hyundai's** subsidiary, Avikus. This AI-based system assists navigators in route planning, surveillance, collision avoidance, and autonomous navigation in an integrated manner. It provides information surrounding the ship in the form of real-time top-view video, drastically enhancing safety during navigation and berthing. Moreover, optimal route planning and speed control can save the fuel up to 15%. HiNAS is easy to install, making it an attractive solution for IMO's environmental regulations.

HDKSOE and its shipbuilding subsidiaries are also planning to build the world's best ships through the signing of an MOU and technology linkage in the field of autonomous ships.

AI-based Machinery and Safety Automation

HDKSOE and its shipbuilding subsidiaries strive to enhance operational efficiency by mounting AI-based machinery and safety automation solutions onto ships. Among them, HiCBM, a machinery automation system, monitors and manages major parts of ships on a real-time basis such as engine, compressor, and pump. The system utilizes AI to detect the signals of breakdown and take preventive measures in advance. Another solution called HiCAMS is an integrated safety management solution to detect and analyze safety-related situations on a real-time basis through the onboard CCTVs within the ship.

HiCBM and HiCAMS perform their roles as 'AI Sailors' that check conditions on ships as real engineers and deckhands would do. The solutions acquired the Approval In Principle (AIP) in recognition of safety and reliability from the American Bureau of Shipping (ABS), the U.S. classification society. By developing various ship technologies, HDKSOE and its shipbuilding industries will actively respond to the Autonomous Shipping era that employs digital technology by developing various ship technologies based on AI.

Digital Twin Ship Platform (HiDTS)

'Digital Twin Ship Platform (HiDTS)' developed by **HDKSOE and its shipbuilding subsidiaries** is a cutting-edge technology that replicates real sea trial conditions in a virtual cyber environment to validate the performances of the key equipment of the ship. This platform allows for simulation even under the presumption of extreme conditions that are difficult to experience during actual sea trials, thereby reducing the duration and cost of sea trials by up to 30%.

HD Hyundai Global R&D Center (GRC) houses the 'Digital Convergence Center,' which has replicated the internal structure of a ship to conduct virtual tests. The virtual bridge, representing the ship's bow, features a massive screen composed of 11 interconnected monitors and other facilities to control the ship, including a steering wheel. The program is operated by inputting data, where various parameters such as sailing country and region can be selected.

HiNAS Operation Screen

HiCBM AIP Ceremony


Virtual Bridge at the Digital Convergence Center of HDKSOE

Digital Transformation

DT Roadmap

Digital Transformation Roadmap

HDKSOE and its shipbuilding subsidiaries enhance efficiency and safety in manufacturing ships by combining world-class shipbuilding technology and advanced ICT capabilities. In particular, they focus on developing smart ships with autonomous navigation systems to expedite commercialization. Through these efforts, HDKSOE and its shipbuilding subsidiaries will lead the digital ship era in the near future and set a model for high-quality shipyards.

BUSINESS CASE

Digital Transformation Business Agreement

HD Hyundai signed a business agreement with Team Naver to actively promote digital transformation. With this partnership, both companies plan to hold various digital transformation programs.

HDKSOE and its shipbuilding subsidiaries will apply 'HyperCLOVA X', a Large Language Model (LLM) AI of Naver, to the shipbuilding and offshore-related database holding over 200 million pieces of data. Through the realization and use of this generative AI service, we intend to maximize work efficiency and expertise. In addition, we plan to launch a new comprehensive data platform named 'Meta Ocean Data Cloud' to collect all global ship operation data and provide necessary information to ship owners.

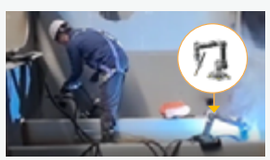
Business Agreement Ceremony to Commercialize AI and Cloud

Smart Shipyard Mid- and Long-term Roadmap

Digital Twin Yard

Short-term Goal	Mid-term Goal
• Simulation-based integrated yard operation system	• AI-based autonomous integrated yard operation system

• Establishing a digital twin yard based on production performance and simulation
• Maximizing productivity through simulation and AI-based optimal operation of production resources



Intelligent Automation

Short-term Goal	Mid-term Goal
• Intelligent robot-based key process automation	• Expanding intelligent robot-based automation and full integration with the ICT system

• Establishing a world-class shipyard by developing and expanding the application of an intelligent production automation system

* Short-term Goal (2024~2025), Mid-term Goal (2026~2027)

Smart Ship Mid- and Long-term Roadmap

Support for Autonomous Navigation

Short-term Goal	Mid-term Goal
• Commercializing autonomous navigation solutions • Validating autonomous navigation remote control linked with low-orbiting satellites (minimum crew/remote control)	• Commercializing Digital Bridge for autonomous navigation (minimum crew/remote control)

• Leading the autonomous ship market and technologies through commercialization of autonomous navigation solutions

Digital Twin Ships

Short-term Goal	Mid-term Goal
• Developing a virtual sea trial solution • Commercializing driver training solution	• Commercializing life-cycle asset management using digital twin (assisting crew/remote control)

• Creating digital replicas of ships in cyberspace to replace sea trials of actual ships and provide crew training, promoting new business of life-cycle asset management service

* Short-term Goal (2022~2024), Mid-term Goal (2025~2027)

Environmental Management

Governance

Environmental Management Governance

Roles and Responsibilities of Governance

Roles of BoD

HDKSOE and its shipbuilding subsidiaries have established a systematic environmental governance stretching from the BoD, the management, and to operational departments. BoDs at each company (or ESG Committees under BoDs) review strategic directions and action plans for environmental management and supervise the goals and performances related to GHG emissions reduction, waste management, pollutant reduction, etc. In addition, the BoDs oversee the implementation activities of environmental management conducted by the management and operational departments and provide reviews and approvals of the matters having significant impacts on corporate business activities.

Roles of the Management

CEOs and executives in charge of environmental management of **HDKSOE and its shipbuilding subsidiaries** establish strategic goals to implement environmental management with responsibilities and authorities to monitor the implementation of each activity and execute investment funds. These executives also receive reports on the establishment of environmental management policies and action plans as well as the monitoring results of their implementation and make decisions on important issues.

Environmental Management Performance Evaluation

Category	Descriptions
HDKSOE	• Environmental indicators assessment for all organizations (bi-annually) • Environmental impact assessment for each process (annually) • Annual ESG goal-setting for department leaders and team leaders (10%)
HHI	• KPIs for CEO and executives - Achievement of GHG emission reduction targets • Entire organizations - Implementation of energy-saving target system and energy keeper activity, number of violations against environmental laws
HMD	• ESG KPIs for department heads - Achievement of ESG improvement tasks, Violations of HSE-related laws, the occurrence of environmental accidents • Business ESG KPI (management, executives) - Energy-saving performance (intensity) - Waste recycling rate
HSHI	• KPIs for CEO, executives - Achievement of GHG emission reduction goals • Annual ESG evaluation for department heads - Energy management - ISO 14001 management

Dedicated Environmental Management Organizations

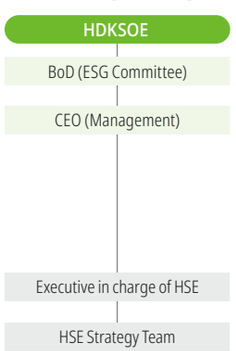
HDKSOE assigns environmental management tasks to HSE Strategy Team under the HSE executive. This team is responsible for acquiring and maintaining environmental management system certifications as well as establishing and revising environmental management-related guidelines. In addition, the team analyzes environmental opportunity factors and risk factors that may arise according to business operations, as well as causes and response strategies regarding other environmental issues to establish efficient management strategies.

At **HHI**, the ESG Department, Energy Management Department, and Green Resources Department are dedicated to addressing environmental management issues. In detail, the ESG Department is responsible for the following tasks related to the overall environmental management system: planning environmental policies and systems; establishing business plans and carbon neutrality strategies; developing and managing environmental KPIs; devising response measures against environmental regulations; managing environment-related permits and licenses; and managing environmental equipment and facilities. The Energy Management Department is in charge of tasks related to energy management systems such as planning energy policies and systems, and formulating business plans while the Green Resources Department takes responsibility for managing waste treatment and operating and managing incineration facilities.

At **HMD**, the Environment & Health Department, the Facility Maintenance Department, and the System Quality Management Department are designated as are dedicated to implement environmental management are responsible for planning environmental management policies and ESG systems, formulating business plans, obtaining and managing ISO 14001, operating environmental facilities, and managing waste. In addition, the departments also handle tasks such as responding to the GHG Emission Trading Scheme (ETS), planning energy projects, obtaining and managing ISO 50001, and managing energy equipment, facilities and water usage.

At **HSHI**, the Environment & Health Department, Facilities and Energy Department, and Equipment Preservation Department serve as dedicated organizations for environmental management. The Environment & Health Department performs tasks including obtaining and managing ISO 14001, establishing and revising environmental policies, responding to GHG ETS, managing environmental permits/licenses and facilities, and managing air, water pollutants and wastes. The Facilities and Energy Department is in charge of obtaining and managing ISO 50001 and managing energy and water use facilities, while the Equipment Maintenance Department is responsible for promoting energy saving through developing hybrid equipment and improving management systems.

HDKSOE Environmental Management Organizational Structure



HHI Environmental Management Organizational Structure

HMD Environmental Management Organizational Structure

HSHI Environmental Management Organizational Structure

Environmental Management

Strategy

Environmental Management Promotion Strategy

Laying the Foundation for Environmental Management

Environmental Management Declaration

HDKSOE and its shipbuilding subsidiaries have officially issued a 'Manifesto for Environment Management' to respond to growing internal and external interests in environmental management. Through this manifesto, we intend to clearly express our vision and specific commitments to environmental management. The manifesto published by each company contains our commitments to sustainable growth and environmental preservation for future generations, as well as our pledge to fulfill corporate social responsibility as a global green enterprise.

- HDKSOE Manifesto for Environmental Management
- HHI Manifesto for Environmental Management
- HMD Manifesto for Environmental Management
- HSHI Manifesto for Environmental Management

Funding for Environmental Investment

HHI utilizes various channels such as green bonds to secure funds for environmental investment. The funds raised through these green bonds are invested for environmental initiatives including constructing and developing technologies for low- and zero-carbon ships. Details of the environmental investment are disclosed in the ex post facto reports on HHI website.

- HHI Green Bond Certification Assessment and Ex Post Facto Report

Goal Management for Environmental Management

HDKSOE and its shipbuilding subsidiaries have set specific standards, procedures, and methods to measure environmental management performance. Dedicated ESG management departments of each company have established effective environmental performance systems by identifying and analyzing internal and external business environment based on the group's guidelines for establishing ESG KPIs. These performance indicators are finalized through reports to the management, BoD, and the subcommittees (ESG Committee). Then, given the achievement of such performance targets, performance compensation for a relevant executive and department (or team) is determined.

Environmental Management Education

HDKSOE provides biannual education programs for all employees on changes and violations of environmental laws to keep the employees informed of the latest information. In addition, environmental education for handlers and operators of environmental facilities is provided on a regular basis to prevent environmental accidents.

HHI conducts education on chemical substances for employees and contractors to provide basic concepts of chemical substances and responses to potential accidents, ensuring that the employees can respond to unexpected chemical accidents. Furthermore, HHI provides continuous education on new laws and environmental systems for personnel in charge of environmental facilities.

HMD conducts environmental education and training on chemical substances and the prevention of marine pollution for employees and contractors. These education and training programs consist of basic concepts of chemical substances and responses to potential accidents, supporting relevant employees in responding to unexpected chemical accidents.

HSHI provides education periodically to keep employees updated on environmental laws, regulations, and international agreements in tune with recent technical trends. Moreover, HSHI tries to conduct environmental education for safety managers from in-house subcontractors, ensuring extended environment management.

BUSINESS CASE

HMD's 'ESG GOAL TO 2030'

Recognizing the importance of ESG management, **HMD** has established 'ESG GOAL to 2030', a mid-and long-term goal for each ESG category to present its commitment and vision toward ESG management. Among these goals, the environmental goals are categorized into the following five areas: responding to climate risks; reducing GHGs and enhancing energy efficiency; optimizing water usage; minimizing consumption of raw and subsidiary materials and resources; and conserving biodiversity. To achieve these goals, HMD has set detailed action plans for each goal and identified KPIs for goal management.

Category	2025	2030	Remark
Reduction of Scope 1 & 2 emissions	15%	39%	Compared to 2022 levels
Reduction of Scope 3 emissions	10%	22%	
Reduction of energy consumption intensity	5%	10%	
Renewable energy usage rate	RE5	RE60	-

BUSINESS CASE

HSHI's 'VISION 2028'

HSHI has established 'Vision 2028', a mid-and long-term goal to ensure safety and environment, throughout the business sites. In particular, HSHI set four major goals to build an eco-friendly worksite. To attain these four goals, HSHI developed action plans for a total of nine areas including: supporting businesses in achieving recycling rates for incineration wastes; installing equipment to achieve recycling rates for wastewater treatment facilities; and establishing solar self-generation facilities to transition to renewable energy. HSHI strives to implement these action plans effectively to achieve 'Vision 2028.'

Key Environmental Goals (~2028)

- Achieve a 100% recycling rate for the removal and incineration wastes
  - Support businesses in recycling incineration wastes
- Achieving 20% carbon emission reduction
  - Transition to renewable energy (PPA 10%, self-generation 10%)
- Achieving a 100% recycling rate for treated water at wastewater treatment facilities

Environmental Management

Risk Management

Environmental Management Risk Management

Environmental Management Risk Management System

Establishing an Environmental Management System

HDKSOE and its shipbuilding subsidiaries have established systematic environmental management systems for each company to respond to environmental risks faced by the company and effectively manage environmental management-related performance indicators such as air and water pollutants, chemical substances, and wastes.

Environmental Management System Certification and Internal Assessment

HDKSOE and its shipbuilding subsidiaries have obtained the environmental management system certification (ISO 14001) to implement environmental management at the company-wide level. Each certified business site is subject to regular assessments conducted by accredited certification bodies and the certification is renewed every three years. In addition, we provide education for HSE representatives from each department and perform internal assessments conducted by professionals who have completed programs for internal assessors including ISO 14001. Through these efforts, we are strengthening the administration of the environmental management system.

Reviewing Environmental Risks for Investment Projects

HDKSOE and its shipbuilding subsidiaries have performed extensive prior reviews on not only financial risks such as strategy, legal issues, and profitability but also environmental risks that potential investment projects may have. Through internal preliminary reports and discussions, each company identifies risk factors of new investment projects on the environment and then determines whether to proceed with the investment.

HHI has established an environmental impact improvement plan, considering the environmental impacts of all business activities (R&D, design, production, etc.) across the company, and implemented improvement activities according to the plan. Dedicated environment-related departments review the necessity and technical feasibility of new investment projects at the company level. The review examines relevant risk and opportunity factors, including environmental pollution risks, pollution risk reduction measures, and the need to obtain permits and licenses according to environmental laws.

HMD considers and reviews environmental risks and opportunity factors when reviewing new investment projects. For consideration of new equipment investment, the appropriateness of such investment is first assessed by writing an environmental impact assessment statement, and details are reviewed to determine whether it is involved in replacing old equipment or redundancy. Moreover, HMD reviews technical performance, compliance with relevant laws and regulations, and technologies considering safety and environmental impacts before making the final decision on the new investment.

HSHI also evaluates and reviews environmental risks and opportunity factors when considering new investment projects. For consideration of new equipment investment, the appropriateness of such investment is first assessed, and details are checked to examine whether it is involved in replacing old equipment or redundancy. In addition, HSHI reviews technical performance, compliance with relevant laws and regulations, and technologies with safety and environmental considerations before finally deciding on the new investment.

Environmental Management Communication

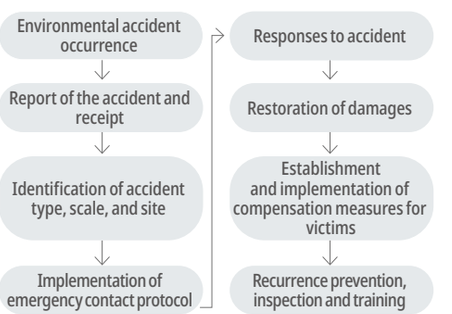
HDKSOE and its shipbuilding subsidiaries actively communicate with stakeholders on positive and negative environmental impacts that may arise from our business operations. Through such communication, we listen to and respect the suggestions and concerns of various stakeholders including employees, contractors, and local communities, thereby sharing roles and responsibilities related to the environment.

In particular, **HHI** joined as a member in the Chemical Safety Management Committee, organized by Dong-gu Office of Ulsan Metropolitan City, and discussed chemical safety management for the local community together with the government and private organizations. Moreover, since 2024, HHI has participated in the private-public joint response council for chemical accidents, organized by the Nakdong River Basin Environmental Office, to establish a cooperation mechanism for a prompt initial response in case of chemical accidents within Ulsan.

Response to Environmental Accidents

HDKSOE and its shipbuilding subsidiaries have conducted regular self-assessments on environmental facilities to prevent potential environmental pollution accidents from business operations. Furthermore, in preparation for potential chemical spills, we conduct hazard assessments on chemical products to be handled and provide guidelines and education for the safe handling of such chemicals. Moreover, **HHI, HMD, and HSHI** conduct preliminary inspections on high-risk processes in terms of marine pollution and carry out marine pollution prevention training periodically.

Environmental Accident Response System



Third-party Certification Status for Environmental Management System

Category	Certification Standards	Certification Body	Validity Period	Certification Scope*
HDKSOE	ISO 14001:2015	DNV	Dec. 2022 ~ Dec. 2025	100%
HHI	ISO 14001:2015	DNV	Mar. 2024 ~ Mar. 2027**	95%
HMD	ISO 14001:2015	LRQA	Jun. 2021 ~ Jun. 2024	100%
HSHI	ISO 14001:2015	DNV	Jul. 2023 ~ Apr. 2025	100%

* - HDKSOE: GRC Headquarters, Ulsan Research Building
- HHI: Ratio of employees in certified sites (product design, manufacturing, etc.)
- HMD: Ulsan Headquarters, Yongyeon Plant, Onsan Plant, Mohwa Plant
- HSHI: Yeongam Headquarters, Daebul 1 Plant

** Certification being maintained during 2023 and renewed in 2024

Environmental Management

Risk Management

Environmental Management Risk Management

Water Usage Reduction

Water Consumption Management

HDKSOE checks the water consumption of GRC Headquarters, Ulsan Research Building, and Gyedong Office in Seoul every month and has strived to ensure effective use of water resources.

HHI has installed water-saving devices in most of its work facilities and conducts a periodic check to discover any missing facilities, which are to be installed in due order. Furthermore, HHI minimizes water usage by reducing drain use to prevent the freezing of quay walls or docks during winter. HHI is also building a water and energy consumption monitoring system (Hi-Energy System) and plans to use the system for advanced analysis and management of water usage.

HMD manages monthly water usage data for Ulsan headquarters and offsite factories to analyze trends. In addition, to save water consumed, HMD minimizes water leaks by repairing and replacing old pipes. In 2024, HMD plans to establish a water pressure monitoring system for stable water use management.

HSHI keeps records and manages daily usage of domestic and industrial water at Yeongam headquarters and Daebul plant. Furthermore, HSHI reuses water through a wastewater reclamation system. In 2023, HSHI established a remote monitoring system for water facilities, aiming to achieve a 100% reclaimed water reuse rate in 2024 by improving the quality of wastewater and investing in utilities such as pipes and pumps.

Water Recycling and Reuse

HMD reduces water usage by recirculating industrial water used for the Strength Test required to manufacture cargo tanks during the construction stage of the LPG Carrier. In 2023, HMD set a target of water recycling at 131,156 tons and achieved 115.9% of the set target.

Industrial Water Recycling Rate

Category	2021	2022	2023
Target	51,560 ton	119,233 ton	131,156 ton
Achievement	108,394 ton	152,122 ton	152,037 ton
Achievement rate compared to a target	210.2 %	127.6 %	115.9 %

HSHI introduced the water reclamation system in 2010 and established a water reuse circulation system. Through this system, wastewater generated from the yards is reprocessed and used for ballast water or yard cleaning, instead of being discharged.

Reclaimed water reuse status

Category	2021	2022	2023
Reclaimed water usage	206,026 ton	234,681 ton	202,804 ton
Cost-saving effects	KRW 106 mil.	KRW 121 mil.	KRW 105 mil.

Water Resources Risk Management

HDKSOE and its shipbuilding subsidiaries intend to analyze water resources risks near the business sites based on the guidelines of the World Resources Institute (WRI) and use the results to seek effective management strategies. According to the analysis, there is a high level of physical risk in our business sites in terms of water quantity, indicating that our business sites may be greatly affected by natural disasters such as flooding, and tsunami because the shipyards are located near the sea. HDKSOE and its shipbuilding subsidiaries plan to consider such analysis to respond to water resources risks.

Water Resources Risks Exposure Level

Category	Physical Risk-Water Quantity	Physical Risk-Water Quality	Transition Risk
HDKSOE	Medium-high (2-3)	Low-medium (1-2)	Low (0-1)
HHI	High (3-4)	Low-medium (1-2)	Medium-high (2-3)
HMD	High (3-4)	Low-medium (1-2)	Medium-high (2-3)
HSHI	High (3-4)	Low-medium (1-2)	Low (0-1)

WRI Water Risk Atlas

Physical Risks - Water Quantity

Physical Risks - Water Quality

Regulatory and Reputational Risk

Environmental Management

Risk Management | **Metrics & Targets**

Environmental Management Risk Management

Reduction of Pollutant Emissions

Management of Water Pollutants

HDKSOE manages wastewater generated from experiments at Ulsan Research Building. The generated wastewater is stored to a wastewater collection tank, and a certain amount is accumulated, a licensed wastewater treatment company collects the water from the tank upon request, which is a fully outsourced service. In 2024, HDKSOE plans to manage water pollutants with the aim of achieving zero violations of domestic administrative rules.

HHI has treated the wastewater from its worksites through the 'Commissioned wastewater treatment – electronic transfer management system' to optimize the treatment based on emission source. Wastewater treated at the in-house treatment facility flows into the Water Quality Improvement Office at Bangeojin, Ulsan. To manage emissions of specific hazardous substances, water quality analysis is regularly conducted based on the legal cycle for each facility. In 2023, HHI achieved a target of wastewater emissions (1% reduction annually from 2022, based on the 2020 levels). In 2024, HHI aims to keep pollutant emissions within 30% of the permissible discharge limits.

HMD manages the emission concentration of water pollutants by applying its own standards to within 50% of the legal emission allowance standard. To precisely measure the concentration of emissions, HMD commissions external professional organizations to analyze components at least once a quarter, and then the results are recorded in HMD's own management system for monitoring. In addition, HMD enhances the efficiency of wastewater treatment and maintains the optimal state of facilities by investing in replacing outdated facilities at the wastewater treatment site. In 2023, HMD achieved a wastewater reduction target (annual 1% reduction compared to 2020 levels), while setting a target of maintaining pollutant emissions within 52.2kg for TOC and 83.51kg for SS in 2024.

HSHI strives to minimize pollutant emissions by identifying environmental impacts arising throughout the entire business operations such as procurement, production, and disposal. To this end, HSHI manages pollutants on a real-time basis by installing water pollution prevention facilities and an automated water quality measurement network. Moreover, it has computerized all environment-related tasks and shared the monitoring status between the environment and production departments, thereby maintaining the optimal state of its facilities. In 2023, HSHI set and achieved a target of maintaining a level below 6ppm for BOD and 6ppm for SS compared to legal standards. In 2024, HSHI sets a goal of emitting within 50% of permissible discharge limits on an annual average.

Management of Air Pollutants

To comply with permissible discharge limits for air pollutants, **HDKSOE** conducts a full investigation of every air pollutant from its facilities and identifies new air pollutants. It also commissions certified professional organizations to measure pollutant emissions periodically. Moreover, HDKSOE strives to improve air quality by regularly replacing dust collection facilities and additional machinery. In 2023, HDKSOE achieved the goal of 'managing air pollutants during the work process within 30% of legally permissible discharge limits, and set the same target for 2024.

HHI installs optimal pollution prevention facilities at air pollutant emitting sites to measure and manage pollutants periodically. Based on the internal standards for each process and facility, HHI conducts repair and maintenance in consecutive order for facilities exceeding the standards. Furthermore, in January 2023, HHI signed a 'Voluntary Agreement on Fine Dust Reduction', with the Nakdong River Basin Environmental Office and the Ulsan Metropolitan City, which aims to reduce fine dust emissions by more than 40% by 2024, compared to the base year (2016). In 2023, HHI excessively achieved the target of 'reducing fine dust (dust, volatile organic compounds) emissions by 20% compared to the base year', followed by continuous efforts to achieve a target of reduction by more than 40% by 2024.

HMD manages its own permissible discharge limits for air pollutants below 30% of those stipulated in the relevant law. To this end, HMD complies with the legal self-measurement cycle for each facility and regularly measures air pollutants. Moreover, to identify any failures in the facilities and pipe leaks, HMD conducts visual inspections every week. For the facilities exceeding its own management standards, HMD conducts repair and maintenance thoroughly such as replacing bag filters, thereby stabilizing operations of the facilities. Additionally, in case of equipment malfunctions or leaks in the piping, HMD immediately address and manage the issues using the on-site feedback system (One-Stop Yard Care). In 2023, HMD set and achieved a target of reducing NOx emissions within 90% of the allocated amount, and set the new target of keeping emissions within 33,072kg for dust and 6,824kg for NOx in 2024.

HSHI maintains the permissible discharge limits for air pollutants 30% below the standards stated in the relevant law. To this end, HSHI conducts self-measurement of air pollutants in accordance with the legal requirements. The operation logs and self-monitoring results are reported to the Air Emission Management System (SEMS) on a monthly basis. In addition, HSHI calculates confirmed emissions biannually and strictly manages the data on air pollutant emissions of the company. In 2023, HSHI set and achieved a target of reducing NOx emissions within 90% of the allocated amount, and set the new target of reducing emissions within 30% of the permissible emission level for air pollutants on an annual average in 2024.

Management of Volatile Organic Compound (VOC)

HHI strives to reduce VOCs by installing adsorption facilities and Regenerative Thermal Oxidizers (RTO) at painting sites with less than 50,000m^3 capacity. It particularly replaces RTO, a steel pre-treatment painting device, with a new device over four years (2020~2023) in consecutive order. Also, to mitigate Harmful Air Pollutants (HAPs), HHI has installed facilities to reduce VOCs at large painting facilities with 50,000m^3 or larger capacity, where Total Hydrocarbon (THC) concetrations are also measured biannually. Additionally, HHI promotes the use of low-VOC paints.

HMD conducts regular measurements of THC concentrations biannually to manage the concentration of VOC emissions. Additionally, HMD regularly monitors and regenerates the adsorbents (zeolite) charged in reduction facilities to enhance the efficiency of VOC reduction, and also promotes the use of low-VOC paints.

HSHI captures and processes the VOCs generated from large painting sites, using catalytic oxidation facilities. Furthermore, HSHI sets its own standards within the legally permissible discharge limit and conducts monitoring such as self-assessments biannually.

Environmental Management

Risk Management | **Metrics & Targets**

Environmental Management Risk Management

Reduction of Waste Emissions

Waste Management

HDKSOE commissions professional treatment companies to treat wastes generated from business operations. Throughout the process, HDKSOE conducts regular inspections and instructions to prevent illegal treatment of wastes and reports new wastes to the relevant authorities for legitimate treatment. In 2024, HDKSOE has set the goal of managing the waste emission intensity (compared to sales) within 1.63 tons/KRW billion level.

HHI transports and sorts wastes from its worksites in a legitimate way, and treats the waste through professional companies. To fulfill the obligations of an emitter, HHI manages the entire process of transporting and treating wastes in a transparent manner and regularly monitors the facilities of the treatment companies. Moreover, to ensure efficient use of resources, HHI reuses incineration waste heat to place in need, or promotes various activities including engine packaging reuses, and design optimization. As a result, HHI achieved the circular use ratio of 51.98% and the terminal disposal ratio of 10.22% in 2023, exceeding the 2023 targets (circular use ratio over 26.82%; terminal disposal ratio less than 32.38%) imposed by the government based on the circular economy performance management system as stated in the Act on Promotion of Transition to Circular Economy and Society. In 2024, HHI targets to achieve the circular use ratio over 32.41% and the terminal disposal ratio less than 30.92%.

HMD sorts the wastes from its worksites according to the relevant laws, and commissions professional companies to recycle, incinerate, and bury such wastes. In particular, HMD pays special attention to managing designated wastes to prevent leakage of leachate to the outside. In addition, HMD continues to expand the items of recyclable wastes such as transparent PET bottles and waste ropes. HMD achieved the recycling rate of 66.1%, the circular use ratio of 54.18%, and the terminal disposal ratio of 9.88%, exceeding the 2023 targets (recycling rate over 64%; circular use ratio over 30.9%; terminal disposal ratio less than 24.29%) imposed by the government based on the circular economy performance management system as stated in the Act on Promotion of Transition to Circular Economy and Society. In 2024, HMD targets to manage the amount of waste within 38,762 tons.

HSHI thoroughly manages the waste in various ways including collection, sales, outsourcing, sorting, and storing. Since the shipyards are adjacent to the sea, HSHI has prioritized the prevention of potential marine pollution and managed offshore facilities and quay line process by applying strict rules. In particular, HSHI spares no effort to ensure waste oil and harmful chemicals are treated in a legitimate manner. In 2023, HSHI achieved the circular use ratio of 77.34% and the terminal disposal ratio of 8.46%, exceeding the targets for 2023 (circular use ratio over 66.13%; terminal disposal ratio less than 17.72%). In 2024, HSHI targets to achieve the circular use ratio of 68.24% and the terminal disposal ratio of 16.07%.

Management of Chemical Substances

HDKSOE identifies harmful or hazardous properties of incoming chemicals through prior reviews to comply with chemical-related laws and regulations. Moreover, HDKSOE regularly provides relevant education such as Material Safety Data Sheets, to the employees for the safe handling of chemical substances.

HHI conducts preliminary hazard assessments for the chemical products handled in the work facilities to decide whether to bring them in. Departments handling chemical substances provide guidance on chemical labeling and the use of protective gear to ensure the safe handling of chemicals. HHI has also installed legitimate facilities to treat harmful chemicals, and every year, the company conducts internal inspections and regular checkups by external organizations on harmful substance handling facilities. In 2023, HHI achieved an annual 1% reduction target in chemical emissions compared to the 2021 level, which has been set since 2022. In 2024, to prevent chemical accidents, HHI plans to manage chemical emissions by conducting a 'monthly internal inspection on harmful chemical handling facilities.' Furthermore, HHI will continue to explore alternative products to reduce the use of harmful chemical substances.

HMD conducts hazard assessments on the chemical products that are handled or to be handled in the business sites. Based on the assessment results, HMD provides a separate handling guide for the chemicals with their safety being confirmed. In addition, HMD conducts regular internal inspections and regular checks by external experts, to prevent harmful chemical spills. In 2023, HMD carried out safe operations after completing the installation inspection on mobile wastewater collection facilities related to the supply of harmful chemicals (methanol) at the quay wall. HMD achieved the goal of 'zero chemical accidents in harmful chemical handling facilities' in 2023, and has set the same goal for 2024.

HSHI uses its own program to conduct hazard assessments before certain chemicals are delivered to effectively manage the entry of chemical substances. Once the chemicals are found to be unqualified, alternative chemicals are used. In addition, HSHI conducts inspections related to the handling of hazardous chemicals periodically. HSHI also receives regular inspections every two years, which are carried out by an external organization to monitor the state of hazardous chemical handling facilities.

BUSINESS CASE Recycling Waste Styrofoam

Since April 2023, **HSHI** has implemented a project to recycle Styrofoam (used to cushion ship equipment) into Ingot, a regenerative material. Through this project, HSHI has reduced micro-plastics generated in the course of incinerating waste Styrofoam and enhanced the recycling rate of Styrofoam, thereby creating a resource recycling ecosystem.

BUSINESS CASE Recycling of Scrap Metal

HMD and HSHI have received official recognition for excellence in resource recycling by obtaining scrap metal recycling certification. This certification, implemented by the Ministry of Environment to promote resource circulation, designates such wastes that meet certain standards as "recyclable resources" and provides exemption from related regulations. In particular, HSHI has established a steel-saving system and held eco-friendly campaigns, resulting in a 19% increase in scrap metal recycling in 2023, compared to the previous year.

Obtaining Scrap Metal Resource Recycling Certification (HSHI)

Biodiversity

Governance

Biodiversity Conservation Governance

Roles and Responsibilities

Roles of BoD

The Board of Directors (ESG Committee) of **HDKSOE and its shipbuilding subsidiaries** receive reports, review, and deliberate on important matters such as establishing and revising biodiversity protection policies, devising and implementing action plans, analyzing risks, and promoting internal and external communications.

Executive Management Responsibility

Executive Officer of safety, health, environment, or ESG at **HDKSOE and its shipbuilding subsidiaries** receive reports on monitoring results of the policies development and implementation on biodiversity conservation and forest protection to make important decision-making on significant issues. In addition, executive officers of R&D at each company manage the development of technologies to reduce adverse impacts on marine ecosystems in the process of ship operations.

Roles of Operating Departments

ESG departments at each company are responsible for establishing and revising biodiversity protection policies, devising and implementing action plans, analyzing risks, and promoting internal and external communications. Departments performing safety, health, and environmental tasks have secured systems to preemptively respond to marine pollution and potential damages to the ecosystem that may result from their business operations as well as capabilities to promptly respond to accidents. Furthermore, R&D departments monitor technology trends to reduce impacts on the marine ecosystem caused by ship operations and develop technologies that conform to international regulations or certification systems for application to ships.

Strategy

Biodiversity Conservation Strategy

Direction for Biodiversity Conservation

Biodiversity Conservation and No Deforestation Commitment

HDKSOE and its shipbuilding subsidiaries continuously monitor the impacts that overall business operations may have on biodiversity and forests. In connection with the goal of Net Zero Emissions by 2050, we strive to achieve No Net Loss (NNL) and Net Positive Impact (NPI) on biodiversity, and prohibition of deforestation. To this end, the companies make efforts to comply with the requirements set by international agreements such as the International Maritime Organization (IMO) and the International Union for Conservation of Nature (IUCN) and operate a cooperative mechanism with local governments and non-profit organizations.

HDKSOE Commitment
HHI Commitment
HMD Commitment
HSHI Commitment

Construction of Low-noise Ships (Dolphin Protection)

HDKSOE and its shipbuilding subsidiaries acknowledge the impact of Underwater Radiated Noise (URN) generated during ship operations on marine organisms. We make special efforts to mitigate the propeller noise from ships as it overlaps with the frequency range of marine mammals such as dolphins.

HDKSOE, HHI, and HMD have cooperated with the Korea Research Institute of Ships & Ocean Engineering (KRISO) and the Ministry of Trade, Industry and Energy (MOTIE) since 2020 to develop 'URN Monitoring and Reduction Technologies for marine environmental protection, with the aim to secure the technology by 2024.

In 2021, **HSHI** successfully delivered the world's first 115,000-ton crude oil tanker, the world's first merchant ship to receive DNV's Silent E-Notation for underwater noise notation. As such, it will continue its efforts to develop and disseminate URN reduction technologies and create an environment conducive to preserving marine biodiversity.

Application of Ballast Water Technology (Prevention of Marine Ecosystem Disruption)

Ballast water is seawater loaded onto a ship's hull to ensure the resilience of the ship. However, when the ballast water from other waters is discharged in another region after completing a voyage, marine organisms from other regions may be released together, disturbing marine ecosystems. Therefore, technologies to prevent such release and disruption are being applied.

HHI has independently developed and employed its own ballast water treatment system called the "HiBallast" to remove microorganisms and pathogens contained in ballast water. The HiBallast earned a Type Approval from the IMO according to the G8 Guidelines.

HMD, in collaboration with Korea Marine Transport Co. Ltd, (KMTC) and the Korean Register (KR), has jointly developed a "Ballast Free" container ship that never discharges ballast water, receiving the Approval in Principal (AIP) certification. This container ship replaces ballast water loaded in the hull with solid weights and portable permanent ballast water, enabling the ships to operate without discharging ballast water into the sea.

Protection of Ecosystem and Habitats

HHI launched 'HHI Dolphin Citizen Squad for Disaster Control' together with the Korea Coast Guard Station Ulsan to minimize pollution damages through prompt initial actions coordinated with the Coast Guard in case of marine pollution incidents. Furthermore, HHI maintains readiness through regular training to quickly respond to marine pollution incidents.

HMD unfolded the campaign titled "Plant Now" where HMD employees grow seedlings at their homes for 100 days and donate them for transplantation at the Noeul (Sunset) Park in the outskirts of Seoul.

HSHI signed an MOU with Wolchulsan National Park for the transition to a carbon-neutral society and has engaged in volunteer activities such as the seeding of native plants to secure carbon absorption sources.

Biodiversity

Risk Management

Biodiversity Impact Management

Biodiversity Assessment Procedures

Overview of Biodiversity Assessment

HDKSOE and its shipbuilding subsidiaries conduct Environmental Impact Assessments (EIA) in accordance with relevant laws and regulations for each country to predict and analyze the impact of environmental factors caused by construction, modification, expansion, and closure of facilities on the lives of residents and the natural environment. Moreover, during EIAs, atmospheric, aquatic, and terrestrial environments, as well as fauna and flora are included in the subjects of the assessment. Then the assessment results are used to understand major impacts and establish mitigation measures.

In particular, when EIA target programs (or activities) are expected to affect biodiversity and ecosystems, the Biodiversity Impact Assessment (BIA) on fauna and flora is incorporate into the EIA process. Through such integrated assessment, the impact on specific species and their populations are predicted and mitigations measured are developed. they can predict the impact on specific species and their populations and develop mitigation measures. Besides, various biodiversity conservation activities for each facility promoted such as increasing species and populations, protecting habitats, and creating ecological forests. To enhance the effectiveness of conservation activities, efforts are also made to collaborate with government organizations, non-profit agencies, and professional institutions.

This page will present the methodology for BIA from area selection, literature survey, impact prediction, establishment of mitigation measures, and post-observation, to monitoring that are suggested in the EIA Report Guidelines published by the Korean Ministry of Environment (ME). When HDKSOE and its shipbuilding subsidiaries should conduct EIA including BIA in the process of construction, expansion, and operation of facilities, a third-party expert organization is appointed to conduct the EIA in compliance with the methodology as described above.

Selection of Survey Areas

According to Environmental Impact Assessments (EIA) guidelines, a survey area is selected to understand the distribution, habitat, and ecological environment of fauna and flora. A survey area also includes areas where impacts on fauna and flora are anticipated. Also, surveys are conducted at different times, given the migration routes, radius of action, and distribution of vegetation depending on seasonal characteristics. The area of the survey location is based on the radius of the long axis of the project area, while nearby local communities and environmental ecosystems that can be affected by the projects are also subject to the assessment.

Literature Surveys

Literature surveys are conducted using open data and materials for the past 5 years such as national natural environment surveys, the Environmental Impact Assessments (EIA) Support System (EIASS), and the Winter Water Birds Census of Korea. When there are no recent literature materials within the Biodiversity Impact Assessment (BIA) target area or other literature materials are needed, the scope of the literature survey can be expanded to include credible academic research and study reports. The literature surveys also allow for an understanding of ecological and natural landscapes as well as an overview of fauna and flora, distribution of major organisms, ecological axes, legal protection areas for the natural environment, and distribution and characteristics of major vegetation.

Field Surveys

Routes for field surveys are selected to include various locations by understanding the topographical conditions of the Biodiversity Impact Assessment (BIA) target area and observing the distribution of live organisms walking along the survey routes through visual observation, photography, sound detection, and trap installation. Through the field surveys, the following is identified: vascular flora, endangered wild species, municipal and provincial protected wildlife, floristic regional indicator plants, rare plants, natural monuments, protected trees, and other species with high academic values.

Recording Survey Results

Observation of fauna and flora is recorded at survey locations and routes by listing them using pictures or tables so that the species and populations can be displayed intuitively.

Prediction of Adverse Impacts

The degree of changes in fauna and flora is analyzed, predicted, and evaluated resulting from environmental changes, air pollution, water pollution, noise, and vibration during construction, expansion, and operation of large-scale facilities. In particular, the prediction of impacts prioritizes major species expected to be significantly affected by the project and species sensitive to artificial interference, analyzing the probability and magnitude of impacts on these species.

Establishment of Mitigation Measures

Based on the prediction of adverse impacts on biodiversity, species and ecological areas in need of protection are selected, and impact mitigation measures optimized for each species and area are established. Project plans are adjusted to avoid significant negative impacts, safety measures are implemented to minimize impacts on the species and their populations, and alternative habitats for specific species are created when necessary.

Post-observation and Inspection

After developing mitigation measures, it is monitored whether these measures have been properly implemented and whether adverse impacts on pre-defined species have been avoided or mitigated. Changes in species and populations are also monitored by comparing the data before and after the project implementation. To enhance the effectiveness of mitigation measures, alternatives are prepared depending on the situations of project operation areas.

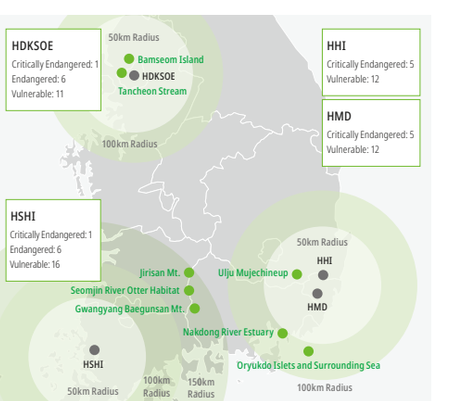
Biodiversity Management Expansion Plans

Mitigating Actions

HDKSOE and its shipbuilding subsidiaries have divided 30 residential conservation areas designated by the Ministry of Environment (ME), the Ministry of Oceans and Fisheries (MOF), and municipal and provincial Governors into areas within 50km, 100km, and 150km. Then we are in the process of developing biodiversity conservation plans centering on such areas.

To prevent adverse effects of project operations and management activities on ecosystem conservation areas, we continue to monitor such activities. We also plan to establish specific strategies to prevent the destruction of conservation areas as well as protect and restore habitats while expanding surveys and management activities of endangered fauna and flora species through biodiversity conservation.

HDKSOE and its shipbuilding subsidiaries acknowledge that our activities may have impacts on biodiversity, and make tireless efforts to display our commitment through Declarations and promote communications with stakeholders.



Distribution of endangered and vulnerable species within a radius of 50km, 100km, and 150km.

Biodiversity

BUSINESS CASE **HSHI Western Site Construction (Year 2009)**

Overview of Biodiversity Assessment

HSHI promoted the construction of a western site spanning about 57,000 square meters to secure spaces for processing and assembling shipbuilding blocks and equipment, thereby creating new jobs and contributing to local economies. Since this construction project was subject to Environmental Impact Assessments (EIA) according to the Enforcement Decree of the Environment Impact Assessment Act, the EIA including Biodiversity Impact Assessment (BIA) was conducted.

Scope of Biodiversity Assessment

The assessment scope was determined by considering environmental factors that are forecast to be affected due to characteristics of the region and the construction project and identifying potentially damaged areas and surroundings through qualitative and quantitative predictions. Moreover, to assess marine fauna and flora species, 16 points along the Type 1 grade waters and surrounding waters were set as the scope of assessment. The assessment also examined potential impacts and damages that terrestrial animals and plants living in wildlife protection areas (about 12.491 km^2) might face due to this construction project.

Preliminary Survey of Terrestrial Fauna and Flora

A total of 15 wildlife protection areas were designated around the western site construction area, and it was found that general wild fauna and flora inhabited those areas such as wildcats, wild boars, and raccoons. Also, legally protected species (class II endangered species) such as leopard cats and martens are found to inhabit these areas. However, since their habitats and project areas were about 3km apart, it was analyzed that the project would not have adversely affected terrestrial animals and plants.

Construction Zone for Western Site Development

Point Map for On-site Inspection of Marine Fauna and Flora

Survey on Marine Fauna and Flora

The marine fauna and flora survey targeted phytoplankton, zooplankton, benthic organisms in subtidal and intertidal zones, fish eggs, larvae, and marine fish. To achieve accurate survey results, a combination of 5 literature surveys and 4 field surveys (seawater sample analysis, and collection using trawl nets) were conducted to confirm the distribution status of marine fauna and flora. The field surveys found 19 to 41 species of phytoplankton ranging at densities of 69 to 637 cells/L, 19 to 28 groups of zooplankton ranging from 192 to 7,959 indiv./m^3, and 27 to 44 species of benthic organisms in the subtidal zone with densities from 280 to 1,900 individuals/m^2.

Analysis of Impacts on Marine Fauna and Flora

The western site development project was to reclaim public waters to expand business sites. In this regard, the analysis found that this project would have potential impacts on the marine ecosystem due to the generation and spread of suspended sediment during excavation and reclamation works, as well as potential oil spills from construction equipment and Ships, and rainfall runoff (nonpoint source pollution). In particular, when the sediment generated during the reclamation works leaked into the ocean and its concentration in the ocean increased, it was expected to have the effect of reducing the primary productivity of phytoplankton and the food source for zooplankton. It was also expected that sensitive fish species to suspended sediment might suffer respiratory impairments and loss.

Establishment of Mitigation Actions for Marine Fauna and Flora

To mitigate environmental impacts, various mitigation measures were developed and implemented as follows: to reduce suspended sediment, silt protectors were installed around the construction site to prevent the spread of sediment; to brace for oil spills, oil spill control equipment and chemicals were installed for the equipment and Ships used in construction; and to minimize the impacts of rainfall runoffs, screen-type nonpoint source pollution treatment facilities were installed. Moreover, a marine pollution control system was established and operated to prepare for potential oil spills or irregular rainfall runoffs. In order to monitor the conditions of marine fauna and flora according to the project execution and continuous implementation of mitigation measures, plans for post-environmental impact surveys were established and implemented.

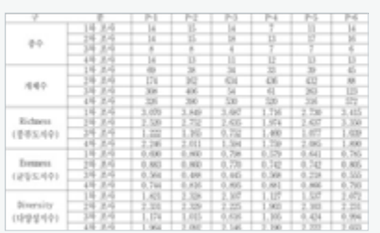


Table of Phytoplankton Ecological Index

Distribution of Wild Terrestrial Fauna and Flora in Wildlife Protection Areas

Total Areas	General Wildlife	Class II Endangered Species
12,491km^2	Wildcat, Wild boar, Raccoon, Roe deer, Water deer, Red Squirrel, Squirrel	Leopard cat, Marten

* The survey was based on the wildlife protection areas at the time of the construction project, and there is a difference in the observation as of the information disclosure.

Impacts on Marine Fauna and Flora and Mitigation Actions

Impacts on Marine Fauna and Flora	Impact Prediction	Mitigation Actions
· Phytoplankton - Species composition: 19-41 species - Current levels: 69-637 cells/L · Zooplankton - Species compositions: 19-28 groups - Appearance population: 192-7,959 indiv./m^3 · Benthic organisms in the subtidal zone - Appearance species: 27-44 species - Average density: 280-1,900 indiv./m^2	· Impact by suspended sediment: reducing primary productivity and current levels of phytoplankton · Impact by oil spills: decreasing dissolved oxygen levels, affecting fish in maintaining temperature and breathing · Impact by rainfall runoffs: inducing nonpoint source pollutants from road surface of construction sites during rainfall	· Mitigation of suspended sediment: installing silt protectors · Mitigation of oil spills: deploying oil spill control equipment and chemicals, and establishing pollution control systems · Mitigation of rainfall runoffs: installing nonpoint source pollution treatment facilities

Social

Safety & Health

Governance

Safety & Health Governance

Roles and Responsibilities

Roles of BoD

The Board of Directors (BoD) for **HDKSOE and its shipbuilding subsidiaries** receives reports on the goals, strategies, and progress related to safety and health. Mostly, issues related to management policies on safety and health, organizational structure and roles, budget and facility status, activity performance, and plans are presented to the BoD. Then, the BoD exchanges ideas for effective implementations of presented issues and conducts in-depth reviews, especially on the problems requiring large investment and process improvement to enhance safety and health.

