

HDKSOE INTEGRATED REPORT 2022

# BEYOND BLUE FORWARD TO GREEN



An aerial photograph of the ocean showing a large wave with white foam cresting over a deep blue sea. The perspective is from above, looking down at the water's surface.

# BEYOND BLUE FORWARD TO GREEN

HDKSOE aims to build a sustainable future,  
beginning with the ocean.

# About This Report

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### Report Overview

This report is an integrated report of HD Korea Shipbuilding & Offshore Engineering and its shipbuilding subsidiaries (HD Hyundai Heavy Industries, Hyundai Mipo Dockyard, Hyundai Samho Heavy Industries)<sup>1</sup>, and transparently discloses to stakeholders the financial and non-financial risks that the company faces, as well as the current status and plans for responding to them. In addition, this report contains the story of the achievements of the past 50 years and the direction for the next 50 years through 'Connects the past and the future' (report 5p-11p) in celebration of the 50<sup>th</sup> anniversary of HD Hyundai. HD Korea Shipbuilding & Offshore Engineering and its shipbuilding subsidiaries have been publishing an integrated report every year and will continue to transparently disclose management information and actively communicate with various stakeholders through the integrated report.

### Reporting Standards and Frameworks

This report is in accordance with the Global Reporting Initiative 2021 (GRI 2021). In order to address the key issues that relate to HDKSOE and its shipbuilding subsidiaries, we comply with the disclosure recommendations of Task Force on Climate-Related Financial Disclosure (TCFD) and Sustainability Accounting Standards Board (SASB) Standards. We follow the IR Framework presented by IIRC (International Integrated Reporting Council).

### Reporting Period

This report details our business operations from January 1<sup>st</sup> through December 31<sup>st</sup> 2022. Some of the data extend to 2023 for significant qualitative achievements. In the case of quantitative performance, three-year data from 2020 to 2022 were presented together to help identify trends.

### Reporting Scope

This report covers HDKSOE and its shipbuilding subsidiaries (HHI, HMD, HSHI). We comply with Korean International Financial Reporting Standards (K-IFRS) for financial performance. In the case of non-financial performance, it is limited to the performance of domestic business sites of HD Korea Shipbuilding & Offshore Engineering and its shipbuilding subsidiaries. Some non-financial performances include Hyundai Vietnam Shipbuilding and HD Hyundai ENT, which are subsidiaries of Hyundai Mipo Dockyard.

### Reporting Assurance

HDKSOE and its shipbuilding subsidiaries conducted the third party's independent assurance (overall sustainability management, GHG emissions, and energy consumption are separately verified) from external institutions to secure the credibility and improve the quality of the report. Please refer to page 180-182 of this report for the assurance result.

### Inquiries about the Report

Please contact HDKSOE ESG Team for any inquiries or comments about the HDKSOE Integrated Report 2022.  
477, Bundangsuseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do (Jeongja-dong) | sustainability@ksoe.co.kr

### Interactive Guide

Please download the electronic version of the HDKSOE Integrated Report 2022 from HDKSOE homepage ([http:// www.hdksoe.co.kr](http://www.hdksoe.co.kr)). It is an interactive PDF format for the better convenience of users.

1. Abbreviated as HDKSOE, HHI, HMD and HSHI respectively

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**The Past 50 Years: A Journey to Lead the World Shipbuilding Industry**

“A 500-won note and a picture of an empty Korean beach was enough to secure loans and sign a contract for a super-large oil tanker. Nothing was impossible for Chung Ju-yung, the founder of Hyundai Heavy Industries, who boldly challenged to prove Korea’s potentials for shipbuilding by presenting a 16<sup>th</sup> century’s ironclad ship in the 500-won note and his plans to build a shipyard. More astonishingly, he decided to build both the shipyard and the ordered ship at the same time, and successfully launched the ship even before the shipyard was finished. It marked the beginning of legendary growth of Korean shipbuilding, which now dominates the global market.

Even in hard times as the worldwide oil crisis, Hyundai Heavy Industries continued to go forward based on creative wisdom, strong determination, and unwavering drive. It put endless endeavor to develop various ship types, ship engines, ship repair services, and plant and heavy electrical businesses. HHI’s path became the measuring stick for Korea’s economic growth. HHI’s debut was also the signal for Korea’s entrance to the world stage.”

- Excerpts from HD Hyundai’s 50-Year History -

# CONNECTS THE PAST AND THE FUTURE

**Over the past 50 years, HDKSOE and its shipbuilding subsidiaries have grown to be the world’s No. 1 shipbuilder, demonstrating the power of “Hyundai Spirit” to the world.**

# BEYOND BLUE FORWARD TO GREEN

We are embarking on a journey into the next 50 years, driven by technological innovation and a transition towards green business.

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**Building a Sustainable Future for Humanity: 50 Years Ahead**

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 implementation 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.

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# 100 Years into the Future, 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.

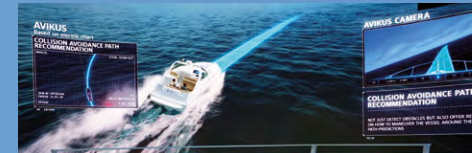
**Strategy 1.**  
Future Renewable Energy Transportation

HDKSOE is developing future energy carriers, including the world's first 90,000m<sup>3</sup> ammonia carrier powered by carbon-free ammonia fuel and the world's first 40,000m<sup>3</sup> 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, fuel supply systems, and a various type of fuel tanks, all aimed at creating a ship that emits zero greenhouse gases.



**Strategy 2.**  
Ship Electrification

HDKSOE is actively preparing for the electrification of ships as an essential requirement for future vessels. 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 towards 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<sup>1</sup>, an electric propulsion system that offers a flexible and efficient hybrid propulsion platform, with HiNAS<sup>2</sup>, an autonomous vessel navigation solution. Furthermore, we plan to establish an integrated digital center in GRC<sup>3</sup> 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

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# 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.










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## Strategy 1 for the Next 50 Years. Total Solution Provider for Clean Ocean

HDKSOE, along with its shipbuilding subsidiaries, has achieved the distinction of constructing the largest number of ships worldwide in the past 50 years, demonstrating leadership in the market through competitive technological expertise. Furthermore, to ensure the provision of safe and efficient eco-friendly marine mobility, we are making significant investments in research and development, as well as comprehensive training programs for engineering professionals.