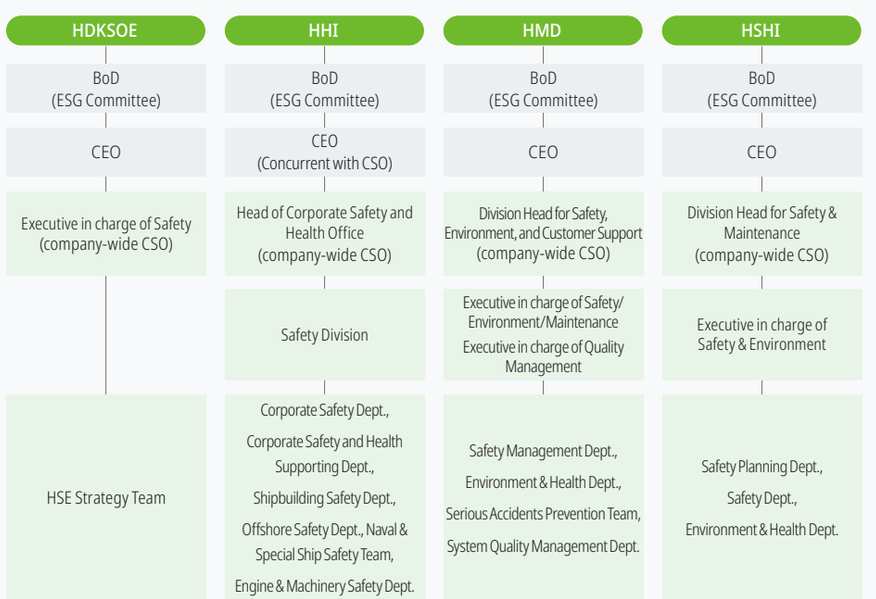
Additionally, the ESG Committee under the BoD receives reports on safety and health plans and management status to manage non-financial risks through ESG.

Roles of Chief Safety Officer (CSO)

CSOs of **HDKSOE and its shipbuilding subsidiaries** are responsible for planning company-wide safety and health policies and systems, operating the safety and health management system, planning and operating workplace safety programs, and listening to workers' safety and health opinions. Responsible executives and managers, including the CSO, set performance goals related to building capacities and eliminating risks in terms of safety and health with the KPIs being used for their performance evaluations.

In addition, CSOs perform safety inspections on business sites by identifying risk factors for serious accidents at work facilities and providing instructions to improve unsafe work conditions.

Safety & Health Governance



Roles of Operational Departments

Departments in charge of safety and health at **HDKSOE and its shipbuilding subsidiaries** manage company-wide safety and health standards and policies, plan and operate safety and health programs, and operate a control tower in the case of emergency.

These departments also take charge of safety inspections at workplaces, risk assessments and improvements, responses and examination to accidents, etc.

Operation of Safety Council for the Shipbuilding Subsidiaries

The Safety Council, jointly participated by **HHI, HMD, and HSHI**, exchanges safety management activities of each company, and makes decisions at the group level on safety and health issues as well as common emerging issues.

The Safety Council for the shipbuilding subsidiaries consists of 'Strategic Consultation' and 'Working-level Consultation.' As for Strategic Consultation, the CSOs and safety executives meet once a quarter to make decisions on priority tasks for the concurrent year and key agenda items from the Working-level Consultation. Meanwhile, the Working-level Consultation, an operational meeting held once a month, is attended by managerial workers and staff in charge of safety issues to review safety systems and establish safety standards.

Key Activities of the Safety Council for Three Shipbuilding Subsidiaries

Category	Period	Key Activities
Strategic Consultation	Every Quarter	• Direction for safety policies and systems • Expansion of safety investment and infrastructure
Working-level Consultation	Every Month	• Establishment of safety standards • Accident analysis and recurrence prevention measures • Introduction of new safety technologies • Enhancement of safety capabilities of contractors

Operation of Occupational Safety and Health Committee (OSHC)

HDKSOE and its shipbuilding subsidiaries operate the Occupational Safety and Health Committee (OSHC) to deliberate and decide on important issues related to occupational safety and health, such as plans and measures to prevent safety risks or health emergencies and disasters of workers performing their duties at the workplace. The OSHC regularly takes place once a quarter to encourage the workers on the prevention of industrial accidents, and additional meetings are held in times of need, such as the emergence of significant issues.

The matters deliberated, resolved, arbitrated, and decided by the OSHC are promptly disseminated to workers through internal communication channels, and the companies and workers are committed to implementing the resolved matters.

Composition and Key Agenda Items of OSHC

Composition	Key Agenda Items
HDKSOE 5 members each from labor and management	• Introduce a rental system for personal protective equipment • Strengthen standards for essential protective equipment • Place stretching equipment and supplies
HHI Up to 10 members each from labor and management	• Review revisions of OSH management regulations • Prevent brain cardiovascular diseases • Improve crane capacity • Improve prescription safety glasses
HMD 8 members each from labor and management	• Improve prescription safety glasses distribution standards • Improve fire extinguisher placement on gondolas • Replace outdated treatment equipment in the physical therapy room • Manage and prevent brain and cardiovascular diseases
HSHI 6 members each from labor and management	•Conduct gastroscopy for night shift workers • Expand the distribution of facial filter masks • Introduce new safety shoes • Invest in facilities such as additional installation of grounding wires in the unit assembly plant

Safety & Health

Strategy

Direction for Safety and Health Policies

Safety and Health Policies and Goals

Establishment of Safety and Health Policies

HDKSOE and its shipbuilding subsidiaries have continued to promote safety and health improvement activities based on the safety and health policies that contain the matters of establishing a safety-first culture, creating pleasant working conditions, strengthening safety training, and building a DT-based smart and safe workplace. Our employees, contractor workers, and all other stakeholders involved in our business activities are subject to these safety and health policies. We also expect other business contractors in various forms to respect our safety and health policies.

BUSINESS CASE

Safety and Health Management Policies and Mid- and Long-term Goals

HDKSOE, HHI, and HMD have established safety and health management policies to practice 'Safety for All', a core value in the group's value systems. Through systematic management, we aim to protect the safety and health of all stakeholders and achieve sustainable development.

- HDKSOE Safety & Health Management Policies
- HHI Safety & Health Management Policies
- HMD Safety & Health Management Policies

In addition, **HHI, HMD, and HSHI** have set a vision containing mid- and long-term goals and tasks to internalize the importance of safety and health management. Further details can be found on pages 67-68 of the Integrated Report.

Safety and Health Priorities

Joint Safety Resolution by Labor, Management, and Contractors

In January 2024, **HHI** held an event wishing for safety, with the participation of the Ulsan Regional Office of the Ministry of Employment and Labor (MOEL), Ulsan Office of the Korea Occupational Safety and Health Agency (KOSHA), and Ulsan Dongbu Fire Station, all employees, and in-house subcontractors. This event provided a valuable opportunity for labor, management, and contractors to make collective efforts toward a safer company.

In 2023, **HMD** jointly organized a resolution event with the labor union and contractors to create a safety for co-existence culture. The participating representatives from labor, management, and contractors made the following resolutions to create a safe, clean, and happy workplace: Prioritizing safety, health, and the environment; complying with safety rules and standard work procedures; taking care of colleagues' safety; preventing environmental pollution; maintaining basic order; and establishing a culture of communication and safety.

In January 2024, **HSHI** held a safety wish event to establish a self-regulated prevention system and wish for zero accidents throughout the year, participated by the Mokpo Regional Office of MOEL, the KOSHA, the Safety Managers' Council in the Southwest Region, and internal and external contractors.

Mobile Safety Work Instruction system

HHI, HMD, and HSHI have adopted a mobile safety work instruction system, through which work instructions and safety information can be checked. This system allows workers to check not only safety information but also the status of wearing protective gear and the state of surroundings being organized on their own.

In particular, **HHI**'s mobile safety work instruction system is connected with Hi-STANDARD (work standard and risk assessment platform) and Hi-SEs' permit-to-work and short-term project information, enabling the collection and provision of integrated safety information.

Safety Reward System

HDKSOE and its shipbuilding subsidiaries reward honorable department or employees who achieve outstanding safety performances or take commendable actions related to the prevention of serious accidents, the spread of safety culture, and the identification of safety improvement tasks. In addition, we evaluate the safety leadership, disaster indicators, safety management system, on-site safety management level, and capacities of safety managers, the result of which is used to select and reward excellent contractors in safety practices.

Major Safety Reward Systems for 2023

Category	Major Reward	Total Reward Amount
HDKSOE	Safety Excellence Employee Reward	Including contractors, KRW 1 million
HHI	Zero Accidents Achievement Award	166 departments, KRW 134.43 million
	Safety Excellence Team Reward	100 teams, KRW 135.2 million
	Safety Excellence Contractor Reward	28 contractors, KRW 280 million
HMD	Zero Accidents Achievement Award	Including contractors, KRW 69.82 million
	Zero Incidents Achievement Award	51 departments and contractors, KRW 204.81 million
	Safety Excellence Reward	9 departments and teams (including contractors) KRW 32.47 million
HSHI	Zero Accidents Achievement Award	189 departments and teams, KRW 210.5 million
	Safety Excellence Team Reward	19 teams and contractors, KRW 19.95 million
	Safety of Merit Award, Incentives	Total 104.6 million

Safety and Health Education

HDKSOE and its shipbuilding subsidiaries provide mandatory safety and health education for our own employees and contractors, including basic training for new hires, on-site and practical training (production workers), work-customized training (office workers), and customized training for supervisors and managers. At the same time, we provide our own education programs on on-site safety management, competency improvement for safety personnel and contractors' safety managers, and practical/experiential training for workers involved in high-risk jobs. In particular, we have strengthened safety and health education and training for foreign workers.

HDKSOE has conducted customized training by work types for lab managers, safety management personnel, and in-house subcontractors. **HHI** created contents to enhance the capacities of foreign workers and provided safety guidebooks in 11 languages. **HMD** has conducted tailored education for each position level, including separate safety and health training for elderly and female workers. **HSHI** has provided various training programs to prevent serious accidents and build capacities, such as external education, training for night safety management personnel, refresher training for longi work at heights, and special safety education for heavy-duty equipment guardians.

Safety Big Data Platform

HHI, HMD, and HSHI have jointly developed and operated a big data and AI-based safety information visualization and safety accident prediction model, which allows for checking the status of serious and general accidents, the number of accidents by period, and accident types. The companies look for the implications by analyzing the safety accident status and trends through this model.

Safety & Health

Risk Management

Safety and Health Risk Management

Laying the Foundation of Risk Management

Establishing a Safety and Health Management System

In accordance with company-wide safety and health policies and guidelines, **HDKSOE and its shipbuilding subsidiaries** have established a safety and health management system that operates the following activities in a cyclical process: establishing safety and health priority tasks and risk management plans; securing resources and budget requiring to implement the plans; performing activities to enhance safety and health levels, and identify and improve harmful and hazardous factors; inspecting procedures, methods, and results of the activities and taking collective measures; and reviewing by the CSO. We will advance the safety and health management system by reflecting related domestic and international laws and regulations, expectations of customers and other stakeholders, and the workers' expectations on improved working conditions.

Integrated HSE Management System (Hi-SEs)

HHI utilizes the integrated HSE management system called Hi-SEs to build a database in all areas, including accident cases, safety education, disaster prevention, environment, and health, for effective work performance.

Hi-SEs is operated with the principles of planning, practice, confirmation, and action, based on international standards for safety, health, and environment (ISO 45001, 14001). All employees can access Hi-SEs via various channels such as PC and mobile to check the information posted on the system.

Third-Party Certification of Safety and Health Management System

HDKSOE and its shipbuilding subsidiaries have obtained and maintained the third-party certification based on ISO 45001, As the effectiveness of the safety and health management system has been highly evaluated, including prediction of workplace accidents and accident risks, prevention of human and physical damages, and safety and health risk management activities.

Internal Review of Safety and Health Management System

In addition to the third-party certification, **HDKSOE and its shipbuilding subsidiaries** conduct internal reviews by utilizing professionals who have completed the education program for international safety and health management standards such as ISO 45001. Those professionals involved in the internal review develop a checklist based on the requirements of ISO 45001 to assess and guide the safety and health levels of each department, thereby strengthening the substantial effects and field operability of the health and safety management system.

Third-Party Certification for Safety and Health Management System

Category	Certification Standards	Certifying Body	Validity Period	Certification Scope*
HDKSOE	ISO 45001:2018	DNV	Dec. 2022~Dec. 2025	100%
HHI	ISO 45001:2018	DNV	Jul. 2022~May 2025	95%
HMD	ISO 45001:2018	LRQA	Jun. 2021~Jun. 20024	100%
HSHI	ISO 45001:2018	DNV	Jul. 2023~Jun. 2025	100%

* HDKSOE: GRC Headquarters, Ulsan Research Building
HHI: Ratio of employees in certified sites (product design, manufacturing, etc.)
HMD: Ulsan Headquarters, Yongyeon Plant, Onsan Plant, Mohwa Plant
HSHI: Yeongam Headquarters, Daebul Plant 1

Safety and Health Guidelines Management

HDKSOE and its shipbuilding subsidiaries have developed and operated the guidelines for safety and health management at the company level as well as for each production site. The safety and health guidelines are established and revised in tune with changes in the working environment, work methods, and operating equipment at the production site. Workers at production sites take safety accident prevention measures before work based on the requirements of the safety and health guidelines.

Granting the Right to Request Work Safety

HDKSOE and its shipbuilding subsidiaries grant workers the 'right to request work safety', which allows them to stop the work as soon as they discover hazardous elements at the business site. Those who detect hazardous factors may request measures to improve safety for dangerous situations through emergency calls, online messengers, etc. The safety department and safety personnel receiving such reports are required to take relevant improvement measures immediately or, in the case of an emergency, stop the operation.

Safety Leading Index (SLI) Management

HHI has managed the Safety Leading Index (SLI) that standardizes items that can check the safety management level within an organization, such as violations of safety rules, occurrences of accidents, and safety education, and presents them in four levels: 'safety, caution, warning, and danger.' Through the SLI, we identify safety risk levels, confirm vulnerable items in terms of safety management, and promote preemptive actions for prevention.

Compliance with Safety and Health-related Laws and Regulations

HDKSOE and its shipbuilding subsidiaries, under the CSO's leadership, establish a safety and health management system and develop and implement measures to prevent serious accidents. At the same time, we comply with safety and health-related laws and regulations, while taking necessary actions to fulfill the obligations stipulated in these laws and regulations.

In order to check compliance with the obligations in the relevant laws and regulations related to securing and promoting the safety and health of workers, we examine the level of compliance with the Serious Accidents Punishment Act, Occupational Safety and Health Act and laws related to the management of hazardous substances, firefighting equipment, chemical substances, and wastes. Through such compliance checks, we establish proper action plans for each finding and take action according to the plan.

Operation of Integrated Control Center

HHI, HMD, and HSHI operate an integrated control center for safety management. The center operates a video control system, intelligent video analysis system, and emergency reporting application, through which accident prevention as well as immediate action and response systems are made possible.

Safety & Health

Risk Management

Safety and Health Risk Management

Conducting Risk Management Activities

Risk Assessment

HDKSOE and its shipbuilding subsidiaries conduct risk assessments for employees under direct control and contractors, through which we identify harmful and hazardous factors, analyze the probability and severity of injuries and diseases caused by identified factors, and plan and implement risk reduction measures. These risk assessments are conducted regularly on an annual basis, considering the performance of machines, instruments, and equipment operated at the workplace and the workers' level of knowledge and capabilities regarding safety and health. Moreover, when there are new machines, instruments, and equipment, or any changes in work methods and procedures, additional risk assessments are conducted. Based on the results of risk assessments, we implement appropriate risk mitigation measures.

HHI has established Hi-STANDARD, a work standard management system, to manage data such as unit work and work methods at the production site, as well as work-specific risk factors and risk information. In 2024, HHI plans to connect Hi-STANDARD with Hi-SEs, the integrated HSE management system, aiming to enhance the effectiveness of risk assessment. Recently, HHI added a new function to the Hi-STANDARD which translates the information on work standards and risk assessments in 25 languages to provide easier access to such information to foreign workers of various nationalities.

Emergency and Crisis Management Manual

HDKSOE and its shipbuilding subsidiaries have operated a company-wide emergency and crisis management manual by consistently updating the manual to protect the employee safety and company assets from emergencies including natural disasters such as typhoons, earthquakes, heavy snow, torrential rain, and accidents such as fires and explosions.

The emergency and crisis management manual contains information on how to systematically respond to emergencies at each stage, including emergency response and management systems, and the establishment and operation of contingency plans. In addition, the manual includes measures such as suspension of work, evacuation of workers, and removal of risk factors in the event of an emergency, as well as relief for victims and prevention of additional damage.

Emergency Preparedness Drill

HDKSOE and its shipbuilding subsidiaries carry out emergency preparedness drills according to an annual plan to make employees fully informed of emergency response measures. After drills, we review the results and identify potential problems and vulnerable areas to reflect the findings and implications in the revisions of the emergency and crisis management manual. Furthermore, in connection with local fire departments, we conduct exercises for swift evacuation, initial response, first aid, and transfer to hospitals in the event of fires or other accidents.

Emergency Drills Conducted in 2023

Category	Descriptions
HDKSOE	Emergency Evacuation, Chemical Exposure, etc.
HHI	Company-wide emergency preparedness drills (including contractors)
HMD	PSM*, Public-private joint drill, etc.
HSHI	Emergent rescue from fire and confined space, etc.

* PSM: Process Safety Management

Medical Checkup and Follow-up Care

To periodically check the health of employees, **HDKSOE and its shipbuilding subsidiaries** provide general and special medical checkups to workers engaged in noise, harmful rays, metals, and organic compounds. As follow-ups, we offer professional counseling, medication and health education for high-risk groups and those with symptoms who are highly likely to develop high blood pressure, dyslipidemia, and brain cardiovascular disease.

HHI has introduced an indicator system that monitors the entire health sector process, including indicators such as the prevalence of high blood pressure, excess rate of work environment measurement, and occupational disease rate. Through this system, HHI identifies vulnerabilities related to health and establishes intervention and management directions. Apart from this, details on 'prevention and management of job stresses' are available on page 73 of the Integrated Report.

HMD has built a database to systemize the data on types of medical checkups, results by types, and harmful factors based on departments. Moreover, through this database, HMD can provide comprehensive management of its employees by predicting potential diseases based on individual working conditions and instructing prevention measures against such diseases as follow-up action.

Operating Health Facilities

HDKSOE and its shipbuilding subsidiaries operate diverse health facilities, including in-house clinics, physical therapy rooms, and oriental medicine treatment rooms to provide medical support and health management for employees and contractors.

Accident Response and Investigation Procedures

HDKSOE and its shipbuilding subsidiaries operate procedures for prompt and safe response, case analysis, and feedback in the event of damage (accident) to property and life caused by natural disasters, leaks of hazardous substances, fires, and explosions. In particular, in the event of an accident, we conduct a thorough investigation to make sure that nothing is missing in the investigation process or results. Based on the investigation results, we develop measures to prevent recurrence, and at the same time, conduct disaster statistics analysis to reflect it in risk management improvement plans and future safety and health activities.

Serious Accident Response Procedures

Receipt of Accident Reporting	• Broadcast and alert for serious accidents • Convene emergency response governance (including the integrated control center)
Initial Response	• Conduct rescue activities and guide workers for emergency evacuation • Implement initial controls such as installing basic fencing
Full-fledged Response	• Divide roles for accident management among investigators and others • Implement secondary controls such as identifying hazardous areas
On-site Investigation	• Secure statements, verify processes, take photographs, and preserve the site • Implement preventive measures to brace for secondary accident risks
Decontrol	• Lift controls upon the approval from the head of the safety department after controls are deemed no longer necessary after completing the on-site investigation
Post-investigation	• Analyze the root causes of the accident • Establish prevention measures against recurrence and reflecting them in future safety and health activities

Safety & Health

Risk Management

Safety and Health Risk Management

Safety and Health Support for Contractors

Safety and Health Policies Application for Contractors

HDKSOE and its shipbuilding subsidiaries apply the same safety and health guidelines, policies, and standards to the contractors, and assess their safety and health levels before the contract. Also after the contract, we regularly assess the safety and health levels of contractors to identify their safety and health risk factors and develop support activities to improve such risk factors.

Supporting Contractors' Health Management

HDKSOE and its shipbuilding subsidiaries monitor the health management status of contractors, identify areas for improvement, and support contractors in establishing and implementing their own management plans for those at risk for health management.

In 2023, **HHI** visited a total of 28 small-sized contractors to inspect areas displaying potential health-related vulnerabilities and provided technical guidance such as offering instructions for improved health.

In 2023, **HMD** visited 30 in-house subcontractors to check their health management status. After the check, HMD provided training on the vulnerabilities found in health management and measures to improve them. Then results were shared with the professional health management organization so that the in-house subcontractors can receive proper guidance and support to enhance their health management levels.

HSHI has computerized the 'Contractors Health Management System' for 89 in-house subcontractors, thereby operating data-based health management for contractors. HSHI is also expanding safety and health support for contractors to respond to the Serious Accidents Punishment Act.

Supporting Risk Assessment Recognition of Contractors

HHI, HMD, and HSHI have strived to establish a risk assessment system for contractors and increase the reliability of risk assessment results. As part of such efforts, we have mandated the 'Recognition of Excellent Risk Assessment Workplaces' system provided by Korea Occupational Safety & Health Agency (KOSHA) to support our contractors in conducting risk assessments. Under this initiative, when a contractor conducts a risk assessment and submits an application for accreditation, KOSHA issues a certificate of recognition after objective evaluations. The certified contractors can receive various benefits such as reduced premiums for industrial accident compensation insurance and additional subsidies. In this context, we support contractors in receiving risk assessment recognition by providing work standards and samples, visiting education, and special training.

Number of Certified Contractors in Risk Assessments

HHI	HMD	HSHI
107	31	40

Safety and Health Communication and Training for Contractors

HDKSOE and its shipbuilding subsidiaries operate various channels such as safety and health meetings and councils for contractors, thereby promoting diverse communication activities including sharing our directions for safety and health policies, reviewing major issues in contractors' safety management, and discussing solutions to reported grievances.

Moreover, HDKSOE and its shipbuilding subsidiaries provide a wide range of training curriculum, such as special lectures on raising safety awareness for the representatives of contractors, and capacity-building programs for safety managers of contractors.

Safety Checks and Technical Guidance for Contractors

HDKSOE and its shipbuilding subsidiaries conduct on-site checks and technical guidance activities for our contractors to resolve instability in the supply chain caused by serious accidents. In this regard, professional safety check personnel identify safety-related risk factors in the worksites of contractors, and then propose improvement measures for high-risk factors, or pass on the risk management experience, thus supporting contractors in establishing their autonomous safety system. We also monitor the contractors' establishment of their safety management system, and compliance with OSH laws and regulations and carry out support activities such as sharing our safety policies, safety standards, and technical materials.

Number of Safety Check Support for Contractors

HDKSOE (In-house)	HHI (External)*
1	11
HMD (External)	**HSHI (External)**
11	9

* HHI supports safety checks for all in-house subcontractors.

Safety checks for HSHI's external contractor

BUSINESS CASE

HHI Safety Open Market

HHI operates a 'Safety Open Market' program, which discovers prospective entrepreneurs and venture/SMEs with the technology and capabilities to resolve safety and health risks or encourages participation from all employees for joint technology development and field application. The 'Safety Open Market' is an open innovation program where HHI presents safety issues that are difficult to improve on-site, and prospective entrepreneurs, venture/SMEs, or employees propose products, services, or ideas that can solve these safety problems.

The selected teams are awarded prizes and provided with opportunities such as mentor assignments for each technology development task, support for on-site testing, and the chance to conduct POC (Proof Of Concept) projects for outstanding proposed technologies.

HHI's Notice on Safety Open Market

Safety & Health

Metrics & Targets

Safety and Health Indicators and Goals

Setting Safety and Health Goals

HDKSOE and its shipbuilding subsidiaries set measurable and assessable quantitative goals, including company-wide accident prevention goals, and manage the implementation status. Based on safety and health policies, we set safety and health goals by comprehensively considering the internal conditions such as risk assessment analysis results, safety inspection and level assessment results, and accident cases, as well as external conditions such as the safety and health-related trends of the shipbuilding industry.

Safety and Health Goals and Performances

HDKSOE

Safety and Health Goals and Performances for 2023	Safety and Health Goals for 2024
• (Goal) Zero serious accidents - (Performance) No serious accidents, zero death toll • (Goal) Achieve an accident rate of 0.1 or less - (Performance) Achieved an accident rate of 0.08, exceeding the target	• Achieve zero serious industrial and public accidents - Ensure HSE management system functionality and enhance acceptance • Work Environment Plus! Health Plus! - Upgrade chemical management systems, promote health improvement activities

HHI

Safety and Health Goals and Performances for 2023	Safety and Health Goals for 2024
• (Goal) Zero serious accidents - (Performance) No serious accidents, zero Fatality rate per 10,000 people • (Goal) Achieve an accident rate of 0.175 or less - (Performance) Achieved an accident rate of 0.167, exceeding the target	• Achieve zero serious accidents, achieve an accident rate of 0.163 or less - Activate field risk assessments centered on workers • Implement a preventive health management system - Improve the health risk assessment operating system, etc.

HMD

Safety and Health Goals and Performances for 2023	Safety and Health Goals for 2024
• (Goal) Zero serious accidents - (Performance) No serious accidents, zero death toll • (Goal) Achieve an accident rate of 0.133 or less - (Performance) Achieved an accident rate of 0.098, meeting the target	• Achieve zero serious accidents • Achieve an accident rate of 0.120 or less

HSHI

Safety and Health Goals and Performances for 2023	Safety and Health Goals for 2024
• (Goal) Zero serious accidents - (Performance) One serious accident occurred • (Goal) Achieve an accident rate of 0.16 or less - (Performance) Achieved an accident rate of 0.097	• Achieve zero serious accidents • Achieve an accident rate of 0.15 or less • Complete the construction of the in-house clinic

BUSINESS CASE

HHI Safety Vision 2027

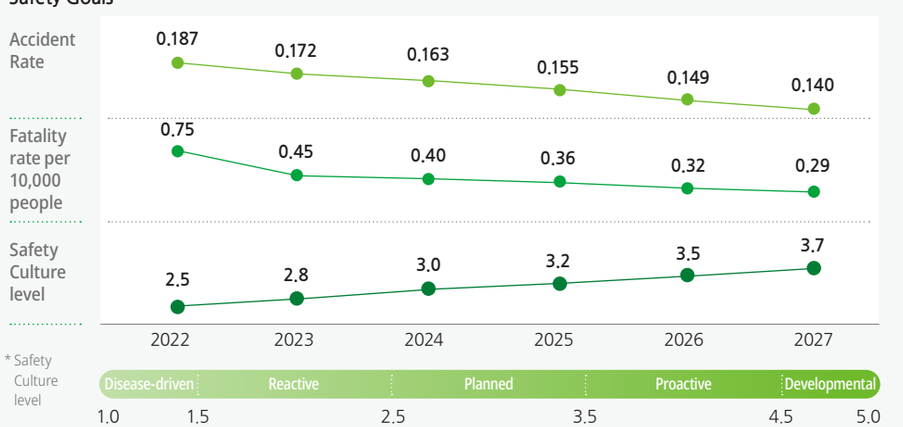
Under the safety leadership of the top management, **HHI** aims to achieve 'Vision 2027: A workplace where everyone is safe, a company where safety is its brand,' by establishing an 'autonomous safety management system' where all employees are main actors in eliminating risks, promoting a 'safety-first culture' where safety capacities are improved through integrated safety culture check programs and safety education curricula, and implementing 'intelligent safe workplace' based on big data and AI.

To achieve goals such as an Industrial accident rate below 0.15, Fatality rate per 10,000 people below 0.29, Safety Culture Index above 3.7 by 2027, HHI promotes activities such as strengthening risk assessments, operating the safety management system, improving safety capabilities, and advancing the accident prediction system. According to the goals of Vision 2027, HHI the company has set and is implementing the goals of achieving zero serious accidents, an accident rate of 0.163 or less, and establishing a preventive health management system in 2024.

Safety Vision 2027 System

Vision	A workplace where everyone is safe, a company where safety is its brand		
Goals	Industrial accident rate below 0.15	Fatality rate per 10,000 people below 0.29	Safety Culture Index above 3.7
Strategy	SYSTEM Establishment an Autonomous Safety Management System	CULTURE Establishment a Safety-First Culture	TECHNOLOGY Achieve an intelligent safe workplace
Priority Tasks	Implement safety and health activities based on risk assessment Establish the operability of an autonomous safety management system	Improve safety culture level Improve safety capability of all employees	Upgrade a big data-based prediction system Implement an AI-based safety monitoring system

Safety Goals



Safety & Health

Metrics & Targets

Safety and Health Indicators and Goals

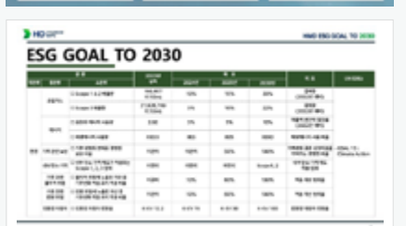
BUSINESS CASE

HMD ESG GOAL TO 2030

Recognizing the importance of ESG management, **HMD** has established the 'ESG GOAL TO 2030' with mid- and long-term objectives in the areas of environment, society, and governance to present HMD's commitments and vision toward ESG management. Among the social goals, "safety indicators" are included, which are categorized into five specific metrics: accident rate, total recordable incident rate (TRIR), fatality rate, lost time injury frequency rate (LTIFR), and near-miss frequency rate (NMFR). To achieve these concrete goals, detailed action plans have been set for each objective, with KPIs identified and managed for each category.

Key Safety and Health KPI Goals

Category		2023 Performance	Goals		
			2024	2025	2030
Safety Indicators	Accident Rate	0.098%	0.12%	0.11%	0.066%
	Total Recordable Incident Rate (TRIR)	0.38	0.35	0.30	0.26
	Fatality Rate	0%	0%	0%	0%
	Lost Time Injury Frequency Rate (LTIFR)	0.38	0.35	0.32	0.26
	Near-Miss Frequency Rate (NMFR)	3.39	3.02	2.82	2.03



BUSINESS CASE

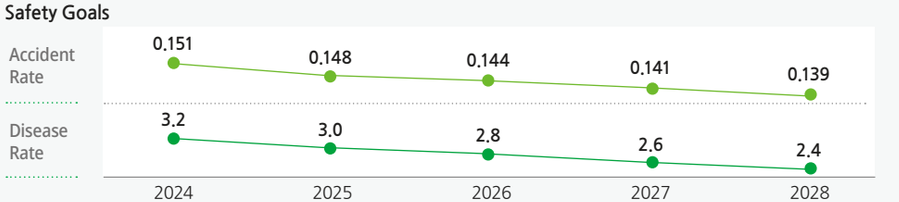
HSHI Safety and Health Vision 2028

HSHI has adopted the slogan "Valuing Life, Greening the Earth." Through this initiative, HSHI aims to achieve an accident rate of 0.139 and a disease rate of 2.4 or lower as qualitative goals. To achieve these objectives, HSHI plans to establish a foundation of basic safety protocols and foster a positive safety culture where safety is paramount. Furthermore, HSHI plans to enhance emergency medical capabilities and provide better medical welfare by integrating the in-house healthcare system into the newly built healthcare center. The strategic approach to achieving these goals is concretized in the 3S strategy (System, Special, Smart).

First, HSHI will secure the functionality of an autonomous safety system by establishing a systematic safety and health management system. Second, HSHI will achieve the highest level of professionalism by strengthening the safety and health capabilities of all members. Last, HSHI will secure and employ the best smart safety technologies.

Vision	Valuing Life, Greening the Earth		
Goals	Accident rate: within 0.139	Disease rate: within 2.4	
Strategy	SYSTEM Secure the functionality of autonomous safety and health system	SPECIAL Achieve the highest level of professionalism	SMART Employ the best smart safety technologies
Priority Tasks	Implement the principle of safety first (Back to the Basic)	Conduct safety culture assessments and provide feedback Strengthen safety education programs	Enhance intelligent video analysis, real-time detection, safety monitoring, and usability

Safety Goals



* Disease Rate: Occupational Disease/Total number of workers * 100

Implementation Measures

Establish Basic Safety Protocols

- Focused management of major risks (confined space, cranes, falls)
- Introduce a "Zero Accident Reward" program for 2024
- Strengthen the operation of the Safety Review Committee

Manage Safety Vulnerable Groups

- Enhance on-site training for foreign workers (10-10 approach) Group -> group + one-on-one
- Implement close safety coaching/ subcontractors safety coaching
- Develop tailored content in multiple languages

Advance Medical Services

- Construct a new healthcare center
- Strengthen medical staff and expand treatment scope
- Establish an emergency medical helicopter support system
- Expand CPR training for contractors

Talent Management

Governance

Talent Management Governance

Roles and Responsibilities

Talent Management Organization

The talent management organizations at **HDKSOE and its shipbuilding subsidiaries** perform their duties such as capacity building, performance evaluation and compensation, welfare benefits, and organizational culture improvement throughout the entire process from recruitment to retirement. These diverse talent management activities aim to attract and retain excellent talents, thereby enhancing our competitiveness and achieving continuous growth. In addition, we make continuous efforts to improve the capacities of talented employees in line with changing market environments and technology demands. By doing so, we play an important role as the industry leader by establishing an innovative and flexible organizational culture.

Forming Labor Unions

HHI, HMD, and HSHI have established labor unions and recognize legitimate activities of labor unions in accordance with the Constitution and labor laws. The scope of employees to whom a collective labor agreement applies is stipulated in the respective collective agreement regulations of each company. As for the employees who are not bound to collective agreement, separate labor-management councils take place to communicate labor opinions.

HDKSOE guarantees the freedom of association and collective bargaining equal to that of the subsidiaries. However, HDKSOE's channel ceased to take the form of a labor union, with the last member withdrawing from the union in October 2022.

Holding Labor-Management Council Meetings

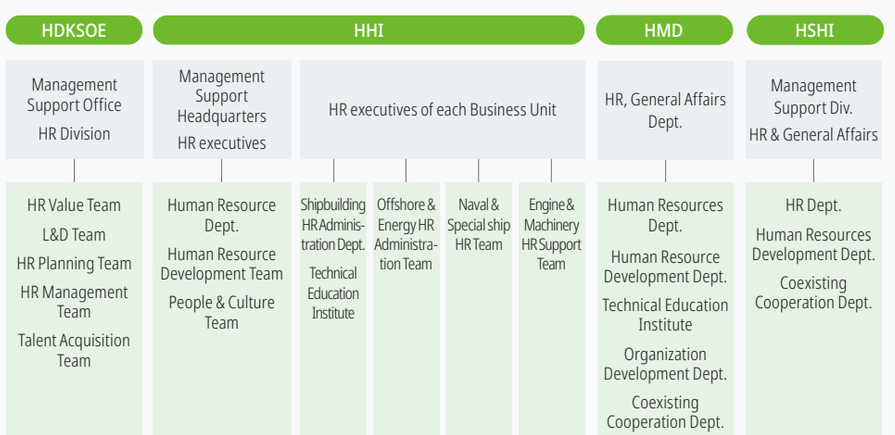
HDKSOE and its shipbuilding subsidiaries regularly hold labor-management council meetings based on relevant laws. Various issues on the employees' working conditions, such as welfare benefits, office amenities, and working systems are put on the table for the labor-management council, and the council members engage in open communication and consultation for these issues. When the labor and management fail to agree on certain agenda items despite active negotiations, we can resort to an arbitration system or continue the discussion to seek solutions.

Implementing Labor-Management Consultation and Collective Agreements

Recognizing the right of labor unions to collective bargaining and concluding an agreement, **HHI, HMD, and HSHI** are implementing the matters agreed on through collective bargaining. By doing so, the subsidiaries can build mutual trust and understanding between the companies and labor unions while endeavoring to improve labor conditions.

In addition, **HDKSOE and its shipbuilding subsidiaries** are fully committed to implementing what has been agreed upon through the labor-management council. In 2023, the respective labor-management councils held four meetings, with diverse agenda items being discussed.

Talent Management Organizational Structure



Operation of Labor-Management Council

Category	No. of Meetings	No. of Negotiated Agenda Items	Major Agenda Items for 2023
HDKSOE	4	Proposed: 41 Negotiated: 27	• Strengthening Maternity Protection System • Expanding subjects for Workation • Improving employee welfare through the Welfare Point System
HHI	4	Proposed: 49 Negotiated: 32	• Revising and publishing Employment Rules • Preparing standards for personnel changes • Extending the use of long-term service leave for industrial accident or parental leave • Improving office environment
HMD	4	Proposed: 36 Negotiated: 22	• Organizing tours and family camps • Extending celebration and condolence leave • Replacing equipment for Mirajae Dormitory • Changing hotel vouchers for self-development leave • Forming a Task Force to handle dramatic staff increase • Installing a grievance counseling center for the Labor Union within the Technology Innovation Hall
HSHI	4	Proposed: 15 Negotiated: 12	• Improving treatment for foreign workers • Implementing quarter-day off (2-hour leave) • Expanding ski camp for employees' children

Talent Management

Strategy

Directions for Talent Management

Capacity Building and Self-Development

Online Learning Platform 'HiClass'

HDKSOE and its shipbuilding subsidiaries operate the online learning platform 'HiClass' to enhance the employees' competency. The employees can access HiClass to take courses at any time, which provides a variety of differentiated training courses reflecting survey results for job training demands and external trends.

Education Tailored to Level of Positions

HDKSOE and its shipbuilding subsidiaries operate education programs tailored to different position levels, including executives, team leaders, team members, and new hires to enhance their expertise and capabilities. Such tailored education programs help all employees from new hires to executive managers to develop diverse competencies such as professional knowledge, leadership, and innovation. Through this, we intend to enhance work performance and organizational competitiveness.

Support for Self-Directed Learning

HDKSOE and its shipbuilding subsidiaries provide diverse educational content including self-development online courses, audiobooks, and e-books to facilitate self-directed learning for the employees. In addition, we support learning other than work-related topics, such as hobbies and general living knowledge, to encourage employees' development in various areas. In 2023, we launched a new program called the 'Life-Hack Sharing Club,' where employees can volunteer to become instructors and share useful tips related to their work or daily life in a form of workshop, inviting any interested employees to hear the lecture.

Job Competency Training Courses

HDKSOE and its shipbuilding subsidiaries operate training programs tailored to specific jobs to improve the skills and knowledge required for employees' job performance. In particular, with the increasing demand for less environmental impact and automation in the future shipbuilding industry, a wide range of technological strengths is required to meet such customer needs. In this context, we provide job competency training with a focus on core technologies such as liquefied gas technology, ship electrification, and digital transformation. Furthermore, we provide hands-on training with high-quality content and experienced instructors, and our Talent Development Institute opens about 60 specialized courses including data analysis using Python.

HHI operates training programs for technical competency improvement and technical transfer for production and technical workers. These programs provide training for key technologies that require high skills in performing duties and might halt production processes in the event of loss, thereby securing technological competitiveness on business sites.

HMD provides training programs on eco-friendly fuel and propulsion systems and electric-powered ships to nurture professionals for eco-friendly ships. Moreover, it has signed an MOU with the Korea Maritime & Ocean University to develop and operate specialized educational programs. Besides, it offered special lectures on basic electrical theory and technologies related to electric-powered ships.

With strengthened competencies through these job training programs, HDKSOE and its shipbuilding subsidiaries are taking the lead in the shipbuilding industry by receiving orders for the world's first medium-sized ammonia-fueled ships (two LPGCs) and an LNG floating storage and regasification unit (worth KRW 483.9 billion).

Internalization and Practice of Core Values

HDKSOE and its shipbuilding subsidiaries offer various educational programs to better understand and practice HD Hyundai's new value system, including the mission, vision, and core values. For example, we provide in-house training for new hires and metaverse education for old timers with the topics of core values, etc. Through these programs, we stimulate the interests of our employees and support them in aligning themselves with the group's policy directions.

Support for Degree Acquisition

HDKSOE and its shipbuilding subsidiaries support employees in obtaining master's and doctoral degrees through self-development study programs at prestigious domestic universities. This program covers 70% of tuition and admission fees, up to KRW 20 million, when acquiring degrees, thereby alleviating the financial burden on employees. Moreover, the company supports the work attendance of concerned employees in consideration of their academic schedules so that they can strike a balance between their academic and work commitments.

Support for Language Proficiency Test and Education for Expatriate

HDKSOE and its shipbuilding subsidiaries supports the examination fees of language proficiency tests to help employees in administrative, design, and research positions increase their language skills. In 2023, over 1,800* employees benefited from this support system and took the proficiency test free of charge. Moreover, to nurture global talents, we pay for language courses and exams of corresponding regions for candidate expatriate employees.

* HDKSOE: 128, HHI: 923, HMD: 550, HSHI: 284

Major Training Courses

Category	Training Targets	Course Descriptions
Core Values Mindset	New hires, managerial workers, etc.	• Understanding the background and necessity of mission, vision, and core values • Sharing the necessity, practices, and direction for each core value
HLC* Program	Key talents from manager level to executives	• Segmented education programs in 5 stages based on positions and roles starting from key talents in manager level • Providing education for basic business administration, technology management, and leadership to cultivate future executives
Leadership 360 Assessment Debriefing	Executive level	• Strengthening self-awareness through interpretation of leadership 360 assessment • Seeking ways to enhance the leadership of an individual
Training for New Managerial workers	New heads of divisions, section leaders, etc.	• Cultivating leadership skills such as goal setting and management, coaching, feedback, etc. • Understanding company-wide systems
Domestic Training for New Hires	New hires in 2nd year	• Recharge and stress management • Value Trip • Vision design for future growth
Technical Capability Development	All production and technical workers	• Basic competency education
Technical Transfer	All production and technical workers	• Core production technology education

* HD Hyundai Leader Course

Talent Management

Strategy

Directions for Talent Management

Performance Appraisal and Compensation

MBO*-based Performance Appraisal

HDKSOE and its shipbuilding subsidiaries operate an MBO-based performance appraisal system where executives, department leaders, and team leaders set performance goals considering the roles and characteristics of each division, office, and department, and regularly monitor whether to implement such goals as planned. Also, we create an environment where all members can actively participate through regular communications and feedback in the course of attaining MBO-based performance goals.

Priority-based Performance Evaluation

HDKSOE and its shipbuilding subsidiaries conduct performance evaluations based on priority tasks determined based on each organization's performance goals.

Through discussions between managerial workers and team members, priority tasks are specified, where the proper level of tasks is allocated to individuals in consideration of their respective capabilities and job levels. As for the shipbuilding subsidiaries, objective monthly performances are reflected in biannual performance evaluations while **HHI** conducts performance-based evaluations after mutually sharing work details and progress for each schedule.

Furthermore, to secure fairness in evaluations, we operate evaluation adjustment sessions and an appeals review system and pursue co-prosperity of individuals and the organization by providing evaluators comprehensive feedback after evaluations.

* MBO: Management by Objectives

Leadership Multidimensional Appraisal

HDKSOE and its shipbuilding subsidiaries conduct a Leadership Multidimensional Appraisal for executives, department leaders, team leaders, and section leaders. This assessment evaluates 'leadership competencies' using various factors such as behaviors, attitudes, collaboration, and communication, gathered from multiple assessors. The elements of the multidimensional appraisal are designed to adequately reflect the objectives of the assessment, the position of the assessed, and the characteristics of their duties.

Agile Conversation and Performance Appraisal

HDKSOE, HHI, and HMD conduct performance evaluations not only on the individual tasks and KPIs-based tasks, but also on temporary organizations and task force teams with special assignments. These evaluations not only assess the subject's performance, cooperation and contribution, but also provide continuous feedback on the whole developing process and produced outcomes.

BUSINESS CASE

Task Management Platform

HHI, through a "Task Management Platform", continuously evaluates the performance of its employees throughout the year to promote further development. The platform manages tasks categorized into priority tasks, originally assigned tasks (regular and periodic missions and duties), and ad-hoc tasks (one-time tasks assigned due to emergencies or direction of senior management).

Since employees can directly register regular and ad-hoc tasks, the company can evaluate a temporary organization for specific programs and R&D projects or tasks performed in the Task Force. The goals are set through regular dialogues and feedback and are adjusted flexibly in response to changes, ensuring employees can successfully perform their duties. This approach enhances employee engagement while providing flexibility and agility to the entire organization.

Performance Evaluation Based on the Position Levels

Target		Evaluation Method	Evaluation Cycle
Executives		MBO evaluation and leadership 360 assessment	Annually
Dept. Leader and team leaders		MBO evaluation and leadership 360 assessment	Twice a year
Section leaders and non-managerial workers*		Performance-based evaluation	Twice a year
	Professional certificate holders (Lawyer, patent attorney, CPA)	Self-evaluation, 360 evaluation (work-related peers), department leader evaluation	Twice a year
	Research staff and office workers	Performance and competency evaluation	Twice a year
	Production workers	Comprehensive evaluation of performance, competency, and attitude	Twice a year

* (HMD) Both section leaders and non-managerial workers are subject to MBO-based evaluation.
(HSHI) While section leaders are subject to MBO-based evaluation, non-managerial workers receive performance-based evaluation.

Performance Evaluation Review and Feedback

HDKSOE and its shipbuilding subsidiaries operate a feedback process where evaluators and evaluatees can freely share and review the validity of performance goals, the objectivity of performance evaluation indicators, implementation of subtasks, collaboration during the implementation, and support provided. When evaluatees register their plans, current status, and other support requests related to performance goals on the task management system, evaluators not only assess the performance status but also provide feedback on the methods and procedures used in performing such tasks. Feedback is provided regularly during registration of performance goals, interim evaluations, and final evaluations while being provided upon the request of evaluatees.

Improving Fairness and Acceptability of Performance Evaluations

HDKSOE and its shipbuilding subsidiaries have established and operate a data-based performance evaluation system to strengthen the fairness of goal setting and task allocation, and fairness of procedures such as the design of performance evaluation indicators and methods.

Furthermore, to enhance the acceptability of performance evaluations among employees, we establish performance goals and indicators specified according to the ranks and responsibilities of employees. In addition to the evaluations based on reasonable criteria, results are presented transparently and mutual feedback is exchanged sufficiently.

Talent Management

Strategy

Directions for Talent Management

Performance Evaluation and Compensation

Performance Compensation System

Through the task management system, **HDKSOE and its shipbuilding subsidiaries** provide differentiated compensation (skill-based benefits and performance-based bonuses) to those employees subject to an annual salary system based on individual performance levels. We also operate a separate incentive system given the diverse and complex work processes and characteristics of each profession group. The incentive system includes various programs such as design incentives, research bonuses, sales incentives, production incentives, incentives for outstanding production teams, and safety incentives. By considering the unique characteristics of each company, we offer rewards that fit various skills and achievements of the employees.

Award System

HDKSOE and its shipbuilding subsidiaries operate various award systems respectively including the Role-Model for Core Values, and the Outstanding Performance Award to recognize and appreciate employee efforts and achievements based on the philosophy of "where there is performance, there is reward."

Major award programs include Excellence in Research Awards, Collaboration Points, and Thank You Cards. Besides there are other award programs such as Zero-Safety-Accident Awards, Long-Term Service Awards, Job Invention Awards, Special Merit Awards for External Contractors, and Safety Excellence Contractor Awards.

Operation of Retirement Pension

HDKSOE and its shipbuilding subsidiaries enforce a retirement pension system to make sure that the employees approaching retirement age can prepare for a stable life post-retirement. This retirement pension is available to all employees across HDKSOE and its shipbuilding subsidiaries and is protected through the external accumulation of retirement pension reserves. Moreover, we provide education for employees subscribed to the retirement pension to raise understanding of the pension system and encourage the employees to actively utilize it.

Operating Employee Stock Ownership Plan

HDKSOE and its shipbuilding subsidiaries operate an Employee Stock Ownership Plan (ESOP) to share the long-term growth of the companies and increase a sense of ownership among the employees. As of December 2023, the ESOP of HDKSOE and its shipbuilding subsidiaries comprises approximately 2,000 members.

Performance Compensation and Key Reward Programs

Category		Target	Description
Performance Bonus		All employees	• A certain percentage of the basic salary is given as a performance bonus based on management performance.
Reward Programs	Thank You Card	All employees	• Employees displaying outstanding performance receive a Thank You Card along with welfare mall points.
	Collaboration Points	All employees	• Employees who collaborate within or across departments receive collaboration points, which are converted to welfare mall points when exceeding a certain threshold.
	Excellence in Research Awards	Research staff	• Based on biannual evaluations, research staff receive individual performance bonuses, designed to motivate R&D activities.
	Technology Innovation Contest	Research staff	• Regardless of individual evaluations, research projects that achieve specific outcomes receive project-based incentives.

* The specific implementation of the programs may vary by subsidiaries.

Defined Benefit Retirement Pension Liability for 2023

(Unit: KRW million)

HDKSOE	HHI	HMD	HSHI
1,512,840	873,005	244,361	299,966

Status of Employee Stock Ownership Plan

(as of Dec. 31st, 2023)

Category	No. of Shares Owned	Ownership Percentage	No. of Members
HDKSOE	102,535	0.14%	670
HHI	269,160	0.30%	746
HMD	16,480	0.04%	171
HSHI	231,073	0.75%	373

Talent Management

Strategy

Directions for Talent Management

Welfare System

Flexible Work System

HDKSOE and its shipbuilding subsidiaries implement a flexible work system to respect the work-life balance for the employees and enhance work efficiency. In cases of outside duty, childcare or other personal reasons, the employees can choose their working hours. We also strive to create a adjustable working environment through a flexible working time, holiday work substitution, and part-time employment, while adopting the PC-OFF system to help employees strike a balance between work and life.

Remote Work System

HDKSOE and its shipbuilding subsidiaries operate a remote work system that allows employees to work flexibly from any location. In addition, to minimize potential work gaps that may arise due to remote work, we provide various supports, including VPN and online collaboration tools. This system enables employees to maintain work efficiency while working safely and conveniently.

Major Benefits Related to Childbirth, Childcare, and Family Care

Category	Description
Maternity Leave and Congratulations Allowance	• Pregnant employees: 90 days of leave based on the childbirth date with an additional 30 days of special maternity leave; Pregnancy grant of KRW 5 million, childbirth grant of KRW 5 million • Spouse employees: Up to 10 days of leave within 90 days from the spouse's childbirth date
Infertility Support	• Infertility leave: Additional leave of 2 days for every 3 legal infertility leave days • Telecommuting for infertility treatments: Telecommuting up to 5 days per month including infertility treatment dates
Miscarriage and Stillbirth Leave and Comfort Allowance	• Additional leaves granted based on the gestational period • Miscarriage comfort allowance of KRW 5 million
Parental Leave	• 1 year of leave per child under 8 years old or in the 2nd grade of elementary school for both parents respectively • Reduced working hours for childcare can be utilized for up to a maximum of 2 years
Childcare Leave	• Operating a leave system for up to 6 months (of which 3 months are paid) for female employees to care for elementary school children aged 6 to 8 years old
Family Care Leave	• Supporting up to 90 days of family care leave annually for employees caring for grandparents, parents, spouses, children, grandchildren, or parents of spouses due to accident, illness, or old age
Reduced Working Hours	• Supporting up to 2 hours of reduced working hours during early pregnancy (within 12 weeks) and late pregnancy (after 36 weeks) • Reduced working hours for childcare (15-35 hours per week)
Breastfeeding Facilities	• Providing breastfeeding breaks of at least 30 minutes, twice a day for female employees with infants under one year old, along with breastfeeding facilities
In-House Daycare Center	• Operating an in-house daycare center from 7 AM to as late as 10 PM

Personal Development Leave System

HDKSOE and its shipbuilding subsidiaries promote a personal development leave system to encourage employees to recharge themselves for sustained business performance and increased employee engagement. All employees are eligible to use up to 5 days of personal development leave twice per year. When using this leave, employees are provided with hotel or resort vouchers or corresponding welfare points so that they can refresh and enjoy a comfortable break.

Job Stress Prevention and Management

HHI has developed a job stress prevention and management manual to support employees in effectively managing stress. HHI also provides support programs specifically for employees experiencing high job stress, which include in-depth job stress assessment, stress measurement and counseling using specialized equipment, and psychological counseling referrals.

Furthermore, **HDKSOE and its shipbuilding subsidiaries** operate in-house counseling centers such as 'Mind Café' (located in Bundang office) and 'Mind Garden' (at Ulsan and Yeongam facilities) to promote employees' mental health and well-being.

Supporting Education for Retirement Planning

HDKSOE and its shipbuilding subsidiaries provide an education program to support retirement planning where employees approaching retirement can be provided with relevant information such as asset and health management, reemployment, and entrepreneurship, thereby preparing for their second phase of life. In particular, customized education programs are operated based on the needs of potential retirees, providing practical information such as self-assessment for successful second life planning, designing and implementing life-stage-specific strategies, preparation and know-how for entrepreneurship or starting a new career, readiness for reemployment, and exploring options for returning to rural life.

In addition, we actively support employees facing retirement in preparing for the next chapter of their lives by systematically providing various government support schemes and necessary information after retirement.

Operating Fitness Center

HDKSOE and its shipbuilding subsidiaries operate in-house gyms to enhance employees' health. The fitness centers are available free of charge for all employees and are equipped with a variety of latest exercise equipment.

BUSINESS CASE

Family-Friendly Company Certified by the Ministry of Gender Equality and Family (MOGEF)

HDKSOE and its shipbuilding subsidiaries have been recognized for the exemplary family-friendly policies including support for childbirth and childcare, flexible working hours, and other family-friendly initiatives. In this regard, we have obtained and maintained the MOGEF's certification as a 'Family-Friendly Company.'

Category	Validity Period
HDKSOE	Dec. 1, 2022 ~ Nov. 30, 2025
HHI	Dec. 1, 2022 ~ Nov. 30, 2025
HMD	Dec. 1, 2021 ~ Nov. 30, 2024
HSHI	Dec. 1, 2022 ~ Nov. 30, 2025

Talent Management

Risk Management

Workforce Planning and Organization Assessment

Systematic Personnel Management

Workforce Supply and Operation Planning

HDKSOE and its shipbuilding subsidiaries establish mid- and long-term workforce supply and operation plans to respond to issues such as selecting next-generation core talents in future strategic areas. Based on changing economic and market conditions, we analyze demand and supply for various positions including administrative, research, and production jobs. Ultimately, we devise strategies to secure or utilize the necessary workforce from internal and external sources.

Identification and Analysis of Internal and External Workforce

HDKSOE and its shipbuilding subsidiaries conduct activities to identify capabilities of both internal and external workforces, including employee competency evaluations and organizational culture assessment.

Employee competency evaluations are conducted to assess the achievement levels of performance goals based on MBO or KPIs, and recognize employees consistently exceeding the performance goals as excellent talents. In addition, the qualitative and quantitative evaluations of the capabilities of individual employees are used together by using indicators and criteria that can measure the level of capabilities and technologies.

Furthermore, we have various mechanisms in place to secure external talents. In line with external changes such as competition in the shipbuilding market, unstable supply chain, and the speed of new technology development, we operate flexible recruitment systems to secure talents early who are capable of addressing current issues. We have also developed collaboration mechanisms with universities with high research performances to foster and secure future talents, conducting separate recruitment processes for master's and doctoral-level candidates from prestigious universities and research institutions. In particular, the Advanced Research Center of HDKSOE explore research tasks in various fields and promote industry-academy research cooperation to lay the foundation for the growth of future talents.

Employee Satisfaction Survey

In order to create a value-added and creative organizational culture, **HDKSOE and its shipbuilding subsidiaries** conduct surveys on the employees. The survey items include 'employee engagement', 'internalization of core values', and 'change management activities.' Through these surveys, we analyze various factors influencing the performance of duties and productivity such as job satisfaction, goal orientation, job experience and happiness, stress factors, etc.

Employee Engagement Survey for 2023 (Unit: %)

Distinctly Positive Response Rate	Survey Participation Rate
57.8	62.5

* Survey subjects: HDKSOE, HHI, HMD, HSHI

BUSINESS CASE

Securing Talents Tailored to Future New Business

HDKSOE and its shipbuilding subsidiaries are establishing a cooperation mechanism among industry, academy, and research institutes by signing an MOU with privileged domestic universities to nurture professionals tailored to future growth engines and strengthen global capabilities. In Sep. 2022, we launched a graduate program of 'Smart Ocean Mobility' Convergence, partnering with the Seoul National University. Under this program, we support research on innovative technologies and ideas in the future shipbuilding industry converging shipbuilding and offshore, AI, and big data such as 'AI for Shipyard Production Planning' 'Advanced Eco-friendly Shipbuilding and Offshore Process System', 'Eco-friendly and Digital Ship Structure Technologies.'

Additionally, in March 2023, we signed with Yonsei and Korea universities on 'Industry-Academy Cooperation to Cultivate Future Talents.' Through these initiatives, we aim to nurture the next-generation core talents that will lead the ocean mobility sector in the future. Besides, in July 2023, an MOU was concluded with Hankuk University of Foreign Studies to seek ways to encourage the settlement of foreign workers, such as developing teaching materials and support for translation and interpretation.

Seoul National University 'Smart Ocean Mobility' Graduate Program

HHI operates the 'Professional Technician Cultivation Program' with the aim of fostering 1,000 technicians in the shipbuilding industry in line with the changing shipbuilding environment. Trainees systematically learn the technical skills required for practical fieldwork, thereby enhancing their capabilities. Those who achieved excellent scores in the program are given the special benefit of being recruited as production and technical workers. HHI is doing its utmost to cultivate technical talents by organizing the 'Professional Technician Cultivation Program' seven times in 2023.

In addition, it is operating the 3rd batch of The 'Professional Technician Cultivation Program' while newly providing short-term training to 130 students from Ulsan Meister High School, tailored to the demands of potential technicians with the motto of 'More Attractive Shipbuilding Industry to Younger Generation'.

Graduation ceremony for Professional Technician Cultivation Program

Talent Management

Risk Management

Workforce Planning and Organization Assessment

Facilitating Labor-Management Communication

Dialogue with the Executive Management

HDKSOE and its shipbuilding subsidiaries are organizing regular meetings to promote smooth communication within the organization and create a coexisting labor-management culture. CEOs of each company and "Gen Z" new hires organize meetings to share differences among different generations and to pursue true communication. Also, through a meeting with team leaders, the participants shared corporate policies and management status and listened to the difficulties of employees.

Management Status Briefing

HHI, HMD, and HSHI adhere to collective agreements that mandate prior notification to labor unions regarding significant management changes. Moreover, during labor-management council meetings, each company transparently shares the management status.

Since 2020, **HHI and HMD** have shared management status and emerging issues of the companies through separate briefing sessions organized by CEOs via internal broadcasting channels, coinciding with quarterly performance disclosures. On top of that, follow-up briefing sessions are provided by business units to build consensus on management status within the organization.

Education on Labor-Management Relations

HDKSOE and its shipbuilding subsidiaries operate a Labor-Management Relations Education program including labor laws to create a sound labor-management culture and establish desirable partnerships. This program covers the education to resolve labor-management issues including the meaning of labor-management relationships, the structure of collective bargaining, cause and understanding of conflicts in labor-management relationships, effective communication for resolving mutual conflicts as well as labor standards such as labor hours, wages, and leaves.

BUSINESS CASE Major LMP (Labor-Management Partnership) Activities

Meeting with Foreign Workers

Top executives from HD Hyundai and the shipbuilding subsidiaries met 42 foreign workers from 7 countries including Vietnam and Uzbekistan who are working at the contractors of **HHI, HMD, and HSHI**.

During this 'Meeting with Foreign Workers', the top management listened to the difficulties and suggestions of foreign workers and comforted their weary minds suffering the hardship of living abroad. In return, the foreign workers delivered words of appreciation for various supports from their companies including interpretation services and on-the-job training to help their settlement in Korea.

Meeting with Foreign Workers from Contractors

Operating One Heart Communication Committee

HHI has established the 'One Heart Communication Committee' to foster positive changes in organizational culture by selecting one member from each Department. The Committee promotes communication with the company and employees. In particular, the Committee members from each Department serve as a bridge of communication, as they voluntarily identify and propose areas for improvement and exchange prompt feedback with the department receiving such proposals.

Since its launch in 2023, the One Heart Communication Committee has identified about 20 tasks to improve the work environment throughout the 1st and 2nd batches.

One Heart Communication Committee

Supporting Leisure Activities for Foreign Workers

To help stable settlement and healthy stress management, **HMD** has organized an event for 146 foreign workers from six countries including Vietnam and Nepal, who are employed by subcontractors, to watch a professional soccer match of the Ulsan HD FC. The foreign workers enthusiastically cheered up for the Ulsan HD FC with unity.

In addition, to enable foreign workers to enjoy sports activities, HMD provided support for sports equipment and facility rentals, demonstrating their commitment to supporting various aspects of settlement and daily life in Korea.

Watching a professional soccer match with foreign workers

Summer Vacation Encouragement Event for Foreign Workers

HMD hosted an encouragement event for 100 Vietnamese workers and recognized their dedication and hard work, in celebration of summer vacation. HMD has made continuous efforts to respect the diversity of foreign workers and create an inclusive corporate culture.

Summer vacation encouragement event for foreign workers

Meeting with CEO

HHI and HMD organize meetings with CEO where top executives directly explain the company's vision and direction to employees and engage in open communication. Through these meetings, employees can ask the CEO questions about the company's current business environment and future development plans, and receive direct answers.

A Meeting with HMD CEO

'CSO on the Go' Program

HSHI is airing the "CSO on the Go" program via YouTube and internal broadcasting to promote diversity. In this program, the Chief Safety Officer (CSO) conducts bi-weekly interviews with foreign employees, checking safety knowledge and experiencing exotic cultures. Furthermore, this program serves as an opportunity to listen to and communicate with foreign employees about their concerns.

'CSO on the Go' YouTube video

Respect for Human Rights

Governance

Human Rights Management Governance

Roles and Responsibilities

Roles of BoD

To protect the human rights of stakeholders related to our distinct business activities, **HDKSOE and its shipbuilding subsidiaries** operate the human rights management governance system where the ESG Committee under the BoD serves as the highest decision-making body.

The ESG Committee receives reports on potential human rights risks involving employees and stakeholders and those with high probability. Then the committee deliberates and approves decision-making issues related to human rights that may strongly influence business operations and financial performances of the companies.

Roles of the Human Rights Management Committee

HDKSOE and its shipbuilding subsidiaries operate a Human Rights Management Committee, chaired by the Chief ESG Officer (C-Level) and participated by executives and managerial workers from relevant departments. The Human Rights Management Committee reviews decision-making issues and performances related to promoting human rights management while approving the Human Rights Commitment, establishment and revision of Guiding Principles for Human Rights Management, human rights impact assessment (HRIA), and the publication of a human rights management report.

Roles of Operating Departments

Departments in charge of human rights management at **HDKSOE and its shipbuilding subsidiaries** perform their roles to carry out activities to strengthen human rights management and manage potential risks. In addition to promoting the systematic implementation of human rights management, a relevant of related departments such as audit, legal, safety and environment, general affairs, and PR join the efforts to identify and improve human rights risks.

The departments in charge conduct HRIAs to identify human rights risks and present suggestions for improvement, and regularly monitor human rights issues to report key matters. Besides, these departments provide human rights education to employees while operating remedial procedures in the event of human rights violations.

Human Rights Management Governance

BoD (ESG Committee)

- ESG-related decision-making including human rights management

Human Rights Management Committee (Chair: Chief ESG Officer)

- Review and decision-making of human rights management-related issues
- Approval of Human Rights Commitment, Guiding Principles for Human Rights Management, HRIAs, publishing human rights management report, etc.

Operating departments

- Identifying human rights risks and suggesting improvement measures
- Monitoring human rights issues and reporting key matters
- Providing human rights education; operating remedial procedures; disclosing human rights management status both internally and externally

Strategy

Directions for Human Rights Management

Laying the Foundation of Human Rights Management

Human Rights Commitment

HDKSOE and its shipbuilding subsidiaries have adopted and disclosed "Declaration of Human Rights Management" and "Guiding Principles for Human Rights Management." The declaration contains our commitment for respecting human rights for stakeholders, prevention and remedial efforts of human rights violations, the structure of human rights management governance, and HRIA. The declaration testifies to our support for international agreements on human rights that the Korean government has joined and ratified, including the Universal Declaration of Human Rights (UDHR), UN Guiding Principles on Business and Human Rights (UNGPs), and the ILO Declaration on Fundamental Principles and Rights at Work. We will continuously strive to live up to these declarations, principles, and agreements.

- HDKSOE Human Rights Commitment
- HHI Human Rights Commitment
- HMD Human Rights Commitment
- HSHI Human Rights Commitment

Guiding Principles for Human Rights Management

HDKSOE and its shipbuilding subsidiaries have established Guiding Principles for Human Rights Management to define necessary matters for developing and implementing policies to protect and promote the human rights of stakeholders including employees.

The principles address prohibition of discrimination, compliance with working conditions, prevention of bullying and sexual harassment at the workplace, the guarantee of freedom of association and collective bargaining, prohibition of forced and child labor, prohibition of exploitation, safety, and health, human rights protection of local residents, the guarantee of environmental rights, and protection of customer human rights.

Furthermore, the principles are used as standards and basis of human rights management by stipulating the matters on the roles and responsibilities of human rights management governance, provision of human rights education, conducting of HRIAs, and remedial procedures for human rights violations.

Application of the Guiding Principles for Human Rights Management

The Guiding Principles for Human Rights Management of **HDKSOE and its shipbuilding subsidiaries** apply to all employees and stakeholders at home and abroad. For employees working overseas, the principles are applied more flexibly in consideration of local laws and regulations.
Unless there are specific provisions in the laws of the countries in which the business is conducted or in the company's articles of incorporation, the Guiding Principles for Human Rights Management should be observed when pursuing human rights management.

Prohibition of Discrimination and Workplace Bullying

According to Article 6 (Prohibition of Discrimination) and Article 8 (Prevention of Bullying and Sexual Harassment at Workplace) of Guiding Principles for Human Rights Management, **HDKSOE and its shipbuilding subsidiaries** do not tolerate any form of discrimination based on gender, age, race, disability, religion, political stance, or region of origin while actively implementing prevention measures and practices to root out workplace bullying and sexual harassment.
If HRIAs discover any cases of discrimination and bullying at the workplace, or if grievance consulting and inspection confirm such cases, the perpetrator will be subject to personnel disciplinary actions based on the standards defined in the employment rules.

BUSINESS CASE

Revision of Employment Rules to Prevent Workplace Bullying

Reflecting human rights-related laws, regulations, and trends, **HHI and HMD** are revising the employment rules, the highest-level regulations stipulating working conditions and service regulations applicable to employment contracts. In particular, the revisions include the provisions to specify measures taken in the event of workplace bullying (Article 119) and to necessitate an anti-bullying organization to prevent and respond to workplace bullying (Article 120).

Respect for Human Rights

Strategy

Directions for Human Rights Management

Implementation and Diffusion of Human Rights Management

Establishing Human Rights Management Process

To build a human rights management system and spread a culture of respect for human rights, **HDKSOE and its shipbuilding subsidiaries** have established and operated a human rights management process. This process is operated based on the following 4 stages: Establishment of human rights management policies (establishing governance, developing and revising guiding principles, internalization, and dissemination); Identification and evaluation of human rights risks (human rights significance assessment, HRIA); Mitigation of Human Rights Risks (priority-based mitigation measures, monitoring the effectiveness of mitigation measures); and Report and improvement (publication of human rights management reports, improvement of human rights management policies and HRIA).

Human Rights Management Process

Establishing human rights management policies
- Build governance
- Develop and revise guiding principles
- Internalize and disseminate

Identifying and assessing human rights risks
- Assess human rights significance
- Assess human rights impact

Mitigating and monitoring human rights risks
- Mitigate priority risks
- Monitor the effectiveness of mitigation measures

Reporting and improving results
- Publish human rights management reports
- Improve policies and evaluation procedures

Building a Human Rights Management Roadmap

HDKSOE and its shipbuilding subsidiaries have established a roadmap to increase the level of human rights management in a phased manner. The Human Rights Management Committee has continuously advanced governance operations such as the Committee and operating departments; the Human Rights Commitment; information disclosure of human rights management; provision of human rights education; the spread of human rights management throughout the supply chain; and HRIAs. Based on the roadmap, we are committed to building human rights management systems that align not only with the national systems of the countries in which their workplaces are located but also with global standards.

Providing Human Rights Education

HDKSOE and its shipbuilding subsidiaries provide human rights education programs for their employees to raise an understanding of human rights commitment and guiding principles and disseminate a culture of respect for human rights. The human rights education program consists of 'Sexual Harassment Prevention (1-hour)', 'Awareness Improvement of the Disabled (1 hour)', 'Workplace Bullying Prevention (1-hour)' and 'Human Rights Management (1-hour)' courses.

These educational programs are provided to employees in labor and production positions as well as dispatched workers. The status of human rights education is managed on the employee e-learning platform (HiClass) as well as the training records within the education system.

* Some educational programs are operated differently depending on the companies. HSHI plans to provide education programs for anti-bullying and human rights violation prevention from 2024.

Human Rights Education Programs at HDKSOE and its shipbuilding subsidiaries

Category	2021	2022	2023
Sexual Harassment Prevention	1 hour	1 hour	1 hour
Awareness Improvement of the Disabled	1 hour	1 hour	1 hour
Workplace Bullying Prevention	-	1 hour	1 hour
Human Rights Management	-	1 hour	1 hour

Management of Major Human Rights Issues

HDKSOE and its shipbuilding subsidiaries select those human rights issues that may be raised related to business operations (prohibition of discrimination, prevention of workplace bullying and sexual harassment, compliance with working conditions and welfare systems, guarantee of freedom of association and collective bargaining, prohibition of forced and child labor, and exploitation, safety and health, responsible supply chain, human rights protection of local residents, guarantee of environmental rights, customer human rights protection, safety and quality of products, etc.). Then we develop and implement measures to manage such issues considering the stakeholders that may be affected by the above challenges.

Human Rights Issue	Affected Stakeholders	Issues Management
Prohibition of Discrimination	• Employees (especially women) • Workers from contractors	• Prohibiting any form of discrimination during employment contracts, applying the same employment rules to all • Operating appeals procedure against performance evaluation procedures, enhancing acceptability through continuous feedback • Institutionalizing policies to ensure that factors unrelated to performance and capability such as gender, academic background, and region do not affect promotions
Compliance with Working Conditions	• Employees (especially women and low-rank personnel) • Workers from contractors	• Complying with legal working hours in each country (e.g., a 52-hour workweek limit in Korea) • Recording night or extended working hours to reflect overworking hours in wages • Providing regular wage payments on pre-announced dates along with detailed pay slips including deduction details
Prohibition of Forced and Child Labor	• Employees • Workers from contractors	• Drafting employment contracts in a language understandable to employees • Prohibiting demands for original identification documents, using debt as a bond when concluding an employment contract, or requesting fees • Verifying age through documents (e.g., resident registration abstract) during recruitment.
Human Rights Protection of Local Residents	• Local community, local residents (geographical/ business connection)	• Conducting prior consultations with affected parties and third parties before transferring business-related land ownership related to business. • Prohibiting confiscation of local residents' property rights through coercive means and avoiding participation in inappropriate forced relocations • Providing adequate compensation to relocated local residents
Customer Human Rights Protection	• Current customers • Potential customers	• Implementing quality management measures based on customer satisfaction surveys during shipbuilding and delivery processes • Establishing principles to provide products and services considering the safety of customers and the product usage process • Continuously strengthening regulations and systems to ensure cybersecurity and privacy protection

Respect for Human Rights

Risk Management

Human Rights Risk Management

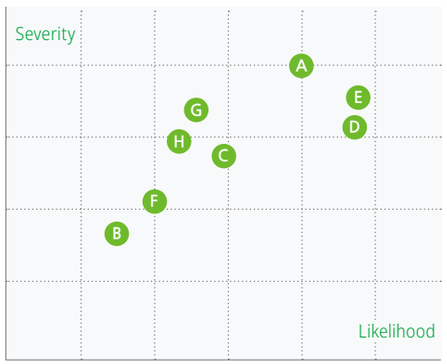
Pre-identification of Human Rights Risks

Human Rights Saliency Assessment

To assess the influence and priorities of human rights issues, **HDKSOE and its shipbuilding subsidiaries** conducted human rights saliency assessment based on the likelihood and severity.

Major issues are determined through the human rights saliency assessment, and stakeholders are divided into two groups: those who are highly related to major issues or potentially have negative impacts related to such issues. The assessment results are reflected in the establishment and revision of evaluation indicators, standards, and procedures based on key issues and potential stakeholders and considered in the establishment of the Supply Chain ESG Risk Evaluation (assessment and due diligence) indicators and standard-setting. In addition, the results of human rights saliency assessment are reflected in proposing measures and establishing plans for improved human rights management.

Results of Human Rights



As of Dec. 2022

Major Human Rights Issues and Potential Key Stakeholders

Major Human Rights Issues	Key stakeholders with potential human rights issues					
	All workers	Female workers	Migrant workers	Dispatched workers	Local community	Customer
A Right to Environment					●	●
B Child labor, forced labor, exploitation	●		●			
C Working conditions (wage, working hours, etc.)		●		●		
D Discrimination, workplace bullying, sexual harassment	●					
E Occupational safety and health	●					
F Customer human rights, quality and safety of products						●
G Human rights of local residents					●	
H Freedom of association and collective bargaining	●					

Human Rights Impact Assessment (HRIA)

Process of HRIA

HDKSOE and its shipbuilding subsidiaries formulate HRIA indicators based on interviews and engagement with working-level staff to pre-identify human rights risks. The evaluation team consisting of human rights management experts conducts the data-based assessment including desk and on-site assessments. Moreover, indicator-specific tasks for improvement are proposed based on the HRIA results analysis.

Process of HRIA

Scope of HRIA

In conducting HRIAs, **HDKSOE and its shipbuilding subsidiaries** consider the entire work facilities as the scope of assessment, including domestic headquarters, research centers, and production factories. The scope of HRIA is divided into management administration and business administration, and since shipbuilding is our main business, we take the relevant areas as our priority. Furthermore, the scope will be extended for the assessment to identify and understand the human rights risks of not only our employees but also diverse stakeholders including workers from contractors, local residents, customers, etc. In particular, HRIAs for contractors are conducted via supply chain ESG assessments (assessment and due diligence).

Developing HRIA Indicators

HDKSOE and its shipbuilding subsidiaries have developed and operated HRIA indicators that can precisely identify and confirm key human rights issues for each stakeholder based on human rights saliency assessment.

In 2023, we advanced these indicators based on legal changes related to human rights, right to labor, and occupational safety such as the prohibition of workplace bullying, support for work-life balance, and the Serious Accidents Punishment Act, as well as suggestions through internal and external environment analysis related to human rights management.

HRIA Indicators

Administration of Management

- Human rights governance
- No discrimination
- Freedom of association and collective bargaining
- Prohibition of forced labor
- Prohibition of child labor
- Guarantee of occupational safety
- Responsible supply chain
- Human rights protection of local residents
- Protection of environmental rights
- Protection of consumer human rights
- Treatment of workers with respect

Business Administration

- Human rights of workers in indoor production (safety, environment, etc.)
- Human rights of workers in preceding area (safety, environment, etc.)
- Human rights of workers in outdoor production (safety, environment, etc.)
- Human rights of workers in production support (Co-prosperity, foreign workers, etc.)

Respect for Human Rights

Risk Management

Human Rights Risk Management

Human Rights Impact Assessment (HRIA)

On-Desk Assessments

HDKSOE conducts a human rights impact assessment for the management administration area every year. **HHI, HMD, and HSHI** have conducted assessments for management administration and business administration alternatively every other year. In 2023, the subsidiaries conducted a human rights impact assessment for business administration.

Among the forms of assessments, on-desk assessments are conducted by distributing a survey, where relevant departments answer the indicators in the questionnaire and attach evidential reference. The on-desk assessments identify human rights risks potentially laid in management administration and business administration areas.

On-site Assessments

HDKSOE and HHI conduct on-site assessments where an evaluation team consisting of third-party experts can additionally confirm and review the risks already identified in on-desk assessments, or further explore human rights risks that could not be identified through on-desk assessments. The evaluation team visits the companies' facilities to precisely determine human rights risks by checking supporting documents such as internal policies and regulations related to the implementing foundation of human rights management. The evaluation team also conducts interviews with departments in charge of human rights management, related departments, workers (including contractors), and local residents.

HMD and HSHI have conducted desk assessments participated by the relevant departments and plan to carry out on-site assessments through third-party experts to enhance the reliability of the assessment results.

HRIA Results Analysis

According to HRIA in 2023, the human rights indicator compliance rates are: 79.8% for **HDKSOE**, 82.2% for **HHI**, 97.0% for **HMD**, and 96.5% for **HSHI**.

HDKSOE was positively rated in the areas of non-discrimination in employment, freedom of association and collective bargaining, prohibition of forced and child labor, and protection of local residents, regional environments, and consumer rights. On the other hand, the result revealed that HDKSOE needs to improve the areas of strengthening human rights governance, expanding human rights management throughout the supply chain, and establishing a consistent monitoring system for human rights risks to advance human rights management.

As a result of the analysis, **HHI** has overall systems in place necessary for preventing risks related to the safety and health of indoor, preceding, and outdoor production workers as well as environmental pollution caused by ship construction activities. Moreover, HHI needs to complement the areas such as managing risk factors to prevent safety accidents, disseminating human rights management to contractors, and providing safety, health, and cultural education for foreign workers.

The on-desk assessment on human rights impacts concluded that no inappropriate issues were found for **HMD** in indoor, preceding, and outdoor productions. However, it was confirmed that some parts require complementing such as improving equipment and facilities related to workers' safety and health and providing respect education for foreign workers from contractors.

Finally, **HSHI** conducted a self-assessment and found that risk factors are managed throughout the entire area including providing instructions and training to prevent safety accidents, making workers comply with safety work regulations, developing measures to address safety accidents, respecting cultures of foreign workers, and installing facilities to minimize environmental impacts on local residents. The company also reviewed immediate actions for identified improvement areas.

Result of Human Rights Impact Assessments for 2023

(Unit: %)

Category		HDKSOE	HHI	HMD	HSHI
HRIA for Work Sites	HRIA Conduct Rate*	100	63.8	56.5	51.3
	Human Rights Risk Identification Rate	20.2	17.8	3	3.5
	Human Rights Improvement In Progress Rate	100	100	100	100
HRIA for Contractors	HRIA Conduct Rate	0	10.5	0.3	1.2
	Human Rights Risk Identification Rate	0	10.5	0	0
	Human Rights Improvement In Progress Rate	-	100	-	-

* HRIA of the shipbuilding subsidiary focuses on the ship production area, since it is the flagship product.

Area-specific Compliance Rate of Shipbuilding Subsidiaries

(Unit: %)

HHI

Indoor Production	Preceding Service	Outdoor Production	Support
80.8	90.9	83.9	76.2

HMD

Indoor Production	Preceding Service	Outdoor Production	Support
94.4	100	95.5	96.8

HSHI

Indoor Production	Preceding Service	Outdoor Production	Support
100	90.9	100	100

HDKSOE Compliance Rate by Areas

(Unit: %)

1) While human rights policy declarations have been implemented, some areas for improvement have been identified, including the improvement of detailed operational manuals and human rights management education systems, and the advancement based on international human rights norms.
2) In accordance with diversification in businesses and the supply chain, a code of conduct for overseas supply chains might be needed.
3) Though recent efforts have been made to strengthen the supply chain, there are some areas to be improved such as expanding the scope of monitoring for contractors and tightening prevention of human rights violations caused by security guards.
4) There is a need to specify the definition and examples of "workplace bullying" in the grievance procedure manual.

Respect for Human Rights

Risk Management

Human Rights Risk Management

Human Rights Impact Assessment (HRIA)

Identification of Priority Human Rights Risks

HDKSOE and its shipbuilding subsidiaries identify priority human rights risks through a comprehensive assessment of various human rights risks identified during HRIA by considering the likelihood of occurrence (frequency of incidents within the company or the industry), the difficulty of remedy (availability of restoration measures and the cost of recovery), and the range of stakeholders exposed to the human rights risks.

Human rights risks with very high likelihood and low resilience are designated as top priority, while risks that can be minimized through grievance procedures are selected as secondary priority. Additionally, separate monitoring activities are conducted for potential risks that are not of high priority but likely to occur.

Improvement Measures for Human Rights Risks

HDKSOE and its shipbuilding subsidiaries review improvement tasks to mitigate, offset, or eliminate human rights risks identified through HRIAs, including prioritized human rights risks. For such improvement tasks, effective and efficient action plans are prepared through consultations with the departments in charge of each human rights risk, reflecting schedules, methods, supports, collaborations, and other considerations for each detailed measure.

In addition, improvement tasks related to overall human rights management such as the establishment of governance, development and revision of policies and principles, and operation of risk management systems are led by departments responsible for human rights management. However, for those improvement tasks requiring investments to ensure safety, health, and environmental rights, or involving diverse stakeholders throughout the supply chain and local community, proper deliberation is made among the relevant departments. Moreover, the implementation of such tasks is monitored to check whether agreed schedules and methods are observed and whether the tasks achieve intended effectiveness.

Prevention, Mitigation, and Resolution Plans of Human Rights Impact

Category	Major Activities	
HDKSOE	• Enhance human rights management governance • Upgrade human rights remedial procedures	• Expand human rights management practices to contractors • Support maternity protection and work-life balance
HHI	• Strengthen safety inspections and focus on managing risk factors • Protect and respect the human rights of contractors	• Respect foreign cultures and protect their human rights • Advance human rights management governance
HMD	• Conduct regular inspections to prevent factory and equipment accidents • Implement simulation training and safety education before work	• Provide cyclical training on protecting foreign workers' human rights and preventing discrimination • Operate a support center for foreign workers with interpreters for six languages
HSHI	• Keep checking risk factors and the use of protective equipment to prevent accidents • Conduct periodic safety training, including the separation of unused shackles	• Install and implement facilities to minimize environmental impact and damage to local residents

Reporting and Handling of Grievances

Grievance Handling Procedures

HDKSOE and its shipbuilding subsidiaries provide multiple channels for employees to report grievances to members of the Grievance Committee, including via employee representative bodies, intranet, hotlines, and offline contacts. The Grievance Committee members notify the informant of the receipt of the grievance report and forward it to the Committee Chair. During the counseling process, we protect the informant by separating the movements of the informant and a perpetrator, if necessary or upon the request of the informant. If the subject of the counseling is a female worker, the Committee allocates a female Committee member for inspection.

The Grievance handlers including the chair and each committee member are required to strictly maintain confidentiality for the report, and grievances received should be processed promptly within 30 days of receipt.

The results of inspection and counseling are provided to both the informant (victim) and the accused (perpetrator). Resolutions are prepared in respect of the victim's wishes and various supports are provided such as psychological counseling, leave, transfer of departments, and medical and legal supports. The perpetrator is subject to personnel disciplinary actions according to relevant regulations.

After the investigation, regular follow-ups are conducted on a regular basis to ensure no retaliation or further harm to the informant and to monitor whether the same issue is repeated. The company strictly prohibits any unfair treatment or harm to employees for reporting or asserting grievances.

Grievance Handling Procedures

Grievance Report and Receipt	• Report grievances through various and functional means • The details of the grievance receipt are communicated to the informant. • Notification is sent to the member, vice-chair, and Chair of the Grievance Committee
Counseling and Investigation	• Confidentiality obligations are strictly observed during counseling and investigation. • Counseling is conducted to verify details and facts. • Upon the informant's request or when necessary, the movements of the informant and the accused are separated.
Investigation Result	• The results of the inspection and counseling are communicated to both the informant and the accused. • Support measures are prepared according to the informant's wishes and hopes. • Disciplinary actions are taken against the perpetrator as per company regulations.
Follow-up actions	• Verification is done to ensure there is no retaliation or additional harm to the informant. • Regular monitoring is conducted to check for recurrence of the same issue. • Special education sessions are conducted as well as the guidance to grievance handling system

Grievance Handling Status for 2023

Category	Unit	HDKSOE	HHI	HMD	HSHI
No. of reports received related to human rights	Cases	1	8	0	5
Representative body	Cases	0	0	0	0
Intranet	Cases	0	2	0	0
Hotline	Cases	0	6	0	0
Offline	Cases	1	0	0	5
No. of cases properly handled	Cases	1(100)	8(100)	0	5(100)

Supply Chain Management

Governance

Supply Chain Management Governance

Roles and Responsibilities

Board of Directors (BoD) Responsibilities

The BoD of **HDKSOE and its shipbuilding subsidiaries** receive reports on compliance with fair trade regulations in the relationships with contractors and presents recommendations for improvement on significant compliance factors.

The ESG Committee under the BoD reviews performance and plans for creating a sustainable supply chain that focuses on checking, evaluating, and improving contractors' ESG levels.

Executive Management Responsibility

Each head of Management Support Headquarters or Division at **HDKSOE and its shipbuilding subsidiaries** present directions to advance a coexistence model for contractors to establish a sustainable supply chain. At the same time, they are monitoring potential risk factors as well as complaints and difficulties that contractors may have. In addition, they manage and oversee overall supply management activities including efforts for co-prosperity such as operation of contractors support and management systems, application of fair trade practices, support of education/technology/financial assistance, etc.

Role of Operating Departments

Procurement departments of **HDKSOE and its shipbuilding subsidiaries** process all tasks in a fair and transparent manner throughout the entire procedure including new registration of contractors, selection, and evaluation of suppliers, etc. in compliance with relevant laws such as the Fair Transactions in Subcontracting Act (hereinafter referred to as 'Subcontracting Act'), and the Act On The Promotion Of Mutually Beneficial Cooperation Between Large Enterprises And Small And Medium Enterprises (hereinafter referred to as 'Mutually Beneficial Cooperation Act'). When selecting contractors, the companies ensure fairness and legitimacy of delivery unit pricing and fulfill their obligations to deliver written contracts. In addition, based on contractor-tailored ESG indicators, they support contractors in enhancing ESG capacities by checking contractors' ESG levels and consulting on improvement tasks.

Co-prosperity departments of each company have promoted activities to provide financial, technological, and educational support to maintain partnerships with contractors and regularly exchange and communicate with contractors to continuously explore practical support programs necessary for their capacity building.

External Contractors Council

HDKSOE and its shipbuilding subsidiaries operate the External Contractors Council to listen to the voices of suppliers, share management policies, and develop and practice substantial support measures for contractors together. Starting with a New Year's Meeting every January, regular subcommittee meetings, workshops, and policy briefing sessions are held periodically according to the schedules of the External Contractor Councils of each subsidiary.

HHI held a briefing session for the Delivery Price Indexation System at its 2nd-half subcommittee meeting to raise understanding of contractors, thereby inducing early establishment of the system and improving the financial soundness of contractors.

In-house Subcontractors Council

Through the In-house Subcontractors Council, **HDKSOE and its shipbuilding subsidiaries** listen to the opinions of subcontractors and seek various ways to promote the shipbuilding industry and achieve co-prosperity.

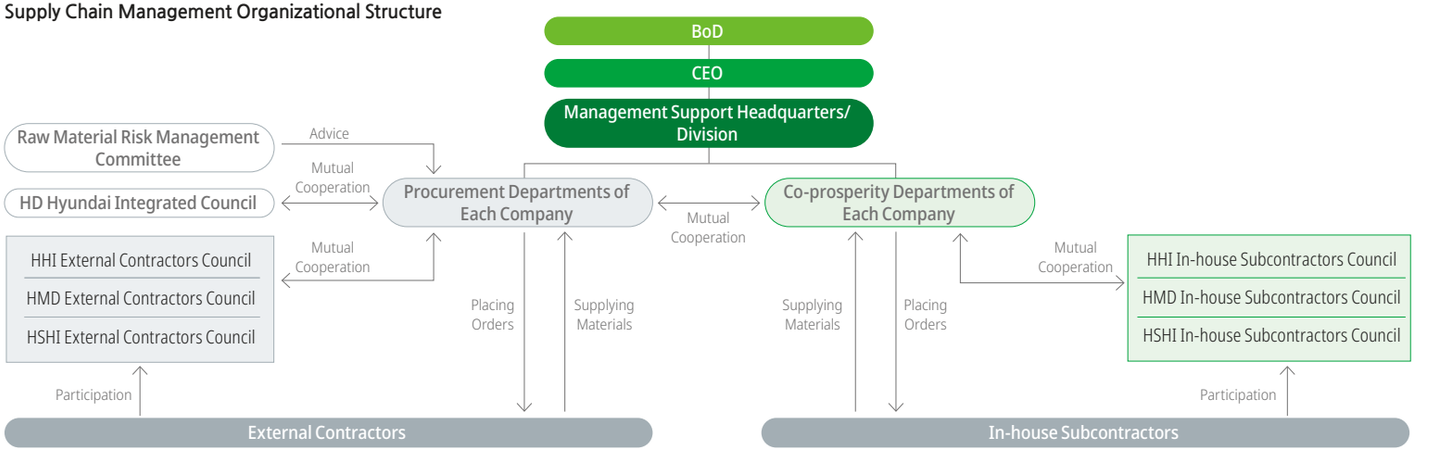
HMD shared the supply and demand status of the local workforce and training while discussing current issues for developing jobs and workforce in the shipbuilding industry. Furthermore, it visited overseas locations and jointly conducted the capacity assessment of foreign professionals with E7 visas.

HSHI provided training to 305 model employees to vitalize an organization for creating a culture of communication and harmony. The training provided an opportunity to make another leap forward through mutual respect, communication, and harmony, and challenge for the future.

Raw Material Risk Management Committee

To minimize the impacts of raw material inflation resulting from the conflicts among major raw material-producing countries and protectionism on the stability of raw material supply, **HDKSOE and its shipbuilding subsidiaries** operate the Raw Material Risk Management Committee. It reviews regulations and management status of raw material risks. Moreover, it formed the Task Force in 2022 to support the early establishment of the Subcontract Price Adjustment System for co-prosperity with contractors and quickly established operational rules and systems. Through such activities, it has strived to reduce the burden of contractors caused by fluctuations in raw material prices.

Supply Chain Management Organizational Structure



Supply Chain Management

Strategy

Direction for Supply Chain Management

Laying the Foundation of Co-Prosperity

Supply Chain Management Operation Philosophy

HDKSOE and its shipbuilding subsidiaries support and manage their contractors based on the supply chain operation philosophy that aims to achieve growth, development, and increased competitiveness of the contractors.

To this end, they promote capacity building in contractors' ESG management by expanding the scope of the contractor management system to include ESG-level assessment, education, and consulting. Furthermore, they conduct various activities to collect the opinions of contractors such as transaction satisfaction surveys to introduce procurement policies and support programs that can be of practical help to contractors. In addition, the companies have continued to operate technical advisory services to support contractors' quality control, timely delivery, and cost-saving as well as safety and health, and welfare programs for contractors' employees to enhance their competitiveness. We continuously review standards and internal regulations related to supply chain ESG and incorporate them into our procurement activities in alignment with Supplier Code of Conduct.

Operating Integrated Procurement System

HDKSOE and its shipbuilding subsidiaries have established the integrated procurement system (HiPRO) to operate all the processes from the selection of contractors, signing of contracts, and delivery, to payment in a fair and transparent manner. When newly registering a contractor, ESG factors are included in the evaluation criteria to review the registration and then a contract is made and signed the contractor based on the standard shipbuilding subcontract agreement. When signing contracts, the companies also have safeguards for ethics and compliance by making all contractors submit the Ethical Management Practice Pledge and register of interest.

The Integrated Procurement Homepage not only provides information on contractor registration procedures and standards, subcontracting practices, and code of conduct for contractors, but also operates a reporting channel for violations of ethical standards and illegal collusion, and a consultation channel for compliance with ethical standards and fair transaction.

Supply Chain Operation Philosophy

VISION	Establishing a Sustainable SCM (Supply Chain Management) through Innovation and Coexistence		
Goal	Encouraging the Growth and Development of Contractors Supporting Increased Competitiveness of Contractors		
Priority Areas	**Continuous System Improvement**	**Strengthening Communication with Contractors**	**Increasing Competitiveness of Contractors**
Key Policies	• Presenting a Contractor-tailored ESG Indicator • Providing ESG Education for Contractors • Supporting Comprehensive ESG Consulting	• Improving Policies through a Transaction Satisfaction Survey • Collecting Opinions through Regular Meetings • Organizing Knowledge-sharing Workshops and Seminars	• Operating Technical Advisory Services • Supporting Safety through Safety and Health Management System • Crating Co-prosperity Fund, Supporting Welfare Programs
Major Examples	• Signing an MOU on Joint Responses to ESG Supply Chain of HD Hyundai Shipbuilding Units (Korea SMEs and Startups Agency) • Signing an MOU on ESG Support Programs with HHI Contractors (Korea Commission for Corporate Partnership)	• Facilitating Communication with Contractors, Listening to their Difficulties, Organizing Information Exchange Meetings and Workshops • Conducting Transaction Satisfaction Surveys on Contractors for Purchasing and Coexisting Cooperation Policies and Reflecting Survey Results in Policies • Sharing Vision and Management Status with Contractors, Awarding Outstanding Contractors	• Operating Technical Advisory Services for Contractors, Publishing Best Technical Advice Casebook • Supporting Digital Transformation of Steel Outfitting-producing Contractors • Providing Safety Management Technical Guidance for External Contractors, Supporting Administrative Services in the Case of Serious Accidents

Operating Internal Review Committee

HDKSOE and its shipbuilding subsidiaries have established and operated the Internal Review Committee to voluntarily review the fairness and legitimacy of their subcontracting transactions and take efficient and appropriate preventive measures for potential violations of the Subcontracting Act and other laws. The Internal Review Committee deliberates the registration and cancellation criteria for contractors and objections to non-selection or cancellation of contractors. If the Committee finds any violation in the reviewed case against the relevant laws including the Subcontracting Act, effective corrective measures are taken accordingly. Furthermore, when there is intentional or gross negligence of employees in contracting with contractors, or transaction processes, they are subject to sanctions commensurate with the severity of their violations.

Fair Contracting and Reasonable Payment

HDKSOE and its shipbuilding subsidiaries calculate management costs and profits reasonably in consideration of quantity, quality, specifications, delivery schedules, material costs, and labor costs of the supplies delivered by contractors. The final unit price is determined in consultation with the contractors. Also, delivery schedules are calculated to fit normal practices by considering the characteristics of items, installation schedules, and production lead time of contractors. Even in the case of an urgent order requiring a shortened delivery schedule, consultation with contractors is held in advance. As for the inspection of supplies, the companies consult with contractors to determine objective, fair, and reasonable inspection criteria and methods.

When outsourcing production to contractors, payment should be made within 60 days of receipt of the supplies. To ensure liquidity for contractors, material costs are paid in 100% cash for SMEs and protected mid-sized companies.

Prohibiting Unfair Management Interference and Coerced Technical Data Submission

The companies do not interfere with any personnel management of contractors such as appointment or dismissal of their employees, and do not coerce contractors to hire a specific individual against their will. They also do not unfairly intervene in the re-subcontracting arrangements of contractors regardless of the purposes of the subcontracting agreement concluded with the contractors.

Moreover, the companies do not request, without legitimate reasons, confidential data on systems, repairs, construction, or service performance of contractors, intellectual property rights such as patents and utility model rights held by contractors, and other information on economically valuable technology or contractors' management.

Handling Supply Chain Grievance

HDKSOE and its shipbuilding subsidiaries operate consultation channels such as regular meetings with contractors to address grievances that may arise in the supply chain. All stakeholders within the supply chain including employees, contractors, and clients can make inquiries and reports about grievances, where the anonymity and confidentiality of the informant (reporter) is guaranteed. Also, retaliation in any form is not tolerated against the individual who raised an issue.

Grievance Handling for Contractors (2023)

Category	Receipt	Handling	Handling Rate
HHI	104 cases	58 cases	55.8%
HMD	137 cases	101 cases	73.7%
HSHI	160 cases	133 cases	83.1%

Supply Chain Management

Strategy

Direction for Supply Chain Management

Co-Prosperity Promotion Activities

Technical Advisory Service for Contractors

To enhance the competitiveness of contractors, **HHI** provides technical advisory services for external contractors and in-house subcontractors. Technical advisory staff consisting of retired technicians from the HHI with more than 30 years of experience visit contractors and present technical solutions in various fields including construction, outfitting, electric systems, quality, and sea trial. The contractors receiving technical advice have experienced practical effects such as enhanced work quality, increased productivity, and an improved safety environment.

Moreover, HHI publishes a casebook containing successful cases of technical advisory services such as technology improvement through one-on-one on-site direction, managerial capacity building for personnel management in contractors, and advice on design, work methods, and safety improvements, thereby supporting other contractors requiring technology advice for similar issues in benchmarking the cases in the book.

Fostering Technical Talents

HHI, HMD, and HSHI operate technical training centers to foster technical talents with expertise in response to increasing demand for workforce in the shipbuilding industry. Not only employees of the companies and contractors, but also trainees who wish to work in the shipbuilding industry can take professional training courses teaching practical skills and theories on ship outfitting, electricity, painting, welding, electrical systems, and safety management as well as general vocational knowledge.

Performances of Technical Training Centers for 2023

(Unit: person)

Category	Participants in the Technical Trainees Course	Employees in the Job Training Course
HHI	527	3,497
HMD	84	1,436
HSHI	179	3,391

In particular, those who get excellent scores or demonstrate exemplary participation in the professional and skilled shipbuilding technicians programs, are given opportunities for employment at the companies or the contractors.

Participating in Digital Transformation Projects of Steel Outfitting Contractors

HHI and HMD are participating in the digital transformation projects of steel outfitting contractors promoted by the Ulsan Metropolitan City to enhance productivity, improve the stability of production sites, and resolve labor shortages for SMEs producing steel outfitting installed on ships.

The projects focus on establishing a digital transformation demonstration center for the steel outfitting manufacturing industry, building an AI-based digital twin platform, setting an intelligent flexible process automation system, and cultivating professionals and supporting companies. Especially HHI and HMD participated in this project with the expectation of resolving the workforce aging problem in the upstream industry and strengthening competitiveness in supplying steel outfitting.

Award for Outstanding Contractors

Every year, **HHI, HMD, and HSHI** reward selected excellent contractors that have made remarkable contributions to quality control, production innovation, and business achievements. In 2024, the Integrated Council participated by shipbuilding subsidiaries and contractors awarded 70 selected excellent contractors for the fields of quality, innovation, ESG, etc.