Building upon our global R&D center, we have devised a strategic plan to further advance technologies for the commercialization of low carbon and zero carbon ships. This includes LNG fueled ships, methanol fueled ships, ammonia fueled ships, hydrogen fueled/hydrogen carriers, and electric propulsion ships. By focusing on these areas, HDKSOE, along with its shipbuilding subsidiaries, aims to enhance its technological competitiveness as a 'Total Solution Provider' capable of meeting diverse market demands for eco-friendly vessels.

	Low Carbon Ship		Zero Carbon Ship		
	LNG Fueled Ship	Methanol Fueled Ship	Ammonia Fueled Ship	Electric Powered Ship	Hydrogen Fueled/ Hydrogen Carrier
Ship					
Key Tech	Re-liquefaction System, Cargo Handling System Onboard CO <sub>2</sub> Capture System, Methane Slip Reduction System	Methanol fuel tank and fuel supply system	Ammonia-fueled engine, safety system, nitrogen oxide post-treatment technology	VFD <sup>1</sup> & Electric/ hybrid propulsion system	Liquefied hydrogen cargo hold/ cargo handling system and hydrogen propulsion system

1. VFD: Variable Frequency Drives

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## Strategy 2 for the Next 50 Years. Implementing Carbon Neutrality: Environmental Responsibility and Climate Crisis Response

### The International Community's Demand for Carbon Neutrality

The climate change crisis is no longer a distant risk but a pressing challenge faced by humanity as a whole. The international community and major financial institutions are actively calling for companies to embrace carbon neutrality. Global investment institutions and major pension funds, in particular, have announced their intention to divest from companies that do not proactively address carbon neutrality. This underscores the fact that carbon neutrality is not just a response to climate change but an essential element for corporate sustainability. HDKSOE and its shipbuilding subsidiaries acknowledge that a swift transition to carbon neutrality is not a choice but a critical necessity.

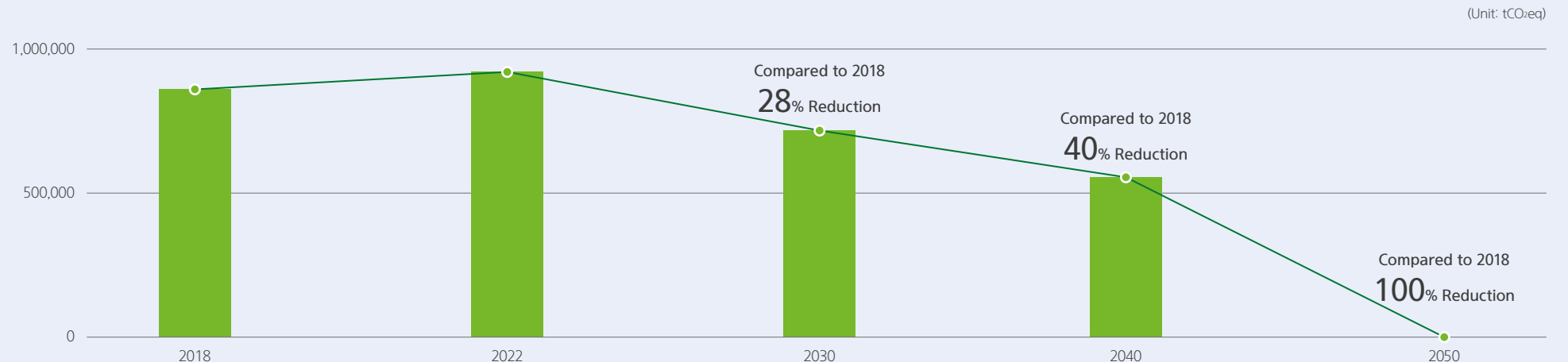
### Climate Change 'Crisis' to 'Opportunity'

In response to the increasing social demand for carbon neutrality and the strengthening of greenhouse gas emission regulations, HDKSOE and its shipbuilding subsidiaries perceive these environmental changes as opportunities. On May 3, 2023, we embarked on a journey toward carbon neutrality, disclosing our roadmap. Our collective aim is to work towards the shared objective of limiting the global average temperature increase to 1.5°C or less, as agreed upon in the 2015 Paris Climate Agreement, which aligns with the 1.5°C scenario outlined by the Intergovernmental Panel on Climate Change (IPCC). We have set targets accordingly and established an implementation path to achieve our goals.

### Roadmap to Carbon Neutralization

HDKSOE and its shipbuilding subsidiaries are implementing measures to reduce greenhouse gas emissions by improving the efficiency of production equipment and facilities and adopting renewable energy sources. As outlined in the carbon neutrality roadmap, we aim to achieve a 28% reduction in emissions by 2030 and a 40% reduction by 2040, compared to 2018 levels. Additionally, our goal is to attain RE100 certification, indicating 100% electricity consumption from renewable sources, and achieve carbon neutrality by 2050. To ensure successful implementation of the carbon neutrality roadmap, we will collaborate with the group's dedicated carbon neutrality organization, focusing on enhancing our execution capabilities. Moving forward, we aspire to become a leading global shipbuilder committed to net-zero emissions. We will actively engage in the global carbon neutrality movement, proactively implement carbon neutrality strategies, address climate change, and diligently manage associated risks.

Roadmap to Carbon Neutralization



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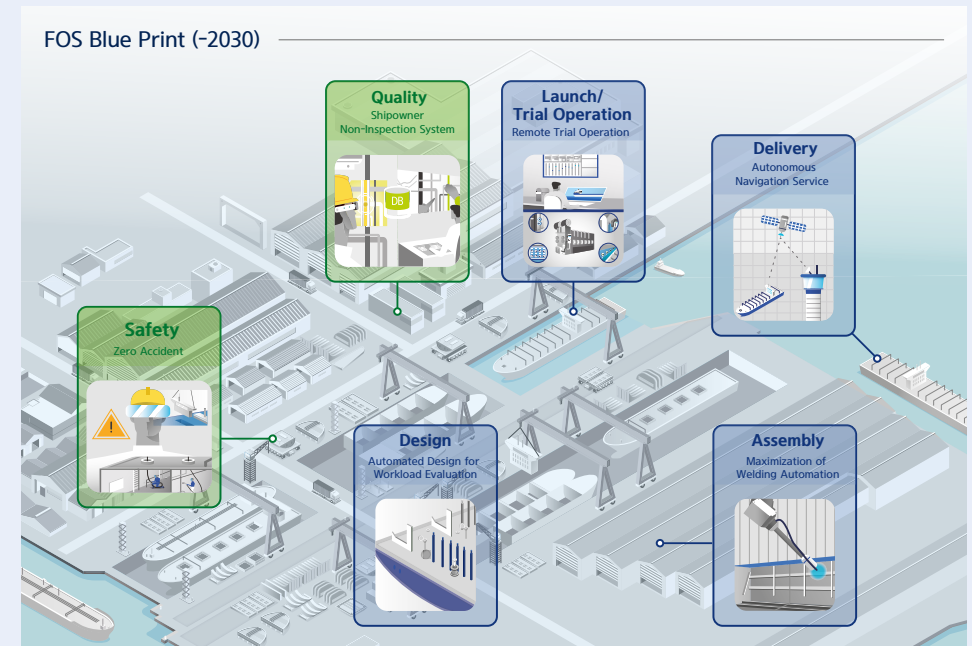
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## Strategy 3 for the Next 50 Years. Digital Transformation Led by Smart Yards and Ships

All industries now need to enhance their digital capabilities to proactively adapt to the rapidly changing future. HDKSOE and its shipbuilding subsidiaries are at the forefront of the digital transformation wave, transitioning into a future-oriented smart shipyard (FOS, Future of Shipyard), implementing advanced digital technologies such as data analytics, virtual/augmented reality, robotics, automation, and artificial intelligence by 2030. Through this initiative, we aim to establish the finest, safe, and efficient shipyard while proactively addressing environmental regulations, including greenhouse gas emissions, to maintain our competitive advantage in the market. Additionally, HDKSOE and its shipbuilding subsidiaries collaborate with HD Hyundai Global Service, a developer and provider of smart ship solution systems, and Avikus, a company specializing in autonomous navigation, enabling us to lead the smart ship market and become a pioneering force in the digital sailing era.



### Leading the Maritime Mobility Market through Advanced Smart Ship Technology

Lv. 1 — Digital Vessel	Lv. 2 — Intelligent Vessel	Lv. 3/4 — Full Autonomous Vessel
<b>Intelligent Navigation Solutions</b> Navigation Aids      Berthing Assistance	Minimize Crew on Board	Unmanned Vessel
<b>Predictive Diagnostics Solution</b> Hazard Monitoring on Board      Ship Equipment Diagnostics	Partial Remote Control	Remote Control
	Partially Autonomous Operation	Autonomous Operation

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# BUSINESS OVERVIEW

HDKSOE and its shipbuilding subsidiaries are creating a successful future for customers with the world's No. 1 capabilities.

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# HD KOREA SHIPBUILDING & OFFSHORE ENGINEERING

New innovations and challenges for a green future, wherever HDKSOE sets foot on, a road is created

Sam. H. Ka,  
CEO



Ki-sun Chung,  
CEO



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**Dear Esteemed Stakeholders,**

This year heralds the beginning of a new 50-year era for HDKSOE. Building up the accomplishments of the past decades, we will endeavor to lay the foundation for the next 50 years. The future envisioned by HDKSOE is a world where we contribute new value and everyone prospers together. To realize this future, we will focus on limitless possibilities and untapped potentials from the ocean, an area in which we boasts of our unparalleled expertise and we steadfastly and progressively strive towards such vision through innovation and challenges.

We achieved impressive financial performance in 2022. Despite the challenges we faced, we exceeded our annual order target by winning contracts for building new 196 ships. In addition to outstanding orders, our enhanced productivity and the development of high-value ships will serve as the foundation for a rebound this year and solidify our position as a leading player in the shipbuilding industry.

In line with our dedication to sustainability, we have established our ambitious 2050 Net-Zero Roadmap. This roadmap outlines our commitments to becoming the "Global No. 1 Net-Zero Shipbuilder" by leading the way in reducing greenhouse gas emissions in our shipyard operations and heightening our awareness of the global responsibility to address climate change.

Amid the growing importance of emission reporting across the value chain, we have initiated cooperative efforts to standardize the measurement and calculation methodology for carbon footprints within our industry. We are actively working with other Korean shipyards and global classification societies to establish common frameworks that will ensure transparency and accountability for reporting Scope 3 emissions.

We are directing our significant resources into developing greener, smarter, and more efficient ships and technologies. In pursuit of raising efficiency, sustainability and safety in our shipbuilding processes, we are harnessing the power of digital technologies such as a smart shipyard. We are actively engaged in developing green technologies that prioritize eco-friendly fueled propulsion systems. Our focus lies on sustainable alternatives such as LNG, methanol, ammonia, hydrogen, and other green options. By embracing these future-ready technologies, we aim to drastically reduce the environmental impact of our ships and contribute to a cleaner and healthier planet.

To ensure that sustainability remains at the core of our operations, we have established ESG Key Performance Indicators (KPIs) for each organization and managerial position. We believe that ESG KPIs serve as essential tools for aligning our activities with ESG goals and internalizing our core values throughout our organization. By incorporating ESG actions into our performance evaluation, we can demonstrate responsible business practices, engage our employees and foster a culture of sustainability.

We firmly believe that our greatest asset is our people. For a new leap for another 50 years, we are actively shaping a new culture within our organization that nurtures talent, promotes well-being, and encourages work-life balance. We are providing a supportive and harmonious environment where our employees can thrive and feel empowered to bring their best selves to the workplace.

In this dynamic and challenging business landscape, we acknowledge the presence of both risks and opportunities that lie ahead. We also understand the importance of effectively navigating these dynamics and taking a proactive approach to shape our future.

On our path towards a green future, we kindly request for the continuous support and patronage of all our stakeholders.