2024 HD Hyundai shipbuilding subsidiaries Integrated Council

HHI and HSHI expanded the scope of selecting outstanding contractors to include overseas suppliers in 2023 and awarded multiple contractors for each procurement field.

Operating Co-Prosperity Fund

HDKSOE and its shipbuilding subsidiaries are operating the Co-Prosperity Fund aimed at reducing the interest burden of contractors with the fund profits generated. In this context, those contractors with excellent technology and high growth potential may take advantage of the Co-Prosperity Fund within a loan limit of up to KRW 7 billion, benefitting from the interest rate reduction, up to 3.4%p lower than commercial financial institutions.

As the importance of Supply Chain ESG Risk Management has increased recently, **HHI, HMD, and HSHI** have introduced a support system where excellent ESG management contractors can receive low-interest loans by using the Co-Prosperity Fund.

Support through Co-Prosperity Fund for 2023

(unit: KRW bil.)

HHI	HMD	HSHI
284.4	57.2	73.5

Operating Joint Labor Welfare Fund

HDKSOE and its shipbuilding subsidiaries have created a joint fund with contractors to support medical expenses, tuition fees for children, and other welfare areas for employees of contractors. As of the end of 2023, **HHI** contributed KRW 2.15 billion to the Joint Labor Welfare Fund, while **HMD and HSHI** contributed KRW 2 billion with the participation of 78 and 89 contractors respectively.

Supporting Welfare Fund

HDKSOE and its shipbuilding subsidiaries have strived to enhance the welfare of contractors through multi-faceted efforts. The companies support school expenses (early childhood education subsidies, high school tuition and operational expenses, university admission and tuition) for the children of contractors. On top of that, the companies provide various welfare funds including New Year and Chuseok bonuses, summer holiday bonuses, incentives for obtaining professional certificates, job proficiency incentives for fitters, and long-service incentives for young employees.

BUSINESS CASE

HHI Root Academy Hall

The area spanning approximately 3.57km^2 where **HHI**'s main and maritime factory premises and around 190 in-house subcontractors are located, has been designated by the Ministry of Trade, Industry, and Energy as the 'Ulsan Bangeojin Shipbuilding and Marine Specialized Complex,' a specialized complex for root industries. HHI opened the Root Academy Hall, a dedicated building to cultivate a workforce tailored to root companies within the production site and support their welfare.

Root Academy Hall is equipped with the latest job training facilities to improve the skills of workers at contractors such as painting training rooms, welding practice rooms, etc. Also, various convenience facilities are provided including a medical checkup center, fitness center, uniform service center, and café for the workers to rest. In particular, the painting training room introduced 4 state-of-the-art VR simulators, allowing workers to practice hard-to-practice painting work like real through virtual reality.

HHI expects that the opening of Root Academy Hall will help contractors to alleviate difficulties in securing skilled workers and at the same time, grow further in terms of quality.

Supply Chain Management

Risk Management

Supply Chain ESG Risk Management

Laying the Foundation of Supply Chain ESG Management

Developing Sustainable Sourcing Policies

HDKSOE and its shipbuilding subsidiaries have declared sustainable sourcing policies to establish a sound and sustainable supply chain, considering human rights management, safety and health, environment, and ethics. To disseminate the sustainable sourcing policies, the companies distribute to contractors the 'Supplier Code of Conduct' and 'ESG Guidelines' that apply to the entire supply chain, receiving pledges of compliance, and operating support programs for contractors.

Developing the Supplier Code of Conduct

Jointly with contractors, **HDKSOE and its shipbuilding subsidiaries** have introduced the code of conduct that contractors should observe to create a sustainable supply chain such as building a safe work environment, respecting the human rights of employees, fulfilling environmental responsibilities, and exercising ethical management. The supplier code of conduct is based on the UN Universal Declaration of Human Rights, UN Convention on the Rights of the Child, and ILO Core Conventions. In cases where there is a conflict between the code of conduct for contractors and domestic or international laws, contractors are required to meet the most stringent requirements.

All Tier 1 contractors in business relationships should comply with the code of conduct while Tier 2 or 3 contractors should be recommended to fulfill their responsibilities of human rights management, safety and health, environment, and ethics according to the same standards.

Operating Conflict Minerals Policy

HDKSOE and HHI have established conflict mineral use policies in accordance with the OECD Due Diligence Guidance. They conduct on-desk surveys on contractors related to the handling or procurement of conflict minerals to check the distribution of conflict minerals within the supply chain. They also conduct online ESG education, on-site assessment, and consulting to improve awareness of conflict minerals.

Requiring Contractors to Comply with Code of Conduct

Contractors should reflect the provisions and requirements stipulated in 'Supplier Code of Conduct' in their operations and decision-making process, and establish plans to reduce risks and take appropriate measures based on mutual consultation.

Moreover, contractors should document their compliance with 'Supplier Code of Conduct' and submit related information (excluding the information prohibited under the Subcontracting Act such as cost, sales, management strategies, and sales-related information) as soon as **HDKSOE and its shipbuilding subsidiaries** request to do so.

Reflecting ESG in Evaluation of Contractor Registration

When registering contractors, **HDKSOE and its shipbuilding subsidiaries** decide whether to register after comprehensively deliberating the results of contractors' self-assessment as well as management evaluation, quality evaluation, and financial evaluation through on-desk and on-site assessment. Factors such as safety and health, environment, ethical management, labor-management partnership, and education are weighted at 15 points (out of 100) in the management evaluation.

Providing Incentives for Excellent Contractors

HDKSOE and its shipbuilding subsidiaries issue 'ESG Excellent SME Certificate' to excellent contractors selected based on the ESG risk assessment. The certified contractors can benefit from financial support such as preferential interest rates, export support such as exploring a market, and technology support such as environment and energy management.

'Sustainable Sourcing Policie' of HDKSOE and its shipbuilding subsidiaries
'Supplier Code of Conduct' of HDKSOE and its shipbuilding subsidiaries
HDKSOE's Conflict Mineral Policies
HHI's Conflict Mineral Policies

Measures against Seriously Violating Contractors

HDKSOE and its shipbuilding subsidiaries distribute the 'Code of Conduct Practice Pledge for Contractors' and receive electronic signatures to make sure that the contractors comply with the code of conduct.

When HDKSOE and its shipbuilding subsidiaries find that a contractor has violated the minimum requirements stipulated in the code of conduct for contractors, the companies can determine this to be a serious breach of duty and take appropriate measures such as termination of contracts or suspension of transactions with the contractor. By signing the code of conduct, contractors consent to the measures described above, such as termination of contracts and suspension of transactions.

Integrated ESG Supply Chain Risk Management

To identify potential risks threatening the sustainability of their supply chain, **HDKSOE and its shipbuilding subsidiaries** have established an integrated supply chain risk management system that combines financial evaluations, supply evaluations, innovation/quality/delivery assessments, and ESG evaluation.

In particular, among the equipment necessary for the production of ships, marine engines, and offshore plants, Tier 1 contractors who supply major foster items requiring specializations are subject to all the evaluations including financial, supply, and ESG evaluations as well as innovation/quality/delivery assessment to minimize disruptions in production that may be caused by Tier 1 contractors.

By doing so, the risks from the financial, non-financial, or ESG-related matters can be identified and evaluated and appropriate countermeasures are developed accordingly. Based on the evaluation results, excellent contractors are gifted with incentives while contractors with lower performance are required to stabilize the discovered issues, where sanctions may be imposed if necessary.

Integrated Supply Chain Risk Evaluation and Management Structure

Category	Financial Evaluation	Supply/Demand Evaluation	ESG Evaluation	Grade Assessment (Innovation/Quality/Delivery Date)
Target	• Tier 1 to 3 contractors among all registered and trading contractors domestically and internationally	• Tier 1 contractors among all registered and trading contractors domestically and internationally	• Tier 1 to 3 contractors among all registered and trading contractors domestically and internationally	• Tier 1 to 3 contractors among all registered and trading contractors domestically and internationally
Type	• Regular/irregular financial evaluation and due diligence	• Impact and urgency evaluation of potential risks such as reputation, disaster, delayed supply and demand	• Registration evaluation, regular evaluation, contractors' self-assessment, self-assessment of the company, due diligence by professional organizations	• Annual regular evaluation
Response and Support	• Suspension of transactions with contractors with poor financial status • Financial support using Co-Prosperity Fund	• Preparation of response measures at each level such as a person in charge, department, and the entire company • Renewal of Tier1 contractors list on an annual basis and establishment of response measures	• Online and offline ESG education for employees and contractors • Selection of excellent ESG contractors, rewards, and financial support	• Rewards and financial support for excellent contractors • Reference of a contractor with a grade of C or lower for 2 consecutive years to the Disciplinary Review Committee for deliberation

Supply Chain Management

Risk Management

Supply Chain ESG Risk Management

Supply Chain ESG Risk Assessment

Supply Chain ESG Risk Assessment Procedures

Based on the code of conduct practice pledge for all contractors, **HDKSOE and its shipbuilding subsidiaries** operate the following procedures for supply chain ESG risk assessment: Distributing guidelines to contractors; Improving awareness and providing professional training; Screening 'significant contractor'; Conducting self-assessment based on Check-list; Visiting contractors for on-site assessment by an independent auditor (the third party organization, external consulting company); Identifying risks and suggesting recommendations; and Providing ESG consulting.

Supply Chain ESG Risk Assessment Process

Code of Conduct pledge	Pledge to comply with the code of conduct through electronic signature for all contractors in business relationships
Guidance on indicators	Explaining guidelines on government's recommendations as well as ESG evaluation and due diligence in consideration of industrial characteristics
Education/ training	Improving awareness and providing professional training for our procurement departments and the contractors
Screening	Identifying 'significant contractors', considering potential ESG characteristics such as business region, type of industry, and supplies
On-desk assessment	Conducting contractors' self-assessment of ESG risk levels based on the guidelines of the companies
On-site assessment	Visiting by an independent auditor (the 3rd party consulting company) to check internal data and inspect sites of contractors
Risk identification	Identifying contractors with potential or high chances of risks from the ESG perspectives
Recommendations for improvement	Improving immediately such risks found in the on-desk and on-site assessment, establishing improvement plans, and presenting recommendations for implementation
Consulting support	Supporting contractors to comply with ESG legal requirements and management systems via the 3rd party consultants, providing data for benchmarking

Guidance on Risk Assessment Indicators

HDKSOE and its shipbuilding subsidiaries operate supply chain ESG risk evaluation indicators in consideration of the principles stated in the UN Universal Declaration of Human Rights, the UN Convention on the Rights of the Child, and the UNGC 10 Principles as well as the characteristics of the shipbuilding industry. Also, they have developed and applied risk assessment procedures and methods by reflecting the government's Supply Chain ESG Risk Management Guideline and the OECD Guidelines for Multinational Enterprises. Their guidelines, containing the supply chain ESG risk evaluation indicator procedures and methods, are provided to contractors before on-desk and on-site assessment.

Risk Assessment Indicator Composition

Category	Assessment Indicators
Environmental	Goal establishment, governance, acquisition of permits/licenses, legal violations, waste disposal, air pollutant management, GHG management, water and wastewater management, noise and vibration management, recycling, energy saving, energy management
Social	Human rights issues, subscription to four major insurance policies, implementation of legal education, protection of pregnant women, employment of minors, grievance handling system, signing employment contracts, dismissal and retirement policies, medical checkup, employment rules, human rights management, freedom of association, safety policies, safety prevention activities, safety inspection, fire training and education, information protection system
Governance	ESG policy, ESG risk management, social responsibility activities, years of service and turnover rate, operation of anti-corruption programs, stakeholder communication, ethics reporting channel, violation of corruption-related laws, violation of fair trade laws

ESG Training for Contractors

HDKSOE and its shipbuilding subsidiaries provide education to the contractors on the importance of ESG management, domestic and international ESG trends, companies' code of conduct structure, supply chain ESG risk assessment indicators and procedures, and response measures to corresponding ESG risk assessment. **HHI**, jointly with the Korea Commission for Corportate Partnership offered capacity-building programs to 335 contractors to respond to supply chain ESG risk assessment.

ESG Training for Procurement Departments

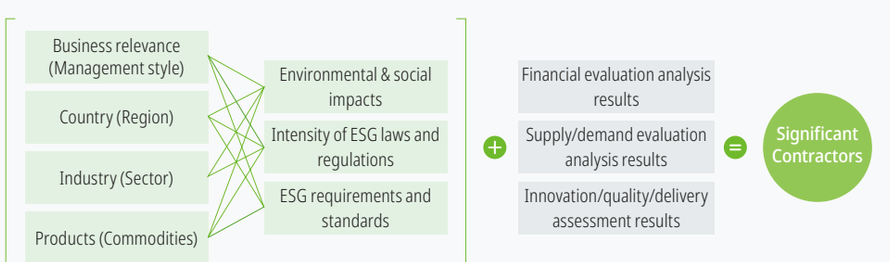
HDKSOE and its shipbuilding subsidiaries also provide professional training on the importance of supply chain ESG risk management and supply chain ESG risk management methodology to the employees of procurement departments and Co-Prosperity-related departments. From 2023, education programs are regularly provided including a monthly ESG report that contains relevant contents such as domestic and international contracting cases and ESG consulting and assessment tools.

Significant Contractors Screening

HDKSOE and its shipbuilding subsidiaries operate Risk Filtering procedures to analyze ESG risk factors with potential or high probability to identify significant contractors. Risk filtering is to comprehensively review the following: environmental and social impacts depending on the business relevance (management style) of contractors; intensity of ESG-related laws and regulations in the country (region) where the business activities are performed; level of ESG requirements specialized or significantly requested in the industry (sector) to which contractors belong; and environmental and social impacts generated when supplies or services produced and delivered by contractors are applied to our products (i.e. ships).

Furthermore, the companies analyze data from financial evaluations, supply and demand assessments, and ratings on innovation, quality, and delivery for existing contractors. Contractors that show low performance levels, limited potential for improvement, or anticipated risk are also identified and managed as significant contractors.

Significant Contractors Screening Criteria



Supply Chain Management

Risk Management

Supply Chain ESG Risk Management

Supply Chain ESG Risk Assessment

On-desk Assessment

Contractors conduct self-assessment of their ESG risk levels once a year by using the Checklist presented on the online system and the ESG Guidelines distributed by the company. Then the ESG risk levels are identified based on the comprehensive reviews of contractors' answers to self-assessment, evidence submitted, and supplementary explanations for self-assessment answers. In addition to identifying potential risks of contractors, the analysis results of contractors' self-assessments are also used to select on-site assessment targets and identify focus areas for on-site assessment.

The companies will enhance the reliability of on-desk assessment results by advancing the online system used for the self-assessment to increase convenience for contractors while continuously providing education on self-assessment participation and response to contractors.

On-site Assessment

Targets of on-site assessment are selected based on the comprehensive review of business relationships such as transaction period with contractors or specialty of delivered products, expected risks according to the risk filtering results, and analysis results of ESG risk on-desk assessment.

On-site assessment for contractors are led by the third-party expert organization which is independent of the companies. To rightly identify the ESG risk levels of contractors, the organization performs document reviews of internal regulations or policies, interviews with managers and workers of contractors, and site tours. Then the risk factors discovered during the on-site assessment by the third-party organization are finally determined after the confirmation and review of representatives of contractors.

Risk Identification and Recommendation for Improvement Planning

ESG risk factors are identified by combined results of ESG risk on-desk and on-site assessment. For contractors with potential significant risk factors or high chances of risks, improvement measures are provided immediately during the on-site assessment while recommendations to establish improvement plans are made for the risk factors requiring considerable time and effort.

In establishing improvement plans, sufficient consultations with contractors are undertaken regarding implementation schedules and methods for each improvement task, and performance goals to be achieved. The level and scope of improvement plans will be determined within the range of resources and capacities possessed by contractors. After improvement planning, the companies monitor whether the contractors are properly implementing improvement activities according to the plan. If any grievances or difficulties are found during the monitoring, the companies provide additional support such as correction and supplement of the improvement plans and provision of necessary information for improvement activities.

Major Risk Factors and Improvement Directions

Risk identification indicators	Improvement directions	Improvement Monitoring
Environmental Management Oversight System	• Establishing and implementing environmental impact and low-carbon goals • Supporting education and implementation of GHG management system	• Promoting support for contractors and improvement in evaluation-based ESG levels - Providing materials and guidance tailored to vulnerable areas of each contractor - Utilizing industry-specific indicators in the registration and evaluation of contractors
Human rights/human resources policies	• Supplementing systematic weaknesses such as the Human Rights Declaration (Charter), grievance handling procedures	
Ethical management system	• Supplementing weaknesses in the Ethical Management Declaration (Charter), conflict of interest system and procedures	

Supply Chain ESG Risk Assessment Results for 2023

(Unit: no. of contractors)

Category		HDKSOE	HHI	HMD	HSHI
Contractors classification	Tier-1 contractors	50	3,275	2,110	1,418
	Significant contractors in Tier-1	25	314	291	172
	Total spend on significant contractors in Tier-1 (%)	18	58	33	22
ESG risk assessment	Total number of significant contractors assessed via on-desk /on-site assessments	0	37	2	1
	Number of significant contractors assessed with substantial actual/ potential negative impacts	0	37	2	1
	Significant contractors with agreed corrective action /improvement plan	0	37	0*	0*
Support for level improvement and capacity building	Total number of significant contractors supported in corrective action plan implementation	0	37	0	0
	Significant contractors participating in ESG capacity-building training	0	199	0	0

* Scheduled to establish improvement plans from 2024

Supply Chain Management

Risk Management

Supply Chain ESG Risk Management

Supply Chain ESG Risk Assessment

ESG Consulting and Support for Improvement

The companies provide support activities such as ESG consulting to enhance the ESG management levels of contractors that fail to meet the requirements or have significant identified risks as a result of ESG risk on-desk and on-site assessment. ESG consulting is provided in a tailored way to small and medium-sized contractors by identifying improvement tasks for each significant risk factor faced by contractors and providing the best practices (including benchmarking cases) with detailed task implementation guidance.

In addition, **HDKSOE and its shipbuilding subsidiaries** promote improvement activities for risk factors inherent in most contractors through ESG risk assessment results as well as separate examination and feedback collection. In 2023, the companies conducted improvement activities including improving living conditions for foreign workers from contractors, providing opportunities to participate in religious activities, and building safety management capacity of in-house subcontractors.

ESG Improvement Support Activities

HHI	• Conducted dormitory remodeling for foreign workers from in-house subcontractors - Provided spaces for 320 residents through dormitory remodeling - Provided customized meals for foreign workers and improved living conditions such as installing a fitness room
HMD	• Conducted activities to ensure cultural diversity for foreign workers from in-house subcontractors - Provided opportunities to 80 Sri Lankan workers to participate in Buddhist service to alleviate their homesickness and broaden religious activities and understanding
HSHI	• Operated safety personnel support system for in-house subcontractors - Provided training and education for safety personnel to establish an autonomous safety management system for contractors and granted management support funds for personnel operations (KRW 3.4 billion annually)

BUSINESS CASE

Strengthening Functions and Settlement Supports for Foreign Workers

HHI operates the Co-Prosperity Human Resources Supporting Department in charge of not only recruiting foreign workers, but also providing administrative support, safety management support, interpretation, and counseling for grievances to support foreign workers in their early settlement and daily lives. In particular, HHI established the Foreign Support Center to help communications of foreign workers at every production site with interpretations of 8 languages. In addition, regular skill assessment and supplementary training are conducted for foreign workers from contractors, and especially for fitting and welding fields, qualification management exams have been strengthened to enhance technical capabilities.

HMD has promoted the conversion of foreign trainees (D-4-6 visa) into skilled workers (E-7-3) and provided theoretical and practical training for three occupations such as welding, painting, and electrical work. The trainees who acquired professional certificates and passed the practical test and Korean language proficiency test are deployed in the shipbuilding works. In 2023, about 1,000 foreign workers including 650 skilled workers (E-7) and 300 unskilled workers (E-9) were secured.

HSHI has newly formed and operated the Co-Prosperity Department to systematically supply, cultivate, and settle foreign workers from contractors. Moreover, it operates an in-house Foreign Worker Support Center where interpreters from major countries support interpretation, counseling, and safety management for foreign workers. HSHI will advance support for their settlement to establish a stable supply system for the production workforce that responds to environmental and ship-type changes, provide capacity building and language education for early deployment of foreign workers, and help the trained workers to be integrated into the local community.

Strategies to Spread ESG Management among Contractors

HDKSOE and its shipbuilding subsidiaries classify contractors based on business importance such as delivery of major supplies, business scale, and size. They have prepared requirements and support for each classification and encouraged the spread of ESG management among contractors. For small and mid-sized contractors in Tier 1 and 2, establishing an ESG implementation organization and ESG data management system has been required. In particular, mid-sized contractors in Tier 1 and 2 are also required to publish a sustainability report to disclose ESG information and obtain a third-party verification. In addition, the companies promote various support activities such as providing analysis results on external environmental changes in the ESG sector, and on the prospects for the introduction of laws and regulations so that all contractors can establish customized ESG strategies and manage their performances from mid- and long-term perspectives.

Strategies to spread ESG Management for Classified Contractors

Classification	Requirements and Supports
Small and mid-sized Tier 1, 2 Contractors	[Requirements] Establishing an implementation organization - managed by the CEO or Directors
	[Requirements] ESG data management - Governance: operational status of BoD, legal violations, etc. - GHG: energy consumption, carbon emissions, etc. - Safety and human rights: industrial accident occurrences, training status
Mid-sized Tier 1, 2 Contractors	[Requirements] ESG information disclosure - Publication of sustainability report - Third-party verification of disclosed information
All contractors	[Support] Establishing ESG strategies - Sharing of analyses on external conditions, laws/regulations trends

Measuring the Effects of ESG Consulting Support for Contractors

To create a sustainable supply chain, **HHI** has promoted the 'ESG Support Project for Contractors' by helping SMEs to build ESG management capacities and providing consulting to enhance responses to supply chain inspection regulations. First, it developed indicators to assess the ESG management levels of contractors before consulting and provided customized consulting based on the assessment results for areas of significance or urgency. To understand the effectiveness of consulting, an additional assessment was conducted after the consulting, displaying an improvement in compliance with indicators by an average of 41.2%p.

Effects of HHI's ESG Consulting for Contractors[1]

Classification	Compliance rate before consulting	Compliance rate after consulting	Improvement effects[2]
Small-sized contractors (19ea)	46.2%	87.2%	KRW 6,386 million
Mid-sized contractors (1ea)	44.7%	91.1%	KRW 447 million
All contractors (20ea)	46.2%	87.4%	KRW 6,833 million

1) Based on 20 contractors in Korea Commission's consulting program
2) Total penalties and fines that may be imposed on contractors if no improvements have been made through ESG consulting

Metrics & Targets

Supply Chain Management Goals (Unit: no. of contractors)

Category	Contractors supported with improvement consulting in 2023	Goals for 2024
HDKSOE	None	2
HHI	40	20
HMD	None	3
HSHI	None	8

Quality Management

Governance

Quality Management Governance

Roles and Responsibilities

Executive Management Responsibility

The management of **HDKSOE and its shipbuilding subsidiaries** recognize that the products and services provided by the group are directly connected to customers' safety, convenience, and efficiency. In this regard, we perform the following roles to ensure the stability and reliability of our products and services

- Establishing the group's direction and policies for quality management
- Directing and supporting effective operation of the quality management system
- Decision-making for reviewing and improving quality management performance

In addition, throughout the entire process from design, development, and production to after-sales service of all products, the management supports all employees, in-house and outside contractors, and suppliers in internalizing the quality mindset and exercising customer-oriented quality management based on strict quality control.

Role of Dedicated Organizations

To strengthen the quality competitiveness of each business, **HDKSOE and its shipbuilding subsidiaries** operate dedicated quality management organizations at the business unit level, which perform the following roles

- Establishing the quality assurance system across the entire value chain providing products and services and executing strict quality control
- Setting the quality management standards reflecting international standards, legal requirements, and customer needs, and developing processes and procedures to meet such standards
- Monitoring the entire value chain for continued quality improvement, and collecting and analyzing quality-related data to identify problems in quality issues and suggest improvement measures

Furthermore, a separate quality planning organization is operated to maintain an unrivaled quality level with competitors and create quality synergies among affiliates, which supports the decision-making process of the management and builds a cooperative framework among dedicated quality management organizations.

Operation of Quality Management Consultative Bodies

HDKSOE and its shipbuilding subsidiaries operate various quality management consultative bodies to continuously secure peerless quality competitiveness for the business based on a consistent quality direction. These consultative bodies monitor business activities based on shared quality management direction, exchange current issues of each company, and continue to identify and promote quality improvement activities such as joint initiatives of 'Securing Homogeneous and Standardized Quality', and 'Expanding Free Warranty System' to create synergies among group companies.

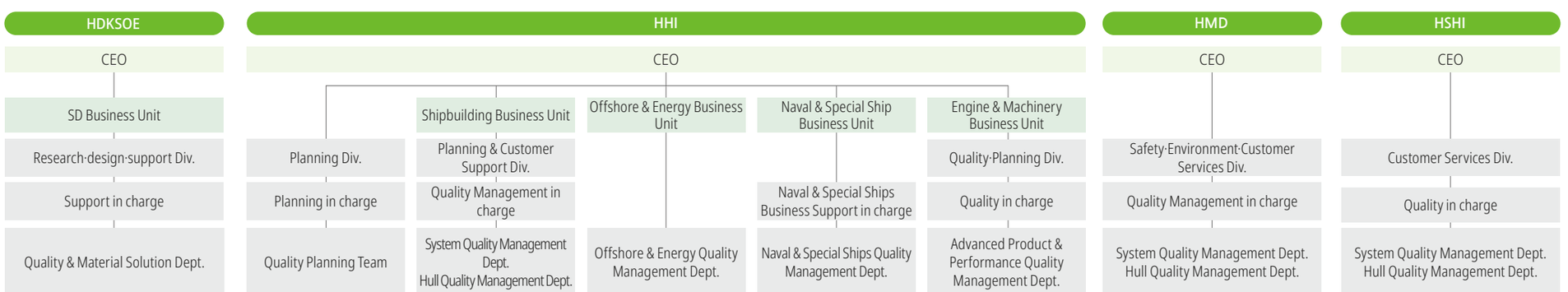
- Exchange meetings for quality management executives and dept. leaders (annually)
- Sub-divisional working committee (annually for each sub-division)
- Consultative body for joint responses to quality issues (year-round)

In 2024, in particular, a remote workshop was first introduced, titled 'Virtual Quality Workshop for Shipbuilding Affiliates' to share the best initiatives of each company such as 'Risk Management Using Digital Twin', and hold profound discussions among many working-level employees on how to strengthen quality management and cooperation at the worksite.

Based on these various quality management cooperation mechanisms, we actively and continuously promote communication to achieve customer satisfaction, respond to quality management issues, and enhance quality premium according to the changing management environment.

2023 2nd Half Quality Exchange Meeting for Executives of Shipbuilding Affiliates

Quality Management Structure



Quality Management

Strategy

Direction for Quality Management

Laying the Foundation for Quality Management

Establishing Quality Policies

HDKSOE and its shipbuilding subsidiaries have established quality policies for each company under the shared quality management directions of 'Stable Quality', 'Supply Chain Management', 'Improved Profit', 'Self-Reliant Quality', and 'Quality Synergy.' Based on these quality policies, we establish strategic goals to provide excellent products and services to customers and continuously enhance quality premium. To attain the targeted goals, various activities are being carried out.

Quality Management System

HDKSOE and its shipbuilding subsidiaries strive to meet customer demands, enhance customer satisfaction, and improve the quality of their products and services. In this regard, each company obtained the ISO 9001 certification, an international standard for quality management systems. Through this, HDKSOE and its subsidiaries are doing their utmost to increase the quality competitiveness and provide the world's best quality products and services to their customers, thereby taking their trust in the group to the next level.

Other Quality-related Certification

HHI, HMD, and HSHI have each obtained the ISO 3834-2 certification, an international standard for welding quality management systems. With the certification, the subsidiaries are globally recognized for their excellent welding quality.

In addition, **HHI** has obtained quality certifications required by its business nature. For naval & special ship business, HHI has acquired the 'Defense Quality Management System', certified by the Korean Defense Acquisition Program Administration. In the engine and machinery business, HHI has obtained the 'Mechanical Nuclear (MN)' and 'Electrical Nuclear and Instrumentation Control (EN)' certificates issued by the Korea Electric Association in accordance with the Korea Electric Power Industry Code (KEPIC). For the Offshore & Energy business, HHI has acquired five non-nuclear ASME certificates (U, U2, S, PP, A), validating its quality systems for each business unit and its expertise.

Based on these certifications, **HDKSOE and its shipbuilding subsidiaries** keep striving to enhance customer satisfaction by ensuring the safety and reliability of the products delivered to customers. Moreover, we will lay the foundation for reliable quality management by identifying and acquiring additional quality-related certifications required for each business at the right time.

Quality Policies by Group Companies

HDKSOE

- Minimizing quality failure costs
- Stabilizing value chain capacities
- Advancing preventive quality management

HHI

- Achieving Zero quality failure
- Stabilizing supply chain quality
- Promoting smart quality innovation
- Establishing a reliable quality system and expanding delegated inspection

HMD

- Operating a sustainable quality management system
- Optimizing processes through Quality 4.0
- Securing DB-based quality transparency
- Enhancing quality with automation technology
- Internalizing core production technologies

HSHI

- Minimizing quality failure with preemptive quality management
- Expanding self-inspection through digital-driven inspection innovation
- Stabilizing supply through minimized quality risks for outsourced products
- Securing quality competitiveness with enhanced quality capacities of workers

Third-Party Certification for Quality Management System

Classification	Certification Standard	Certifying Body	Validity Period	Scope of Certification*
HDKSOE	ISO 9001:2015	DNV	Jul. 17th, 2023 ~ Jun. 30th, 2026	100%
HHI	ISO 9001:2015	DNV	Apr. 24th, 2023 ~ Feb. 23rd, 2025	100%
HMD	ISO 9001:2015	LR	Jun. 28th, 2021 ~ Jun. 27th, 2024	100%
HSHI	ISO 9001:2015	DNV	Dec. 1st, 2022 ~ Nov. 30th, 2025	100%

* HDKSOE: certified sites – Ulsan R&D Building, GRC Headquarters
HHI: Ratio of employees in the certified sites subject to the scope of certification (design, production of products)
HMD: certified sites – Headquarters, Yongyeon Plant, Onsan Plant, Mohwa Plant
HSHI: certified sites – Headquarters, Daebul 1 Plant

Quality Management

Strategy

Direction for Quality Management

Implementation and Expansion of Quality Management

Minimizing Quality Failure Costs

Since HHI introduced Quality Failure Costs for the first time in this industry, **HDKSOE and its shipbuilding subsidiaries** have expanded the concept to all affiliates for more effective management. Quality failure costs are managed for 8 subcategories of the major value chains such as design, procurement, production, and after-sales service. Every year, challenging goals are set for each subcategory to ensure the timely delivery of high-quality ships to customers.

To brace for the risks of quality failure costs resulting from internal and external changes in the business environment, we will stick to basic quality such as adhering to processes, stabilizing quality, and managing the supply chain. We will also promote multi-faceted activities to prevent such risks including joint efforts for improvement.

* Quality Failure Costs: Costs incurred due to quality-related issues arising before or after the delivery of products and services to customers

Strengthening Self-reliant Quality System

HHI, HMD, and HSHI have established a stable quality level and system through their shipbuilding records accumulated for the past decades, laying the foundation for customer trust.

Building on the deepened mutual trust, they introduced the 'Hi-TRUST' (Customer Delegated Inspection System), a ship quality assurance program, and has made the efforts to expand delegated inspections to customers across the entire stages from design, construction, and post-delivery of a ship.

In addition to strengthened self-reliant quality management, various policy-making activities will be continued to establish and expand self-reliant quality management systems such as the introduction of smart quality inspection technology, and the provision of transparent quality information.

Stabilizing Supply Chain Quality

HDKSOE and its shipbuilding subsidiaries conduct various support activities to ensure stable quality and increase competitiveness of contractors. In this context, we provide not only regular quality checks and technology consultation, but also production know-how and free technology training to support the contractors in making contractors' own efforts to build quality capacities.

Furthermore, we have been consolidating bonds with contractors by providing training for quality issues that contractors might encounter during production, the best practices and sharing relevant information.

Activity	Description
Visits and feedback of quality management executives and dept. leaders	Discussing improvement measures for major repetitive quality issues Listening to requests for improvement and complaints from contractors
Yard invitation meeting for quality management personnel at contrators	Understanding the installation and operation process of supplier materials Facilitating communication through listening to VOC and meetings
Quality checks on contractors with excessive A/S claims	Visiting the contractors to improve and prevent recurrent A/S claims

A ship quality assurance program 'Hi-TRUST'

Operating a customer satisfaction survey platform

HHI, HMD, and HSHI conduct phased surveys tailored to the shipbuilding schedules of customers to understand the level of customer perception and use such understanding in their management activities to meet customer satisfaction.

In particular, from 2023, the subsidiaries have standardized survey formats to capture objective customer satisfaction levels. Through this, the subsidiaries plan to further upgrade quality management by identifying areas and measures for improvement at the stages following the construction and delivery.

Customer Satisfaction Survey Areas

Classification		Areas
Construction Phase	Production Process	Design, production (hull, outfitting, painting, test operation)
	Project Management	Quality, contract, and administrative issues
After Delivery	Ship Quality	Hull, outfitting, accommodation
	Service Quality	A/S (procedures & results, service personnel)

Customer Satisfaction Survey Results (those for shipbuilding subsidiaries compiled)

Comprehensive satisfaction level

79.4points

Satisfaction at construction phase

79.1points

Satisfaction after delivery

80.1points

Risk Management

Quality Risk Management

Quality Risk Management System

Risk Management for Initial Equipment and Technologies

HDKSOE and its shipbuilding subsidiaries are rigorously managing quality-related risks that may arise when developing initial equipment and technologies applied to Novel Ships and low and zero carbon (LZC) ships.

Especially the 'Initial Equipment Application Risk Management Task Force' is operated to stabilize products and technologies whose activities encompass all performance check activities across the entire areas from design, production, and commissioning. Furthermore, the TF continuously monitors the performance of initial equipment and technology applications after the delivery of products to reduce risks.

Initial Equipment Application Risk Management TF

Members	Executive Officer and working-level employees from research, design, procurement, production, test operation, and quality management at the HDKSOE and its shipbuilding subsidiaries
Roles	Sharing the status of initial equipment application from design to delivery of a ship and identifying and managing risks for each initial equipment
Key Operations in 2023	Categorized the management criteria for newly applied initial equipment and systems to monitor each phase including design, production, and commissioning; shared key risks to tackle potential problems; and minimized risks by reflecting improvement measures when applying initial equipment and systems to other ships

Quality Management

Metrics & Targets

Quality Management Achievements and Plans

Quality Management Achievements in 2023 and Plans for 2024

Achievements and Plans of HDKSOE and Its Shipbuilding Subsidiaries

Classification	Major Achievements in 2023	Plans in 2024
HDKSOE	**(SD)** • Introduced and operated Quality Review Meetings	**(SD)** • Establishing DB for quality issues and enhancing core quality management for each segment
HHI	**(Shipbuilding)** • Delivered the world's first Methanol-fueled large container ship (Jan. 2024) **(Offshore & Energy)** • Realized business automation using Robotic Process Automation (RPA) (14 cases) **(Special ships)** • Awarded Government commendation for improving defense capacity **(Engine)** • Became the world's first to achieve 200 million horsepower in the accumulative 2-stroke engine production • Awarded 3 gold prizes and 1 silver prize at the National Quality Control Circles Competition • Achieved 15,000 units of its own-developed HiMSEN engine	**(Shipbuilding)** • Strengthening self-reliant quality assurance system through digitization and expanded sharing of quality information • Establishing a quality prevention system using Palantir • Exploring and distributing quality content for foreign workers in various languages **(Offshore & Energy)** • Advancing and Improving the efficiency of the Project Completion System (PCS)
HMD	• Awarded 1 gold prize and 2 silver prize at the National Quality Control Circles Competition • Delivered the world's first Methanol-fueled container ship	• Transitioning of quality data (Quality 4.0 initiative) • Promoting System Optimization Process Project • Transferring core production technologies through Technical Quality Consulting
HSHI	• Awarded 2 gold prizes and a person of merit prize at the National Quality Control Circles Competition • Certified factory for 'Hi-TRUST', an outside double pipe connection shop • Obtained the first approval for PAUT (Phased Array Ultrasonic Test) application to the welded joints of SUS pipes	• Fostering foreign quality personnel and operating a dedicated outside quality organization to stabilize internal and external quality • Enhancing data-based quality • Responding to initial quality risks preemptively (Novel ship, etc.)

World's 1st delivery of Methanol-fueled large container ship (HHI)

World's 1st to achieve 200 million horsepower in accumulative production of 2-stroke engine (HHI)

World's 1st delivery of Methanol-fueled container ship (HMD)

BUSINESS CASE

Selection as World's Best Ships

A total of 10 ships* built by **HHI, HMD, and HSHI** have been selected as '2023 World's Best Ships' by the Royal Institution of Naval Architects (RINA), a renowned British maritime and shipbuilding publication. HDKSOE's shipbuilding subsidiaries have been producing World's Best Ships for 41 consecutive years since 1983, and until now, a total of 196 ships have been officially recognized for exceptional shipbuilding technologies and quality competitiveness. Through tireless R&D efforts toward higher quality and performance, the companies will be committed to customer satisfaction, making the world's shipbuilding and shipping industries naturally accept the obvious fact that 'HD Hyundai's Ships = Masterpieces.'

Record of Selection as World's Best Ships: Total 196 ships

* HHI 4 ships: 1 LNG carrier, 1 LPG carrier, 1 containership, 1 product oil carrier
HMD 3 ships: 2 containerships, 1 LNG bunkering Ship
HSHI 3 ships: 1 LNG carrier, 2 Crude-oil carriers

Quality Improvement Training for External Contractors

HSHI organized a knowledge-sharing program jointly with the Jeonnam Shipbuilding Marine Equipment Association for about 60 production managers from its contractors in Mokpo and Yeongam for 13 sessions for three months. The program provided professional knowledge necessary for their job performance such as quality of ship blocks, issues related to outfitting installation, and quality management methods.

Completion Ceremony of Quality Support Consulting for External Contractors

Optimization of Painting Works

HDKSOE, HHI, and HMD have signed a 'Memorandum of Understanding (MOU) on Optimizing Painting Construction for PC Tanker' with DNV (Norwegian Classification Society) and LR (Lloyd's Register in the U.K.). Accordingly, HDKSOE, HHI, and HMD will initiate the development of paints and painting procedures until the 2nd half of this year for LR2-class PC Tanker cargo holds, while DNV and LR will verify the safety and reliability of this technology.

MOU Signing Ceremony to develop technology for optimizing PC tanker painting construction

Social Contribution

Governance

Social Contribution Governance

Roles and Responsibilities

Social Contribution Council

The Social Contribution Council of **HD Hyundai**, as a decision-making body determining social contribution activities at the group level, sets the basic direction and policies for the group's social commitment. The Council is participated by the CEOs of **HDKSOE and its shipbuilding subsidiaries** to review group-wide social contribution activities and establish goals and plans.

Social Contribution Steering Committee

HDKSOE and its shipbuilding subsidiaries operate the Social Contribution Steering Committee, consisting of the heads of each company's social contribution departments. The Steering Committee discusses overall social contribution activities of the group and the operation of the HD Hyundai 1% Nanum (Sharing) Foundation.

Social Contribution Structure

Social Contribution Council

Chair: HD Hyundai CEO
Members: CEOs of Hyundai companies (Including HDKSOE and its subsidiaries)

Social Contribution Steering Committee

Chair: Team Leader of CSR Planning Team(HDKSOE)
Members: Department Leader at HDKSOE and its subsidiaries

HD Hyundai 1% Nanum Foundation

HD Hyundai 1% Nanum Foundation was established with shared intention of employees to donate 1% of their salaries. **HDKSOE and its shipbuilding subsidiaries** have also joined this initiative. The contributions, donated with the good intention of employees, are used to implement various social contribution programs of HD Hyundai Group.

BUSINESS CASE

HD Hyundai Hope Foundation

HD Hyundai established the 'HD Hyundai Hope Foundation' in 2024 to console grieving families of workers who lost their lives in tragic shipbuilding accidents and fulfil its social responsibilities. To maintain fairness and transparency in operating the Foundation, directors of the board are selected mostly from outside the group. The Foundation carries out various activities to comfort the pain and sorrow of the bereaved families.

HDKSOE and its shipbuilding subsidiaries also joined the group's initiative to establish the HD Hyundai Hope Foundation. In particular, HD Hyundai Heavy Industries, HD Hyundai Mipo, and HD Hyundai Samho donated funds for the Foundation. It plans to focus on providing scholarships for college-aged children of the families affected by serious accidents. The Foundation will also provide legal assistance to the bereaved and support low-income families with financial difficulties.

Social Contribution Directions of HD Hyundai 1% Nanum Foundation

Happy Family
· Happy Meal for Elders
· Heating Oil Support

"Happy Family" project supports the underprivileged with various social programs.

This project provides 'Happy Meal' to elders in difficult circumstances and support vulnerable households with 'Heating Oil Support' during the cold winter.

Happy Donor
· Happy Supporters
· HD119

"Happy Donor" project can be represented as Happy Supporters, where the employees of the Group may suggest community services suitable to each region. This program adds significance with high sustainability.

Meanwhile, HD119 provides emergency relief activities in case of unexpected accidents or natural disasters by offering financial or material support and dispatching employee volunteer teams.

HD HYUNDAI NANUM Foundation

Dream Future
· Dream Place
· Dream Academy
· Dream Harmony

"Dream Future" is a recently established project that helps children in institutional care, which was selected by the donors after gaining an approval rate of 41% from the survey.

To ensure the stable settlement of children in welfare facilities, we have established an integrated platform with a wide range of support from the protection stage to financial independence.

Dream Partner
· HD HYUNDAI Honor Award
· I'm Donor
· Biological Specimen Producer Course for the Disabled
· Forest Wedding in National Parks

"Dream Partner" seeks to deliver the value of sharing to a wide range of stakeholders.

We reflect the donors' opinion (including our workers) as in the "HD Hyundai Honor Award" and "I'm Donor" project, and provide opportunities for employees to directly participate in sharing activities, such as the MZ Volunteer Group and the Sharing Flea Market.

Social Contribution

Strategy

Directions for Social Contribution

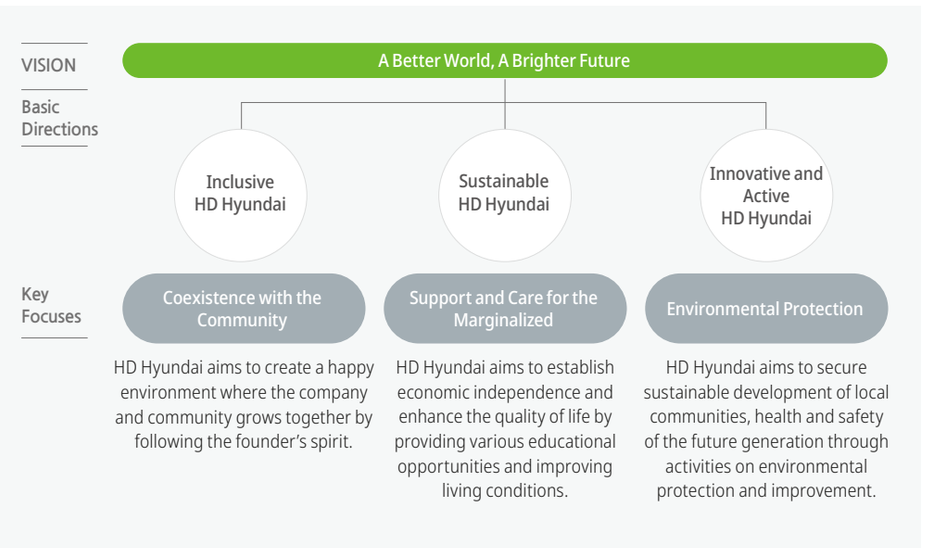
Social Contribution Vision and Core Values

Social Contribution Vision

HD Hyundai sets 'Sustainability', 'Inclusiveness', 'Innovation and Action' as key directions to realize 'A Better World, A Brighter Future', and has continued its contribution to marginalized people and local communities. In addition, HD Hyundai pays careful attention to local communities to attain UN Sustainable Development Goals (UN SDGs) through its social contribution activities.

HDKSOE and its shipbuilding subsidiaries, beyond simple donation, encourages active participation of our employees in spirit of sharing to continue our efforts toward a better future.

Core Values of HD Hyundai Social Contribution



HDKSOE Social Contribution Activities

Sharing Event for Disabled People

HDKSOE co-organized an event with the Korea Association of Persons with Physical Disabilities (KAPPD) to promote communication and harmony with physically disabled people living in Seongnam-si on Nov. 11th, 2023, in celebration of the Day of People with Disability. During the event participated by about 200 disabled people and volunteers, HDKSOE conveyed a warm message of gratitude and support by holding recreational activities, sharing of goods, and presenting awards. Moreover, to enhance welfare of the disabled people, HDKSOE offered basic necessities worth KRW 5 million to the participants.

The 23rd Anniversary of the Day of People with Disability in Seongnam-si

Soccer Class for Vulnerable Children

HDKSOE donated KRW 50 million to 'Soccer Class for Vulnerable Children in Seongnam-si', jointly operated by the Seongnam FC and Good Neighbors, a social welfare organization. HDKSOE also provided about 300 vulnerable children with the opportunities to watch Seongnam FC soccer game, and 75 children with coaching opportunity. Through various activities, HDKSOE supported the children's dreams.

Soccer Class for Vulnerable Children 'Dream Eleven'

Blood Donation Campaign

Employees of **HDKSOE** have been actively participating in the blood donation campaign regularly organized at the group level. In 2023, a total of 70 employees joined the blood donation campaign. The certificates received from the campaigns were delivered to the Korea Childhood Leukemia Foundation and the Korea Pediatric Cancer Foundation to be used to save medical expenses for children with cancer.

Blood Donation Campaign

Social Contribution

Strategy

Directions for Social Contribution

Social Contribution Activities of HHI

Talent Donations for Vulnerable Groups

HHI Technical Education Institute provides talent donations to vulnerable groups in Dong-gu, Ulsan-si in cooperation with the Ulsan Dong-gu Volunteer Center. Technicians, including a gold medalist of WorldSkill, used their advanced skills to provide supports necessary for the 2nd generation of vulnerable groups. They provided safer and more convenient living environments to vulnerable households by installing cabinets, replacing shower taps and toilets, and cleaning pipes. Moreover, the HHI Association of Master Craftsman volunteer every year to repair seven or eight selected houses for the vulnerable in Dong-gu, Ulsan-si.

Talent Donations for the Vulnerable

Supporting Job Creation for Disabled People

HHI donated KRW 10 million to Maeari, a social welfare organization in Ulsan-si. This vocational rehabilitation organization provides assistance to people with severe disabilities for their financial independence. As of 2023, HHI has been supporting Maeari for 3 years. The contributions are mostly used for operational costs for 'Ecopresso', a café where about 10 baristas with hearing and development disabilities are working. The profits from the café are used to support financial independence of workers with disabilities. In addition, HHI has continuously carried out various social contribution activities including the spring picnic called the 'Ottogi Party' (supporting about 50 disabled people) and 'Brain Sports Competition for Disabled People' (supporting about 80 disabled people).

Donation Ceremony to Maeari

Delivery of Blessing Bags for Holidays

HHI has delivered blissing bags for needy neighbors in the local community for the past 30 years as of 2024. To mark New Year's holidays in 2023, HHI donated gift certificates worth KRW 42.5 million to Dong-gu Office of Ulsan-si. The donations were then distributed to about 850 underprivileged households in the form of traditional market gift certificates. Furthermore, HHI visited 63 social welfare facilities including senior community centers to deliver care kits worth about KRW 15.8 million, while cheering soldiers up by granting solatium totaling about 15 million to 4 nearby military bases twinned with HHI.

Delivery of Blessing Bags for New Year Holidays

Social Contribution Activities of HMD

Donation of Recycling Toys

HMD presented 1,000 sets of 'Recycling Toys' made from recycled plastics to vulnerable children. After the CEO and other employees collect, dismantle, and sort the unused plastic toys, they are forwarded to a social enterprise located in Ulju-gun which manufactured new toys through recycling. Through this virtuous cycle of resources, the social contribution program spent KRW 19.8 million for toy donation to 75 children.
In addition, HMD implements 'Happy Supporters' project where the contributions of KRW 22 million was donated in June 2023 to ensure emotional stability and cultural activities for the vulnerable groups.