# HD KOREA SHIPBUILDING & OFFSHORE ENGINEERING

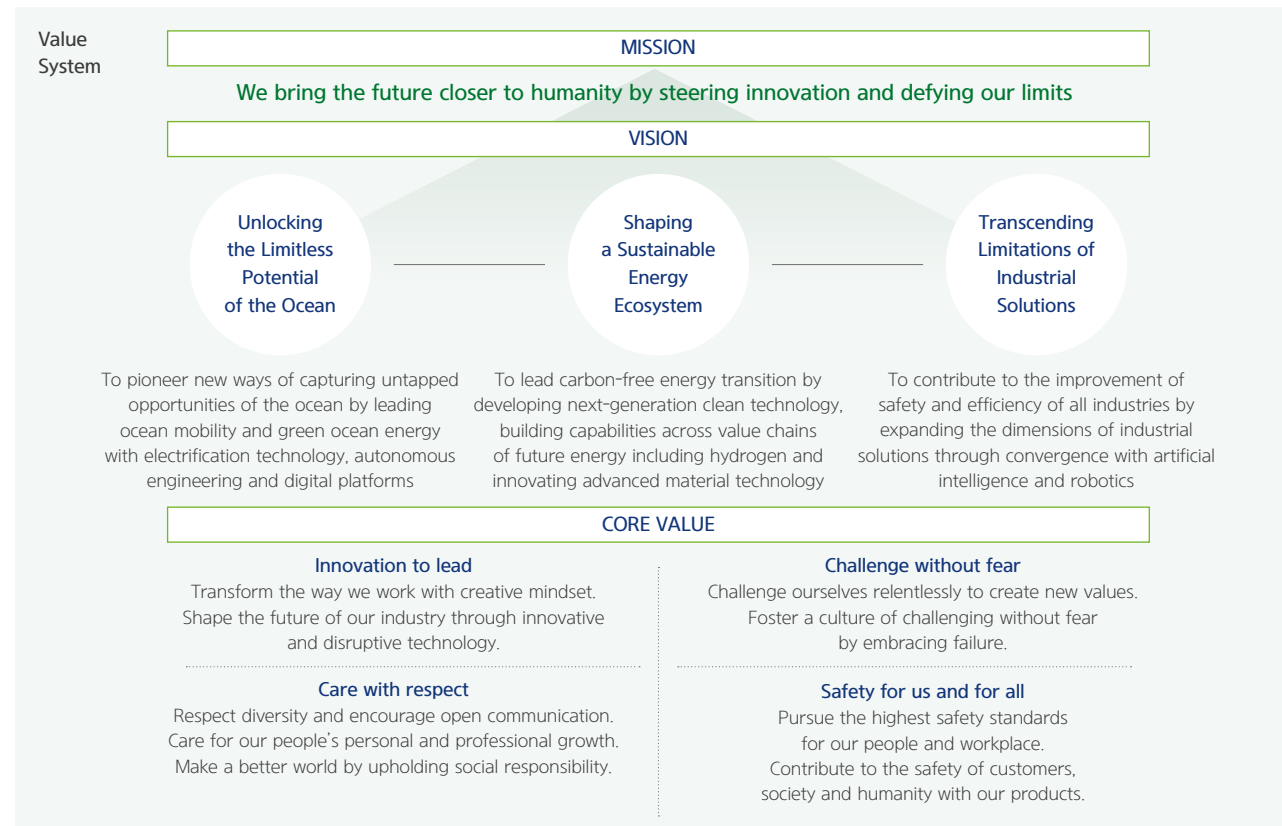
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## Company Overview

HDKSOE, an intermediate shipbuilding holding company of HD Hyundai, is committed to transforming into a technology-driven shipbuilding and offshore group with world-class R&D and engineering capabilities. To achieve this goal, HDKSOE sets forth the group’s mid- to long-term development direction and growth strategy, while diligently fulfilling its role in recruiting and cultivating research and technology personnel who will drive future advancements. Furthermore, we aim to create new value by harnessing synergies among affiliates, while simultaneously leading the mutual growth of the entire industrial ecosystem, encompassing our affiliates and supplier companies.

## HDKSOE Value System

HDKSOE is dedicated to pursuing three visions aligned with HD Hyundai’s Value System, with the mission of “We bring the future closer to humanity by steering innovation and defying our limits”. To realize value amidst the diverse changes and trends of our era, we are determined to strengthen our position as a global leader in the shipbuilding and offshore industry through our Core Value.



## HDKSOE Corporate Governance

HDKSOE is an intermediate shipbuilding holding company of HD Hyundai. It is a controlling company that owns shipbuilding subsidiaries such as HHI, HMD, and HSHI.

### Company Profile

<b>Company Name</b>	HD Korea Shipbuilding & Offshore Engineering
<b>Head Office</b>	477, Bundanguseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea
<b>Establishment</b>	December 28, 1973
<b>CEO</b>	Sam H. Ka, Ki-sun Chung
<b>Employees</b>	890

### Financial Highlights

(Consolidated basis as of Dec. 2022)

Classification	Unit	2020	2021	2022
Sum		149,037	154,934	173,020
Shipbuilding		124,687	132,402	145,613
<b>Total Revenue</b>		10,766	6,205	8,905
Engines & Machines		7,086	7,398	7,345
Green Energy	KRW	4,966	5,922	9,848
Others	100 million	2,554	3,007	1,309
<b>Operating Profit (Loss)</b>		744	(13,848)	(3,556)
<b>Net Profit (Loss)</b>		(8,352)	(11,412)	(2,952)
<b>Total Assets</b>		252,442	272,931	298,835
<b>Total Liabilities</b>		128,230	148,793	175,713
<b>Total Equity</b>		124,212	124,138	123,121
<b>Debt Ratio</b>		103.2	119.9	142.7
<b>Net Debt-to-Equity Ratio<sup>1</sup></b>	%	14.9	- <sup>2</sup>	2.6
<b>Operating Margin</b>		0.5	(8.9)	(2.1)
<b>Return on Assets</b>		(3.3)	(4.3)	(1.0)

1. (Debts-Deposits) ÷ Total Equity

2. Debts less than deposits are not shown.

# HD KOREA SHIPBUILDING & OFFSHORE ENGINEERING

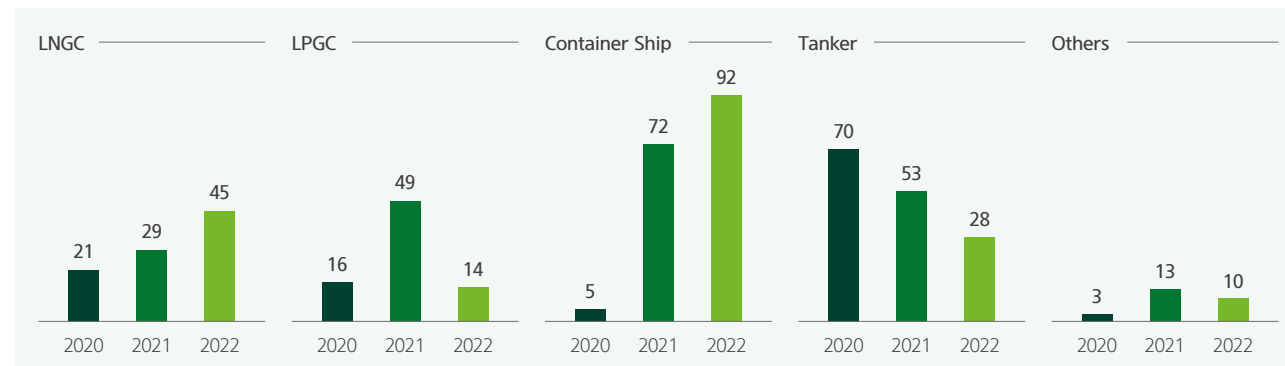
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## Performance in 2022

HDKSOE, as the intermediate holding company, is a specialized company focused on shipbuilding and offshore engineering industries. Our main business areas encompass shipbuilding, offshore/plant construction, industrial machinery/energy, and research and development. In our role as the intermediate holding company, we play a crucial part in shaping the group's direction of development and growth strategy. Additionally, we strive to enhance the group's sustainability by developing and securing innovative technologies through our Advanced Research Center. With a rich history spanning 50 years, HDKSOE has laid the foundation for Korea's economic development through its exceptional technological capabilities. Today, we have established ourselves as a global leader in the shipbuilding and offshore industry. Our offerings encompass smart, high-efficiency, and eco-friendly "marine solutions", including shipbuilding, ship engines and propulsion systems, offshore structure manufacturing, and ship life management services. Furthermore, we are committed to increasing corporate value through growth while fulfilling our corporate social responsibilities.

### Shipbuilding Orders<sup>1</sup>

Unit: No. of ships



(Unit: USD 100 million)

Classification	2020		2021		2022	
	No. of Ships	Amount	No. of Ships	Amount	No. of Ships	Amount
Shipbuilding	115		216		189	
LNGC	21		29		45	
LPGC	16	97.9	49	201.5	14	228.9 <sup>1</sup>
Container Ship	5		72		92	
Tanker	70		53		28	
Others	3		13		10	
Naval & Special Ship	1	3.8	3	10.4	7	11.9
Offshore/Plant	-	3.1	3	18.2	-	0.2
Engines & Machines	-	9.0	-	20.7	-	33.6
<b>Total</b>	<b>116</b>	<b>113.8</b>	<b>222</b>	<b>250.8</b>	<b>196</b>	<b>274.7</b>

1. Combined no. of orders received by HHI, HMD and HSHI

2. Including HSHI's industrial facility performance

## Major Achievement

### Achieve a Turnaround in Shipbuilding Business

In 2022, despite the ongoing aftermath of COVID-19 and the complex challenges posed by the prolonged war in Ukraine, fluctuations in interest rates and exchange rates, inflation, and soaring raw material prices, we surpassed our order target and received orders totaling \$22.89 billion. This outstanding achievement led to the turnaround in the operating profit from the third quarter onwards. Moreover, we have made significant strides in technological advancements, including the development of an LNG/hydrogen hybrid engine and the successful construction and delivery of an electric propulsion ship.

### Leading Eco-friendly Technology through Collaboration with Global Companies

HDKSOE has entered into a collaboration agreement with Shell, to conduct a fuel cell demonstration. Starting from 2025, a 174,000m<sup>3</sup> LNG carrier operated by Shell will be equipped with a 600kW class high-efficiency solid oxide fuel cell (SOFC) for power generation. This collaboration aims to develop and produce high-efficiency, eco-friendly ships that can produce fuel cells as a long-term propulsion power source. Furthermore, HDKSOE has strengthened its partnerships with global companies, including a collaboration with Palantir to construct a smart shipyard, and investment in TerraPower to secure next-generation nuclear energy technology.



'Ship fuel cell demonstration consortium' contract signing ceremony

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## HDKSOE's Business Characteristics

The shipbuilding business conducted by HDKSOE and its shipbuilding subsidiaries operates within the equipment industry and is a capital-intensive sector that necessitates significant investment in facilities, particularly large-scale construction facilities. Simultaneously, the construction process itself is highly diverse, and due to the nature of the work, automation is limited, leading to a labor-intensive environment that requires a substantial number of skilled personnel. This characteristic contributes to employment rate significantly. Furthermore, given the nature of the industry, we are heavily influenced by the market conditions of the shipping industry, and creates a ripple effect on related industries such as steel and machinery. Additionally, in addition to the construction of general merchant ships, the shipbuilding business also encompasses the defense industry, which involves the construction of coast guard and navy vessels vital for national defense.

HDKSOE and its shipbuilding subsidiaries have established a prominent position in the shipbuilding industry by leveraging our extensive experience and expertise in ship construction. We possess a diverse range of product offerings, a robust track record of transactions with leading global shipping companies, and the ability to self-manufacture and procure key ship equipment. Additionally, with our exceptional research and development infrastructure and shipbuilding technologies, we continuously adapt to market dynamics.

## 2023 Market Status and Forecast

In 2022, there was a significant increase in orders for new LNG carriers, aligning with the global rise in LNG demand and the increased need for LNG maritime transportation following the conflict between Russia and Ukraine. This led to an unprecedented surge in newbuilding orders on a global scale. Furthermore, container ships have also experienced a consistent growth in newbuilding orders, driven by the improved profitability of container shipping companies. However, it is worth noting that amidst this steady trend of newbuilding orders, global inflation, including high oil prices and escalating raw material costs, resulted in a sharp rise in newbuilding prices.

This year, the shipbuilding industry is expected to experience some contraction due to shipowners adopting a more cautious approach amid the economic slowdown and high interest rates. However, the new order performance in the first quarter of 2023 has been positive. According to Clarksons, a shipbuilding and shipping analysis agency, ship orders are projected to slightly decrease in 2023 compared to the previous year but are expected to resume an upward trajectory from 2024 onwards. In addition, the acceleration of environmental regulations is expected to drive an increase in demand for eco-friendly ship orders from shipowners who aim to comply with these regulations. This is anticipated to contribute to the growth of new ship orders in the mid- to long-term, indicating a positive trend.

## 2023 Major Plan

HDKSOE aims to lead new trends and set the technological paradigm with innovation and a proactive approach in the era of eco-friendly and digital transformation. In 2023, we will strive to prepare for a new future, enhance internal stability, and accurately anticipate the changing landscape to spearhead the eco-friendly and digital transition and foster innovation. Through these efforts, we will persistently challenge ourselves and foster growth as a technology-driven shipbuilding company with world-class R&D engineering capabilities for the next 50 years.