Donation Ceremony for Toy Recycling Project

Sharing for Vulnerable Groups

HMD offered KRW 9 million donations to the Ulsan Dong-gu General Social Welfare Center to share side dishes with vulnerable groups. In addition, the employees personally made Kimchi and delivered it to 750 vulnerable householders including senior citizens living alone, people with disabilities, teen heads of households, and single-parent family to realize a value of sharing. In addition, HMD donated KRW 9.6 million to Ulsan Gwangmyeong Won, a rehabilitation facility for people with visual disabilities in Ulsan-si, to support them with safer and more comfortable lives. The contributions will be used as the operational cost for the facility to help blind people.

Sharing Kimchi and Side Dishes for Vulnerable Groups

Lending Farms a Hand

HMD provided a helping hand to rural areas by visiting farms in Ulju-gun, Ulsan and helped the garlic harvest. About 20 employees volunteered to assist local farms and after the volunteering work, they purchased agricultural products worth KRW 900,000 directly from the farms. Then they donated such agricultural products to welfare facilities within the local community, continuing the good deeds.

Volunteering in Garlic Harvest in Ulju-gun

Social Contribution

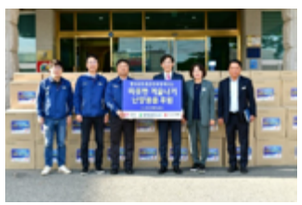
Strategy

Directions for Social Contribution

Social Contribution Activities of HSHI

Donation of Care Kits for Low-income Class

Since 2021, **HSHI** has supported economically difficult neighbors to have a warm winter by implementing the warm winter project for the low-income class living in Yeongam-gun and Mokpo-si. In 2023, HSHI donated KRW 23 million worth of carbon mats to 210 low-income households including basic livelihood recipients and senior citizens living alone.
Moreover, as part of social contribution efforts by the HD Hyundai 1% Nanum Foundation, HSHI offered snacks, together with Good Neighbors, to about 1,500 children in 58 local child care center in Yeongam-gun and Mokpo-si on the occasion of Children's Day. On top of that, HSHI makes multi-faceted efforts to help children realize their dreams by providing a cumulative KRW 750million for surgery and medical bills of children with leukemia or cancer.



Donation of Heating Supplies for a Warn Winter

Environment Cleanup Activity

Employees of **HSHI** Ship Commissioning Department carried out marine environment cleanup activities in cooperation with the Regional Office of Oceans and Fisheries and the Korea Coast Guard Station. The employees collected marine litters at the seashore near the Jindo Port, removed hazardous materials, and created carbon-absorbing plants to contribute to recovery of marine ecosystem. Moreover, HSHI provided an environmental education program to the participating employees to raise their awareness about environmental protection.

Environment Cleanup Activities along the Seashore of Jindo Port by HSHI Ship Commissioning Dept.

Foreign Volunteers

HSHI launched 'Foreign Residents Volunteer Group' in Yeongam-gun with the aim to increase the sense of community among the foreign residents and to create foreigners' positive images among local residents. The Volunteer Group, after the inauguration ceremony, carried out environment cleanup activities around the Daebul Housing Complex in Samho-eup, improved housing environment, and patrolled to prevent crimes. HSHI plans to conduct six or more social contribution activities every year in connection with nearby local communities.

Foreign Residents Volunteer Group in Yeongam-gun

BUSINESS CASE

Overseas Social Contribution Activities

HD Hyundai Vietnam Shipbuilding (HVS), the overseas subsidiary of HMD, donated houses to nine households in Ninh Tan and Ninh Sim areas in collaboration with local leadership, as part of the Great Solidarity Housing Construction Program led by Vietnam Fatherland Front Committee in Ninh Hoa. Houses were provided to poor, near-poor, and marginalized households whose houses were deteriorated, damaged, and beyond repair to ensure safe living environment during frequent rainy seasons in Vietnam. Furthermore, HVS donated USD 11,614 (KRW 15.86 million) worth of scholarship to 14 elementary and middle schools as well as kindergartens to increase educational access for marginalized people in Ninh Hoa area.

Improving Deteriorated Houses for Marginalized People in Vietnam

Donation of Scholarships for Elementary, Middle, and Pre- Schools of Vietnam

Metrics & Targets

Social Contribution Metrics and Targets

Goals and Achievements

Classification		2023 Goal	2023 Achievement	2024 Goal
HDKSOE	Hours of Volunteering	840 hrs	811 hrs	1,210 hrs
	Expense for Social Contribution Projects	KRW 180 million	KRW 60 million	KRW 210 million
HHI	Hours of Volunteering	15,916 hrs	11,383 hrs	12,744 hrs
	Expense for Social Contribution Projects	KRW 520 million	KRW 720 million	KRW 540 million
HMD	Hours of Volunteering	2,880 hrs	2,963 hrs	2,880 hrs
	Expense for Social Contribution Projects	KRW 100 million	KRW 75 million	KRW 100 million
HSHI	Hours of Volunteering	6,000 hrs	5,905 hrs	6,500 hrs
	Expense for Social Contribution Projects	KRW 100 million	KRW 380 million	KRW 120 million

Governance

Board of Directors (BoD)

BoD Composition

BoD Composition Status

To ensure effective decision-making, the Boards of **HDKSOE and its shipbuilding subsidiaries** are composed of directors who have expertise in various fields such as business administration, accounting, law, and risk management while having a high level of understanding of the shipbuilding industry.

Appointment Procedures for Directors

All directors of **HDKSOE and its shipbuilding subsidiaries** are appointed at the general meeting of shareholders after going through fair procedures and assessments. Candidates for directors are nominated by the BoD and the Independent Director Recommendation Committee. With the notice of convening a general shareholders meeting, personal information about the nominees, recommenders, and their relationship with major shareholders is disclosed. In addition, the appointment of directors is presented as a separate agenda item and is subject to the shareholders' approval at the Annual General Meeting.

Notice of 2023 HDKSOE General Meeting of Shareholders
Notice of 2023 HHI General Meeting of Shareholders
Notice of 2023 HMD General Meeting of Shareholders

Term Limits for Directors

According to the Commercial Act of South Korea, the tenure of outside directors at **HDKSOE and its shipbuilding subsidiaries** should not exceed six years. In this context, directors are provided with the necessary support in diverse aspects to raise their understanding of the company and strengthen decision-making capabilities during their tenure. Furthermore, when outside directors seek advice from external experts on important decisions to make, we actively offer the requested assistance to the directors.

Enhancing Diversity among Directors

HDKSOE and its shipbuilding subsidiaries respect the diversity of directors to ensure various perspectives are considered in decision-making. At the stage of nomination and review, each company does not discriminate against any nominees based on their sex, age, nationality, race, religion, or ethnicity. In order to enhance the efficiency of the BoD, we have appointed those with extensive experience in various fields as outside directors. As of late March 2024, each subsidiary has appointed one female director respectively.

HDKSOE and HHI have appointed female outside directors (Jo Young-hee and Park Hyun-jung respectively), who are recognized for their expertise in legal affairs that may contribute to enhancing the companies' competitiveness and enable them to perform effective management and oversight for the companies.

Kim Seong-eun, an outside director of **HMD**, is an accounting and tax expert who has served as an outside director at Citibank Korea. It is expected to contribute greatly to enhancing the soundness and transparency of HMD and further improving the BoD-centered decision-making system.

Shin Ho-young, an outside director of **HSHI**, is an accounting expert, noted for a wide rage of knowledge and experience with a Ph.D. in accounting, and has served as President of the Academic Society of Global Business Administration.

Securing Independence of Directors

HDKSOE and its shipbuilding subsidiaries enhance the independence of BoD by appointing a majority of directors as outside directors, creating an environment where board members are open for discussion, free from the interests of businesses, management, or controlling shareholders. Outside directors are not involved in the company's ordinary course of business and are selected based on the following independence requirements.

Independence Requirements for Outside Directors

Outside directors should meet the following requirements as well as other qualifications as stated in the related laws including the Commercial Act of South Korea.

1. Outside directors should not have served as an executive of the company within the recent two years.
2. Outside directors should not be an immediate family member of any executives of the company or its subsidiaries.
3. Outside directors should not have the same interests as advisors, consultants, or employees and major shareholders of the corporation which has concluded with a major advisory contract with the company or its senior management.
4. Outside directors should not be significant customers, or the employees or major shareholders of suppliers as defined in Items a) and b) of Article 34 (5) 2 of the Enforcement Decree of the Commercial Act.
5. Outside directors should not have been partners of employees of the company's external auditor for the past 2 years.
6. Outside directors should not have any conflicts of interest such as economic interests, regarding the matters decided by the BoD.

Board of Directors (BoD)

BoD Composition

HDKSOE BoD Composition

(As of Mar. 31, 2024)

Type	Name	Position	Gender	Major Career	Date of Initial Appointment
Inside Directors	Chung Ki-sun	CEO	Male	Former President of Sales, HHI Incumbent CEO, HDKSOE	Mar. 2022
	Kim Sung-joon	CEO (Chairman of the BoD)	Male	Former Head of Advanced Research Center, HDKSOE Incumbent CEO, HDKSOE	Mar. 2024
Outside Directors	Kim Hong-kee	Outside Director	Male	Former CEO, Samil PWC Accountings Incumbent Auditor, Wonik PNE	Mar. 2023
	Kim Sung-han	Outside Director	Male	Former Second Vice Minister of Foreign Affairs Incumbent Professor, Korea University Graduate School of International Studies	Mar. 2024
	Jo Young-hee	Outside Director	Female	Former Attorney, Sejong law firm Incumbent Partner attorney, LAB Partners	Mar. 2022

HHI BoD Composition

(As of Mar. 31, 2024)

Type	Name	Position	Gender	Major Career	Date of Initial Appointment
Inside Directors	Lee Sang-kyun	CEO (Chairman of the BoD)	Male	Former CEO, HSHI Former COO of Shipbuilding Business Unit, HHI Incumbent CEO, HHI	Apr. 2021
	Noh Jin-yul	CEO	Male	Former Head of Management Support Headquarters, HHI Incumbent Head of Corporate Safety and Health Office, HHI Incumbent CEO, HHI	Mar. 2024
Outside Directors	Shin Dong-mok	Outside Director	Male	Incumbent Professor, Naval Architecture and Ocean Engineering, University of Ulsan Incumbent Dean, Graduate School of Ulsan University	Mar. 2024
	Chae Joon	Outside Director	Male	Incumbent Outside director, Yuanta Securities Co., Ltd. Incumbent Professor, Business School of Seoul National University	Mar. 2020
	Park Hyun-jung	Outside Director	Female	Former Judge, Seoul Central District Court Incumbent Professor, Hanyang University School of Law	Mar. 2022

HMD BoD Composition

(As of Mar. 31, 2024)

Type	Name	Position	Gender	Major Career	Date of Initial Appointment
Inside Directors	Kim Hyung-kwan	CEO (Chairman of the BoD)	Male	Former Project Planning Division Head, HHI Former CEO, HSHI	Mar. 2023
	Cho Jin-ho	Inside Director	Male	Former Management Planning Division Head, HD Hyundai OCI Incumbent Management Support Division Head, HD Hyundai	Mar. 2022
Outside Directors	Yoo Seung-won	Outside Director	Male	Former Professor, Hong Kong University of Science and Technology (HKUST) Incumbent Professor, Korea University	Mar. 2020
	Kim Seong-eun	Outside Director	Female	Former President, Korea Association of Business Education Former Advisory member, National Economic Advisory Council	Mar. 2022

HSHI BoD Composition

(As of Mar. 31, 2024)

Type	Name	Position	Gender	Major Career	Date of Initial Appointment
Inside Directors	Shin Hyeon-dae	CEO (Chairman of the BoD)	Male	Former CEO, HMD Incumbent CEO, HSHI	Mar. 2023
	Lee Sang-hyuk	Inside Director (Non-Executive)	Male	Former Head of Finance and Management Division, HSHI Incumbent Head of Cost Accounting Division, HDKSOE	Mar. 2024
Outside Directors	Jung Do-sam	Outside Director	Male	Former Vice CEO, Samil PWC Accountings Incumbent Vice Chairman, Beyul Accounting Corporation	Mar. 2020
	Ko Chang-hyun	Outside Director	Male	Former Member of Legislative Committee of Special Act on Ceremonial Cases, Ministry of Justice Incumbent Lawyer at KIM & CHANG	Mar. 2021
	Shin Ho-young	Outside Director	Female	Former President of the Academic Society of Global Business Administration Incumbent Honorary Professor, Business School of Hanyang University	Mar. 2022
	Lee Jang-young	Outside Director	Male	Former Deputy Governor of the Financial Supervisory Service (FSS) Incumbent Senior Advisor at KIM & CHANG	Mar. 2023

Board of Directors (BoD)

BoD Composition

Enhancing Directors Professionalism

HDKSOE and its shipbuilding subsidiaries appoint directors by considering extensively their essential capabilities for business administration and risk management, as well as ample knowledge about the shipbuilding industry to ensure stable decision-making process.

In this context, BoD of **HDKSOE and its shipbuilding subsidiaries** consist of experts from diverse fields including leadership, CEO experience, risk management, finance and accounting, and policy and administration. Directors on the Board all perform the functions of decision-making and oversight of management to increase corporate competitiveness. In addition, each company discloses the Board Skills Matrix (BSM) to support stakeholders in clearly understanding the directors' capabilities at a glance.

HDKSOE Board Skills Matrix

(As of Mar. 31, 2024)

Name	Leader-ship	CEO Experi-ence	Risk Man-agement	Finance/ Account-ing	Policy Adminis-tration	Sales & Market-ing	Laws/ Regula-tions	R&D	Interna-tional Relations	Gender	Certifica-tion
Chung Ki-sun	●	●	●			●				Male	-
Kim Sung-joon	●	●	●			●		●		Male	-
Kim Hong-kee	●		●	●	●					Male	CPA
Kim Sung-han	●		●		●				●	Male	-
Jo Young-hee	●		●		●		●			Female	Lawyer

HMD Board Skills Matrix

(As of Mar. 31, 2024)

Name	Leadership	CEO Experience	Risk Management	Finance/ Accounting	Policy Administration	Sales & Marketing	Laws/ Regulations	Gender	Certifica-tion
Kim Hyung-kwan	●	●	●					Male	-
Cho Jin-ho	●		●	●				Male	-
Yoo Seung-won	●		●	●				Male	-
Kim Seong-eun	●		●	●				Female	-

HHI Board Skills Matrix

(As of Mar. 31, 2024)

Name	Leadership	CEO Experience	Risk Management	Finance/ Accounting	Laws/ Regulations	Industry experience*	Gender	Certifica-tion
Lee Sang-kyun	●	●	●			●	Male	-
Noh Jin-yul	●	●	●			●	Male	-
Shin Dong-mok	●		●			●	Male	-
Chae Joon	●		●	●			Male	-
Park Hyun-jung	●		●		●		Female	Lawyer

* Board members with business administration, academic or research experiences within the same industry

HSHI Board Skills Matrix

(As of Mar. 31, 2024)

Name	Leadership	CEO Experience	Risk Management	Finance/ Accounting	Policy Administration	Sales & Marketing	Laws/ Regulations	Gender	Certifica-tion
Shin Hyun-dae	●	●	●			●		Male	-
Lee Sang-hyuk	●		●	●				Male	-
Jung Do-sam	●		●	●				Male	CPA
Ko Chang-hyun	●		●		●		●	Male	Lawyer
Shin Ho-young	●			●	●			Female	-
Lee Jang-young	●		●	●	●		●	Male	-

Board of Directors (BoD)

BoD Operation

Functions of BoD

The BoDs of **HDKSOE and its shipbuilding subsidiaries** establish the long-term vision and goals of the companies and make decisions on significant management issues. For example, the BoD systematically manages those issues that are directly related to creation of corporate values such as risks, ethical and compliance management, internal accounting, and auditing as well as issues for sustainable management including climate change, human rights, safety and health, etc.

Chair of the BoD

HDKSOE and its shipbuilding subsidiaries appoint a Chairperson of the Board every year at the first Board meeting following the regular general meeting of shareholders. The Chair is a one-year term, and to ensure continuity in cases where the Chair is absent, the Chair can determine the order of directors who will serve as an acting chair or designate an interim chairperson.

Convening and organizing Board Meetings

Board meetings of directors of **HD Korea Shipbuilding & Offshore and its subsidiaries** are convened by the chairman or a director designated by the board, and the notice of the meeting should be given to each director at least one day prior to the meeting. However, in the cases where all directors agree, Board meetings can be held at any time without following the convening procedures. The quorum for the Board meeting is the majority of directors and the Board makes determinations with the majority approval of the members present. However, for the matters falling under the Commercial Act Article 397-2 (Prohibition of Appropriation of Company's Opportunities and Assets) and Article 398 (Transaction between Directors, etc. and Company), the approval of the BoD shall be granted with two-thirds or more of the total number of the directors. Furthermore, the Articles of Incorporation stipulate that directors with a special interest are not allowed to exercise their voting rights.

Training for BoD

HDKSOE and its shipbuilding subsidiaries provide a wide range of training programs to enhance directors' capacity to discern and their expertise in decision-making. Especially in September 2023, we provided training for the directors to strengthen ESG management capabilities. This program mainly focused on responses to IFRS S1 and S2 disclosure requirements, and analysis and mitigation of internal and external risk factors. The directors shared multi-faceted insights and had profound discussions on efficient response strategies.

BoD Operation Status (Jan. 1 ~ Dec. 31, 2023)

Category	Board Resolutions		Attendance Rate	
	Decisions	Reports	Inside Directors	Outside Directors
HDKSOE	25	9	87.5 %	100 %
HHI	24	8	87.5 %	100 %
HMD	13	8	85.7 %	100 %
HSHI	14	8	75.0 %	93.9 %

Training for BoD

Date	Topics	Attendee
Apr. 2023	• Accounting for Engineer-to-order Industries	HDKSOE, HSHI
	• Consolidated internal accounting control system	HHI, HMD
Jul. 2023	• Internal control to prevent embezzlement	HHI, HMD, HSHI
Sep. 2023	• Improvements in the Act on External Audit of Stock Companies and ESG-related disclosure (IFRS S1 and S2) • Future of HD Hyundai Group under the global uncertainty	HDKSOE, HHI, HMD, HSHI

Board of Directors (BoD)

BoD Operation

HDKSOE Board Meetings

No.	Date	Agenda	Decision	Approval Rate
1st	Jan. 03, 2023	Approval of signing an agreement with a financial investor	Approved	100 %
2nd	Feb. 07, 2023	Approval of the 49th Financial Statement	Approved	100 %
		Approval of the 49th Sales Report	Approved	100 %
		Approval of appointment of change in compliance officer	Approved	100 %
		Approval of appointment of change in Fair Trade Compliance Program Manager	Approved	100 %
		Report of 2022 Internal Accounting Control System Operation Status (CEO)	Reported	-
3rd	Feb. 24, 2023	Approval of transaction limits with related parties	Approved	100 %
		Approval of donation to Hyundai Educational Foundation	Approved	100 %
		Approval of the convocation of the 49th Regular General Meeting of Shareholders and the purpose	Approved	100 %
		Report of 2022 Internal Accounting Control System Operation Status Evaluation (Audit Committee)	Reported	-
		Report of H2 Fair Trade Compliance Program status inspection	Reported	-
		Report on participation in corporate acquisition bids	Reported	-
4th	Mar. 28, 2023	Appointment of the BoD Chairman and determining priority order for an acting chair	Approved	100 %
		Appointment of Outside Director Recommendation Committee Members	Approved	100 %
		Appointment of Related Party Transactions Committee Members	Approved	100 %
		Appointment of ESG Committee Members	Approved	100 %
		Approval of head office relocation	Approved	100 %
5th	Apr. 27, 2023	Approval of acquisition of small and medium ships propulsion package business	Approved	100 %
		Report on 2023 Q1 Business Performance Report	Reported	-
6th	Jul. 27, 2023	Approval of 2023 H2 safety and health management plan	Approved	100 %
		Approval of parent company guarantee for HHI's Mexico Trion FPU Project	Approved	100 %
		Delegation to CEO regarding parent company guarantee for HHI's participation in a bid for RUYA Project in Qatar	Approved	100 %
		Approval of acquisition of BWTS business	Approved	100 %
		Approval of signing and implementing an amendment to real estate lease agreement with HD Hyundai	Approved	100 %
		Report on 2023 H1 Business Performance Report	Reported	-
		Report on operation of compliance control standards	Reported	-
7th	Oct. 26, 2023	Approval of selling shares in HHI MOS	Approved	100 %
		Report on 2023 Q3 Business Performance Report	Reported	-
		Report on 2023 H1 Fair Trade Compliance Program status	Reported	-
8th	Dec. 08, 2023	Setting of the record date for shareholders	Approved	100 %
		Approval of transaction limits between directors, etc. and the company	Approved	100 %
		Approval of transaction limits with stakeholders such as major shareholders	Approved	100 %
		Approval of changes to executives' compensation system	Approved	100 %
		Approval of the sale of Ehwa Industrial Park 2BL	Approved	100 %

HHI Board Meetings

No.	Date	Agenda	Decision	Approval Rate
1st	Feb. 07, 2023	Report of 2023 Environmental Management	Reported	-
		Report of 2022 Internal accounting control system operational status	Reported	-
		Approval of the 4th Financial Statement	Approved	100 %
		Approval of the 4th Sales Report	Approved	100 %
		Approval of 2023 safety and health management plans	Approved	100 %
2nd	Feb. 24, 2023	Report of 2022 Internal Accounting Control System Operational Status Evaluation	Reported	-
		Report of 2022 H2 Fair Trade Self-compliance status	Reported	-
		Approval of the convocation of the 4th regular general meeting of shareholders and the purpose of the meeting	Approved	100 %
3rd	Mar. 28, 2023	Approval of appointment of CEO	Approved	100 %
		Approval of appointment of BoD Chairman and deciding the order of acting chairs in the absence of the chairman	Approved	100 %
		Appointment of Related Party Transactions Committee Members	Approved	100 %
		Appointment of Outside Director Recommendation Committee Members	Approved	100 %
		Appointment of ESG Committee Members	Approved	100 %
4th	Apr. 26, 2023	Report on 2023 Q1 Business Performance	Reported	-
		Approval of handover of small and medium ships propulsion package business	Approved	100 %
5th	Jul. 27, 2023	Report on 2023 H1 Business Performance	Reported	-
		Approval of participation in the paid-in capital increase of HD Hyundai Engine	Approved	100 %
		Approval of BWTS business transfer	Approved	100 %
6th	Oct. 25, 2023	Report on 2023 Q3 Business Performance Report	Reported	-
		Report on 2023 H1 fair trade self-compliance status	Reported	-
		Approval of donation to Hanmaeum Center	Approved	100 %
		Approval of acquisition of HHI MOS shares	Approved	100 %
		Approval of the merger agreement for HHI MOS	Approved	100 %
		Setting of record date for shareholders	Approved	100 %
7th	Nov. 29, 2023	Approval of the merger with HHI MOS	Approved	100 %
8th	Dec. 13, 2023	Approval of land purchase at the Ehwa Industrial Park	Approved	100 %
		Approval of corporate bond issuance limit	Approved	100 %
		Approval of short-term bond issuance limit	Approved	100 %
		Approval of changes to the executive compensation system	Approved	100 %
		Approval of transaction limits between directors, etc., and the company	Approved	100 %
		Approval of goods and services transactions with affiliates	Approved	100 %
		Setting of record date for determining shareholders	Approved	100 %

Board of Directors (BoD)

BoD Operation

HMD Board Meetings

No.	Date	Agenda	Decision	Approval Rate
1st	Feb. 07, 2023	Approval of the 49th Financial Statement	Approved	100 %
		Approval of the 49th Sales Report	Approved	100 %
		Approval of 2023 safety and health management plans	Approved	100 %
		Report on 2022 Internal Accounting Control System Operation Status	Reported	-
		Report on 2022 H2 Fair trade Self-compliance status inspection	Reported	-
		Report of 2022 compliance control standards operational status inspection	Reported	-
2nd	Feb. 23, 2023	Approval of the convocation of the 49th Regular General Meeting of Shareholders and the agenda presented to the meeting	Approved	100 %
		Report on 2022 Internal Accounting Control System Operation Status Evaluation	Reported	-
3rd	Mar. 27, 2023	Appointment of CEO	Approved	100 %
		Appointment of the BoD Chairman and determining the orders of acting chairs	Approved	100 %
		Appointment of Outside Director Recommendation Committee Members	Approved	100 %
		Appointment of ESG Committee Members	Approved	100 %
		Appointment of Related Party Transactions Committee Members	Approved	100 %
4th	Apr. 26, 2023	Report on 2023 Q1 Business Performance Report	Reported	-
5th	Jul. 26, 2023	Report on 2023 H1 Business Performance Report	Reported	-
		Report on 2023 H1 Fair trade Self-compliance status inspection	Reported	-
6th	Oct. 25, 2023	Report on 2023 3Q Business Performance Report	Reported	-
7th	Dec. 07, 2023	Setting the record date for voting rights at the 50th general meeting of shareholders	Approved	100 %
		Approval of transaction limits with major shareholders and related parties for 2024	Approved	100 %
		Approval of transaction limits between directors, etc. and the company	Approved	100 %
		Approval of changes to executives' compensation system	Approved	100 %

HSHI Board Meetings

No.	Date	Agenda	Decision	Approval Rate
1st	Jan. 03, 2023	Withdrawal of Initial Public Offering (IPO)	Approved	100 %
2nd	Feb. 02, 2023	Approval of the 25th Financial Statement	Approved	100 %
		Approval of the 25th Sales Report	Approved	100 %
		Approval of 2023 safety and health management plans	Approved	100 %
		Report on 2022 Internal Accounting Control System Operation Status	Reported	-
		Report on 2022 H2 Fair Trade Self-compliance status inspection	Reported	-
3rd	Feb. 23, 2023	Approval of the convocation of the 25th Regular General Meeting of Shareholders and the purpose	Approved	100 %
		Independent evaluation report of 2022 Internal Accounting Control System	Reported	-
4th	Mar. 27, 2023	Appointment of the BoD Chairman and determining the orders of acting chairs in the absence of the Chairman	Approved	100 %
		Appointment of CEO	Approved	100 %
		Appointment of members of Board Committees	Approved	100 %
		Approval of facility investment in the 2nd Dolphin Outfitting Quay	Approved	100 %
5th	Apr. 26, 2023	Report on 2023 Q1 Management Performance Report	Reported	-
6th	Jul. 27, 2023	Appointment of Change in fair trade self-compliance manager	Approved	100 %
		Report on 2023 H1 Business Performance Report	Reported	-
		Report on 2023 H1 fair trade self-compliance state inspection	Reported	-
7th	Oct. 25, 2023	Report on 2023 3Q Business Performance Report	Reported	-
8th	Dec. 07, 2023	Setting the record date for regular general meeting of shareholders	Approved	100 %
		Approval of goods and services transaction amounts with affiliates	Approved	100 %
		Approval of transaction limits between directors, etc. and the company	Approved	100 %
		Approval of changes to executive remuneration structure and payment limits	Approved	100 %
		2024 Management Plans	Reported	-

Board of Directors (BoD)

Board Committees

Audit Committee

HDKSOE and its shipbuilding subsidiaries strictly follow the requirements for the appointment of Audit Committee members as specified in the Commercial Act. The Audit Committee of each company consists of outside directors appointed at the general meeting of shareholders to strengthen the independence of internal audit functions. Each company appoints at least one accounting and finance expert as a member of Audit Committee.
The Audit Committee of each company confirms the legality of the activities of directors and the management based on its expertise in accounting and finance, and oversees the integrity of financial reports and reliability of disclosure. In addition, the Audit Committee reviews other matters related to the independence of corporate management such as supervision of external auditors and company-wide risk management system.

Composition and Roles of Audit Committee

(As of Mar. 31, 2024)

HDKSOE	HHI	HMD	HSHI
Chair: Kim Hong-kee Members: Kim Sung-han, Jo Young-hee	Chair: Chae Joon Members: Shin Dong-mok, Park Hyun-jung	Chair: Yoo Seung-won Members: Kim Seong-eun	Chair: Jung Do-sam Members: Ko Chang-hyun, Shin Ho-young, Lee Jang-young

Non-audit Service Cost

Category	2021	2022	2023
HDKSOE	-	KRW 150 mil.	-
HHI	KRW 250 mil.	KRW 324 mil.	KRW 12 mil.*
HMD	-	KRW 110 mil.	-
HSHI	KRW 90 mil.	KRW 120 mil.	-

* Prior approval of non-audit service through the Audit Committee

Outside Director Recommendation Committee

HDKSOE and its shipbuilding subsidiaries operate the Outside Director Recommendation Committee to select candidates for outside directors to be appointed by the general shareholders meeting. The Outside Director Recommendation Committee consists of a majority of outside directors and reviews the qualifications of the nominees.

Composition and Roles of Outside Director Recommendation Committee

(As of Mar. 31, 2024)

HDKSOE	HHI	HMD	HSHI
Chair: Kim Hong-kee Members: Kim Sung-joon, Jo Young-hee, Kim Sung-han	Chair: Chae Joon Members: Lee Sang-kyun, Chae Joon, Park Hyun-jung	Chair: Yoo Seung-won Members: Kim Seong-eun, Kim Hyung-kwan	Chair: Shin Ho-young Members: Shin Hyun-dae, Jung Do-sam, Ko Chang-hyun, Lee Jang-young

Related Party Transactions Committee

HDKSOE and its shipbuilding subsidiaries have established and operated the Related Party Transactions Committee to develop basic policies for transactions among the affiliates and monitor the operational status of standards for selecting transaction counterparts. The Related Party Transactions Committee of each company performs its duties to strengthen internal control such as reviews of large-scale related party transactions over a certain amount, and enhance the efficiency of oversight on unfair support activities.

Composition and Roles of Related Party Transactions Committee

(As of Mar. 31, 2024)

HDKSOE	HHI	HMD	HSHI
Chair: Jo Young-hee Members: Kim Sung-joon, Kim Hong-kee, Kim Sung-han	Chair: Park Hyun-jung Members: Lee Sang-kyun, Shin Dong-mok, Chae Joon	Chair: Kim Seong-eun Members: Yoo Seung-won, Cho Jin-ho	Chair: Ko Chang-hyun Members: Shin Hyun-dae, Jung Do-sam, Shin Ho-young, Lee Jang-young

Board of Directors (BoD)

Board Committees

Compensation Committee

As of February 2024, **HDKSOE, HHI, and HMD** formed the Compensation Committee within the BoD, which consists of a majority of outside directors to secure its independence according to the Board regulations. Furthermore, the Compensation Committee plays an important role in enhancing the objectivity and transparency of the compensation decision-making process for directors and the management by reviewing and determining the remuneration limits of registered directors and the compensation system for inside directors.

Composition and Roles of Compensation Committee (As of Mar. 31, 2024)

HDKSOE	HHI	HMD	HSHI
Chair: Kim Sung-han Members: Kim Hong-kee, Jo Young-hee	Chair: Park Hyun-jung Members: Shin Dong-mok, Chae Joon	Chair: Kim Seong-eun Members: Yoo Seung-won	-*

* HSHI has decided the directors' remuneration in accordance with the Articles of Incorporation and the resolutions of a general shareholders meeting, and plans to establish the Compensation Committee in 2024.

ESG Committee

HDKSOE and its shipbuilding subsidiaries have established and operated the ESG Committee to enhance sustainability and increase ESG management capabilities. The ESG Committee of each company plays a critical role in supporting activities required to develop and internalize ESG capabilities. It is also responsible for necessary activities to promote corporate sustainability such as climate change, safety and health, human rights, and risks.

Composition and Roles of ESG Committee (As of Mar. 31, 2024)

HDKSOE	HHI	HMD	HSHI
Chair: Jo Young-hee Members: Kim Sung-joon, Kim Hong-kee, Kim Sung-han	Chair: Shin Dong-mok Members: Noh Jin-yul, Chae Joon, Park Hyun-jung	Chair: * Members: Kim Seong-eun (Acting Chair), Yoo Seung-won, Kim Hyung-kwan	Chair: Lee Jang-young Members: Shin Hyun-dae, Jung Do-sam, Ko Chang-hyun, Shin Ho-young

* Currently operated by the acting chair as the new director is scheduled to be appointed in June.

ESG Committee Activities

Category	Date	Agenda	Decision	Approval Rate
HDKSOE	Feb. 07, 2023	Approval of carbon neutrality roadmap and external declaration	Approved	100 %
		Report on 2022 ESG management performance and 2023 plans	Reported	-
		Report on establishing ESG KPIs for 2023	Reported	-
		Report of non-financial risk management plans (climate change, environmental management, safety & health management, sustainable supply chain, human rights management, etc.)	Reported	-
		Report on the Materiality Assessment in 2022 Integrated Report	Reported	-
	Mar. 28, 2023	Appointment of ESG Committee Chair	Approved	100%
HHI	Apr. 26, 2023	Report of plans for carbon neutrality roadmap and external declaration	Reported	-
		Report on non-financial risk management plans	Reported	-
		Report on the Materiality Assessment in 2022 Integrated Report	Reported	-
	Dec. 13, 2023	Report on ESG management	Reported	-
HMD	Feb. 07, 2023	Report on 2022 ESG activities and 2023 plans	Reported	-
	Apr. 26, 2023	Approval of carbon neutrality roadmap and external declaration	Approved	100 %
		Report on 2023 Q1 ESG activities and plans	Reported	-
	Jul. 26, 2023	Report on 2023 H1 ESG activities and H2 plans	Reported	-
	Oct. 25, 2023	Report on 2023 Q3 ESG activities and plans	Reported	-
HSHI	Mar. 27, 2023	Appointment of ESG Committee Chair	Approved	100 %
	Apr. 26, 2023	Report on carbon neutrality roadmap and external declaration	Approved	100 %
	Dec. 07, 2023	Report on 2023 ESG management performance and 2024 plans	Reported	-

Board of Directors (BoD)

BoD Performance Evaluation

Evaluating BoD Operations

HDKSOE and its shipbuilding subsidiaries have introduced a Board performance evaluation system to assess the appropriateness of Board composition and ensure an effective Board operation. The evaluation system employs criteria for 25 items in 5 areas including BoD's roles and responsibilities, structure, operation, Board Committees, and the reflection of evaluation results. The evaluation is conducted annually on a self-assessment basis, including the assessment of individual outside directors' activities. The evaluation for FY2023 found no significant problems in the composition and operation of the Board, and the BoD is fulfilling its roles and responsibilities faithfully.

Performance Evaluation for the Management

HDKSOE and its shipbuilding subsidiaries evaluate the performance of the management by considering quantitative indicators such as sales, orders, and operating profits, as well as qualitative indicators such as leadership, expertise, and responsibility in job performance. Moreover, we have set company-wide ESG KPIs for the CEOs of each company to enhance corporate sustainability, continuously monitoring the attainment of targets for each KPIs.

Calculation and Payment of Performance Incentives for the Management

Performance incentives for the management are divided into management bonuses and long-term incentives. The management bonus is calculated based on the current year's quantitative indicators such as sales, orders, and operating profits, as well as the leadership and expertise to attain management targets, and is paid at the beginning of the following year.

The long-term incentive was introduced in late 2023 to prevent decision-making from focusing only on short-term performance and to maximize long-term corporate value. This incentive is calculated comprehensively considering indicators such as organizational evaluation and net profit over a grace period (longer than three years), and paid after the grace period ends.

As for outside directors and audit committee members, fixed salaries are paid without performance incentives to ensure their independence.

Calculation Criteria and Methods for Compensation Package

Category		Registered Directors (Inside Directors)
Payment Basis		• Executed based on the Executives Remuneration Standards determined by the BoD resolution within the limit of directors' remuneration approved by the general shareholders meeting
Criteria	Basic Salary	• Paid in equal monthly installments by dividing into base pay and position allowances - Base pay: determined depending on ranks (grade) - Position allowances: determined depending on duties (position)
	Performance-based Compensation	• The level of payment is determined based on organizational evaluation, individual evaluation, and achievement rate to operating profit target - Quantitative indicators: sales, orders, operating profits, etc. - Qualitative indicators: leadership, expertise and responsibility in job performance

Remuneration for the Management (CEO) (As of Dec. 31, 2023)

Category		HDKSOE		HHI		HMD	HSHI
		Ka Sam-hyun	Chung Ki-sun	Han Young-seuk	Lee Sang-kyun	Kim Hyung-kwan	Shin Hyun-dae
Remuneration for CEO	Basic Salary	KRW 921 mil.	KRW 413 mil.	KRW 899 mil.	KRW 886 mil.	KRW 700 mil.	KRW 687 mil.
	Performance Bonus	KRW 221 mil.	KRW 399 mil.	KRW 265 mil.	KRW 152 mil.	KRW 61 mil.	KRW 267 mil.
	Total*	KRW 1,142 mil.	KRW 812 mil.	KRW 1,163 mil.	KRW 1,038 mil.	KRW 761 mil.	KRW 954 mil.
	Comparison with employee average	12.8 times	9.1 times	12.8 times	11.4 times	9.1 times	9.2 times
Year-end value of shares held compared to basic salary		0.69 times	0.16 times	0.4 times	0.16 times	(No shares held)	(Unlisted)

* Excluding retirement income

Shareholder Protection

Exercise of Shareholder Rights

Convocation and Notice of General Meeting of Shareholders

HDKSOE and its shipbuilding subsidiaries convene a regular general meeting of shareholders within three months from the settlement day of each fiscal year. The information on the general shareholders meeting such as date, place, and agenda is provided at least four weeks ahead of the meeting date by sending a notification of convocation to shareholders, announcing the notification on an electronic disclosure system, and posting an electronic notification on each company's website. Furthermore, the results of shareholders' votes, including approval and opposition rates, are disclosed on each company's website.

Exercise of Shareholder Voting Rights

In accordance with the Articles of Incorporation, **HDKSOE and its shipbuilding subsidiaries** grant one vote for each stock and enhance the convenience and shareholders' opportunities to exercise their voting rights by introducing an electronic voting system.

HHI, HMD, and HSHI participated in an autonomous compliance program with dispersed scheduling of general shareholders meetings to avoid the concentration of general shareholders meetings.

Delegation of Voting Rights (Proxy Voting)

HDKSOE and its shipbuilding subsidiaries provide reference documents before the proxy solicitation period starts to help shareholders exercise their voting rights. In this context, we provide all shareholders with guidance on attendance in general shareholders meetings as well as delegated voting. For institutional investors with over a certain percentage of ownership, we directly contact and encourage them to vote by proxy.

Guarantee of Shareholder Proposal

HDKSOE and its shipbuilding subsidiaries have internal standards and procedures in place for handling shareholder proposals. Moreover, to guarantee shareholders' rights to freely ask inquiries and request explanations during general meetings of shareholders, we provide them with opportunities to do so.

HDKSOE Status of Issued Stocks (As of Dec. 31, 2023)

Category	Authorized Shares	Issued Shares	Issuance Ratio
Common Stock*	100,000,000 shares	70,773,116 shares	70.77%

* Class stocks such as dividend preferred convertible stocks have not been issued

HHI Status of Issued Stocks (As of Dec. 31, 2023)

Category	Authorized Shares	Issued Shares	Issuance Ratio
Common Stock*	120,000,000 shares	88,773,116 shares	73.98%

* Class stocks such as dividend preferred convertible stocks have not been issued

HMD Status of Issued Stocks (As of Dec. 31, 2023)

Category	Authorized Shares	Issued Shares	Issuance Ratio
Common Stock*	46,000,000 shares	39,942,149 shares	86.83%

* Class stocks such as dividend preferred convertible stocks have not been issued

HSHI Status of Issued Stocks (As of Dec. 31, 2023)

Category	Authorized Shares	Issued Shares	Issuance Ratio
Common Stock	68,000,000 shares	26,024,324 shares	38.27%
Preferred Stock*	15,000,000 shares	4,647,202 shares	30.98%

* Non-voting participating and cumulative preferred stocks such as dividend preferred convertible stocks

HDKSOE Status of Major Shareholders (As of Dec. 31, 2023)

Category	No. of Shares Owned	Percentage Ownership
HD Hyundai	24,807,124 shares	35.05%
National Pension Service	4,229,387 shares	5.98%
Employee Stock Ownership Association	102,535 shares	0.14%
Ka Sam-hyun	5,255 shares	0.02%

HHI Status of Major Shareholders (As of Dec. 31, 2023)

Category	No. of Shares Owned	Percentage Ownership
HDKSOE	69,264,116 shares	78.02%
National Pension Service	5,455,655 shares	6.15%
Employee Stock Ownership Association	269,160 shares	0.30%
Han Young-seuk	2,800 shares	0.01%
Lee Sang-kyun	1,107 shares	0.00%

HMD Status of Major Shareholders (As of Dec. 31, 2023)

Category	No. of Shares Owned	Percentage Ownership
HDKSOE	16,936,492 shares	42.40%
National Pension Service	2,798,445 shares	7.05%
Fidelity Management & Research Company LLC	2,480,716 shares	6.25%
Employee Stock Ownership Association	16,480 shares	0.04%
Shin Hyun-dae	4,160 shares	0.01%
Han Young-seuk	2,000 shares	0.01%
Yoon Chang-jun	1,158 shares	0.00%

HSHI Status of Major Shareholders (As of Dec. 31, 2023)

Category	No. of Shares Owned	Percentage Ownership
HDKSOE	29,621,591 shares	96.58%
Employee Stock Ownership Association	231,073 shares	0.75%

Shareholder Protection

Protection of Shareholders' Interests

Communications with Shareholders

HDKSOE and its shipbuilding subsidiaries have pursued active communication with shareholders by participating in IR conferences targeting domestic and international institutional investors and analysts as well as organizing Corporate Day events and Non-Deal Road Shows (NDR). We also help raise investors' understanding of our management status by utilizing interactive conference calls and webcasting (online audio broadcasting) at a quarterly earnings release.

In addition, we regularly provide our business performance through posts on IR data such as quarterly earnings reports and monthly IR news on the Korean and English websites of HDKSOE and its shipbuilding subsidiaries. The IR inquiry pages on these websites include contact information for IR departments (phone numbers and email addresses), allowing investors to make inquiries about the companies' management status, and request a one-on-one or group meeting with IR staff when necessary.

We also provide English data including our earnings reports, IR news, and contact information for IR departments on our websites to enhance the convenience of foreign investors. Since 2024, **HDKSOE and HHI** have published English disclosures on the Korea Exchange's electronic disclosure system (KIND).

Shareholder Return Policies

HDKSOE and its shipbuilding subsidiaries have actively reviewed shareholder-friendly policies and developed a dividend policy with over 30% payout ratio (based on net income in a separate profit and loss (P&L) statement to prioritize shareholder values. Such dividend policy is established in comprehensive consideration of investment, cash flow, financial structure, and dividend stability to expand shareholder returns, and may be adjusted depending on the business conditions and economic outlook.

The dividend is determined within the scope of profit available for the dividend, comprehensively considering profit scale, an investment plan for future growth, and financial structure. The dividend can be distributed in cash or shares through the BoD resolutions and approval of general shareholders meetings.

HD Hyundai* Shareholding Status

(As of Dec. 31, 2023)

Category	No. of shares owned**	Percentage Ownership
Chung Mong-jun	21,011,330 shares	26.60%
National Pension Service	7,040,807 shares	8.91%
Chung Ki-sun	4,155,485 shares	5.26%
ASAN Foundation	3,078,300 shares	3.90%
Asan Nanum Foundation	389,915 shares	0.49%
Kwon Oh-gap	45,030 shares	0.06%
Ka Sam-hyun	7,020 shares	0.01%

* Largest shareholder of HDKSOE
** HD Hyundai issues common stocks only and has not issued preferred stocks such as dividend preferred convertible stocks.

Regulating Related Party Transactions among Affiliates, and Self-Dealing by Controlling Shareholders

HDKSOE and its shipbuilding subsidiaries stipulate that the matters falling under 'Prohibition of Appropriation of Company's Opportunities and Assets' and 'Transaction between Company and Directors, etc.' should be determined with the approval of two-thirds or more directors. Also, we have an in stitutional mechanism in place not to allow the directors with a special interest to exercise their voting rights.

Without prior approval of the BoD, directors are not allowed to make transactions on their own or a third-party account that may fall under business sectors of the company or to serve as partners with unlimited liability or directors of other companies with the same business purposes. Besides, it is regulated that directors should not exploit the business opportunities of the company for the benefit of their own or a third party.

In addition, HDKSOE and its shipbuilding subsidiaries have established a Related Party Transaction Committee under the BoD to monitor established policies for related party transactions, selection criteria for transaction counterparts, and the state of related party transactions. The Committee also reviews and approves the matters delegated by the BoD.

Provided that directors can make decisions with full understanding of the issues such as conflict of interests resulting from related party transactions, and fairness of procedures and content of such transactions, the Related Party Transactions Committee of the BoD gives comprehensive approvals on related party transactions when necessary.

Respect for the Rights of Sole Shareholders and Minority Shareholders

HDKSOE and its shipbuilding subsidiaries have specified the respect for sole shareholder's rights and minority shareholders' rights in Article 17.2 of the Articles of Incorporation, and Article 17 of the Corporate Governance Charter. We will continue to review and improve measures to protect shareholders' rights including the collection of shareholders' opinions and protection of dissenting shareholders in cases of a merger, business acquisitions, physical division and spin-off, and comprehensive exchanges and transfers of stocks, causing significant changes to the ownership structure or major business activities.

Protection of Shareholders According to Changes in Ownership Structure or Major Businesses

HDKSOE and its shipbuilding subsidiaries stipulate that a merger, a spin-off, or a spin-off & merger requires a merger agreement which is subject to approval by the special resolution of a general shareholders meeting. Dissenting shareholders are also guaranteed to exercise their appraisal rights. When it comes to the resolution for a spin-off, the shareholders with non-voting class stocks are also provided with voting rights. If a merger or spin-off may place more burden on the related shareholders, the consent of all shareholders should be sought in addition to the special resolution of the general shareholders meeting.

Furthermore, when there are any material issues that may affect business activities such as the transfer of all or a critical part of the business operations, approval through the special resolution of the general shareholders meeting should be obtained. In the case of comprehensive exchanges and transfers of stocks, HDKSOE and its shipbuilding subsidiaries guarantee dissenting shareholders' appraisal rights. When the dissenting shareholders exercise their appraisal rights, the companies buy the corresponding shares within a month from the end of the appraisal request period.

Ethics & Compliance

Governance

Ethical Management System

Ethical Management Operation System

The CEO has the authority to establish plans and determine future directions for ethical management of the **HDKSOE and its shipbuilding subsidiaries.** Then the Audit Committee, with guaranteed professionalism and independence, confirms audits, evaluations, and corrective measures. Moreover, the Business Ethics Team operates the ethical management system, prepares ethical management training and programs for employees, inspects unethical acts, and conducts risk assessment and preventive activities.

Charter of Ethics

HDKSOE and its shipbuilding subsidiaries have internally and externally declared the Charter of Ethics with which the entire group should commonly apply and comply. Then, the Charter was revised in Dec. 2023 to reflect the core values of HD Hyundai. All employees learned the Charter well enough to perform their duties with sincerity and responsibility.

Charter of Ethics for HDKSOE and its Shipbuilding Subsidiaries

Business Ethics Guideline

As ethical management-related laws were introduced such as the Anti-Corruption Act, social interests and awareness have increased in ethical awareness. In this context, **HDKSOE and its shipbuilding subsidiaries** established the Business Ethics Guideline to provide guidance to ethical behaviors of employees and maintain a transparent and fair organizational culture.

Business Ethics Guideline for HDKSOE and its Shipbuilding Subsidiaries

Code of Conduct

HDKSOE and its shipbuilding subsidiaries have established a Code of Conduct to prescribe ethical behaviors of the employees, thereby promoting effective ethical management. This Code of Conduct provides clear standards for ethical behaviors within the organization and guidelines that employees can follow to act accordingly.

Code of Conduct for HDKSOE and its shipbuilding subsidiaries

Ethical Management Practice Pledge

HDKSOE and its shipbuilding subsidiaries require all employees and contractors to submit an Ethical Management Practice Pledge. The Pledge contains the signee's commitment to avoid unfair transactions, misconduct, illegal solicitations, or bribery, and emphasizes compliance with the group's ethics regulations and guidelines to observe the Anti-Corruption Act.

Group's Ethical Management Framework

Charter of Ethics	**Code of Conduct**	**Business Ethics Guideline**
A concise declaration of HD Hyundai's management philosophy based on ethical management	Specified guidelines for each area in the Ethics Charter and standards for ethical behaviors	Specific criteria for ethical behaviors and work processes to practice ethical management
Code of Conduct for Business Partner	**Ethical Management Practice Programs**	**Training and Promotion**
Ethical standards to ensure fair & transparent transactions, coexistence, and mutual prosperity with contractors	Specific systems and procedures to establish and develop a fair and transparent corporate culture	Commitment of employees toward active practice and spread of ethical management

Strategy

Future Direction for Ethical Management

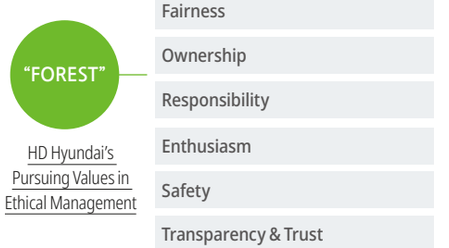
Pursue Values in Ethical Management

HDKSOE and its shipbuilding subsidiaries strive to practice the values that the HD Hyundai Group has pursued in ethical management. Like a forest that contributes to the coexistence and mutual growth of living creatures within, they also intend to create an environment contributing to the growth and development of all stakeholders.

Establishment of Ethical Management Goals

With ethics as the top priority, all employees of **HDKSOE and its shipbuilding subsidiaries** comply with the code of ethics when performing their duties. They pursue transparent and innovative management with an aim to develop into a trusted and respected company.

Pursuing Values in Ethical Management



Ethical Management Goals

Future Direction for Ethical Management

Stakeholders	Values in Pursuit	Future Direction
Shareholders · Investors	Transparency	Strengthening Corporate Value, Providing Transparent Business Management Information, Equal Treatment of Shareholders, Fair Dividends
Contractors · Competitors	Fairness	Fair Business Practice, Protecting Technology and Business Information, Fair Scout
Government · Related Agencies	Law-abiding	Maintaining Sound and Fair Relationships, Cooperation in Policies, Faithful Payment of Taxes
Customers · Consumers	Customer Satisfaction	Promoting Customers' Interest, Technology Development, Quality Improvement
Employees	Respect	Respect for Human Rights and Privacy, Improving Working Conditions, No Discrimination
Community	Corporate Citizenship	Eco-friendly Management, Social Contribution Activities

Ethics & Compliance

Risk Management

Raising Ethical Awareness

Strengthening Ethical Education

HDKSOE and its shipbuilding subsidiaries conduct annual online and offline training to raise awareness of ethical management among all employees — permanent, contract, and dispatched— and to internalize an ethical culture. In particular, to help new employees unfamiliar with the corporate culture, special offline training is provided on ethical management. Moreover, ethical education programs are prepared for contractors to convey our commitment to ethical management and inform them of reporting channels. Contractors can receive online training in the same way as our employees do.

List of Ethics Training Provided

Hi-Class Training	• Video content education
Duty with Integrity Training	• Online training on the prohibition of accepting bribery from contractors
Self-Assessment	• An annual PC/mobile survey to assess employees' understanding of ethical management
Group Training	• Face-to-face or virtual ethical management training for new and experienced employees

Self-Assessment on Compliance with Ethical Management

Every year, **HDKSOE and its shipbuilding subsidiaries** conduct a self-assessment on compliance with ethical management-related regulations with a survey-type checklist, which contains items such as bribery, entertainment, conflicts of interest, and work ethics. Through the self-assessment, employees can better understand relevant regulations and assess their awareness level.

Gift Refusal System

To spread ethical awareness among employees, **HDKSOE and its shipbuilding subsidiaries** operate a system for refusing and returning monetary gifts inevitably received from contractors. The system allows the employees to refuse and return the gifts through a simple notification process. If refusing and returning a gift is not possible, the gift is donated to social welfare organizations.

HR System and Ethics & Compliance

HDKSOE and its shipbuilding subsidiaries conduct training and regular activities to ensure compliance with the group's code of ethics. In addition, according to personnel policies emphasizing compliance and ethical management, violators of the code of ethics are addressed based on the internal disciplinary committee regulations. Under a zero-tolerance principle, violators may be subject to disciplinary actions depending on the severity including warnings, reprimands, pay cuts, suspensions, dismissal, etc. It is equally applied to all employees of HDKSOE and its shipbuilding subsidiaries.

Penalty in Evaluation and Promotion

When employees receive severe penalties of pay cuts or greater for their misconduct in ethical management and compliance, their results of regular performance evaluation will be downgraded (pay cut: level 1 down, suspension: level 2 down). As for promotion, the company operates a promotion point system and points are deducted depending on the severity of disciplinary actions (pay cut: -4 points/reprimand: -2 points/warning: -1 point). Furthermore, those who receive severe disciplinary actions of suspension or greater are excluded from promotion candidates.

Disciplinary System

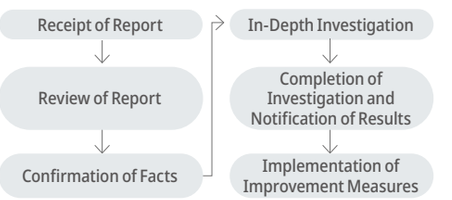
According to the employment rules, employees should observe ethics regulations and any violation of the regulation will be subject to a disciplinary process as stated in the employment rule. Under this process, the company notifies a violator seven days before a Personnel Committee meeting, which will be held to determine the violation and the level of disciplinary action. Then, the Personnel Committee provides the violator with an opportunity to explain where testifier can attend for a defense, and up to three witnesses can be requested. In cases where the Personnel Committee decides to impose on a suspension or more severe disciplinary action, the violator can file an appeal within 10 days. The Personnel Committee will be held again within 15 days of such appeal and the result will be notified to the violator within 7 days of the Committee meeting.

Unethical Conduct Report Channels

HDKSOE and its shipbuilding subsidiaries operate various channels for reporting unethical conduct to strengthen the ethical corporate culture. The unethical conduct can be reported at any time via phone, mail, or online consultation, and the reports are strictly kept secret. If an informant faces unfair treatment, he/she can request the Business Ethics Planning Team for correction and protection, and the Team will take appropriate measures for the request.

Unethical Conduct Report/Consultation of HDKSOE and its Shipbuilding Subsidiaries

Procedures for Handling Unethical Conduct Report



Informant Protection and Rewards

In principle, **HDKSOE and its shipbuilding subsidiaries** prohibit a report from being publicly disclosed to ensure the confidentiality of an informant and reported information. To this end, we ensure that the identity of the informant will not be exposed without his/her consent. Moreover, if such a report contributes to saving costs and preventing financial losses of the company, a reward of up to KRW 1 billion may be granted.

Ethics & Compliance

Governance

Compliance Management Governance

Compliance Management Organization

HDKSOE and its shipbuilding subsidiaries have established compliance management governance for each company. In line with the compliance management plan and directions determined by the Board of Directors (BoD) and CEO, various activities including compliance education and compliance control monitoring are carried out.

Designation of Compliance Officers

Company	Name	Appointment Date (Term)	Career
HDKSOE	Kim Min-sung	Feb. 07, 2023 (3 years)	Former Head of Legal Team at HD Hyundai Oilbank Current Head of Domestic Legal Team and Compliance Officer at HDKSOE
HHI*	Kim Hae-sung	Apr. 22, 2021 (3 years)	Former In-house Counsel at HMD Current Senior Counsel at HHI Legal Team
HMD	Bae Sang-woon	Dec. 9, 2022 (3 years)	Former In-house Counsel at Seongdong Shipbuilding & Marine Engineering Co., Ltd. Current Senior Counsel at HMD Legal Team
HSHI	As an unlisted company, no compliance officer has been designated or operated. Fair Trade Compliance Manager is in charge of compliance control.		

* HHI newly appointed Kim Tae-jeong as Compliance Officer (Apr. 24, 2024)

Strategy

Compliance Management Strategy

Ethics and Compliance Management Practice Declaration

Every year, CEO publicly declares the commitment and policies of **HDKSOE and its shipbuilding subsidiaries** to practice ethical and compliance management including establishing an anti-corruption management system, spreading a culture of fair trade, and continuously revising ethical and compliance management systems.

Cyber Counseling for Unfair Transaction

To establish a fair subcontract transaction culture, **HDKSOE and its shipbuilding subsidiaries** operate a cyber-counseling system where contractors can report or inquire about suspicious cases of unfair transactions directly to the compliance management organization. We make efforts to ensure that an informant will not be disadvantaged from his/her report. As part of such efforts, disclosing information related to an informant is prohibited to operate the system efficiently. If an informant suffers from exposure of identity or disadvantages resulting from discrimination, the informant can request the Business Ethics Team for protection or relief.

In 2023, four cases of re-subcontract counseling were received and finalized after the investigation in due process.

Compliance Education

HDKSOE and its shipbuilding subsidiaries regularly hold compliance education sessions for all employees. The education covers fair transaction, subcontracting, illegal dispatch, etc. with differentiated curriculum depending on responsibilities and positions. Moreover, we strive to increase awareness of compliance management among employees by identifying certain needs of education on major compliance issues based on risk assessment results and providing both online and offline education and consulting services.

Delivery of Compliance News

HDKSOE and its shipbuilding subsidiaries have provided articles to employees in the form of news materials on selected timely compliance issues such as revisions and violations of laws related to fair transactions, anti-corruption, and economic sanctions.

In 2023, a total of 14 compliance news materials were delivered to employees on the Regulation Trend to Eliminate Technology Misuse, the Revised Enforcement Decree of the Improper Solicitation and Graft Act (draft), and the Implementation of Subcontract Price Adjustment System.

Completion of Major Compliance Education Programs in 2023

(Unit: person)

Category	HDKSOE	HHI	HMD	HSHI
Compliance Staff Training	74	203	43	55
Compliance Education (1st half)	522	2,487	1,265	2,105
Compliance Education (2nd half)	312	1,443	689	719
Delivery Price Indexation System Education	6	67	14	37

Ethics & Compliance

Risk Management

Compliance Risk Management

Compliance Risk Assessment

HDKSOE and its shipbuilding subsidiaries conduct an annual compliance risk assessment to identify and analyze compliance risks. The compliance risk assessment evaluates the risks of violating related laws that employees may face while performing their duties, such as the Monopoly Regulation and Fair Trade Act (hereinafter referred to as 'Fair Trade Act'), the Fair Transactions in Subcontracting Act (hereinafter referred to as 'Subcontracting Act'), and the Anti-corruption Act. The assessment also evaluates the effectiveness of measures to control such risks. Based on the assessment results, efforts are being made to mitigate risks through risk-specific education, monitoring, and auditing. In addition, we monitor the effectiveness of education afterward by checking whether there are any improvements for each risk indicator.

Compliance Risk Assessment Criteria

Risk Assessment	Fair Trade Act, Subcontracting Act, Anti-Corruption Act, etc.
Pre-consultation System	Legal support Systems, email, phone calls, visits, etc.
Internal Control Systems	Compliance control standards and Compliance Program

Implementation of Compliance Risk Assessment

Category	Number of Departments Assessed (Percentage)
HDKSOE	68 (100%)
HHI	203 (100%)
HMD	46 (100%)
HSHI	55 (100%)

Compliance Control Standards

HDKSOE and its shipbuilding subsidiaries set compliance control standards in 2012 and have applied them to adhere to laws and regulations and to promote transparent business practices. The compliance control standards define the roles and responsibilities of the BoD, CEO, and Compliance Officer and address matters such as compliance risk assessment, operation of compliance education programs, employees' voluntary compliance monitoring, reporting and processing of violations, and validity evaluation of compliance control standards. The CEO establishes and revises the compliance control standards with the approval of the BoD. In case of the revisions caused by amendments to related laws, reporting to the BoD can be substituted for its approval.

Operation of Compliance Program (CP)

In accordance with the CP regulations, **HDKSOE and its shipbuilding subsidiaries** monitor the CP operation status and employees' compliance status at least once a half year. Based on the monitoring results, we appropriately provide manuals and visiting training for those departments with high-risk exposure to violating laws. The results of monitoring and associated education are reported to BoD twice a year.

Compliance Guidelines for Anti-Corruption and Economic Sanctions Laws

To establish a fair and clean management culture and manage the risks of legal violations, **HDKSOE and its shipbuilding subsidiaries** conduct thorough pre-checks and reviews on anti-corruption activities in accordance with Anti-corruption Laws Compliance Guidelines. Furthermore, we conduct monitoring activities based on the Economic Sanctions Laws Compliance Guidelines to prevent risks related to domestic and international economic sanctions. In particular, we strive to minimize risks of illegal acts that employees may conduct while performing duties by operating a compliance pre-approval system such as approval of providing economic benefits, and due diligence for transactions related to economic sanctions and providing one-on-one consultation with experts through a legal support system.

Anti-Corruption Laws Compliance Guidelines, Economic Sanctions Laws Compliance Guidelines

- HDKSOE Anti-Corruption Laws Compliance Guidelines
- HHI Anti-Corruption Laws Compliance Guidelines
- HMD Anti-Corruption Laws Compliance Guidelines
- HSHI Anti-Corruption Laws Compliance Guidelines

Anti-Bribery Management System Certification

HDKSOE and its shipbuilding subsidiaries obtained 'ISO 37001', an international certification for anti-bribery management systems from the international verification organization Lloyd's Register Quality Assurance (LRQA) in 2022. This international standard defines the system that prevents and manages the risks of bribery and corruption arising from corporate activities. To obtain the certification, a total of 45 items in 7 ethical management categories had been strictly assessed over 2 months such as organizational context, leadership, planning, support, etc. The result satisfied all detailed criteria and proved our high-level compliance management capacities and endeavors toward fair transactions with contractors.

ISO 37001 Certificates

Third-Party Certification Status of Anti-bribery Management System

Category	Certification Standard	Certifying Body	Validity Period
HDKSOE	ISO 37001:2016	LQRA	Sep. 2022 ~ Sep. 2025
HHI	ISO 37001:2016	LQRA	Sep. 2022 ~ Sep. 2025
HMD	ISO 37001:2016	LQRA	Sep. 2022 ~ Sep. 2025
HSHI	ISO 37001:2016	LQRA	Oct. 2022 ~ Oct. 2025

Information Security

Governance

Information Security Governance

Executive Management Responsibility

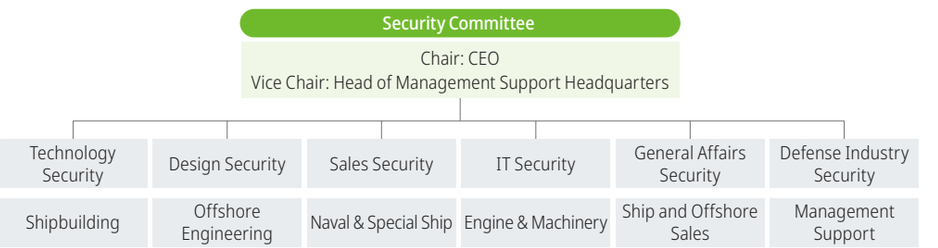
HDKSOE and its subsidiaries appoint employees with expertise in information security and privacy protection as the Chief Information Security Officer (CISO) and the Chief Privacy Officer (CPO). While the CISO is responsible for the operation of information security organizations, security planning, audit, risk management, and training and drills, the CPO is in charge of establishing internal management plans for privacy protection, overseeing personal information management, processing complaints and relieving damages, and managing personal information files.

Roles of the Security Committee

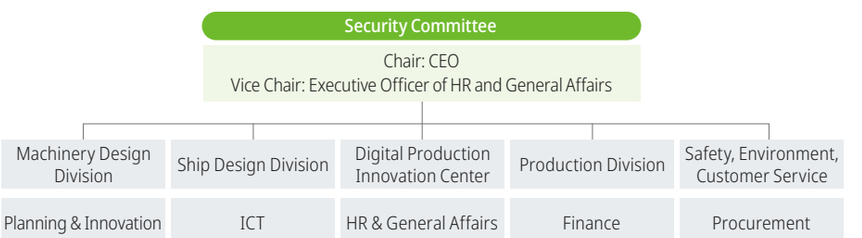
HDKSOE and its subsidiaries hold a meeting for the Security Committee at least once a year which is participated by key executives and the CEO of each company as Chair of the Committee. The Security Committee deliberates and coordinates important security decisions such as the establishment, revision, and abolition of company-wide security regulations, plans, and budgets for security programs, securing of human resources, improvement measures and support for enhanced security level, the introduction of new technologies, responses to security incidents and prevention measures against a repetitive incident.

HDKSOE Security Committee

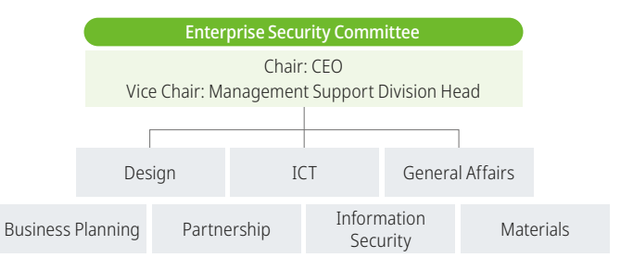
HHI Security Committee



HMD Security Committee



HSHI Security Committee

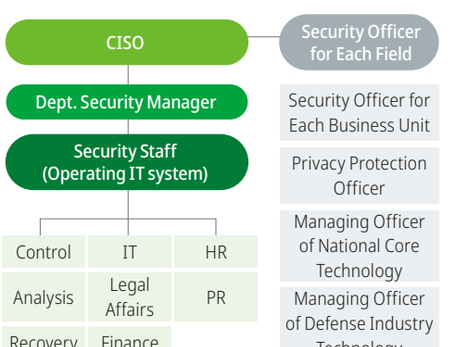


Incident Response Team (IRT)

HDKSOE and its subsidiaries have formed an Incident Response Team (IRT) to promptly respond to information security incidents, thereby minimizing damages from such incidents and returning to normal operations as soon as possible.

The IRT, led by the CISO as a team leader, consists of security officers in each business Business Unit security managers and staff in each dept., operators of each computer system, and outside technicians if necessary. The IRT investigates the incidents, takes necessary actions, establishes measures to prevent the recurrence of incidents, and disseminates relevant information within the group. In particular, if there is a leak of personal information, information on national core technology, defense industry technology or other critical national information, which is considered a critical national information asset, the IRT cooperates with external agencies for damage recovery by reporting such incident through the CPO or the Managing Officer of National Core Technology/National Defense Industry Technology.

IRT Structure



Information Security

Strategy | Risk Management

Information Security Activities

Establishment and Revision of Information Security Regulations

HDKSOE and its subsidiaries have built an integrated security management system at the group level by establishing and revising information security regulations (on security management, security of national core technologies, privacy protection, security of GRC facilities, etc.) to respond to changes in governing domestic and international laws as well as in security environment.

Such information security regulations are revised annually by reflecting revisions of relevant laws, examination of security level, analysis of information security vulnerabilities, results of penetration testing, and inspection of the incident response system.

Posting of Information Security Regulations

HDKSOE and its subsidiaries post the information security regulations (on security management, security of national core technologies, privacy protection, security of GRC facilities, etc.) on the intranet to which all the executives and employees are accessible. They should refer to such regulations posted on the intranet to comply with the detailed requirements specified in the security regulations while performing their duties.

Operation of Information Security Regulations

HDKSOE and its subsidiaries operate a 'Personal Penalty Point System' for the employees where the penalty points are imposed on any violation of information security regulations.

Under this system, penalty points are imposed on those employees who fail to comply with security regulations or to properly perform security management tasks during regular, random, and special inspections. While the penalty points differ depending on the seriousness of violations, the points double for a second offense of the same issue, and triple for three or more offenses.

The imposed penalty points are accumulated for two years. When such accumulated penalty exceeds 10 points, the employee involved is referred to the Personnel Committee and is subject to disciplinary measures based on the employment rules and regulations on reward and punishment.

Assessment of Security Level (Analysis of vulnerability, penetration testing, etc.)

To enhance the security level and strengthen competitiveness, **HDKSOE and its subsidiaries** conduct security level assessments annually, thereby improving the weaknesses in security and stabilizing the security system.

Criteria for Security Level Assessment

Classification	Items
Management security (43 items)	- Establishment and revision of security regulations - Development of an annual business plan - Security commitment, security activities, security training, etc.
Physical security (43 items)	- Designation of protected area and management of authorization of access - Operation of security guards and access control procedures - Installation, operation, and management of CCTV
IT security (44 items)	- Control of access to servers and Database, security management - Procedures and organization of responses to security incidents - Confirmation of protection level of IT assets
Privacy protection (55 items)	- Establishing an organizational and annual plan for privacy protection - Collection, use, provision, and destruction of personal information - Check on the existence of mandatory safety measures for private information
Technology security (2 areas)	- Inspection of vulnerabilities in servers, network equipment, etc. - Penetration testing of a publicly disclosed web system such as a homepage

Third-party Certification of Information Security System

HDKSOE and its subsidiaries have continued to advance various matters to ensure information security such as physical measures against threats to information security, continuous revision of information security procedures and regulations, and strengthened system security programs and networks. Based on the excellence of such management activities and achievements, our information security system has obtained and maintained the certifications from the third party by the international standard (ISO 27001).

HHI has obtained and maintained third-party certifications for its information security system (ISO 27001) as well as, cloud information protection and privacy protection (ISO 27017, ISO 27018) and Privacy Information Management System (ISO 27701) in recognition of excellence in physical security measures, information access control, and service stability of its information security and privacy protection systems.

Third-party Audit of General IT Technologies

HDKSOE and its subsidiaries secure the capability to control overall operation, data access security, and the development and modification of IT programs necessary for operating the internal accounting management system.

In addition, we undergo third-party audits concerning the infrastructure setup, security management activities, and overall information technology general controls related to the acquisition, development, maintenance, and operation of IT programs.

Third-party Certifications for Information Security Systems

Classification	Certification standard	Valid term	Scope of certification
HDKSOE	ISO/IEC 27001:2022	Feb. 2024 ~ Feb. 2027	All business sites using the HDKSOE system
	ISO 22301:2019	Dec. 2022 ~ Dec. 2025	HD Hyundai Global R&D Center
HHI	ISO/IEC 27001:2022	Feb. 2024 ~ Jan. 2027*	All business sites using the HHI system
	ISO/IEC 27017:2015		
	ISO/IEC 27018:2019		
	ISO/IEC 27701:2019		
HMD	ISO/IEC 27001:2022	Jan. 2022 ~ Jan. 2025	All business sites using the HMD system
HSHI	ISO/IEC 27001:2022	Dec. 2021 ~ Dec. 2024	All business sites using the HSHI system

* The certification was valid until 2023 and has been renewed in 2024.

Information Security

Strategy | Risk Management

Information Security Activities

Responses to Security Incidents

To identify any attempts related to security incidents or threats, **HDKSOE and its subsidiaries** detect signs of potential security incidents through regular monitoring (access logs, firewalls, penetration prevention systems, antivirus software inspection logs, etc.).

An employee recognizing a security incident should report to the dept. security manager through various channels where the incident details can be promptly reported, informed, and disseminated. The dept. security manager receiving such a report should immediately form a response team for emergency response, with the participation of in-house experts including IT system operators and a dedicated security organization. In addition, actions to recover and improve systems should be taken to prevent recurrence through in-depth analysis of the types and progress of the incident.

Information Security Training

To raise the awareness of employees, **HDKSOE and its subsidiaries** regularly provide security training on the structure and use of information security systems, as well as what to comply with and how to behave in performing duties. Moreover, we provide privacy protection training at least once a year for personal information handlers.

Response Process in Case of Incident

Security Training Program

Title	Target	Description
Security training for new employees	New employee	• Security rules, the practice of security commitment, compliance with the protection of national core technology and business secret
Training for division security manager	Division security manager	• Internal security regulations (details), use of security portal system
Privacy protection training	Personal information handler	• laws related to personal information, measures to secure safety, procedures of response to information leakage
Training for national core technology handler	Those involved in national core technologies	• Relevant laws related to national core technology and procedures of export reporting, response procedures to technology outflow and violation
Training for security change management	GRC residents	• Shift of security perception, screen watermark, and precautions when using a business laptop
Monthly security training	All employees	• Training on 'Security Day' every month (security related to e-mail, documents, and daily lives)
Training for prospective retirees	Prospective retirees	• Procedures of examining security for prospective retirees, compliance with the protection of national core technology and business secret

Privacy Protection Activities

Privacy Protection System and Awareness-raising

HDKSOE and its subsidiaries strive to protect the personal information of all stakeholders in recognition of the importance of privacy protection. To manage related risks across the entire company, each company appoints its own CPO and makes sure that the personal information of all stakeholders including customers, employees, and supplier companies is safely managed according to the governing laws to prevent loss, theft, leakage, forgery, falsification, or destruction of such information. Furthermore, we are monitoring whether the personal information handling system complies with the mandatory safety measures for personal information (administrative, technical, and physical safety measures) to enhance the level of privacy protection through improvement activities.

Collection and Processing of Personal Information

HDKSOE and its subsidiaries collect personal information at the minimum necessary level to provide customer consultation and various services. Such collected personal information should not be used for purposes other than previously defined. When the purpose of use is changed, prior consent should be sought from the individuals.
In principle, personal information should be destroyed right after the purpose of collecting and using such personal information has been attained. However, name, e-mail, mobile phone number, and address would be retained for 2 years before being destroyed based on the internal management regulation.

Automatic Collection of Personal Information and Refusal

In principle, **HDKSOE and its subsidiaries** do not use Cookie, which enable us to store and retrieve personal information automatically.
We respect the right of information subjects to opt in/out in terms of the automatic collection of personal information (cookie installation) and instruct them how to opt out of the automatic collection through our Privacy Policy.

Rights and Obligations of Personal Information Subjects

HDKSOE and its subsidiaries are committed to our obligations to take necessary actions, respecting the rights of information subjects to access, correct errors, and request deletion. When an information subject requests correction, such personal information will not be used until the correction is duly made. Moreover, once the deletion is requested and processed, the deleted information will not be retained any longer.

Rights of Personal Information Subject

Right to access	Information subjects have the right request for access to their personal information held by the company at any time
Right to correction and deletion	Information subjects have the right to request for correction and deletion of their personal information held by the company at any time
Right to suspension of information processing	Information subjects have the right to request for suspension of processing their personal information held by the company at any time

Personal Information Safety Measures

In handling personal information, **HDKSOE and its subsidiaries** take physical and administrative measures to secure safety that prevent any loss, theft, leakage, forgery, falsification, or destruction of such information. For further details about personal information safety measures, please refer to the Privacy Policy of each company.

- HDKSOE Privacy Policy
- HHI Privacy Policy
- HMD Privacy Policy
- HSHI Privacy Policy

Risk Management

Governance

Risk Governance Framework

Risk Management and Oversight Responsibility

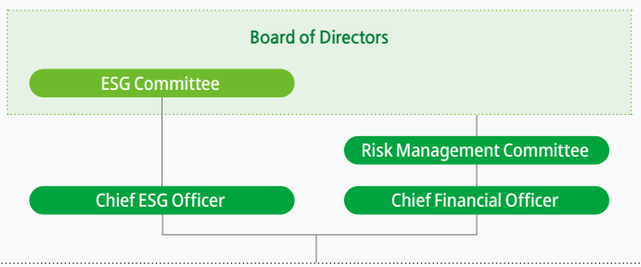
HDKSOE and its shipbuilding subsidiaries operate a risk governance framework of checks and balances to rightly identify business-related risks, while at the same time minimizing the impacts of such risk factors on businesses and finances through systematic and effective countermeasures.

To identify, assess, and respond to major impacts that the risks and organizations might have on the economy, environment, and stakeholders throughout the entire business and value chains, all the employees from each sector are involved in risk management activities. In particular, the Risk Management Committee reviews risks and seeks countermeasures at an enterprise level for such significant risk factors as foreign exchanges, raw materials, etc. The Chief Financial Officer reports key risks to the Board of Directors which are expected to have great effects on current operations or future business plans.

In addition, in line with the shift to an ESG Management Paradigm, key identified risks and response measures related to the environment, society, and governance as well as major impacts of the organization on the economy, environment, and stakeholders are being reported through the Chief ESG Officer to the ESG Committee under the Board.

HDKSOE and its shipbuilding subsidiaries have independent functions of internal accounting control and ethical management, which oversee if the risk management activities are conducted systematically and effectively based on the relevant internal regulations and guidelines. The oversight is carried out to check whether internal control and risk management activities of each department are properly conducted, and the results are reported to the Audit Committee under the BoD.

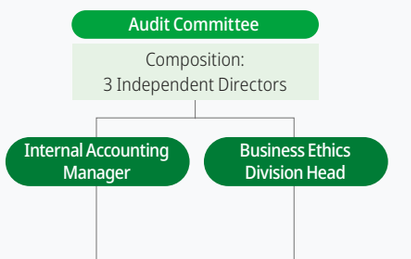
Risk Management (second line)



Management Areas by Major Risks (first line)

Finance	Environment	Health and Safety	Human Resources
Monitoring financial risks (foreign exchange, etc.) that may affect business operations	Managing environmental risks	Managing health and safety risks	Managing risk of labor costs, human rights issues, etc.
Compliance	**ESG**	**Procurement**	**Project**
Managing compliance-related risks (e.g. unfair transaction, subcontract, corruption, etc.)	Managing non-financial risks related to the company's sustainability	Monitoring raw material prices and supply & demand stability; managing supply chain sustainability	Managing project risks (related to contract, commerce, technology, etc.)
Quality	**Information Security**		
Managing quality risks reflecting customer and supply chain	Managing business continuity and security risks		

Risk Management Auditing (third line)



Internal Accounting Management/Support	Ethical Management
Examining operations and current status of internal accounting management system	Conducting ethical management and auditing activities at the entire group level

Risk Management

Strategy

Risk Management Procedures

Enterprise-wide Risk Management

HDKSOE and its shipbuilding subsidiaries are promoting enterprise-wide risk management activities led by the Risk Management Committee to properly manage a variety of risks and ensure the soundness, reliability, and stability of corporate management. To this end, exposures are calculated by applying measurement and analysis indicators by risk factors that might have significant impacts on the business. Then, policies are developed and implemented to mitigate and reduce individual risks. In particular, priority risks such as foreign exchange and raw material are monitored by the Risk Management Committee, for it may greatly impact business performance (profitability). To minimize risks such as value change in foreign currency transactions and property loss, as well as price fluctuation and unstable supply & demand of raw materials, the committee focuses on improving risk prediction and comes up with effective response measures.

HDKSOE and its shipbuilding subsidiaries provide all the employees with risk management training and share the company's risk management regulations and detailed rules. Moreover, to strengthen the oversight of enterprise-level risk management activities, extra training is provided at least once a year to the members of the Audit Committee (Outside Directors) in line with the company's internal accounting management policy.

2023 Audit Committee Risk Management Training

Disclosure Risk	System improvements as stated in the Act on External Audit of Stock Companies, and disclosure related to ESG (IFRS S1, S2)
Accounting Risk	Characteristics of accounting for the order-taking industry
Business Risk	Future of HD Hyundai Group under the global uncertainty

Business Unit-tailored Risk Management

HDKSOE and its shipbuilding subsidiaries structurally separate an enterprise-level risk management system from the primary tasks of each business unit to allow them to focus more on their primary tasks (shipbuilding, offshore services, development, production, and construction of special ships, engines, etc.). The risk factors for respective business units are identified and managed according to the specific technologies, requirements, and operational methods of the work sites that are applied to the products of each business unit. Several meetings including a quality management meeting, a production monitoring meeting, and a health and safety meeting are held by business units to review risk status periodically and discuss how to manage critical risk factors.

Based on the internal policy on 'Risk and Opportunity Management', HDKSOE and its shipbuilding subsidiaries incorporate risk and opportunity management plans established by each dept. into a dept.- and enterprise-level quality policies. The results of overall risk and opportunity management are compiled and reported as part of the quality management performance, while chances to improve are continuously explored. Furthermore, the 'Principle of Product & Service Safety for Customers' was established and implemented to identify consumer safety-related risks and seek appropriate countermeasures.

HiClass Risk Management Training

Risk Identification

HDKSOE and its shipbuilding subsidiaries comprehensively analyze overall data on the company's past management performance, together with revisions to laws related to the shipbuilding industry, changes in economic conditions, and shifts in the expectations or requirements of stakeholders. Through such analysis, risks are identified that may have great impacts on current operations or future business plans.

Risk Assessment

HDKSOE and its shipbuilding subsidiaries evaluate the possibility (frequency) and significance (intensity) of each risk factor which is confirmed according to the risk identification procedure. The possibility and significance of individual risk factors can be assessed by both a quantitative method as an absolute measure and a qualitative method as a relative measure depending on the characteristics of risks. We regularly evaluate the possibility and significance of each risk factor, thus checking the risk exposure status.

Risk Assessment Cycle

Assessor	Cycle
Foreign Exchange Risk Management Committee	Once a month
Raw Material Risk Management Committee	Once a quarter
ESG Committee	Regular: Once a year Random: When necessary

Risk Prioritization

HDKSOE and its shipbuilding subsidiaries select those risks as priority risks, which require imminent actions due to high possibility (frequency) or sufficient response measures due to great significance (intensity) as a result of risk assessment. When prioritizing risks, not only risk assessment results, but also any experience or lessons learned on the issues arising from past management and their financial impacts are taken into consideration.

Risk Appetite and Responses

HDKSOE and its shipbuilding subsidiaries analyze the probability of assessed risks including priority risks, as well as potential business operation and financial impacts in case of such risks occurring. Then, the company's appetite and tolerance to each risk are determined based on the comprehensive analysis of the probability and impact. The company conducts a sensitivity analysis by key risk factors, when necessary, to identify the risk probability and impact, and develops countermeasures to mitigate potential restrictions on business activities or financial loss.

Risk Management

Priority Risks Management

Foreign Exchange Risk

HDKSOE and its shipbuilding subsidiaries, as leading export companies, need to manage foreign exchange risks because most of our revenues are generated in foreign currencies. Foreign exchange risks refer to the uncertainty where the company's net asset denominated in foreign currencies or the net value of cash flow may change due to unexpected foreign exchange fluctuation.

HDKSOE and its shipbuilding subsidiaries manages a considerable portion of foreign exchange risk exposure positions unhedged by the balance of foreign exchange derivatives transactions among net inflows of each foreign currency or the net assets denominated in foreign currencies through hedge trading such as forward exchange transactions. We set hedging criteria and execute hedging strategies based on comprehensive consideration of foreign exchange volatility and order conditions.

Raw Material Price Fluctuation Risk

The profitability of **HDKSOE and its shipbuilding subsidiaries** such as operating profit is influenced by the fluctuation of raw material prices. Raw material prices can increase compared to those expected at the time of ship orders, due to changes in domestic and foreign economic conditions and evolving international policy trends, which, in turn, leads to reduced profitability.

Based on the analysis of supply & demand as well as price fluctuation, HDKSOE and its shipbuilding subsidiaries incorporate the risks of volatile raw material prices within a predictable range, into a ship contract. However, if a raw material price is expected to exceed an initial forecast, we minimize the impacts of such fluctuation by implementing countermeasures such as signing a long-term procurement contract, diversifying suppliers, securing an optimal inventory level, and executing hedge trading.

Other Risk Management

Tax Risk

With the basic principle of contributing to national and regional development, **HDKSOE and HHI** manage potential tax risks that can occur during business operations. To this end, the companies establish and operate tax policies, while complying with the laws of the countries in which they perform the business and ensuring a transparent tax payment. Moreover, the companies manage thoroughly to prevent any violations of tax laws such as tax evasion, or irregular tax accounting practices.

HDKSOE and its shipbuilding subsidiaries disclose details of corporate taxes annually through the Financial Supervisory Service (FSS)'s DART (Data Analysis, Retrieval and Transfer System), and secure transparency and objectivity through the audits conducted by an independent auditor.

Full Text

Tax policies of HDKSOE and HHI

BUSINESS CASE

HDKSOE Acquires International Standard Certification for Business Continuity Management System (BCMS)

HDKSOE has established a dedicated risk management body to examine an enterprise-wide risk management capacity and build a systematic risk management system. In particular, HDKSOE has obtained the ISO 22301 certification from the DNV (Det Norske Veritas) for its Business Continuity Management System (BCM). The BCM is a preventive, management, and recovery system to minimize potential damages and restore the company's operations within the shortest time even in the failures of the company's major functions due to security incidents, physical accidents, and disasters. HDKSOE is supposed to receive a post-evaluation once a year, and a renewal evaluation every three years to maintain the ISO 22301 certification for the overall risk management system including the BCM.

Full Text of Tax Policies

HDKSOE and HHI set the principle of contributing to national and regional development through fair tax management and compliance with tax laws as corporate citizens. To this end, the company has established and implemented systematic standards and procedures for tax policy and risk management, while striving to pay taxes transparently.

Tax Principles

The company shall comply with the laws of each country where it performs business and fulfill its tax obligations diligently.

① Principle of Arm's Length Transaction

- The company continuously conducts internal monitoring to prevent income shifting and the Base Erosion and Profit Shifting (BEPS), and submits integrated/individual company reports and respective country reports to the tax authorities when legal requirements such as transaction volume with foreign related parties are met.
- The company transacts with domestic and foreign related parties at arm's length prices (ALP) and takes advantage of reviews and opinions from outside experts to calculate objective and professional ALP.
- The company does not conduct violations against tax laws or any abnormal tax accounting practices with the purpose of tax evasion and does not exploit differences in tax laws of different countries.

② Principle of Tax Risk Management

- The company carefully reviews and evaluates related risks to manage various tax risks that can arise from business operations including entry into new industry markets, corporate restructuring such as mergers and acquisitions, and alteration in tax laws, and establishes a decision-making system based on such evaluation.
- The company abides by all tax reporting and due dates for payment, and adequate evidence for transactions is documented and preserved.
- In the event of significant issues arising from business activities, the company conducts close reviews on such issues in cooperation with outside experts.

③ Principle of Tax Information Disclosure

- The company discloses details of corporate taxes annually through the FSS's DART including calculation criteria and composition of corporate tax expenses (income), deferred tax asset, liabilities and changes, securing transparency and objectivity through the audits conducted by an independent auditor.

Risk Management

Risk Management

Risk Sensitivity Analysis

Sensitivity Analysis of Financial Risks

HDKSOE and its shipbuilding subsidiaries are exposed to financial risks such as credit, liquidity, and market risks. For example, we are exposed to market risk where the fair value of financial products or future cash flows fluctuate according to changes in market prices. In this context, market price management activities are carried out to manage and control such market risk exposures to an acceptable extent, while optimizing profits. In particular, we hedge the interest rate risk by using interest rate swaps that minimize the impact of fluctuations in the value of variable interest bonds and borrowings on current net income.

Sensitivity Analysis of Non-financial Risks

As 2 to 3 years is required from receipt of an order to delivery of ships, **HDKSOE and its shipbuilding subsidiaries** are exposed to risks of various changes such as increased prices of equipment and materials, fluctuation in exchange rates and oil prices, and changes in labor hours required for production. Accordingly, we analyze the impact of the required number of laborers, labor hours, and working days for shipbuilding on current or future profits. As for the risks associated with changes in labor hours, a dedicated dept. for labor hour management is responsible for managing related uncertainties.

Sensitivity Analysis of Current Profit and Loss Based on Interest Rate Fluctuation (Unit: KRW million)

Classification	Variable Interest Rate Financial Instruments		Interest Rate Swap Contracts		Remarks
	100bp increase	100bp decline	100bp increase	100bp decline	
HDKSOE	(1,334)	1,334	5,802	(5,802)	Consolidated basis
HHI	(8,642)	8,642	5,802	(5,802)	Consolidated basis
HMD	2,206	(2,206)	N/A	N/A	Consolidated basis
HSHI	5,311	(5,311)	N/A	N/A	Separate basis

Sensitivity Analysis of Profit and Loss According to Changes in Labor Hours (Unit: KRW million)

Classification	Impacts on Current Profit/Loss		Impacts on Future Profit/Loss		Remarks
	10% increase	10% decline	10% increase	10% decline	
HDKSOE	(142,355)	125,233	(964,936)	982,146	Consolidated basis
HHI	(85,306)	74,801	(607,000)	617,505	Consolidated basis
HMD	(36,283)	32,303	(149,045)	153,025	Consolidated basis
HSHI	(20,766)	18,129	(208,891)	211,615	Separate basis

Emerging Risks

Uncertainty in Decreased Working Age Population

South Korea's population growth rate is expected to decline by an annual average of -0.16% for the ten years after 2025, while the working-age population is forecast to decrease by an average of 500,000 annually in the 2030s. This projection is based on OECD fertility rate estimation and domestic scenarios to maintain the fertility rate, displaying that future changes in the working-age population face a high level of uncertainty.

HDKSOE and its shipbuilding subsidiaries require a large labor force to perform diverse and complex shipbuilding tasks, and R&D personnel with a high level of technical expertise. In particular, the risk factors including extended production hours and delayed delivery due to insufficient labor forces, and excessive increases in labor costs to secure personnel, have negative impacts on the company's profitability including current profits.

HHI keeps expanding recruitment opportunities for foreign workers and supports their early settlement by operating the Foreign Service Center. Furthermore, HHI promotes capacity-building activities by providing regular assessments and refresher training to foreign workers of in-house subcontractors.

HMD recruits skilled workers for production from more than ten countries including Vietnam, Indonesia, and Sri Lanka. HMD provides specialized training programs for welding, painting, and electricity to transition them into skilled labor. Moreover, to help them settle more easily, HMD opened the Foreign Service Center to support interpretation and administrative services.

HSHI is also promoting specialized training to supply foreign workers more efficiently to the work site and keeps holding events to improve the capacities of foreign workers and support their settlement, such as painting skill competitions, safety culture campaigns, and Korean speech contests.

Uncertainty in the Stringency of Marine Environmental Regulations

Regulations on Greenhouse Gas (GHG) and air pollutant emissions from ships have been continuously tightened up at both home and abroad. The IMO (International Maritime Organization)'s Energy Efficiency Design Index (EEDI) regulations, although varying by ship type and size, require at least a 20% reduction in carbon emissions from ships by 2025 compared to 2008 levels, and a 30% reduction from 2025. On top of that, new regulations such as the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII) have been introduced to regulate carbon emissions from existing ships. With the expectation of these regulations being strengthened consistently, it still is not easy to estimate their intensity due to changing interests related to the marine environment.

HDKSOE and its shipbuilding subsidiaries anticipate that the ship replacement cycle for their (potential) customers may begin around 2025 and 2026, while a paradigm shift is proceeding towards low and zero carbon (LZC) ships. Consequently, it is highly important to stay ahead of the LZC shipbuilding market. In this context, HDKSOE and its subsidiaries keep advancing LZC ship technologies while focusing on expanding orders for market-dominating ships such as LNG- and Methanol-fueled ships.

HHI is concentrating on developing engines that use methanol and ammonia as fuel. HHI has completed the development of the new high-performance HiMSEN H32 methanol engine and is currently developing the H22 model ammonia engine.

HMD is working on commercializing low-carbon, high-efficiency electric-powered ships that apply variable-speed engine control and the HiCONIS-PEMS for optimal energy control, based on LNG dual-fuel engines and Energy Storage Systems (ESS).

HSHI is promoting special projects for efficient LNG supply to reduce energy supply time for LNG-fueled ships and minimize BOG during fuel supply.

ESG Factbook

Summary of Financial Data

Summary of Consolidated Financial Statements

(Unit: KRW mil.)

Title of Account	48th Reporting Period (Jan. 1 ~ Dec. 31, 2021)	49th Reporting Period (Jan. 1 ~ Dec. 31, 2022)	50th Reporting Period (Jan. 1 ~ Dec. 31, 2023)
Current assets	14,562,196	15,775,914	17,735,127
Cash and cash equivalents	4,567,468	2,697,223	3,018,391
Short-term financial assets	660,028	1,304,041	1,595,619
Trade and other receivables	1,067,698	1,026,706	1,460,129
Contract assets	5,502,878	6,435,957	7,156,818
Inventories	1,554,137	2,203,317	2,005,665
Other current assets	1,209,987	2,108,670	2,498,505
Non-current assets	12,730,898	14,107,562	14,507,441
Investments in associates and joint ventures	321,972	269,724	308,959
Long-term financial assets	194,920	201,295	232,714
Investment properties	231,499	222,374	218,330
Tangible assets	9,872,012	10,143,113	10,503,503
Intangible assets	133,536	163,697	190,793
Other non-current assets	1,976,959	3,107,359	3,053,142
Total assets	27,293,094	29,883,476	32,242,568
Current liabilities	11,286,468	15,033,482	17,497,867
Non-current liabilities	3,592,871	2,537,864	2,374,598
Total liabilities	14,879,339	17,571,346	19,872,465
Capital stock	353,866	353,866	353,866
Capital surplus	2,400,507	2,467,506	2,459,695
Capital adjustments	(8,697,363)	(8,703,262)	(8,609,897)
Accumulated other comprehensive income	1,332,379	1,296,442	1,325,568
Retained earnings	14,467,170	14,300,367	14,374,459
Non-controlling interests	2,557,196	2,597,211	2,466,412
Total equity	12,413,755	12,312,130	12,370,103
Valuation method for the stocks of associates and join ventures	Equity method	Equity method	Equity method

Summary of Consolidated P&L (Profit & Loss) Statement

(Unit: KRW mil.)

Title of Account	48th Reporting Period (Jan. 1 ~ Dec. 31, 2021)	49th Reporting Period (Jan. 1 ~ Dec. 31, 2022)	50th Reporting Period (Jan. 1 ~ Dec. 31, 2023)
Sales	15,493,382	17,302,020	21,296,206
Operating profit (loss)	(1,384,816)	(355,561)	282,261
Profit (loss) for the year	(1,141,204)	(295,177)	144,930
Equity Attributable to Owners of Parent	(929,319)	(216,950)	221,711
Non-controlling interests	(211,885)	(78,227)	(76,781)
Total comprehensive income (loss)	(1,046,938)	(260,212)	(11,068)
Equity Attributable to Owners of Parent	(829,592)	(202,696)	103,218
Non-controlling interests	(217,346)	(57,516)	(114,286)
Earnings per share (loss) (KRW)	(13,142)	(3,068)	3,135
No. of consolidated subsidiaries	20	17	19

Summary of Financial Data

Financial Highlights for the Group Companies[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Sales	KRW 100 mil.	1,958	1,805	2,699	83,113	90,455	119,639	28,872	37,169	40,391	42,410	46,464	59,587
Operating profit (loss)	KRW 100 mil.	151	(183)	(116)	(8,003)	(2,892)	1,786	(2,173)	(1,091)	(1,529)	(3,359)	177	3,017
Profit (loss) for the year	KRW 100 mil.	1,964	3,755	3,015	(8,142)	(3,521)	247	(1,601)	(438)	(1,390)	(2,341)	29	2,112
Total assets	KRW 100 mil.	111,091	114,302	117,742	150,787	162,894	171,336	38,783	47,482	49,091	50,565	55,883	74,573
Total liabilities	KRW 100 mil.	3,321	3,057	2,447	94,846	110,016	119,262	16,740	25,730	28,939	33,880	39,274	56,256
Total equity	KRW 100 mil.	107,770	111,245	115,296	55,940	52,878	52,074	22,043	21,753	20,152	16,685	16,610	18,318
Debt ratio	%	3.08	2.75	2.12	169.6	208.1	229.0	75.9	118.3	143.6	203.1	236.5	307.1
Net debt-to-equity ratio[2]	%	-	-	-	21.1	32.1	39.8	-	-	11.16	48.6	40.9	-
Operating margin	%	7.7	-10.1	-4.3	-9.6	-3.2	1.5	-7.5	-2.9	-3.8	-7.9	0.4	5.1
Return on assets	%	1.8	3.3	2.6	-5.4	-2.2	0.1	-4.1	-0.9	-2.8	-4.6	0.1	2.8

1) Financial data of HDKSOE and HSHI are separate basis, while those of HHI and HMD are consolidated basis.
2) As it is a negative (-) ratio, the net debt-to-equity ratio is not calculated.

Distribution to Stakeholders

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Contractors	Cost for raw material procurement[1]	KRW 100 mil.	-	-	-	50,895	60,199	73,230	20,491	26,893	27,044	28,119	31,791	36,717
Employees	Personnel expenditure	KRW 100 mil.	809	803	1,133	11,803	8,867	10,536	3,690	3,742	4,206	3,211	3,585	4,050
Shareholder and investor	Interest expense	KRW 100 mil.	6	8	42	1,256	1,061	1,319	35	51	138	390	469	377
	Dividend	KRW 100 mil.	0	0	0	0	0	0	0	0	0	52	52	52
Government	Corporate tax (profit)	KRW 100 mil.	(502)	(539)	(2,398)	(2,972)	(694)	97	(497)	(134)	(192)	(748)	(23)	973
	Tax and public imposts	KRW 100 mil.	20	14	14	22	22	28	2	2	3	19	24	23
Local community	Donation	KRW 100 mil.	13	22	43	25	27	46	29	29	48	20	18	32

1) HHI's major vendors for raw materials: POSCO, Hyundai Steel Co., Ltd., Emerson Korea Co., Ltd., KumKang Valve Mfg. Co., Ltd., Hanyang ENG Co., Ltd., etc.
Raw material procurement cost for HMD included HVS data and its major vendors are POSCO, Hyundai Steel Co., Ltd., FRANK MOHN AS, etc.
HSHI's major vendors for raw materials: POSCO, Hyundai Steel Co., Ltd., HHI, etc.