### Implementing ESG KPIs in the Shipbuilding and Offshore Sector



In November 2022, HDKSOE introduced ESG KPIs for shipbuilding and the offshore sector. In 2023, we aim to enhance ESG performance management through advanced KPI design. Starting with ESG organizations, two common KPIs and one selection KPI will be established and applied. Additionally, KPIs will be implemented at a team level to foster internal adoption of ESG management throughout the company.

### Advancing Key Initiatives to Address Climate Change



HDKSOE aims to comprehensively implement the detailed strategy for carbon neutrality, as declared in May 2023. Moreover, we are committed to spearheading the transition towards eco-friendly shipbuilding by developing indicators aligned with international standards. This will be achieved through the standardization of scope 3 calculations within the shipbuilding industry and the implementation of the ship Life Cycle Assessment (LCA) project.

### Establishing a Supply Chain ESG Management System



Since 2022, HDKSOE has been developing a supplier ESG management policy and evaluation system to promote sustainable supply chain management. In 2023, our plan is to establish a Supplier Code of Conduct, ESG Guidelines, and develop an evaluation tool to assess our suppliers. Through these initiatives, we aim to mitigate supplier-related risks and enhance our supply chain ESG capabilities by implementing comprehensive supply chain ESG management and due diligence plans.

### Digital Transformation: Shaping the Future of Shipbuilding



We are undergoing a remarkable transformation into a cutting-edge, technology-driven industry that seamlessly integrates shipbuilding with ICT, aiming to bridge the technological gap in the market. With our extensive experience in building the largest number of ships in the world, we plan to achieve a remarkable level of autonomous navigation technology by advancing relevant technologies. In this pursuit, we aim to establish industry standards for autonomous navigation through active collaboration with organizations such as classification societies. Furthermore, by integrating big data platforms and ICT into the production process, we strive to eliminate inefficiencies throughout the entire process ranging from ship design to construction phases. This will enable us to create a smart yard, fostering a safer workplace and accelerating the realization of a more streamlined production environment.



# HD HYUNDAI HEAVY INDUSTRIES

## A clean future starts from the sea: HHI takes the lead

**Han Young-seuk**  
CEO



**Lee Sang-kyun**  
CEO



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### Dear Esteemed Stakeholders,

Thank you for your continued support and interest in HHI. Celebrating its 50<sup>th</sup> anniversary in 2022, HHI unveiled “Vision 2030” to establish itself as a premier shipbuilding and offshore company leading the eco-friendly digital era. We are committed to leading the global shipbuilding and offshore market by cultivating eco-friendly digital ships, smart yards, and future-oriented businesses. In 2021, we successfully issued domestic green bonds, followed by foreign currency green bond issuances in 2022, securing proactive financing for investments in eco-friendly ships. This signifies the positive evaluation of HHI ESG management efforts by global investors. We will continue to solidify our market leadership based on our eco-friendly ship technology. Furthermore, the Gunsan Shipyard has been reactivated, and the successful launch of its first block marks a significant milestone. The full-scale operation of the Gunsan Shipyard will greatly contribute to the ship production process and bolster the local economy. HHI faces a business environment fraught with various uncertainties, including a global economic downturn and supply chain risks due to rapid interest rate hikes and declining growth rates. However, we remain committed to forging a future through constant innovations and challenges.

The year 2023 holds great significance as we embark on a new chapter, building upon our proud 50-year history. HHI is poised to stride boldly towards the next 100 years. In pursuit of a clean future starting from the sea, we have outlined the following key objectives for the year.

### First, We will Advance the ESG Management System.

HHI is committed to actively promoting an ESG management culture that fosters sustainable value, in alignment with our group’s ESG management vision of “Future From the Ocean.” Through ESG Promotion Committee, which has been operational since the first half of this year, we aim to identify key ESG-related priorities, enhance execution capabilities, and implement ESG key performance indicators (KPIs) for systematic management of ESG performance across the organization. Furthermore, we will enhance transparency in climate disclosure and eco-friendly management by developing a methodology to calculate greenhouse gas emissions throughout the entire value chain of our ships. Additionally, we will take the lead in implementing socially responsible management practices, including human rights management and coexisting cooperation, while coexisting our ESG management system.

### Second, We will Lead the Market with Advanced Technology and Innovation.

As the world moves towards a carbon-neutral era, we will take the lead in the market by proactively developing eco-friendly vessels that are anticipated to experience increased demand. Additionally, this year we aim to finalize the construction of the ‘Visible Shipyard’, which represents the initial phase of our Future of Shipyard (FOS) project, thereby enhancing our practical production competitiveness.

Furthermore, we will establish a solid foundation for an autonomous shipyard, encompassing design to production, through the utilization of Palantir’s corporate big data platform, ‘Foundry’, enabling the realization of the world’s top-ranked smart shipyard seamlessly.

### Third, We will Further Solidify Safety as Our Top Priority.

Safety is our utmost priority in all aspects of our management. To foster a culture of safety-first, we will introduce a fresh safety mindset among all employees and enhance field-oriented risk assessments. Furthermore, we will reinforce our support for supplier safety management, establishing a coexisting cooperation system. Additionally, we will implement a site-specific safety education system and strive to create a smart and secure working environment, ensuring a workplace that is free from serious accidents.

Finally, HHI aims to foster a thriving future for all through constant innovation and sustainable management. We extend our heartfelt appreciation to all stakeholders who have accompanied us on this journey, and eagerly anticipate the next 50 years of HHI as we strive to “unlock the boundless potential of the sea” and surpass the accomplishments of the past 50 years.

Thank you.

# HD HYUNDAI HEAVY INDUSTRIES

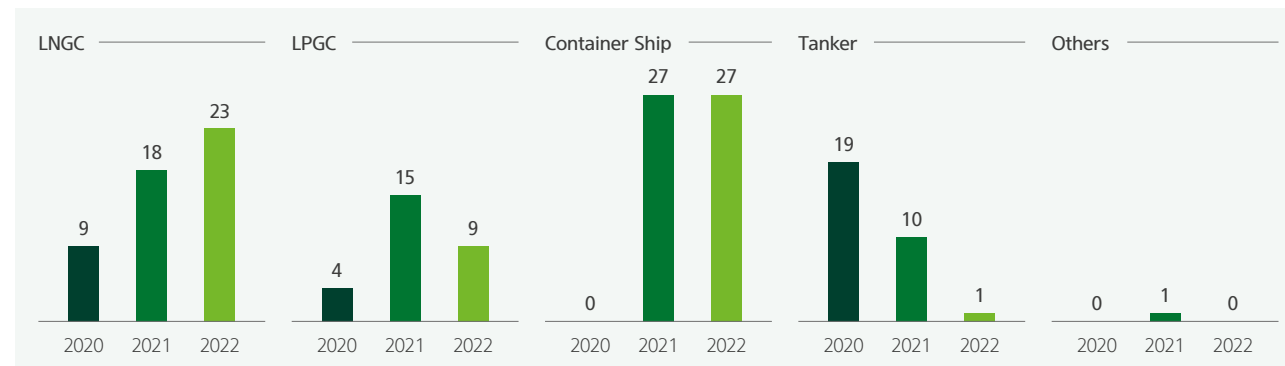
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## Company Overview

HHI embarked on its shipbuilding journey by simultaneously constructing the shipyard and producing the first two super-large oil tankers. With the completion of the shipyard, we completed the shipbuilding. Within a decade of its establishment, the company swiftly ascended to become the world's top shipyard, leveraging the technology honed through its shipbuilding operations. Expanding its horizons, HHI's business diversified into offshore plants and engine machinery businesses, transforming into a globally renowned comprehensive heavy industry company. Driven by a commitment to a sustainable future and value creation for humanity, we have tirelessly contributed to the development of the national economy and mankind, solidifying our position as a leading global enterprise over the past 50 years. As we venture forward, HHI is poised to spearhead the exploration of the boundless potential of the sea. Through innovation that leads the times and unwavering pursuit of new frontiers, we will pave the way for a future that benefits all of humanity.

## Shipbuilding Orders

Unit: No. of ships



(Unit: USD 100 million)

Classification	2020		2021		2022	
	No. of Ships	Amount	No. of Ships	Amount	No. of Ships	Amount
Shipbuilding	32		71		60	
LNGC	9		18		23	
LPGC	4		15		9	
Container Ship	0	37.2	27	98.1	27	104.2
Tanker	19		10		1	
Others	0		1		0	
Naval & Special Ship	1	3.8	3	10.4	7	11.9
Offshore/Plant	-	3.1	3	18.2	-	0.2
Engineering Machinery	-	9.0	-	20.7	-	33.6
<b>Total</b>	<b>33</b>	<b>53.1</b>	<b>77</b>	<b>147.4</b>	<b>67</b>	<b>150.0</b>

## Company Profile

Company Name	HD Hyundai Heavy Industries
Head Office	1000 Bangeojinsunhwandoro, Dong-gu, Ulsan, South Korea
Establishment	Jun 3, 2019 (Established HHI through physical division of HDKSOE)
CEO	Han Young-seuk, Lee Sang-kyun
Employees	12,765

## Financial Highlights

(Consolidated basis as of Dec. 2022)

Classification	Unit	2020	2021	2022
Sum		83,120	83,113	90,455
Shipbuilding		58,771	63,206	64,672
Offshore/Plant		8,967	4,264	7,852
Engines & Machines		14,728	14,917	17,151
Others	KRW 100 million	654	724	779
Operating Profit (Loss)		325	(8,003)	(2,892)
Net Profit (Loss)		(4,314)	(8,142)	(3,521)
Total Assets		137,997	150,787	162,894
Total Liabilities		84,389	94,846	110,016
Total Equity		53,608	55,940	52,878
Debt Ratio		157.4	169.6	208.1
Net Debt-to-Equity Ratio	%	50.0	21.1	32.1
Operating Margin		0.4	(9.6)	(3.2)
Return on Assets		(3.1)	(5.4)	(2.2)

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## Performance in 2022

Despite the prolonged war in Ukraine, fluctuations in interest rates and exchange rates, inflation, and soaring raw material prices amid the ongoing aftermath of COVID-19, HHI has exceeded its order target by receiving orders worth \$15 billion. We have achieved notable performance improvements, including transforming operating profit into a surplus in the 3<sup>rd</sup> quarter of 2022. Additionally, we have made significant strides in technology development, such as the creation of an LNG/hydrogen hybrid fuel engine, showcasing our commitment to achieving a remarkable competitive advantage. Building upon these accomplishments, we will exert our utmost efforts in 2023 to lead market transformations and foster a year of constant challenge and innovation, laying the foundation for our company's centennial beyond its 50<sup>th</sup> anniversary.

## Major Performance

**I 'Vision 2030' Declaration I** HHI has unveiled its 'Vision 2030' in commemoration of its 50<sup>th</sup> anniversary, outlining a roadmap to become a leading global shipbuilding and offshore company at the forefront of the eco-friendly digital era. The vision encompasses the development of eco-friendly digital ships, the implementation of smart yard systems, and the advancement of future-oriented new ventures. In pursuit of these goals, the company has set growth strategies that involve the development of eco-friendly digital ships, the establishment of a smart yard system, and the promotion of businesses related to the emerging hydrogen economy. Furthermore, the company is committed to commercializing carbon-free fuel propulsion systems.

**I Successful Green Bond Public Offering I** In February 2021, the company achieved the highest rating, Green 1, for green bonds, making it the first shipbuilding company to receive this recognition from NICE Credit Ratings. Subsequently, in March 2021, we issued domestic green bonds. Building on this success, in March 2022, we secured ESG certification from DNV and successfully issued \$300 million worth of green bonds, which were guaranteed by KDB Industrial Bank. Despite challenging market conditions, our commitment to ESG management has earned positive responses from investors. It will proactively utilize the raised funds to further develop eco-friendly ships, strengthen investments in the eco-friendly ship sector, and establish a sustainable growth cycle based on ESG management principles.

**I Supplier ESG Management Support I** In a pioneering effort within the shipbuilding and offshore industry, it has provided support for the ESG management of our suppliers by establishing the 'Coexisting Cooperation Fund' in accordance with the Act On The Promotion Of Mutually Beneficial Cooperation Between Large Enterprises And Small And Medium Enterprises. The fund has been utilized to develop and implement tailored ESG indicators for suppliers, as well as to offer comprehensive consulting services to our key suppliers. Specifically, we have selected 35 suppliers who supply ship equipment and parts and have provided on-site due diligence support and ESG consulting through external specialized agencies. For suppliers who have received high evaluations, Korea Commission for Corporate Partnership issues a 'Certificate of Excellent ESG Small and Medium-sized Businesses', which grants access to preferential interest rate products from major banks. Additionally, incentives such as support for utilizing mutual growth funds for ESG management and preferential participation in overseas export support projects are provided.