Environmental Data*

Environmental Investments

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
GHG reduction investment amount[1]	KRW mil.	0	0	0	6,885	12,422	1,851	-	-	1,137	-	-	-
GHG reduction financial performance	KRW mil.	0	0	0	1,210	242	73	-	-	23	-	-	-

1) Due to changes in the management metrics, the titles of the indicators have differed from those in the previous year's report

Green[1] Procurement

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Green procurement performance	KRW 100 mil.(%)	0(0)	0(0)	0(0)	2,312(3.47)	3,210(3.58)	2,972(3.55)	1,841(8.98)	970(3.27)	932(3.04)	4,082(9.14)	4,777(5.66)	2,672(5.20)
Total procurement	KRW 100 mil.	0	477	2,211	66,683	89,716	83,771	20,506	29,663	30,681	34,526	45,067	54,813

1) Based on eco-labeled products, excellent recycling certified products, and low carbon products

Patent

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Patent application related to environmental impact reduction technologies	Case	86	145	217	156	196	220	1	13	1	0	0	1
Intellectual property application	Case	176	256	363	273	393	435	1	13	1	5	6	24

* Due to the upgrade of the quantitative data calculation system of HDKSOE and its shipbuilding subsidiaries, there may be some changes compared to the 2022 Integrated Report.

Environmental Data

Violations of Environmental Laws[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
No. of violations of environmental laws	Case	0	0	0	0	0	0	0	0	0	0	0	0
Fines paid for environmental law violations	KRW	0	0	0	0	0	0	0	0	0	0	0	0

1) Only significant fines (over USD 10,000 fines imposed on confirmed major violations) are indicated.

Environmental Education[1]

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Employees	Participants	Persons	0	788	1,058	9,532	10,743	11,157	2,633	2,283	2,558	-	307	303
Contractors	Participants	Persons	0	13	9	12,263	10,673	14,872	3,622	3,190	5,370	-	4,488	6,608

1) HDKSOE: education programs for chemical substance handlers (employees), for environmental facility operation manager (contractors)
HHI/HMD: based on chemical substance training for those facilities handling hazardous chemicals in accordance with the Chemicals Substances Control Act (employees and contractors)
HSHI: education programs on environmental laws and regulations, and technological trends (employees and contractors))

Environmental Data

Scope 1&2 Emissions[1]

Category	Unit	HDKSOE[5]			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total emissions (Scope 1+2)[2]	tCO_2eq	7,520	8,191	7,286	529,999	549,552	639,878	155,876	160,950	163,100	255,232	239,869	266,223
Direct emissions (Scope 1)	tCO_2eq	3,199	3,333	2,862	236,741	244,228	276,779	50,696	55,481	57,122	105,687	102,258	113,555
Indirect emissions (Scope 2)	tCO_2eq	4,321	4,858	4,424	293,262	305,331	363,104	105,186	105,476	105,982	149,545	137,613	152,670
GHG Intensity (Sales)	tCO_2eq/KRW bil.	38.40	45.38	22.89	63.82	60.62	53.51	54.54	43.55	40.76	60.18	51.62	44.67
Intensity change rate	%	-4.95	18.18	-49.56	1.39	-5.02	-11.73	2.24	-20.16	-6.40	-6.97	-14.22	-13.46
Total reduction (Scope 1+2)[3]	tCO_2eq	-[4]	-[4]	-[4]	34,475	15,151	8,071	-	-	2,601	-	-	-
Direct reduction (Scope 1)	tCO_2eq	-[4]	-[4]	-[4]	32,151	8,127	566	-	-	1,494	-	-	-
Indirect reduction (Scope 2)	tCO_2eq	-[4]	-[4]	-[4]	2,324	7,024	7,505	-	-	1,108	-	-	-

1) HDKSOE: GRC Headquarters, Ulsan Research Building, Seoul Gyedong Office, Seamarq Hotel
HHI: All business sites
HMD: All business sites
HSHI: All business sites
2) There might be some differences in the sum of emissions amount since the emissions from each business site are rounded off to a whole number.
3) Figures are based on the submitted GHG statement.
4) Unmanaged data
5) Although HDKSOE has been excluded from the Emissions Trading System (ETS) since 2021, we still calculate GHG emissions according to the Guidelines on ETS reporting and certification.

Environmental Data

Scope 3 Emissions[3]

Category	Unit	HDKSOE[5]			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Scope 3 emissions[1]	tCO_2eq	15,338	26,445	115,967	55,628,023	51,907,477	56,118,291	12,807,363	21,626,799	25,698,051	31,530,959	41,171,974	37,519,463
Upstream total other emissions	tCO_2eq	603	5,960	17,394	2,255,896	2,736,292	3,055,146	932,129	1,283,510	1,191,329	1,796,288	2,250,296	2,297,032
Purchased goods and services (Category 1)	tCO_2eq	0	4,523	14,346	2,155,703	2,586,628	2,890,103	887,624	1,210,194	1,117,940	1,726,616	2,167,905	2,234,450
Capital goods (Category 2)[4]	tCO_2eq	0	0	1,051	23,106	44,190	24,263	12,305	7,681	5,909	13,683	38,125	6,707
Fuel-and-energy-related-activities (not included in Scope 1 or 2) (Category 3)	tCO_2eq	553	703	379	31,793	39,905	49,445	10,352	10,945	11,736	14,255	15,359	19,209
Upstream transportation and distribution (Category 4)	tCO_2eq	0	0	209	38,570	37,132	62,152	1,416	27,726[6]	27,868	1,848	2,015	8,505
Waste generated in operations (Category 5)	tCO_2eq	49	69	76	6,644[2]	9,293[2]	13,254[2]	20,357	23,746	23,052	39,830	16,739	17,507
Business travel (Category 6)	tCO_2eq	1	383	754	65	5,193	3,614	65	425	616	53	310	469
Employees commuting (Category 7)	tCO_2eq	0	282	580	15	13,951	12,315	10	2,793	4,208	3	9,843	10,185
Downstream total other emissions	tCO_2eq	14,660	20,486	98,573	53,372,127	49,171,186	53,063,145	11,875,236	20,343,289	24,506,723	29,734,671	38,921,678	35,222,432
Use of sold ships (Category 11)	tCO_2eq	0	0	76,190	53,368,013	49,166,120	53,058,683	11,873,901	20,341,722	24,505,194	29,730,490	38,918,514	35,218,698
End of life treatment of sold ships (Category 12)	tCO_2eq	0	0	2	4,114	5,066	4,462	1,335	1,567	1,529	4,181	3,164	3,734
Investments (Category 15)	tCO_2eq	14,660	20,486	22,381	-	-	-	-	-	-	-	-	-

1) The sum of emissions may differ as the emissions for each category are rounded up to whole numbers.
2) HHI incinerates some of the wastes from its business site internally in addition to outsourcing waste disposal to third parties. The resulting GHG emissions are reflected in Scope 1 and 2.
3) Advancement of GHG Scope 3 emissions calculation methodology
- Scope 3 emissions for 2021 were calculated based on a methodology developed by HDKSOE and its shipbuilding subsidiaries (third-party verification conducted by the Korea Management Registrar).
- Scope 3 emissions for 2022~2023 were calculated based on a methodology, jointly established by HDKSOE and its shipbuilding subsidiaries, domestic and foreign classification societies, and domestic shipbuilders. Third-party verification was conducted by the Korea Foundation for Quality.
(However, it is noteworthy that some methodologies and scope of application may vary according to the circumstances of each company. Furthermore, additional changes may occur as the standardization of Scope 3 emissions calculation methodologies and the development of global guidelines have been underway.)

4) As the capital goods emissions are calculated based on investment or acquisition amounts for major facilities as recorded in the Business Report, yearly deviations may occur.
5) As the SD Business Unit was newly established in 2022, emissions were found associated with Cat.1 (purchased goods and services), Cat.4 (Upstream transportation and distribution), Cat.11 (Use of sold products), and Cat.12 (End-of-life treatment of sold products).
6) Missing coverage from emissions calculations in 2021 was reflected.

Environmental Data

Energy[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total energy consumption[2]	TJ	153	167	149	9,406	9,887	11,511	2,865	2,903	2,905	4,395	4,096	4,552
Fuels	TJ	63	65	57	3,063	3,268	3,700	667	699	696	1,271	1,222	1,365
Steam	TJ	0	0	2	218	243	227	0	0	0.312	0	0	0
Electricity	TJ	90	102	91	6,130	6,382	7,590	2,198	2,204	2,214	3,125	2,876	3,190
Non-renewable energy consumption	TJ	90	102	90	6,128	6,380	7,588	2,198	2,204	2,214	3,125	2,876	3,190
Renewable energy consumption	TJ	0	0	0.3	2	2	2	0	0	0.03	0	0	0
GHG emissions reduction recognized through REC (Renewable Energy Certificate) procurement	TJ	0	0	0	0	0	0	0	0	0	0	0	0
Intensity (sales)	TJ/KRW bil.	0.78	0.92	0.55	1.13	1.09	0.96	1.00	0.79	0.73	1.04	0.88	0.76
Intensity change rate	%	-3.67	18.27	-33.99	4.88	-3.71	-11.74	3.35	-21.65	-7.57	-6.64	-14.94	-13.34
Non-renewable energy generation													
Steam	TJ	0	0	0	417	427	450	0	0	0.312	0	0	0
Renewable energy generation													
Solar power	MWh	0	0	74	167	161	223	0	0	8.2	0	0	0
Wind power	MWh	0	0	0	1,674	393	0	0	0	0	0	0	0
Energy sales													
Electricity	MWh	0	0	0	1,674	393	0	0	0	0	0	0	0
Steam	TJ	0	0	0	199	184	225	0	0	0	0	0	0
Percentage of non-polluting vehicles	Vehicles (%)	0(0)	0(0)	3(6.25)	0(0)	3(1.60)	3(1.52)	0(0)	0(0)	11(7.2)	1(0.68)	4(2.70)	19(12.58)

1) HDKSOE: GRC Headquarters, Ulsan Research Building, Seoul Gyedong Office, Seamarq Hotel
HHI: All business sites
HMD: All business sites
HSHI: All business sites
2) The data was compiled based on the GHG emissions permits submitted, and there may be discrepancies with the sum of individual consumption amounts because the consumption for each business site was rounded down to the whole number.

Environmental Data

Raw Materials[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Steel purchase amount	KRW mil.	0	0	0	1,173,172	1,279,990	1,234,824	620,088	842,609	734,266	852,186	1,039,758	863,679
Recycled steel purchase amount	KRW mil.	0	0	0	34,735	59,511	52,618	22,023	38,823	29,416	27,679	31,200	38,582

1) Based on steel (excluding equipment and outfitting materials)

Water Withdrawal[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total water withdrawals	ton	29,487	24,037	43,230	3,058,754	3,095,418	3,421,160	1,249,565	1,330,212	1,607,902	3,057,535	3,351,470	2,814,761
Surface water	ton	0	0	0	0	0	0	0	0	0	0	0	0
Underground water	ton	0	0	0	0	0	0	0	0	0	0	0	0
Seawater	ton	0	0	0	0	0	0	0	0	0	0	0	0
Water provided by third parties (service water, industrial water, etc.)	ton	29,487	24,037	43,230	3,058,754	3,095,418	3,421,160	1,249,565	1,330,212	1,607,902	3,057,535	3,351,470	2,814,761
Water intensity (sales)	ton/KRW bil.	150.57	133.17	160.16	368.85	341.46	286.10	437.24	359.93	401.85	720.95	721.30	472.38
Water reused	ton	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	201,889	234,681	202,801

1) HDKSOE: GRC Headquarters, Ulsan Research Building, Seoul Gyedong Office
HHI: Head office (main plant), offshore plant
HMD: Head office (main plant), Onsan Plant, Mohwa Plant, Yongyeon Plant
HSHI: Head office, Daebul 1 Plant
2) Unmanaged data

Environmental Data

Air pollutants[1]

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
NOx	Emissions[2]	ton	0.061	0.097	0.100	60	49	33	8	6	6	12	11	10
	Intensity (sales)	ton/KRW bil.	0.0003	0.0005	0.0004	0.0072	0.0054	0.0028	0.0028	0.0016	0.0015	0.0029	0.0023	0.0016
SOx	Emissions[2]	ton	0	0	0.011	0.616	4.461	1.802	0.137	0.184	0.849	0.693	0.268	2.477
	Intensity (sales)	ton/KRW bil.	0	0	0.00004	0.0001	0.0005	0.0002	0.00005	0.00005	0.0002	0.0002	0.0001	0.0004
Dust	Emissions[2]	ton	0.069	0.018	0.025	31.820	18.279	16.930	7.1	4.1	6.3	16.296	18.584	21.976
	Intensity (sales)	ton/KRW bil.	0.0004	0.0001	0.0001	0.0038	0.0020	0.0014	0.0025	0.0011	0.0016	0.0038	0.0040	0.0037

1) HDKSOE: Ulsan Research Building
HHI: Head office (main plant)
HMD: Head office (main plant)
HSHI: Head office (main plant)
2) When calculating NOx, fuel consumption, emission factor, and efficiency of prevention facilities were used. As for the calculation of SOx and dust, pollutant concentration measurement results, exhaust gas flow rate, and facility operation time were considered.

Water pollutants[1]

Category		Unit	HDKSOE[2]			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Effluents discharge		ton	18.3	18.4	53.8	3,400	3,940	4,191	1,007	1,195	1,315	454	533	490
Total Organic Carbon (TOC)[3]	Emissions	kg	-	-	-	17	21	33	9.6	11.8	5.7	1.6	1.5	1.5
	Intensity (sales)	kg/KRW bil.	-	-	-	0.0021	0.0023	0.0027	0.0034	0.0032	0.0015	0.0004	0.0003	0.0003
Biochemical Oxygen Demand (BOD)	Emissions	kg	-	-	-	6	6	17	2.2	3.1	6.1	1.0	1.0	1.3
	Intensity (sales)	kg/KRW bil.	-	-	-	0.0007	0.0006	0.0014	0.0008	0.0008	0.0017	0.0002	0.0002	0.0002
Suspended Solids (SS)	Emissions	kg	-	-	-	6	6	6	3	2.1	1.3	1.4	1.2	0.4
	Intensity (sales)	kg/KRW bil.	-	-	-	0.0007	0.0007	0.0005	0.001	0.0006	0.0004	0.0003	0.0003	0.0001

1) HDKSOE: Ulsan Research Building
HHI: Head office (main plant)
HMD: Head office (main plant)
HSHI: Head office (main plant)
2) HDKSOE generates wastewater from laboratories, all of which are being outsourced for treatment.
3) Since 2022, the Ministry of Environment has converted the organic matter measurement index from Chemical Oxygen Demand (COD) to TOC. Accordingly, data for 2021 represent COD emissions while data from 2022 indicate TOC emissions.

Environmental Data

Waste[1,2]

Category			Unit	HDKSOE			HHI			HMD			HSHI		
				2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total waste disposed[3]			ton	229	158	239	238,888	214,603	263,915	29,785	33,281	39,914	75,326	73,292	84,648
Intensity (sales)			ton/KRW bil.	1.17	0.88	0.89	28.77	23.67	22.07	10.42	9.01	9.98	17.76	15.77	14.29
General waste	Waste disposed		ton	221	153	231	155,595	149,020	174,667	24,939	27,405	29,935	71,328	69,598	79,822
	Landfilled	Internal treatment	ton	0	0	0	0	0	0	0	0	0	0	0	0
		Outsourced treatment	ton	0	0	0	308	5,294[4]	552	445	457	272	7,339	4,968	6,298
	Incinerated (energy recovery)	Internal treatment	ton	0	0	0	27,767	29,648	36,557	0	0	0	0	0	0
		Outsourced treatment	ton	26	35	24	0	478	534	9,183	10,649	11,665	0	0	0
	Recycled	Internal treatment	ton	0	0	0	0	0	0	0	0	0	0	0	0
		Outsourced treatment	ton	195	118	207	127,520	113,601	137,024	14,184	15,116	16,674	53,634	53,309	63,187
	Incinerated (without energy recovery)	Outsourced treatment	ton	0	0	0	0	0	0	1,127	1,183	1,324	10,296	11,321	10,337
Hazardous waste	Waste disposed		ton	8	5	8	7,456	6,860	7,877	2,049	2,041	2,109	3,998	3,694	4,347
	Landfilled	Internal treatment	ton	0	0	0	0	0	0	0	0	0	0	0	0
		Outsourced treatment	ton	0	0	0	1,440	848	863	0	54	72	0.26	0.00	13.24
	Incinerated (energy recovery)	Internal treatment	ton	0	0	0	0	65	58	0	0	0	0	0	0
		Outsourced treatment	ton	6	3	7	1,994	1,824	1,953	0	0	0	0	0	0
	Recycled	Internal treatment	ton	0	0	0	0	0	0	0	0	0	0	0	0
		Outsourced treatment	ton	2	2	1	4,021	4,122	4,993	1,339	1,343	1,287	2,299	2,154	2,287
	Incinerated (without energy recovery)	Outsourced treatment	ton	0	0	0	0	0	0	710	644	751	1,699	1,541	2,047
	Neutralized	Outsourced treatment	ton	0	0	0	2	0	10	0	0	0	0	0	0
Construction waste[5]	Waste disposed		ton	0	0	0	75,837	58,724	81,371	2,797	3,835	7,870	0	0	480

1) HDKSOE: Ulsan Research Building
HHI: Head office (main plant), offshore plant, Pipe shop & hydro Test shop, Offshore Piping Fabrication Shop, Offshore Pipe Painting Shop, Munsan Shop, Hyundai Incineration Plant, Gunsan Shipyard
HMD: Head office (main plant) and outside plants (Yongyeon, Onsan, Mohwa)
HSHI: Head office (main plant)
2) It is based on the figures reported in the Allbaro system of the Ministry of Environment, and some of them, such as waste paper and scrap metal, are based on their weight.
3) Since the amounts of waste discharged for each category are rounded up to whole numbers, there may be some differences with the sum of total waste disposed.
4) Some of the existing recyclable waste is landfilled due to the recycling company's circumstances, which results in increased consignment landfill amount.
5) Construction wastes are fully recycled through outsourced processing companies.

Social*

Labor-Management Relations

Category	Unit	HDKSOE[1]			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Union membership rate[2]	%	4	-	-	97	96	97	100	100	100	88	86	85
Strike force	Persons	0	0	0	868	824	55	0	0	0	287	279	216
No. of labor-management council meetings convened	Times	3	4	4	4	4	4	4	4	4	4	4	4
Ratio of employees covered by collective agreements	%	100	-	-	100	100	100	100	100	100	100	100	100

1) HDKSOE's last union member withdrew from the union in October 2022.
2) Calculation: (Number of union members ÷ number of employees eligible for the membership) × 100

Workforce Breakdown[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total number of employees	Persons	678	880	1,177	12,818	12,770	13,267	3,029	3,108	3,551	3,506	3,784	3,875
Male	Persons	545	716	950	12,238	12,183	12,655	2,945	3,020	3,421	3,436	3,670	3,749
Female	Persons	133	164	227	580	587	612	84	88	130	68	112	125
Under 30	Persons	102	142	243	961	976	915	216	265	422	140	219	302
30 ~ 50	Persons	535	670	828	8,410	8,310	8,524	2,021	2,097	2,313	2,098	2,131	2,042
51 or above	Persons	41	68	106	3,447	3,484	3,828	792	746	816	1,266	1,432	1,530
Registered executives	Persons	5	5	5	7	5	5	5	5	5	6	7	6
Non-registered executives	Persons	26	35	43	94	105	116	19	23	30	18	27	28
Permanent employees	Persons	623	816	1082	12,443	12,182	11,930	2,955	3,014	3,087	3,405	3,568	3,623
Male	Persons	499	667	889	11,985	11,715	11,429	2,905	2,958	3,006	3,361	3,504	3,538
Female	Persons	124	149	193	458	467	501	50	56	81	44	64	85
Non-permanent employees	Persons	24	24	47	274	478	1,216	50	66	429	77	182	218
Male	Persons	15	11	16	152	360	1,107	16	35	381	53	135	179
Female	Persons	9	13	31	122	118	109	34	31	48	24	47	39
Senior managers[2]	Persons	31	40	48	101	110	121	24	29	36	19	26	27

1) As of the end of the reporting period
2) Managerial officials of director or higher ranks

* Due to the upgrade of the quantitative data calculation system of HDKSOE and its shipbuilding subsidiaries, there may be some changes compared to the 2022 Integrated Report.

Social

Workforce Breakdown (Diversity)[1]

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Women in management positions[2]	Persons (%)	5(4.9)	8(5.2)	11(5.5)	6(0.7)	6(0.7)	8(0.8)	0(0)	2(0.69)	2(0.63)	0(0)	0(0)	1(0.30)
Women in new management positions	Persons (%)	2(13.3)	1(2.9)	2(6.3)	1(0.1)	1(0.1)	3(0.3)	0(0)	2(2.0)	0(0)	0(0)	0(0)	1(1.59)
Female executives	Persons (%)	0(0)	2(3.6)	3(4.8)	0(0)	2(1.8)	2(1.7)	0(0)	1(3.6)	1(2.9)	0(0)	0(0)	0(0)
Women in management positions in revenue-generating departments	Persons (%)	3(7.0)	3(4.5)	4(4.0)	3(0.4)	3(0.4)	3(0.4)	0(0)	1(0.4)	1(0.4)	0(0)	0(0)	1(0.40)
Women in STEM-related departments (Science, Technology, Engineering and Mathematics)	Persons (%)	48(11.8)	56(10.7)	75(10.9)	184(8.9)	189(8.9)	199(9.7)	50(1.9)	36(6.8)	48(8.2)	19(4.2)	37(7.0)	47(8.8)
People with disability	Persons (%)	1(0.1)	1(0.1)	1(0.1)	256(2.0)	234(1.8)	229(1.7)	55(1.8)	55(1.8)	57(1.6)	115(3.3)	110(2.9)	119(3.1)
The national merits	Persons (%)	6(0.9)	6(0.7)	5(0.4)	627(4.9)	622(4.9)	625(4.7)	120(4.0)	111(3.6)	117(3.3)	81(2.3)	75(2)	73(1.9)
No. of foreign workers	Persons (%)	4(0.6)	3(0.3)	5(0.4)	4(0.03)	16(0.13)	494(3.72)	0(0)	0(0)	313(8.81)	0(0)	1(0.03)	1(0.03)
US	Persons	1	1	2	0	0	0	0	0	0	0	0	0
UK	Persons	1	1	2	0	1	0	0	0	0	0	0	0
Australia	Persons	1	0	0	0	0	0	0	0	0	0	0	0
Canada	Persons	1	1	1	0	0	0	0	0	0	0	0	0
India	Persons	0	0	0	4	11	57	0	0	0	0	1	1
Myanmar	Persons	0	0	0	0	1	0	0	0	0	0	0	0
Philippines	Persons	0	0	0	0	1	1	0	0	0	0	0	0
Thailand	Persons	0	0	0	0	1	108	0	0	45	0	0	0
Malaysia	Persons	0	0	0	0	1	1	0	0	79	0	0	0
Vietnam	Persons	0	0	0	0	0	0	0	0	189	0	0	0
Sri Lanka	Persons	0	0	0	0	0	327	0	0	0	0	0	0

1) As of the end of the reporting period
2) Female employees among the total managerial workers (section leader ~ executives)

Social

Recruitment and Retention - Permanent Employees

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total number of new recruits	Persons	44	171	222	239	630	389	104	109	184	114	252	173
Entry-level employee	Persons	31	88	157	211	326	232	69	74	125	69	101	137
Experienced employee	Persons	13	83	65	28	304	157	35	35	59	45	151	36
Under 30	Persons	24	83	155	179	262	221	28	67	127	67	104	130
30 ~ 50	Persons	20	86	67	58	360	167	70	36	57	47	148	43
51 of above	Persons	0	2	0	2	8	1	6	6	0	0	0	0
Male	Persons	35	132	177	123	556	340	84	83	156	96	231	145
Female	Persons	9	39	45	116	74	49	20	26	28	18	21	28
Average hiring cost per person	KRW 1,000	1,097	1,333	1,220	290	230	281	908	1,202	1,069	901	747	838
Proportion of positions filled through internal recruitment plans	%	100	100	99.6	100	100	100	100	100	100	-	-	100
Total turnover[2]	Persons (%)	43(6.9)	62(7.6)	39(3.6)	700(5.6)	748(6.1)	319(2.7)	124(4.2)	182(6.0)	53(1.7)	62(1.8)	70(2.0)	40(1.1)
Under 30	Persons	8	13	8	52	112	87	37	62	23	28	35	13
30 ~ 50	Persons	34	45	29	207	268	205	21	42	27	21	26	19
51 of above	Persons	1	4	0	441	368	27	66	78	3	13	9	8
Male	Persons	37	51	28	678	710	300	92	153	52	56	64	38
Female	Persons	6	11	11	22	38	19	32	29	1	6	6	2
Voluntary turnover[1]	Persons (%)	43(6.9)	61(9.5)	38(4.3)	162(1.3)	125(1.0)	186(1.6)	36(1.2)	90(2.9)	48(1.6)	58(1.7)	64(1.8)	37(1.0)
Average years of service	Years	9.9	9.4	8.0	17.7	16.9	17.7	17.9	17.6	15.7	20	19	20
Male	Years	10.0	9.6	8.0	17.8	17.2	17.8	18.2	17.8	16.1	20	20	20
Female	Years	9.5	8.7	7.0	14.5	11.8	16.5	7.8	6.5	5.8	11	9	6

1) Excluding involuntary departures such as retirement
2) Total turnover rate (%) = (Total number of turnover ÷ number of permanent employees) × 100%

Performance Evaluation

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ratio of employees receiving regular performance appraisal	%	90.0	86.7	86.7	91.6	92.6	92.8	94.2	90.6	81.0	96.8	86.2	89.3
Male	%	91.3	88.0	89.0	-[1]	92.6	93.0	94.1	90.9	83.0	97.6	87.3	90.0
Female	%	85.0	81.1	76.7	-[1]	94.0	87.0	100	73.2	51.0	54.4	47.7	68.5

1) Data accumulated from 2022

Social

Remuneration[1]

Category	Unit	HDKSOE[2]			HHI[2]			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Statutory minimum wage (annual)[4]	KRW 1,000	21,870	22,973	24,127	21,870	22,973	24,127	21,870	22,973	24,127	21,870	22,973	24,127
Average salary	KRW 1,000	63,631	82,082	89,426	70,562	84,721	90,884	77,263	86,243	84,499	75,491	84,452	103,967
Male	KRW 1,000	67,767	87,683	96,002	71,522	85,863	92,059	78,167	87,321	85,801	76,365	85,711	105,135
Female	KRW 1,000	47,585	57,099	61,407	50,325	60,995	66,513	45,652	48,869	50,025	34,936	42,853	68,670
Average salary of new hires at major workplaces[3,5]													
Male	KRW 1,000	49,884	68,139	67,121	47,542	54,112	58,720	46,558	53,079	54,089	51,170	56,196	69,314
Female	KRW 1,000	47,732	64,419	63,722	47,636	53,141	57,353	44,118	50,358	51,135	50,459	58,287	70,077
Average base salary for non-managerial employees[6]													
Male	KRW 1,000	53,373	76,888	86,897	53,777	59,610	63,102	48,869	58,885	62,820	57,274	60,009	64,626
Female	KRW 1,000	44,240	60,236	71,382	45,544	52,463	56,044	35,448	44,995	47,878	40,656	45,629	50,939
Average gross salary for non-managerial employees[6] (base salary + incentives)													
Male	KRW 1,000	60,650	83,273	93,905	59,866	67,252	72,550	69,750	80,085	82,950	63,726	68,956	79,012
Female	KRW 1,000	51,129	66,406	78,045	50,746	59,492	64,395	46,011	56,122	57,176	45,368	51,872	61,118
Average base salary for managerial employees													
Male	KRW 1,000	73,216	100,731	112,730	71,231	94,829	97,683	72,280	95,499	98,875	72,568	84,383	85,519
Female	KRW 1,000	71,057	105,913	120,343	71,527	93,805	92,119	-	93,705	100,407	-	-	78,159
Average gross salary for managerial employees (base salary + incentives)													
Male	KRW 1,000	82,630	107,813	120,866	79,286	101,802	104,442	84,153	113,774	99,888	80,400	92,974	99,453
Female	KRW 1,000	78,893	112,869	128,249	79,604	100,524	98,000	-	107,882	101,481	-	-	92,482
Average base salary for executives													
Male	KRW 1,000	228,730	245,180	263,934	244,285	258,517	268,538	210,404	250,720	248,240	203,583	231,465	255,759
Female	KRW 1,000	-	-	-	-	-	-	-	-	-	-	-	-
Average gross salary for executives (base salary + incentives)													
Male	KRW 1,000	284,671	332,443	340,201	288,672	336,778	332,740	255,513	333,437	282,968	250,964	241,766	267,280
Female	KRW 1,000	-	-	-	-	-	-	-	-	-	-	-	-

1) In cases where there are no female employees or the number is very small among the female employees-related data, a hyphen is used to protect personal data.
2) The metric for 'Average Salary' employs different calculation methodologies from the metrics such as 'Average salary of new hires at major workplaces', 'Fixed salary/total salary for managerial employees', and 'Fixed/total salary for non-managerial employees.'
3) For employees with less than one year of service, the annual salary is calculated based on the December payroll records.
HMD: For male employees, the calculation is based on the entry-level salary for office workers having completed military service. For female employees, the calculation is based on the entry-level salary for office workers having not completed military service.
4) Statutory minimum wage * 209 hours (contracted working hours per month) * 12 months
5) Business sites located in South Korea are included in the scope, and overseas business sites are excluded.
6) Managerial workers with lower ranks than section leaders were included as well.

Social

Defined Benefit Pension Plan

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Defined benefit obligation	KRW mil.	1,326,318	1,233,692	1,512,840	813,842	722,401	873,005	226,563	220,097	244,361	232,588	232,808	299,966
Percentage of assets contributed by the employer to the defined benefit plan	%	99.7	95.7	96.3	95.9	96.1	96.4	98	130	120	102	122	118

Employee Benefits

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Employee benefit expenses	KRW 1,000	3,443,000	4,232,000	3,022,000	38,784,000	35,905,000	47,936,000	7,864,000	7,557,000	10,170,000	6,432,000	7,787,000	13,197,000
Ratio of employee benefits expenses to revenues	%	1.76	2.34	1.12	0.47	0.40	0.40	0.28	0.2	0.25	0.15	0.17	0.22
Male employees who used parental leave	Persons	5	7	5	227	227	246	46	21	28	39	34	21
Female employees who used parental leave	Persons	7	9	10	23	24	34	3	4	2	6	4	3
Paid parental leave provided to female employees	Years	1	1	1	1	1	1	1	1	1	1	1	1
Paid parental leave provided to male employees	Years	1	1	1	1	1	1	1	1	1	1	1	1
Male employees who used maternity leave	Persons	33	40	49	351	278	252	31	36	51	39	31	31
Female employees who used maternity leave	Persons	8	9	8	24	23	23	5	3	1	0	0	0

Social

Training for Employees

	Category	Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
General	Training hours per employee	Hours	49.0	80.1	71.6	56	30	18	17	36	19	16	30	33
	Training expenditure per employee	KRW 1,000	300	604	691	354	186	309	80	363	337	159	268	671
By employment type	Permanent employees	Hours	48.9	83.1	73.8	23	31	19	17	36	19	0	32	34
	Non-permanent (contract, part-time employees)	Hours	12.4	15.0	21.8	19	15	10	7	36	16	0	6	8
By gender	Male	Hours	39.1	69.1	73.9	23	30	18	17	36	19	0	31	31
	Female	Hours	46.2	82.6	62.5	27	24	27	17	41	6	0	25	67
By ranks	Management (executives)	Hours	13.0	9.9	36.1	14	21	8	12	18	10	0	25	18
	Senior managers or above (office job)	Hours	47.9	72.2	59.7	36	25	25	27	38	9	0	50	33
	Managers or below (office job)	Hours	32.8	104.1	88.2	29	22	44	34	69	10	0	74	124
	Entire production workers	Hours	-	-	-	17	34	10	10	28	25	0	19	21
By age	Under 30	Hours	46.6	110.7	103.9	23	55	53	48	76	13	0	77	122
	30~50	Hours	46.6	80.3	64.3	24	31	18	16	34	19	0	34	27
	51 or above	Hours	26.2	17.8	37.8	22	18	10	11	27	23	0	17	19

Social

Grievance Handling

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
No. of reported human rights cases	Cases	5	4	1	3	5	8	1	1	0	2	3	5
Representative organization of employees	Cases	0	0	0	0	0	0	0	0	0	0	0	0
Intranet	Cases	0	0	0	0	0	2	1	1	0	0	0	0
Hotline	Cases	0	0	0	3	5	6	0	0	0	0	0	0
Offline	Cases	5	4	1	0	0	0	0	0	0	2	3	5
No. of human rights reports handled	Cases	3	2	1	3	5	8	1	1	0	2	3	5
No. of discrimination reports handled	Cases	0	0	0	0	0	0	0	0	0	0	0	0
No. of bullying at workplace reports handled	Cases	2	2	0	3	4	6	1	1	0	1	3	4
No. of sexual harassment reports handled	Cases	1	0	1	0	1	2	0	0	0	1	0	1

Human Rights Risk Management

Category	Unit	HDKSOE[1]			HHI[1]			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Sexual harassment prevention education	Hours/persons	1	1	1	1	1	1	1	1	1	0	1	1
Education to promote disability awareness	Hours/persons	1	1	1	1	1	1	1	1	1	0	1	1
Workplace bullying prevention education	Hours/persons	-	1	1	-	1	1	1	1	1	0	0	0
Human rights (human rights violation prevention) education	Hours/persons	-	0.66	0.5	-	1	1[2]	1	1	0	0	0	0
No. of business sites conducting desk/on-site assessments for human rights risks	-	0	2	2	0	1	1	0	1	1	0	1	1
No. of business sites with identified human rights risks as a result of desk/on-site assessments	-	0	2	2	0	1	1	0	1	1	0	1	1
No. of business sites with mitigation plans as a result of desk/on-site assessments	-	0	2	2	0	1	1	0	1	1	0	1	1
No. of business sites where mitigation actions are taken according to the mitigation plans	-	0	0	0	0	1	1	0	0	0	0	1	1

1) Since 2022, "Education to prevent bullying in the workplace" and "Human rights education" were newly introduced for office workers as a must, apart from legally compulsory education.
2) Targeting office workers (Management Support Headquarters)

Social

Safety and Health Risk Management

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Employees	Fatalities due to work-related injury[1]	Case (%)	0(0)	0(0)	0(0)	1(0.007)	1(0.007)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	Serious work-related injuries other than fatal accidents[1,2]	Case (%)	0(0)	0(0)	0(0)	1(0.007)	4(0.027)	2(0.015)	2(0.066)	1(0.032)	1(0.028)	-	0(0)	4(0.10)
	Work-related injury accidents with record/preservation obligations[1]	Case (%)	0(0)	0(0)	0(0)	44(0.32)	41(0.30)	33(0.26)	12(0.40)	13(0.42)	27(0.76)	6(0.17)	15(0.4)	8(0.21)
	Total working hours	Hours	1,351,808	1,772,832	2,282,880	27,448,600	27,253,692	27,047,573	6,314,112	6,491,476	7,440,800	7,292,480	7,795,040	7,936,000
	Lost Time Incident (LTI)	Case	0	0	0	44	41	33	12	13	27	6	15	8
	Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	0	0	0	0.321	0.301	0.244	0.380	0.401	0.726	0.16	0.38	0.20
	Occupational Illness (OI)[3]	Case	0	0	0	369	418	410	30	26	35	150	118	108
	Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0	0	0	2.54	3.11	3.00	0.950	0.801	0.941	4	3	3
	Industrial accident rate	%	0	0	0	0.342	0.323	0.255	0.397	0.419	0.761	0.171	0.396	0.206

1) Work-related injury: Injuries or fatalities caused by factors related to work, such as construction, equipment, raw materials, gas, steam, dust, etc., or other work activities.
2) Accidents with a high probability of leading to serious accidents
3) Major disease types: Lumbar herniated intervertebral disc, rotator cuff tear, arthritis, tennis elbow, etc.

Social

Safety and Health Risk Management

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Contractors	Fatalities due to work-related injury[1]	Case (%)	0(0)	0(0)	0(0)	2(0.015)	1(0.007)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(0.0001)
	Serious work-related injuries other than fatal accidents[1,2]	Case (%)	0(0)	0(0)	0(0)	0(0)	4(0.03)	9(0.05)	0(0)	1(0.02)	2(0.04)	-	1(0.01)	4(0.04)
	Work-related injury accidents with record/preservation obligations[1]	Case (%)	0(0)	0(0)	1(2.44)	14(0.10)	9(0.06)	18(0.10)	9(0.16)	7(0.12)	12(0.21)	9(0.12)	9(0.11)	8(0.08)
	Total working hours	Hours	68,829	62,572	78,720	26,752,100	29,366,364	35,411,113	11,949,624	12,056,196	12,079,248	15,708,024	16,971,264	20,266,128
	Lost Time Incident (LTI)	Case	0	0	1	14	9	18	9	7	12	9	9	8
	Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	0	0	2.54	0.105	0.061	0.102	0.151	0.116	0.199	0.11	0.11	0.08
	Occupational Illness (OI)[3]	Case	0	0	0	-[4]	-[4]	-[4]	25	28	26	41	67	54
	Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0	0	0	-[4]	-[4]	-[4]	0.418	0.464	0.430	0.52	0.79	0.53
	Industrial accident rate	%	0	0	2.44	0.107	0.064	0.103	0.157	0.121	0.208	0.12	0.11	0.08
	No. of safety and health-related grievances received from contractors	Case	100	116	76	-	951	1,376	0	56	206	0	381	481
	No. of cases resolved among safety and health-related grievances received from contractors	Case (%)	100(100)	116(100)	76(100)	-	951(100)	1,376(100)	0(0)	56(100)	206(100)	0(0)	368(97)	463(96)
Serious accidents[6]		Case	0	0	0	3	2	0	0	0	0	0	0	1
Serious accident rate		Occurrence per 200,000 hours	0	0	0	0.011	0.007	0	0	0	0	0	0	0.0071
No. of people having completed safety and health training programs	Employees	Persons	792	720	1,189	11,945[5]	11,459[5]	11,130[5]	3,029	3,108	3,551	3,233	3,162	3,441
	Contractors	Persons	33	30	41	12,354[5]	13,067[5]	17,735[5]	5,723	5,763	5,763	8,584	8,550	10,882

1) Work-related injury: Injuries or fatalities caused by factors related to work, such as construction, equipment, raw materials, gas, steam, dust, etc., or other work activities.
2) Accidents with a high probability of leading to serious accidents
3) Major disease types: Lumbar herniated intervertebral disc, rotator cuff tear, arthritis, tennis elbow, etc.
4) Unmanaged data (due to privacy protection)
5) Certain groups of people such as new hires and retirees during the fiscal year were excluded, and all employees completed mandatory training.
6) According to the Occupational Safety and Health Act, serious accidents are defined as accidents resulting in the following: one or more deaths; two or more persons requiring over three months of medical care simultaneously or ten or more persons being injured or developing occupational diseases simultaneously

Social

Supply Chain Risk Management[3]

Category	Unit	HDKSOE[1]			HHI[2]			HMD[2]			HSHI[2]		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
No. of Tier 1 contractors	companies	-	13	50	3,135	3,716	3,275	1,833	1,929	2,110	1,174	1,253	1,418
No. of contractors conducting ESG risk on-desk assessments among the entire Tier 1 contractors	companies	-	0	0	-	35	40	-	-	23	-	-	23
No. of contractors conducting ESG risk on-site assessments among the entire Tier 1 contractors	companies	-	0	0	-	35	40	-	-	6	-	-	6
No. of contractors with identified ESG risks as a result of on-desk/ on-site assessments among the entire Tier 1 contractors	companies	-	0	0	-	35	40	-	-	6	-	-	6
No. of contractors developing improvement plans among the Tier 1 contractors with identified ESG risks	companies	-	0	0	-	35	40	-	-	0	-	-	0
No. of contractors voluntarily completing the implementation of improvement measures among the Tier 1 contractors developing improvement plans	companies	-	0	0	-	35	40	-	-	0	-	-	0
No. of contractors having received support for implementation among the Tier 1 contractors developing improvement plans	companies	-	0	0	-	35	40	-	-	0	-	-	0
No. of contractors whose contracts were terminated due to failure in improving risks among the Tier 1 contractors with identified ESG risks	companies	-	0	0	-	0	0	-	-	0	-	-	0
No. of Tier 1 contractors participating in the supply chain ESG capacity building programs	companies	-	0	0	-	0	335	-	-	0	-	-	0
No. of significant contractors[3]	companies	-	13	25	313	315	314	249	264	291	151	162	172
Purchase percentage of significant contractors	%	-	21	18	57	62	58	43	39	33	26	25	22
No. of contractors conducting ESG risk on-desk/on-site assessments among the significant contractors	companies	-	0	0	-	33	37	-	-	2	-	-	1
No. of contractors with identified ESG risks as a result of on-desk/ on-site assessments among the significant contractors	companies	-	0	0	-	33	37	-	-	2	-	-	1
No. of contractors developing improvement plans among the significant contractors with identified ESG risks	companies	-	0	0	-	33	37	-	-	0	-	-	0
No. of contractors having received support for implementation among the significant contractors developing improvement plans	companies	-	0	0	-	33	37	-	-	0	-	-	0
No. of contractors whose contracts were terminated due to failure in improving risks among the significant contractors with identified ESG risks	companies	-	0	0	-	0	0	-	-	0	-	-	0
No. of significant contractors participating in the supply chain ESG capacity building programs	companies	-	0	0	-	243	199	-	-	0	-	-	0

1) HDKSOE has no relevant supply chain data in 2021 as we have launched SD Business unit in 2022.
2) Starting period for supply chain ESG consulting
HHI: 2022 HMD: 2023 HSHI: 2023
3) Significant contractors are classified by internal standards considering the business influence, and all of them belong to Tier-1.

Social

Social Contribution

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Volunteering hours per employee	Hours	0.6	0.2	0.9	0.6	0.7	0.9	0.7	0.6	0.9	1.8	1.5	1.6
Amount of social investments	KRW mil.	140	259	55	634	781	955	81	81	140	72	161	378
Amount of cash contributions	KRW mil.	140	259	55	404	554	722	81	81	140	72	161	378
Amount of in-kind donation[1]	KRW mil.	0	0	0	230	227	233	0	0	0	0	0	0

1) Criteria for calculation of in-kind donation amount: based on donation receipt.

Governance*

Board of Directors

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Board composition	No. of members	Persons	5	5	5	7	5	5	5	5	5	6	7	6
	No. of outside directors	Persons	3	3	3	4	3	3	3	3	3	3	4	4
	No. of inside directors	Persons	2	2	2	3	2	2	2	2	2	1	1	1
	No. of other non-executive directors	Persons	0	0	0	0	0	0	0	0	0	2	2	1
Board operation	No. of meetings held	Times	9	10	8	10	9	8	8	8	7	8	11	8
	No. of agenda reported	Cases	10	14	9	8	11	8	9	11	8	9	10	8
	No. of agenda decided for approvals/ rejections	Cases	27	20	25	31	20	24	16	13	13	17	17	14
	No. of against or amendment by outside directors	Cases	0	0	0	0	0	0	0	0	0	0	0	0
	Average attendance rate	%	90	92	95	100	98	95	100	95	100	100	91	95
Board expertise	No. of outside directors with 4 or less other mandates	Persons	3	3	3	4	3	3	3	3	3	3	4	4
	No. of other mandates allowed for outside directors	Number	1	1	1	1	1	1	1	1	1	2	2	2
	Average tenure	Years	3.2	2.8	2.6	1.9	2.4	3.5	2.6	2.6	2.8	2.8	3.4	2.4
	No. of outside directors with industry experiences	Persons	0	0	0	0	0	0	2	1	1	0	0	0
	No. of board members with risk management expertise	Persons	3	3	3	6	5	5	5	5	5	2	3	4
Board diversity	Female	Persons	0	1	1	0	1	1	0	1	1	0	1	1
	Male	Persons	5	4	4	7	4	4	5	4	4	6	6	5
	Under 30	Persons	0	0	0	0	0	0	0	0	0	0	0	0
	30~50	Persons	0	1	1	0	1	1	1	1	0	0	0	0
	51 or above	Persons	5	4	4	7	4	4	4	4	5	6	7	6
	No. of female executives who are neither the controlling shareholders nor their relatives among registered executives	Persons	0	1	1	0	1	1	0	1	1	0	0	0

* Due to the upgrade of the quantitative data calculation system of HDKSOE and its shipbuilding subsidiaries, there may be some changes compared to the 2022 Integrated Report.

Governance

Board of Directors

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Outside Director Recommendation Committee	No. of members	Persons	4	4	4	5	4	4	4	4	4	4	5	5
	No. of outside directors	Persons (%)	3(75)	3(75)	3(75)	4(80)	3(75)	3(75)	3(75)	3(75)	3(75)	3(75)	4(80)	4(80)
	Attendance rate	%	75	88	100	-[1]	89	75	100	100	100	100	100	90
	No. of meetings held	Times	1	2	2	0	2	1	2	2	1	1	2	2
	No. of agenda approved	Cases	1	2	2	-[1]	2	1	1	1	1	1	2	3
	No. of agenda reported	Cases	0	0	0	-[1]	0	0	0	0	0	0	0	0
Audit Committee	No. of members	Persons	3	3	3	4	3	3	3	3	3	3	4	4
	No. of outside directors	Persons (%)	3(100)	3(100)	3(100)	4(100)	3(100)	3(100)	3(100)	3(100)	3(100)	3(100)	4(100)	4(100)
	Attendance rate	%	100	100	100	100	100	100	100	95	94	100	96	96
	No. of meetings held	Times	5	7	5	7	5	6	6	6	6	6	6	6
	Remuneration for audit services paid to external auditors	KRW 1,000	605,000	730,000	664,000	1,705,000	1,160,000	1,170,000	570,000	590,000	720,000	400,000	636,000	490,000
	Remuneration for non-audit services paid to external auditors	KRW 1,000	0	150,000	0	250,000	324,000	12,000[2]	0	110,000	0	25,000	120,000	0
	Members of the Audit Committee who meet the statutory requirements for accounting or financial experts	Persons	3	2	2	3	2	2	2	3	3	1	2	3
	No. of agenda approved	Cases	5	7	4	11	3	5	5	4	5	7	6	7
	No. of agenda reported	Cases	19	16	17	15	16	14	15	16	15	13	16	14
	No. of against or amendment	Cases	0	0	0	0	0	0	0	0	0	0	0	0

1) Since the Outside Director Recommendation Committee was not held in 2021, the attendance rate, the no. of agenda approved, and the no. of agenda reported are marked with '-'.
2) Non-audit services of external auditors obtain prior approval through the Audit Committee.

Governance

Board of Directors

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Related Party Transaction Committee	No. of members	Persons	4	4	4	5	4	4	4	4	4	3	4	5
	No. of outside directors	Persons (%)	3(75)	3(75)	3(75)	4(80)	3(75)	3(75)	3(75)	3(75)	3(75)	3(100)	4(100)	4(80)
	Attendance rate	%	100	100	100	100	100	100	100	100	100	100	100	100
	No. of meetings held	Times	1	2	1	1	2	1	2	2	1	2	1	1
	No. of agenda approved	Cases	0	2	1	0	2	0	1	1	0	1	0	0
	No. of agenda reported	Cases	1	1	1	1	1	1	1	2	1	1	1	1
ESG Committee	No. of members	Persons	4	4	4	5	4	4	4	4	4	4	5	5
	No. of outside directors	Persons (%)	3(75)	3(75)	3(75)	4(80)	3(75)	3(75)	3(75)	3(75)	3(75)	3(75)	4(80)	4(80)
	Attendance rate	%	88	100	100	100	100	87.5	100	100	94	100	80	100
	No. of meetings held	Times	2	1	2	2	2	2	3	6	4	2	1	3
	No. of agenda approved	Cases	1	0	2	1	1	0	1	1	1	1	0	2
	No. of agenda reported	Cases	2	1	4	2	1	4	3	6	4	2	1	1

Governance

Remuneration Systems

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Evaluation and Remuneration	Pay ratio of CEO to employee median	Times	9.3	12.0	11.6	10.6	13.8	12.2	10.2	9.0	9.2	7.2	3.8	9.1
	Pay ratio of CEO to employee average	Times	9.3	11.2	10.9	10.1	13.4	12.1	7.8	6.6	9.0	7.4	3.9	9.2
	Total annual pay of CEO (1)	KRW 1,000	800,988	1,220,700	1,141,280	800,988	1,149,100	1,163,380	591,000	572,565	761,023	555,000	326,500	954,344
	Total annual pay of CEO (2)[1]	KRW 1,000	380,160	610,660	811,900	630,980	1,120,900	1,038,064	-	-	-	-	-	-
	Median of total annual pay of all employees[2]	KRW 1,000	63,552	76,621	84,023	67,229	82,050	90,548	57,719	63,464	82,924	77,370	86,747	104,300
	Average of total annual pay of all employees[2]	KRW 1,000	63,631	82,062	89,426	70,562	84,721	90,884	75,775	86,114	84,499	75,491	84,452	103,967
Ownership of government organizations	Total ratio of shares owned by government organizations and National Pension Service	%	6.03	5.62	6.08	6	7	6	8.2	8.8	7	0	0	0
Founding family and CEO stock	No. of shares owned by the founding family (direct)	Shares	544	544	544	0	0	0	0	0	0	0	0	0
	Percentage ownership of the founding family (direct/indirect)	%	9.86	11.17	11.17	7.86	8.71	8.71	4.18	4.73	4.73	7.94	8.99	9.09
	CEO stock ownership as a ratio of annual base salary (1)	Times	0.6	0.3	0.7	0	0.367	0.402	0.58	0.61	0	0	0	0
	CEO stock ownership as a ratio of annual base salary (2)[1]	Times	-	0.1	0.2	0.196	0.144	0.161	-	-	-	0	0	0
	Share ownership requirements compared to CEO's annual base salary (1)	Times	0	0	0	0	0	0	0	0	0	0	0	0
	Share ownership requirements compared to CEO's annual base salary (2)[1]	Times	0	0	0	0	0	0	0	0	0	0	0	0

1) Respective data are disclosed for the companies with two or more CEOs.
2) When calculating median and average values, the total annual pay of the CEO is excluded.

Protecting Shareholder Rights

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Total No. of issued shares	Share	70,773,116	70,773,116	70,773,116	88,773,116	88,773,116	88,773,116	39,942,149	39,942,149	39,942,149	30,671,526	30,671,526	30,671,526
Common shares	Share	70,773,116	70,773,116	70,773,116	88,773,116	88,773,116	88,773,116	39,942,149	39,942,149	39,942,149	26,024,324	26,024,324	26,024,324
Non-voting shares	Share	58,486	58,486	58,486	0	0	0	57,851	57,851	57,851	43,755	43,755	43,755
Voting Power	-	70,773,116	70,773,116	70,773,116	88,773,116	88,773,116	88,773,116	39,712,298	39,712,298	39,712,298	30,627,771	30,627,771	30,627,771

Governance

Anti-corruption and Ethical Management

Category		Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ethics Policies	Application scope of employee ethics regulations	%	100	100	100	100	100	100	100	100	100	100	100	100
	Ethical management pledge	%	99.4	-	99.7	99.5	-	100	99.4	-	100	98.9	-	100
	Office workers	%	99.4	-	99.7	99.5	-	100	99.5	-	100	98.7	-	100
	Production workers	%	99.6	-	0	99.6	-	100	98.8	-	100	100	-	100
	Ethical management pledge for contractors	%	-	-	-	99.0	96.2	97.9	96.4	79.1	74.3	90.5	87.3	98.7
Ethics Education	Ethics education hours per employee	Hours	0.31	0.68	0.49	0.23	0.34	0.21	0.43	0.36	0.21	0.27	0.33	0.21
	Ratio of employees completed ethics education	%	59.5	86.5	78.3	38.4	46.2	35.8	59.5	44.9	34.8	50.6	46.6	37.1

Compliance

Category			Unit	HDKSOE			HHI			HMD			HSHI		
				2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Compliance management	Dept. subject to compliance inspection[1]		Dept. (%)	34(59)	58(100)	28(41)	121(60)	216(100)	95(47)	17(49)	45(100)	16(35)	44(94)	45(100)	20(36)
	Compliance education sessions		Cases	11	10	8	16	15	11	6	8	5	6	6	5
	Compliance education participants		Persons	563	1,189	1,461	3,687	8,797	4,546	383	1,928	2,012	1,134	2,047	2,917
	Fair trade[2]	Violations	Cases	1	0	1	1	0	0	0	0	0	0	0	0
		Fines[3]	Cases	0	0	0	0	0	0	0	0	0	0	0	0
	Corruption and bribery	Violations	Cases	0	0	0	0	0	0	0	0	0	0	0	0
		Fines	Cases	0	0	0	0	0	0	0	0	0	0	0	0
	Money laundering and internal transactions		Cases	0	0	0	0	0	0	0	0	0	0	0	0
Ethical management evaluation and measures	No. of legal consultations on anti-corruption and economic sanctions		Cases	1	2	11	51	42	30	0	0	1	1	3	3
	No. of legal consultations on fair trade-related laws		Cases	11	5	47	80	77	95	8	6	5	2	65	61
	Other legal advice		Cases	946	1,296	1,081	505	613	628	387	366	457	181	297	250
	No. of departments assessed for corruption risk		Dept. (%)	15(27)	58(100)	68(100)	48(21)	216(100)	203(100)	9(16)	45(100)	46(100)	10(24)	45(100)	55(100)
Measures against unfair trade practices	Operation of cyber counseling system for contractors related to unfair trade practices		Cases	0	0	0	2	2	4	1	0	0	2	1	0

1) Departments exposed to medium or higher risks are subject to compliance risk assessment and receive inspections. Therefore, in some years, the inspection rate may not be 100% depending on the exposure.
2) Violations of fair trade laws and regulations were prepared based on the Annual Report, excluding cases currently under litigation, trials, or objections.
3) Indicated only for significant fines (violations of serious environmental laws and regulations resulting in fines exceeding $10,000).

Governance

Political Contributions

Category		Unit	HDKSOE				HHI				HMD				HSHI			
			2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Political Contribution[1]	Lobbyist/Lobbying organizations	KRW mil.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Political campaign/political organization	KRW mil.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Others	KRW mil.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1) The company does not provide political donations in accordance with relevant laws such as the Political Funds Act.

Association Fees

Category		Unit	HDKSOE	HHI	HMD	HSHI
Association Fees[1]	Top 1	KRW mil.	Korea Chamber of Commerce & Industry (223)	Korea Offshore & Shipbuilding Association (1,210)	Korea Offshore & Shipbuilding Association (356)	Korea Offshore & Shipbuilding Association (781)
	Top 2	KRW mil	Korea Atomic Industrial Forum (20)	Korea Defense Industry Association (393)	Foreign Workers Support Center Operational Contributions (163)	Korea Chamber of Commerce & Industry (75)
	Top 3	KRW mil	Korea Listed Companies Association (14)	Korea Enterprise Federation (297)	Korea Chamber of Commerce & Industry (90)	Korea Enterprise Federation (30)
	Top 4	KRW mil	Korea Industrial Technology Association (7)	Korea Chamber of Commerce & Industry (106)	Korea Enterprise Federation (30)	Jeonnam Enterprises Federation (5)
	Top 5	KRW mil	Korea Welding and Joining Society (6)	Korea Listed Companies Association (14)	Corporate Safety and Health Committee (24)	Korean Standards Association (2)

1) Purpose of participating in the association: Participation as a member of economic organizations and associations that play a role in collecting, conveying, and representing the opinions of industry and business to government and foreign institutions/companies.

R&D

Category	Unit	HDKSOE[2]			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
R&D Personnel	Persons	356	388	435	222	217	233	13	13	39	0	20	17
R&D Expense[1]	KRW mil.	92,480	125,165	162,437	77,424	103,891	116,733	11,216	17,848	22,326	33,897	42,729	50,944
Ratio of R&D Expense to Sales	%	2.34	4.21	7.24	0.93	1.15	0.98	0.39	0.48	0.56	0.80	0.94	0.85

1) Calculated based on total R&D expenditure before deducting government subsidy (a state subsidy)
2) R&D expense and sales of HDKSOE are applied to a consolidated basis.

Privacy Protection

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Violations of privacy protection laws and regulations	Cases	0	0	0	0	0	0	0	0	0	0	0	0
No. of customers (individuals) affected by violations of privacy laws and regulations (leakage, theft, etc.)	Cases	0	0	0	0	0	0	0	0	0	0	0	0

HD Hyundai Vietnam Shipbuilding

Environmental

General Environmental Data

Category			Unit	2021	2022	2023
Environmental Investments			$	398,872.31	729,236.61	770,867.82
Total emissions (Scope 1+2)			tCO_2eq	25,568.1	45,468.4	55,414.1
Direct emissions (Scope 1)			tCO_2eq	6,298.1	12,662.4	19,003.6
Indirect emissions (Scope 2)			tCO_2eq	19,270.0	32,806.1	36,410.4
Scope 3 emissions			tCO_2eq	-	-	4,242,246
Purchased goods and services (Category 1)			tCO_2eq	-	-	406,809
Capital goods (Category 2)			tCO_2eq	-	-	1,189
Fuel-and-energy-related-activities (not included in Scope 1 or 2) (Category 3)			tCO_2eq	-	-	7,165
Upstream transportation and distribution (Category 4)			tCO_2eq	-	-	9,212
Waste generated in operations (Category 5)			tCO_2eq	-	-	16,591
Business travel (Category 6)			tCO_2eq	-	-	34
Employees commuting (Category 7)			tCO_2eq	-	-	2,195
Use of sold ships (Category 11)			tCO_2eq	-	-	3,798,654
End-of-life treatment of sold ships (Category 12)			tCO_2eq	-	-	395
GHG Intensity			tCO_2eq/KRW bil.	64.5	64.3	77.6
Total energy consumption			TJ	466.4	796.5	944.8
Fuels			L	663,059	1,108,917	1,160,618
Electricity			MWh	41,945.00	71,409.00	78,092.00
Intensity			TJ/KRW bil.	1.2	1.1	1.3
Intensity change rate			%	-2.42	13.04	0.60
Total water withdrawals			ton	585,400	682,600	696,850
Surface water			ton	585,400	682,600	696,850
Total waste disposed			ton	230,087	297,955	362,095
Intensity			ton/KRW bil.	580.3	421.3	507.3
General waste	**Waste disposed**		ton	230,087	297,955	362,095
	Landfilled	Internal treatment	ton	191,853	225,330	255,285
	Incinerated (energy recovery)	Outsourced treatment	ton	31,033	61,520	95,161
	Recycled	Outsourced treatment	ton	7,200	11,104	11,648

Social

Diversity in Workforce

Category	Unit	2021	2022	2023
Total number of employees	Persons	2,725	2,792	3,033
Male	Persons	2,585	2,657	2,893
Female	Persons	140	135	140
Under 30	Persons	476	549	707
30 ~ 50	Persons	2,032	1,995	2,012
51 or above	Persons	217	248	314
Permanent employees	Persons	2,725	2,792	3,033
Male	Persons	2,585	2,657	2,893
Female	Persons	140	135	140
Non-permanent employees	Persons	0	0	0
Male	Persons	0	0	0
Female	Persons	0	0	0
Senior managers	Persons	7	6	6
External workers	Persons	0	0	0
Women in managerial positions	Persons (%)	62(2.3)	65(2.3)	65(2.1)
Women in new managerial positions	Persons (%)	5(0.2)	8(0.3)	14(0.5)
Women in revenue-generating departments	Persons (%)	11(0.4)	11(0.4)	11(0.4)
Women in STEM-related departments (Science, Technology, Engineering and Mathematics)	Persons (%)	8(0.3)	8(0.3)	9(0.3)

HD Hyundai Vietnam Shipbuilding

Social

Recruitment

Category	Unit	2021	2022	2023
Total number of new recruits	Persons	62	244	374
Entry-level employee	Persons	62	244	374
Experienced employee	Persons	0	0	0
Under 30	Persons	58	200	298
30 ~ 50	Persons	3	44	76
51 of above	Persons	1	0	0
Male	Persons	52	239	365
Female	Persons	10	5	9
Total turnover	Persons	173	182	131
Male	Persons	164	172	127
Female	Persons	9	10	4
Voluntary turnover	Persons	10	32	22
Average years of service	Years	14.5	14.5	13.9
Male	Years	14.7	14.5	13.9
Female	Years	12.5	13.5	13.5

Employee Benefits

Category	Unit	2021	2022	2023
Male employees who used parental leave	Persons	108	60	105
Female employees who used parental leave	Persons	9	2	15
Maximum period for paid parental leave provided to female employees	Years	0.5[1]	0.5[1]	0.5[1]
Maximum period for paid parental leave provided to male employees	Years	-[2]	-[2]	-[2]

1) The leave is 6 months for each child. In the case of multiple births, an additional month is added for each child from the second child.
2) Normal birth: 5 business days/birth by surgery: 7 business days/twin birth: 10 business days/twin birth by surgery: 14 business days

Collective Agreements

Category	Unit	2021	2022	2023
Union membership rate	%	89.6	95.5	99.9
Strike force	Persons	0	0	0
No. of labor-management council meetings convened	Times	1	1	1
Ratio of employees covered by collective agreements	%	100	100	100

HD Hyundai Vietnam Shipbuilding

Social

Training

	Category	Unit	2021	2022	2023
General	Training hours per employee	Hours	17	27	51
	Training expenditure per employee	$	90.24	191.00	168.72
By employment type	Permanent employees	Hours	45,493	75,479	155,099
	Non-permanent (contract, part-time employees)	Hours	0	0	0

Safety and Health

	Category	Unit	2021	2022	2023
ISO 45001(Occupational health and safety management systems)[1]		%	-	-	100
Employees	Fatalities due to work-related injury	Case (%)	0(0)	0(0)	0(0)
	Serious work-related injuries other than fatal accidents	Case (%)	1(0.028)	3(0.069)	1(0.021)
	Work-related injury accidents with record/ preservation obligations	Case (%)	1(0.028)	3(0.069)	1(0.021)
	Total working hours	Hours	4,971,139.50	6,843,983.60	6,937,029.50
	Lost Time Incident (LTI)	Case	1	3	1
	Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	0.040	0.088	0.029
	Occupational Illness (OI)	Case	21	24	23
	Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	4	5	6
	Industrial accident rate	%	0	0	0

1) Target business sites: Main plant in Vietnam

	Category	Unit	2021	2022	2023
Contractors	Fatalities due to work-related injury	Case (%)	0(0)	0(0)	0(0)
	Serious work-related injuries other than fatal accidents	Case (%)	0(0)	0(0)	0(0)
	Work-related injury accidents with record/ preservation obligations	Case (%)	0(0)	0(0)	0(0)
	Total working hours	Hours	971,227	2,175,994	2,484,634
	Lost Time Incident (LTI)	Case	0	0	0
	Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	0	0	0
	Occupational Illness (OI)	Case	0	0	0
	Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0	0	0
	Industrial accident rate	%	0	0	0
	No. of safety and health-related grievances received from contractors	Case	1	3	8
	No. of cases resolved among safety and health-related grievances received from contractors	Case	1	3	8
	Rate of cases resolved among safety and health-related grievances received from contractors	%	100	100	100

HD Hyundai Vietnam Shipbuilding

Social

Safety and Health

Category		Unit	2021	2022	2023
Serious accidents		Case	0	0	0
Serious accident rate		Occurrence per 200,000 hours	0	0	0
No. of people having completed safety and health training programs	Employees	Persons	740	433	495
	Contractors	Persons	-	-	-

Social Contribution

Category	Unit	2021	2022	2023
Amount of social investments	$	45,087	14,352	94,044
Amount of cash contributions	$	41,465	14,352	93,190
Amount of in-kind donation	$	3,622	0	854

Quality

Category	Unit	2021	2022	2023
ISO 9001(Quality Management System)	%	100	100	100
ISO 3834 (Welding Quality Management System)	%	-	-	100

Governance

Information Security

Category	Unit	2021	2022	2023
No. of customers (individuals) affected by violations of privacy laws and regulations (leakage, theft, etc.)	Cases	0	0	0

Corporate Ethics

Category		Unit	2021	2022	2023
Ethics Policies	Ethical management pledge	%	100	100	100
	Office workers	%	100	100	100
	Production workers	%	100	100	100
	Ethical management pledge for contractors	%	100	100	100
Ethics Education	Ethics education hours per employee	Hours	0.25	0.5	0.5
	Ratio of employees who completed ethics education	%	98	97	99

Appendix

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GRI

Universal Standard

Indicator		Reporting Requirement	Page	Note
GRI 2: General Disclosures				
GRI 2: The organization and its reporting practices	2-1	Organizational details	3~16	
	2-2	Entities included in the organization's sustainability reporting	2	
	2-3	Reporting period, frequency and contact point	2	
	2-4	Restatements of information	-	In case of any restatements, the details of the restatements and their reasons are disclosed in footnotes.
	2-5	External assurance	158~159	
GRI 2: Activities and workers	2-6	Activities, value chain, and other business relationships	2, 4~16	
	2-7	Employees	130~132	
	2-8	Workers who are not employees	-	The standards are not consistent across the four companies. Accurate information will be disclosed in the 2025 integrated report.
GRI 2: Governance	2-9	Governance structure and composition	97~99	
	2-10	Nomination and selection of the highest governance body	97	
	2-11	Chair of the highest governance body	97~99, 110	
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	2-15	Conflicts of interest	97	
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	2-21	Annual total compensation ratio	105, 144	

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	2-29	Approach to stakeholder engagement	29	
	2-30	Collective bargaining agreements	69	
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GRI 3: Disclosures on material topics	3-1	Process to determine material topics	25~28	
	3-2	List of material topics	25~28	
	3-3	Management of material topics	① Promotion of Occupational Safety and Health: 26, 62~68 GRI: 403-1~10 ② Technology investment to reduce environmental impacts: 27, 44~47 GRI: non-GRI ③ GHG emissions reduction: 28, 32~43 GRI: 305-1~7 ④ Strengthening labor-management partnership: 69, 75 GRI: 402-1, 407-1 ⑤ Supply chain ESG management: 81~87 GRI: 308-1~2, 408-1, 409-1, 414-1~2 ⑥ Climate risk management: 32~43 GRI: 201-2	

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GRI

Topic Standard

Indicator		Reporting Requirement	Page	Note
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	201-2	Financial implications and other risks and opportunities due to climate change	39~41	
	201-3	Defined benefit plan obligations and other retirement plans	134	
	201-4	Financial assistance received from government	145	
GRI 202: Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	133	
	202-2	Proportion of senior management hired from the local community	-	100%
GRI 203: Indirect Economic Impacts	203-1	Infrastructure investments and services supported	92~95, 140	
	203-2	Significant indirect economic impacts	121	
GRI 204: Procurement Practices	204-1	Proportion of spending on local suppliers	139	
GRI 205: Anti-corruption	205-1	Operations assessed for risks related to corruption	145	
	205-2	Communication and training about anti-corruption policies and procedures	108~111	
	205-3	Confirmed incidents of corruption and actions taken	145	
GRI 206: Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practice	145	
GRI 207: Tax	207-1	Approach to tax	117	
	207-3	Stakeholder engagement and management of concerns related to tax	117	

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	303-4	Water discharge	128	
	303-5	Water consumption	127	
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	304-2	Significant impacts of activities, products and services on biodiversity	58-60	
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GRI

Topic Standard

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	401-3	Parental leave	134	
GRI 402: Labor/Management relations	402-1	Minimum notice periods regarding operational changes	-*	
GRI 403: Occupational health and safety	403-1	Occupational health and safety management system	64	
	403-2	Hazard identification, risk assessment, and incident investigation	62, 65	
	403-3	Occupational health services	65~66	
	403-4	Worker participation, consultation, and communication on occupational health and safety	62~63	
	403-5	Worker training on occupational health and safety	63	
	403-6	Promotion of worker health	64~66	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	66	
	403-8	Workers covered by an occupational health and safety management system	63~64	
	403-9	Work-related injuries	63~64,137~138	
	403-10	Work-related ill health	63~64, 137~138	

* In accordance with Article 9 of the Collective Agreement, the labor-management promptly exchange written notifications in cases of operational changes, including those regarding company name, article of incorporation, employment rules, personnel, organizational restructuring, labor welfare, training programs, in-house contractors and other personnel-related matters.

Indicator		Reporting Requirement	Page	Note
GRI 404: Training and education	404-1	Average hours of training per year per employee	135	
	404-2	Programs for upgrading employee skills and transition assistance programs	70	
	404-3	Percentage of employees receiving regular performance and career development reviews	132	
GRI 405: Diversity and Equal opportunity	405-1	Diversity of governance bodies and employees	131	
	405-2	Ratio of basic salary and remuneration of women to men	133	
GRI 406: Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	136	
GRI 407: Freedom of association and Collective bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	69, 75, 84	
GRI 408: Child labor	408-1	Operations and suppliers at significant risk for incidents of child labor	86	
GRI 409: Forced or Compulsory labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	86	
GRI 414: Supplier social assessment	414-1	New suppliers that were screened using social criteria	84, 86	
	414-2	Negative social impacts in the supply chain and actions taken	86~87, 138	
GRI 415: Public policy	415-1	Political contributions	146	
GRI 416: Customer health and safety	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	0 cases
GRI 417: Marketing and Labeling	417-2	Incidents of non-compliance concerning product and service information and labeling	-	0 cases
	417-3	Incidents of non-compliance concerning marketing communications	-	0 cases
GRI 418: Customer privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	146	

Initiative Index

SASB

Sustainability Disclosure Topics & Metrics[1]

Topic	SASB Code	Accounting Metrics	Unit	HDKSOE			HHI			HMD			HSHI		
				2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Energy Management	RT-EE-130a.1	Total energy consumed	TJ	153	167	149	9,406	9,887	11,511	2,865	2,903	2,905	4,395	4,096	4,552
		Percentage grid electricity	Ratio (%)	59.1	60.9	61.1	65.2	64.5	65.9	76.9	76.0	76.2	71.1	70.2	70.1
		Percentage renewable	Ratio (%)	0	0	0.201	0.021	0.020	0.017	0	0	0	0	0	0
Workforce Health & Safety	RT-IG-320a.1	Total Recordable Incident Rate (TRIR)	Ratio (%)	0	0	0.085	0.214	0.177	0.163	0.230	0.216	0.400	0.1304	0.1938	0.1135
		Fatality rate	Ratio (%)	0	0	0	0.015	0.007	0	0	0	0	0	0	0.007
		Near Miss Frequency Rate (NMFR) for (a) direct employees and (b) contract employees	Ratio (%)	0	0	0	3.683	5.284	6.225	2.76	2.512	2.326	8.73	8.32	11.38
Fuel Economy & Emissions in Use-phase	RT-IG-410a.1	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	gal/1,000ton-mile	-	-	-	-	-	-	-	-	-	-	-	-
	RT-IG-410a.2	Sales-weighted fuel efficiency for non-road equipment	gal/hr	-	-	-	-	-	-	-	-	-	-	-	-
	RT-IG-410a.3	Sales-weighted fuel efficiency for stationary generators	W/gal	-	-	-	-	-	-	-	-	-	-	-	-
	RT-IG-410a.4	Sales-weighted emissions of nitrogen oxides (NOx)	g/kJ	-	-	-	2-stroke engine Tier II 0.0035 Tier III 0.0006 4-stroke engine Tier II 0.0023 Tier III 0.0004	2-stroke engine Tier II 0.0035 Tier III 0.0006 4-stroke engine Tier II 0.0023 Tier III 0.0005	2-stroke engine Tier II 0.0034 Tier III 0.0007 4-stroke engine Tier II 0.0023 Tier III 0.0005	-	-	-	-	-	-
		Sales-weighted emissions of particulate matter (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	g/kWh	-	-	-	-	-	-	-	-	-	-	-	-
Materials Sourcing	RT-IG-440a.1	Description of the management of risks associated with the use of critical materials		Operation of Raw Material Risk Committee			Operation of Raw Material Risk Committee			Operation of Raw Material Risk Committee			Operation of Raw Material Risk Committee		
Remanufacturing Design & Services	RT-IG-440b.1	Revenue from remanufactured products and remanufacturing services	-	-	-	-	-	-	-	-	-	-	-	-	-

1) Metrics marked with '-' are either not applicable or not monitored.

Initiative Index

SASB

Activity Metrics

SASB code	Accounting Metrics	Unit	HDKSOE			HHI			HMD			HSHI		
			2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
RT-IG-000.A	Number of units produced by product category	Number	0	0	0	T/K 6ships LNGC 10ships LPGC 8ships VLCC 1ship VLOC 2ships VLEC 3ships CNTR 13ships LNG FSRU 1ship TOTAL 44ships	T/K 2ships CNTR 6ships LNGC 8ships LPGC 3ships VLEC 2ships SHUTTLE T/K 2ships VLCC 14ships TOTAL 37ships	CNTR 14ships LNG 9ships LPG 8ships BV 1ship ETH 2ships PC 1ship VLCC 2ships TOTAL 37ships	P/C 45ships LPG 4ships LNG 1ship RO-PAX 1ships CONT 4ships RO-RO 1ship TOTAL 56ships	P/C 40ships LPG 10ships LNG 1ship RO-PAX 1ship CONT 11ships RO-RO 1ship B/C 2ships TOTAL 66ships	P/C 16ships LPG 16ships LNG 3ships RO-PAX 1ship CONT 24ships RO-RO 3ships TOTAL 63ships	T/K 12ships P/C 3ships LPGC 2ships LNGC 9ships CNTR 2ships B/C 4ships	T/K 12ships LPGC 4ships LNGC 7ships CNTR 5ships B/C 3ships	T/K 7ships LPGC 10ships LNGC 8ships CNTR 6ships B/C 2ships
RT-IG-000.B	Number of employees	Number	693	895	1,192	12,818	12,770	13,267	3,029	3,108	3,551	3,506	3,784	3,875

Initiative Index

UN SDGs

In line with the global efforts, HDKSOE and its shipbuilding subsidiaries are committed to achieving the United Nations Sustainable Development Goals (SDGs). To this end, we pursue the growth and innovation that facilitate economic development and job creation while at the same time reducing impacts on the environment, a shared source of humanity, through technology development. By doing so, we aim to align our business directions with the SDGs. As part of such efforts, HDKSOE and its shipbuilding subsidiaries have developed strategies to attain the goals of sustainable development and focused on contributing to 12 out of 17 SDGs and their associated 30 targets.

Key SDGs	Targets	Page	Contributions of HDKSOE and its shipbuilding subsidiaries
Ensure healthy lives and promote well-being for all at all ages	3.4 Reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	57, 65	• Operate various health facilities such as an in-house clinic, physical therapy room, and oriental medicine treatment room to enhance employee's health • Conduct special medical checkups for employees exposed to noise, harmful radiation, metals, and organic chemicals • Implement a hazard assessment process through a chemical management system
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.4 Substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship 4.5 Eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	69-75	• Foster excellent workforce through systematic technical education programs such as a core technology transfer system • Develop and operate job competency training courses to nurture shipbuilding professionals
Ensure availability and sustainable management of water and sanitation for all	6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally 6.6 Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes 6.7 Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	55-56	• Reduce wastewater and improve water quality by minimizing water usage and reusing water • Conduct environmental clean-up activities such as collecting marine debris and removing hazardous materials
Ensure access to affordable, reliable, sustainable and modern energy for all	7.2 Increase substantially the share of renewable energy in the global energy mix 7.3 Double the global rate of improvement in energy efficiency	42-43, 48-51	• Develop LZC ships and engines • Maintain an efficient energy management system certified by ISO 50001 • Establish optimal ship energy management systems by developing autonomous intelligent ships
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	48-51, 81-87	• Expand high-value-added industries, enhance economic productivity, and reduce risk factors by establishing a super-gap smart shipyard • Support education and financial services to achieve co-prosperity with contractors
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.4 Upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	48-51	• Realize saving fuel costs and energy optimization through the digital transformation of shipyards • Enhance the efficiency of ship operations through automation solutions
Reduce inequality within and among countries	10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	92-95	• Conduct social contribution activities to practice sharing by supporting vulnerable groups, promoting coexistence with the local community, and supporting the self-reliance of future generations
Ensure sustainable consumption and production patterns	12.2 achieve the sustainable management and efficient use of natural resources 12.4 Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment 12.5 Substantially reduce waste generation through prevention, reduction, recycling and reuse	45-47, 55-57	• Obtain international certification for environmental management system (ISO14001) • Install prevention facilities and educate environmental personnel • Minimize pollutant emissions through periodic inspections of emission concentration • Manage chemical accidents prevention • Reuse resources and recycle wastes
Take urgent action to combat climate change and its impacts	13.2 Integrate climate change measures into national policies, strategies and planning	33-34, 87	• Declare commitment to carbon neutrality and establish a roadmap • Support contractors in achieving carbon neutrality
Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.1 Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution 14.2 Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans 14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	58-60	• Possess equipment to prevent marine accidents and manage safety during ship entry and departure • Prevent the destruction of ecosystem conservation areas and protect and restore habitats • Reduce underwater radiated noise from ships to decrease negative impacts on marine life
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.4 Ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development 15.8 Introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	58	• Biodiversity Conservation Declaration, Deforestation Prohibition Declaration • Prevent the introduction of invasive species through the development of ballast water treatment systems such as the 'Hi-Ballast' system and 'Ballast-Free' system
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all 16.5 Substantially reduce corruption and bribery in all their forms 16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	97-111	• Practice transparent and responsible management through ethical and compliance management • Realize a rational governance that maintains checks and balances • Promote inclusive management by encouraging the engagement of various stakeholders such as communication with labor union

Independent Assurance Statement

DNV Business Assurance Korea, Ltd. ('DNV') has been commissioned by HD Korea Shipbuilding and Offshore Engineering (hereafter referred to as "HDKSOE" or 'the Company') to undertake an independent limited assurance on the HDKSOE Sustainability Report 2023 (hereafter referred as 'the Report') for the calendar year ending 31 December 2023. The intended users of this assurance statement are the management and stakeholders of HDKSOE.

Standards of Assurance

This assurance engagement has been carried out in Type 2 limited assurance in accordance with AccountAbility's AA1000 Assurance Standard v3 and DNV's VeriSustain protocol V6.0, which is based on our professional experience and international assurance best practice including the International Standard on Assurance Engagements (ISAE) 3000 – 'Assurance Engagements other than Audits and Reviews of Historical Financial Information' (revised), issued by the International Auditing and Assurance Standards Board. DNV has reviewed the Report's adherence to the four principles of AA1000 AccountAbility Principles Standard (2018) and the accuracy, completeness, and neutrality principles of VeriSustain. In addition, DNV has reviewed the 'reliability of specified sustainability performance information' as described in 'Scope of Assurance'.

DNV's Verisustain protocol requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited or/and reasonable assurance.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less detailed than, those undertaken during a reasonable assurance engagement, so the level of assurance obtained is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. We planned and performed our work to obtain the evidence we considered sufficient to provide a basis for our conclusion, so that the risk of this conclusion being in error is reduced, but not reduced completely.

We have not performed any work, and do not express any conclusion, on any other information that may be published outside of the Report and/or on HDKSOE website for the current reporting period.

Scope of Assurance

We have carried out an independent limited assurance on the Report and an independent verification for selected performance, which include the following:

- We have reviewed the following GRI Topic Disclosures relevant to the Material Topics which have been identified as material through the materiality assessment undertaken by HDKSOE.
- Regarding the 'reliability of specified sustainability performance information'), we have reviewed the quality and reliability of Energy Consumption (302-1), Water Withdrawal (303-3), Waste Generation and Disposal (306-3), Work-related Injuries and Fatalities and LTIFR (403-9 & 403-10), and Ratio of Basic Salary and Remuneration of Women to Men (405-2)

Opinion, observations and recommendations

On the basis of the work undertaken, nothing came to our attention to suggest that the Report does not adhere to the four principles of AA1000 APS and the accuracy, completeness, and neutrality principles of VeriSustain described below. In terms of reliability of specified sustainability performance information, nothing came to our attention to suggest that these data have not been properly collated from information reported at operational level, nor that the assumptions used were inappropriate. Nothing came to our attention to cause us to believe that HDKSOE's Report is not prepared, in all material respects, in accordance with the GRI Standards.

Without affecting our assurance opinion, we provide the following observations against the principles of AA1000 APS and VeriSustain applicable to the relevant information described in the 'Scope of Assurance':

Inclusivity: Stakeholder participation and opinion

HDKSOE defines customers, shareholders/investors, business partners, executives/employees, government/national parliament, and media as major stakeholders and reports major issues of interest by stakeholder type. The Company operates a variety of communication channels in order to promote participation from stakeholders in its overall business management. The channels include customer satisfaction survey, shareholder's meeting, business partner's gathering, consultation with municipal governments, labor-management council, policy gathering, and meeting with media.

Materiality: Identifying and reporting on material sustainability topics

HDKSOE has conducted a dual materiality assessment to prioritize and report on 6 key topics that require an intensive management from a financial perspective and a social/environmental impact perspective. In this process, the Company has conducted ESG indicators research at global level, internal/external business environment analysis, opinion collection from employees and external stakeholders. DNV has confirmed that the material topics and their connections to the UN SDGs, in the broader context of sustainable development, have been addressed in the Report.

Responsiveness: Transparent response to critical sustainability topics and related impacts

HDKSOE identifies key ESG management areas and their related indicators based on materiality assessment and describes related activities in the Report. With regard to ESG strategy implementation, the Company reports on each subsidiary's ESG organizational system, strategic topics, and activities under the Company-wide ESG management system. It also discloses interconnectedness to material topics, hence responding to material sustainability topics and their impacts.

Impact: Monitoring, measuring and accounting for the impact of organizational activities on the organization and its stakeholders

HDKSOE reports on identified key areas and related topics/impacts and action plans to mitigate negative impacts across the value chain, and measures, evaluates and monitors impacts with appropriate performance indicators. In particular, ISO 14001 and ISO 45001 are applied in managing environment and safety issues for the Company and its subsidiaries. With regard to its suppliers, ESG risk evaluation procedures and training for suppliers are explained in the Report. It is DNV's recommendation that the Company disclose mid- and long-term due diligence plan more specifically in the Report.

Reliability: Accuracy and comparability of information presented in the report and the quality of underlying data management systems

The data collection and processing process, supporting documents and records were verified through sampling techniques, and based on the result, no intentional errors or misstatements were found in the sustainability performance information described in the report. HDKSOE can explain the source and meaning of sustainability performance using reliable methods and data, and any errors or unclear expressions found during the verification process were corrected before the publication of the Report.

Independent Assurance Statement

Completeness: How much of all the information that has been identified as material to the organization and its stakeholders is reported

HDKSOE reports on the Company's key non-financial disclosures based on its performance related to material topics during the reporting period of 2023 using appropriate GRI Topic Standard disclosures, for the identified boundaries of operations.

Neutrality: Extent to which a report provides a balanced account of an organization's performance, delivered in a neutral tone

HDKSOE discloses the Company's performance, challenges, and stakeholder concerns during the reporting period in a neutral, consistent, and balanced manner.

Our competence, independence and quality control

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17029:2019 – Conformity assessment, general principles and requirements for validation and verification bodies. Accordingly, DNV maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

DNV's established policies and procedures are designed to ensure that DNV, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV) and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. Our multi-disciplinary team consisted of professionals with a combination of sustainability assurance experiences. DNV conducted GHG verification for the Company's subsidiary (HD Hyundai Samho) in 2023 and we assess that this activity does not have impact on independence and impartiality of the assurance of this Report.

Limitations

DNV's assurance engagements are based on the assumption that the data and information provided by the Company to us as part of our review have been provided in good faith, are true, and are free from material misstatements. Because of the selected nature (sampling) and other inherent limitation of both procedures and systems of internal control, there remains the unavoidable risk that errors or irregularities, possibly significant, may not have been detected.

The engagement excludes the sustainability management, performance, and reporting practices of the Company's suppliers, contractors, and any third parties mentioned in the Report. We did not interview external stakeholders as part of this assurance engagement.

We understand that the reported financial data, governance and related information are based on statutory disclosures and Audited Financial Statements, which are subject to a separate independent statutory audit process. We did not review financial disclosures and data as they are not within the scope of our assurance engagement. The assessment is limited to data and information in scope within the defined reporting period. Any data outside this period is not considered within the scope of assurance.

DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Independent Assurance Statement.

Responsibilities of the Directors of HDKSOE and of the assurance providers

The Company's management has sole responsibility for the integrity of the Report and this responsibility includes designing, implementing, and maintaining internal controls over collection, analysis, aggregation and preparation of data, fair presentation of the information and ensuring that data is free from material misstatement.
DNV's responsibility is to plan and perform the work to obtain assurance about whether the relevant information described in the 'Scope of Assurance' has been prepared in accordance with the reporting requirements and to report to HDKSOE in the form of an independent assurance conclusion, based on the work performed and the evidence obtained. Our statement represents our independent opinion and is intended to inform all stakeholders. DNV was not involved in the preparation of any statements or data included in the Report except for this Independent Assurance Statement.

Basis of our Opinion

We adopted a risk-based approach, that is, we concentrated our assurance efforts on the issues of high material relevance to the Company's business and its key stakeholders. Our limited assurance procedures included, but were not limited to, the following activities:

- Peer and media review to identify relevant sustainability issues for HDKSOE in the reporting period;
- Review of the disclosures according to reporting requirements with a focus on the process and the result of materiality assessment, Topic Standards Disclosures and relevant management processes;
- Understanding of the key systems, processes and controls for consolidating, collecting, managing and reporting disclosures and KPIs in the Report;
- Review documentary evidence and management representations supporting adherence to the reporting principles and requirements, with a focus on understanding and testing, on a sample basis, key data sets
- On-site visit at the HDKSOE's Head Office in Seoul, Republic of Korea to review the processes and systems for preparing site level sustainability data and implementation of sustainability strategy and carried out sample based assessment of site-specific data disclosures.
- Conduct interviews with representatives from the ESG team and relevant departments with overall responsibility of monitoring, data consolidation and reporting of the selected information;

For and on behalf of DNV Business Assurance Korea Ltd.
Seoul, Republic of Korea
24 June 2024

AA1000 Licensed Report 000-10/V3-VGFA7

Chang Rok Yun	Yun Tak Cho	Jae Hee Kim
Lead Verifier	Verifier	Reviewer

GHG & Energy Assurance Statement

GHG Emissions

Verification Target

Korean Foundation for Quality (hereinafter 'KFQ') has conducted a verification of Scope 3 Greenhouse Gas Emissions (hereinafter 'GHG emissions') HD Korea Shipbuilding & Offshore Engineering Co., Ltd., HD Hyundai Heavy Industries Co., Ltd., HD Hyundai Mipo Co., Ltd., HD Hyundai Samho Co., Ltd. (hereinafter 'Company') for 2023.

Verification Scope

The verification Scope covered the emission categories selected by the company and the emissions between January 1st, 2023 to December 31st, 2023.

Verification Criteria

The following criteria and coefficients used by the company were applied.

• **Criteria**
- WBCSD/WRI, Corporate Value Chain (Scope 3) Accounting and Reporting Standard
- ISO14064-1:2018,
- GHG Protocol Corporate Standard
- Rule for emission reporting and certification of greenhouse gas emission trading Scheme[1)]
- ISO 14064-3:2019

1) Notification No. 2023-221 of Ministry of Environment

• **Coefficient**
- Environmental Product Declaration evaluation coefficient (2021)
- EEDI(Energy Efficiency Design Index)

Level of Assurance

The verification was performed in accordance with the procedures specified in ISO14064-3 and the assurance level of the verification was performed to satisfy the limited assurance level.

Verification Limitation

GHG emissions verification involves inherent limitations that may arise depending on the organization's data characteristics, calculations and estimates, sampling method, and limited assurance level. Additionally, this verification does not include responsibility for the accuracy of the original data provided by the company.

Verification Opinions

Through the verification process according to the 'ISO14064-3:2006' KFQ could obtain reasonable basis to express following conclusion on the Greenhouse Gas Emission Report.
1) GHG emissions for 2023 of Company were properly calculated according to the verification standards.
2) For GHG emissions, no material errors or omissions were found, except for emissions information not considered within the selected category range.
3) The criteria and process established or estimated/assumed by the company to calculate GHG emissions were transparently reflected in the internal calculation process.

APPENDIX A. SUMMARY OF SCOPE3 GHG EMISSION RESULTS

Organization: HD Korea Shipbuilding & Offshore Engineering Co., Ltd., HD Hyundai Heavy Industries Co., Ltd., HD Hyundai Mipo Co., Ltd., HD Hyundai Samho Co., Ltd.
Emission calculation period: The emission calculation period is from January 1st to December 31st, 2023.

Company Scope 3 Emissions verification Results

(Unit: tCO_2eq)

	Category	Scope 3 Emissions			
		HDKSOE	HHI	HMD	HSHI
1	Purchased goods & services	14,346	2,890,103	1,117,940	2,234,450
2	Capital goods	1,051	24,263	5,909	6,707
3	Fuel and Energy Related Activities Not Included in Scope 1 or Scope 2	379	49,445	11,736	19,209
4	Upstream Transportation and Distribution	209	62,152	27,868	8,505
5	Waste Generated in Operations	76	13,254	23,052	17,507
6	Business Travel	754	3,614	616	469
7	Employee Commuting	580	12,315	4,208	10,185
11	Use of Sold Products	76,190	53,058,683	24,505,194	35,218,698
12	End of Life Treatment of Sold Products	2	4,462	1,529	3,734
15	Investments	22,381	-	-	-
	Total	115,967	56,118,291	25,698,051	37,519,463

* As total emissions are summed by rounding emissions by category to whole numbers, a difference of $\pm 1 tCO_2eq$ may occur

June 7th, 2024
CEO Ji-Young Song
Korean Foundation for Quality

Ji Young Song

Membership Status & Public Information

Public Information

Classification	Disclosure Channels
HD Hyundai Website	http://www.hd-hyundai.com/
HD Hyundai ESG Website	https://esg.hd.com/en/main
HD Hyundai Business Ethics Website	http://ethics.hdhyundai.co.kr/HtmlE/main.html
HD Hyundai Social Contribution Website	https://csr.hyundai-holdings.co.kr/front/index
HDKSOE Website	https://www.hdksoe.co.kr/en/
HHI Website	https://english.hhi.co.kr/
HMD Website	https://www.hd-hmd.com/english/main/main.jsp
HSHI Website	https://www.hshi.co.kr/eng/
Financial Supervisory Service (FSS) Data Analysis, Retrieval and Transfer System (DART)	https://englishdart.fss.or.kr/

Membership Status

Membership	HDKSOE	HHI	HMD	HSHI
Korea Enterprises Federation		●	●	●
Korea International Trade Association	●	●	●	●
Korean Standards Association		●	●	●
Korea Chamber of Commerce & Industry	●	●	●	●
Korea Listed Companies Association	●	●	●	
Korea Fair Competition Federation	●		●	
Korea Offshore & Shipbuilding Association		●	●	●
Korea Association of Machinery Industry		●		
Korea Defence Industry Association		●		
Korea Association for Space Technology Promotion		●		

Sustainable Value Story

BEYOND BLUE FORWARD TO GREEN

We are embarking on a journey toward a new day, driven by technological innovation and business transition with environmental considerations.

HDKSOE and its shipbuilding subsidiaries are committed to harnessing the boundless potential of the sea to create a sustainable future for humanity. With a focus on addressing pressing issues like environmental pollution and climate change, we aim to drive a fundamental shift in maritime business through 'Ocean Transformation'.

Amidst the global announcement of significant greenhouse gas reductions in response to the climate crisis, HDKSOE and its shipbuilding subsidiaries are actively investing our capabilities and resources in the development of low-carbon and zero-carbon ships. This initiative aims to minimize emissions of harmful substances and greenhouse gases produced during ship operations, contributing to the creation of the cleaner planet. Furthermore, we have unveiled a carbon-neutral roadmap in May 2023, intensifying our commitment to align with the global initiative of achieving zero greenhouse gas emissions from our business sites. Additionally, we are promoting to build "Intelligent Autonomous Shipyard" that optimizes business operation and energy use by integrating ship digitalization, advanced technology, and autonomous navigation.

For 100 Year to Come: Future from the Ocean

Ocean Mobility

HDKSOE is preparing for the next generation of the maritime industry based on three major strategies. These strategies aim to lead the transition to ocean mobility and play a crucial role in global decarbonization.

Strategy 1.
Future Renewable Energy Transportation

HDKSOE is developing future energy carriers, including the world's first 90,000m³ ammonia carrier powered by carbon-free ammonia fuel and the world's first 40,000m³ liquefied hydrogen carrier.
In addition, we are developing various alternative fuel propulsion/power generation systems to comply with stricter environmental regulations. This includes the development of ammonia DF HiMSEN engines, LNG-hydrogen mixed fuel engines, and various types of fuel supply system and fuel tanks, aiming to produce ships without greenhous gas emission.

Strategy 2.
Ship Electrification

HDKSOE is actively preparing for the electrification of ships as an essential requirement for future Ships. We acknowledge the necessity of transforming ship power supply methods to enable sustainable energy transportation, and thus we are expediting the development of ship electrification technologies.
Furthermore, we are making significant strides toward realizing ship electrification by implementing electric propulsion in the Ulsan Taehwa and 7.5K LNG bunkering ships.

Strategy 3.
Acceleration of Ship Autonomous Navigation

HDKSOE aims to enable optimal operational efficiency by integrating Hi-EPS[1], an electric propulsion system that offers a flexible and efficient hybrid propulsion platform, with HiNAS[2], an autonomous Ship navigation solution. Furthermore, we have established Digital Convergence Center in GRC[3] to enhance efficiency and sustainability. Through institutional automation, remote control, and real-time optimized smart life cycle management, our goal is to double efficiency and promote sustainability.

1. Hyundai intelligent Electric Propulsion System (Hi-EPS): next-generation electric propulsion system
2. Hyundai intelligent Navigation Assistant Solutions (HiNAS): Ship navigation assistance system
3. Global R&D Center (GRC): HD Hyundai office building in Seongnam, completed in November 2022

For 100 Year to Come: Future from the Ocean

Ocean Energy

HDKSOE aims to establish a stable foundation for marine energy production by commercializing a versatile offshore platform and to lead the development of ocean energy for future generations.

HiFloat Platform

The HiFloat platform, being prepared for commercialization by HDKSOE, is an offshore wind power plant designed as a marine energy cluster. It harnesses the continuous and powerful sea winds originating from the distant ocean to generate energy. Through HiFloat, our goal is to produce 7% of global energy production by 2050. Our technology-intensive new floating offshore power plant is expected to have a power generation capacity of 1.5GW. Considering the current maximum power generation capacity of offshore wind power plants at 88MW, this will bring about substantial transformations in marine energy production.

Small Modular Reactor (SMR)

HDKSOE has successfully developed a vacuum container capable of containing plasma at temperatures of 150 million degrees Celsius, which is ten times higher than the temperature of the sun's core. The SMR (Small Modular Reactor), a next-generation nuclear fission reactor, is one-sixth the size of existing nuclear power plants, making it simpler and more cost-effective to construct as a prefabricated modular device. Leveraging its ultra-precision engineering capabilities, HDKSOE is exploring the potential of utilizing SMR as a ship energy source.

Organizations that Contributed to the Report

HDKSOE

Management Support Team, Risk Management Team, Corporate Planning Team 2, Internal Accounting, Audit Support Team, Corporate Relations Team, Digital Twin Research Dept., Advanced Research Center, Talent Acquisition Team, Security Planning Team, CSR Planning Team, R&D Performance Management Team, Tax Team, Tax Support Team, Research Planning Team, Consolidation Accounting Team, Financial Planning & Analysis Team, Business Ethics Planning Team, Treasury Team 1, Legal Affairs/Compliance Team, Intellectual Property Dept., Quality & Material Solution Dept., Project Solution Dept., PR Team, ESG Dept., HR Planning Team, HR Value Team, HR Management Team, HSE Strategy Team, Intelligent AI Research Dept., IR Team, L&D Team, Supply Chain Management Dept., SD Business Administration Dept.

HMD

Initial Planning Dept., Organization Development Dept., Internal Accounting Control Team, Co-Prosperity Dept., Digital Manufacturing Innovation Center, Digital Innovation Dept., Legal Team, Project & Production Planning Dept., Coexisting Cooperation Dept., Hull Quality Management Dept., System Quality Management Dept., Facility Maintenance Dept., Safety Management Dept., Cost Accounting Dept., Human Resource Development Dept., Procurement Dept. I, Procurement Dept. II, Design Collaboration Dept., General Affairs Dept., PR Team, Environment & Health Dept., Accounting Dept., Human Resources Dept., HD Hyundai Vietnam Shipbuilding, HD Hyundai E&T

HHI

Procurement Planning Dept., Green Resources Dept., Technology Planning Dept., Technical Education Institute, Co-prosperity Planning Dept., Digital Innovation Plan Dept., Corporate Culture & P.R. Dept., Legal/Security Support Team, Legal Dept., Coexisting Planning Team, Corporate Safety Dept., Corporate Safety and Health Supporting Dept., Energy Management Dept., Engine & Machinery Business Planning Dept., Engine System Sales Dept. 1, Human Resource Development Team, Property Development Dept., Project & Production Planning Dept., Financial Analysis Dept., General Affairs Dept., Quality Planning Team, Offshore & Energy Project Planning Dept., Accounting Dept., ESG Dept., Human Resources Dept., People & Culture Team

HSHI

Contract Management Dept., Co-prosperity Dept., Digital Innovation Dept., Project & Production Planning Dept., Coexisting Cooperation Dept., Marine Commissioning Dept., Hull Quality Management Dept., Equipment Preservation Dept., Facilities and Energy Dept., System Quality Management Dept., Safety Planning Dept., Safety Dept., Cost Management Dept., Business Ethics Planning Team, Human Resources Development Dept., Automation Innovation Center, Materials Procurement Dept., Information Security Team, Design Coordination Dept., General Affairs Dept., Process Design Dept., Environment & Health Dept., Accounting Dept., DT Innovation Dept., HR Dept.


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