The company is committed to promoting the significance of ESG management throughout the domestic shipbuilding industry. Through leading educational initiatives and guidance for supplier companies, we aim to create a sustainable supply chain environment and foster awareness of ESG principles.

## 2023 Major Plan

**I Change of Name and Internalization of Core Values I** HHI has undergone a name change from Hyundai Heavy Industries to HD Hyundai Heavy Industries with the aim to maximize the impact of introducing the group's new CI, as well as establishing a sense of group identity and unity. This name change is intended to secure a long-term competitive advantage by transforming the existing conservative corporate image into a differentiated brand image, and to attract excellent talents by strengthening the recruitment brand. Furthermore, during the 50<sup>th</sup> anniversary vision declaration ceremony held in December 2022, the company announced its new vision and core values. To internalize these core values, HHI has planned various activities throughout the year, including executive role modeling, fostering communication among executives and employees, organizational and system reform, and employee competency development. The company is committed to implementing these initiatives to embed the core values within the organization and foster a unified culture.

## I Exceeded 200 Million Horsepower in 2-stroke Engine Production and Produced Methanol DF HiMSEN Engine I

We began manufacturing 2-stroke engines for ships in 1978 and reached a significant milestone in September 2010 by surpassing the production of 100 million horsepower in 2-stroke engines. In 2023, we achieved another remarkable accomplishment by reaching the production milestone of 200 million horsepower. This achievement sets a new record in the field of 2-stroke engines, unmatched by any other manufacturer. In addition to our production achievements, we are actively accelerating the development of eco-friendly engine technology. We have successfully completed the initial production of the eco-friendly methanol dual fuel HiMSEN engine and have plans to supply it as a generator for container ships. Furthermore, we accomplished the production of the first LPG dual fuel engine in Korea last year. We have also conducted tests on the HiMSEN engine using bio-ship oil and explored hybrid engine technologies utilizing natural gas and hydrogen.



**I Expanded Application of the Company-Wide Palantir Foundry Platform I** In September 2022 the company entered into a contract with Palantir, a global leader in big data, to adopt their 'Foundry' big data platform. Following a successful pilot test conducted from May to July 2022, we achieved significant outcomes in effectively integrating and augmenting our vast accumulated data, resulting in an optimized plan for design and production processes. This partnership will expedite our transition to a more advanced stage. Notable initiatives include the implementation of an 'automation platform for design quantity analysis' and the establishment of an optimized system for yard facility operations. We remain committed to enhancing our competitive edge through these endeavors.

# HYUNDAI MIPO DOCKYARD

## Lighting up the future of the sea: HMD takes the lead

Kim Hyung-gwan  
CEO



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### Dear Esteemed Stakeholders,

We would like to express our heartfelt gratitude for your interest and trust in HMD. Similar to how iron becomes stronger with each strike, HMD has overcome numerous challenges and adversities since its establishment, solidifying its current position. However, we do not rest on our laurels; instead, we strive for continuous growth and development through constant innovation and unwavering determination. We will establish the groundwork for future expansion by creating new value and actively engaging all employees and suppliers in our shared goals and initiatives for sustainable management.

### First, We will Strive to Establish a Global Leadership Position in Practicing ESG Management.

Recently, the transition to an eco-friendly paradigm is accelerating worldwide under the great wave of ESG. HMD which is preparing for this future at the forefront, established a carbon-neutral roadmap by 2050 for the first time in the domestic shipbuilding industry in May 2023, taking a step forward as a Global No. 1 Net-Zero Shipbuilder. Our carbon-neutral roadmap reflects our responsibilities for the environment, detailed implementation plans and practices, such as reducing our greenhouse gas emissions and introducing eco-friendly technologies and production processes.

In addition, the scope of responsibility for greenhouse gas emissions has been expanded and disclosed, encompassing not only Scopes 1 and 2 but also Scope 3, which considers the entire value chain. In this process, HMD along with other major

domestic and foreign shipbuilders and global shipping companies, has implemented standardized carbon footprint calculation methodologies across the value chain. Through these efforts, we are ensuring transparency and reliability in disclosing Scope 3 emissions, further solidifying our position as the undisputed leader in the small and medium-sized shipbuilding market.

### Second, We will Achieve the 10 ESG Strategic Goals.

We aim to lead HMD's Financial Story and create a sustainable future through effective ESG management. We have established ten ESG strategic objectives, including sales of eco-friendly products, ensuring accident-free workplaces, proactive response to ESG evaluation initiatives, implementation of environmental management practices, strengthening supply chain management, promoting human rights management, introduction of eco-friendly vehicles, reduction of GHG emissions, internalization of comprehensive employee ESG management, and labor relations. To achieve these goals, we have established ten ESG strategic objectives within the internalization/labor relations sector. Furthermore, we have reinforced the role of the ESG Committee under the Board of Directors to establish HMD's vision and mid- to long-term strategies. We have implemented ESG Key Performance Indicators (KPIs) across the company to systematically monitor and evaluate our progress. By linking organizational activities with ESG goals, we ensure that executives and employees internalize the core values and goals of ESG and incorporate them into decision-making processes.

Throughout this entire process, we remain committed to continuous efforts and achievements, which are essential for the successful establishment and practice of our ESG management system.

### Third, We will Practice Data Management Using Information and Communication Technology.

In 2023, we will prioritize 'safety' and strive to achieve our goal of zero serious accidents for five consecutive years, including our overseas subsidiaries. Our utmost effort is to create a safe and joyful workplace for all our employees. To accomplish this, we will enhance our safety management system by leveraging various information and communication technologies. This will enable us to foster an advanced corporate culture that enhances the competence and expertise of each employee while promoting autonomy, responsibility, and fair evaluation.

HMD will continue to change and innovate for sustainable management and a better life for mankind. In addition, we will create a driving force that moves the world in the future by sincerely promoting innovation in all fields to take a step forward. We ask for your support and interest.

Thank you.

# HYUNDAI MIPO DOCKYARD

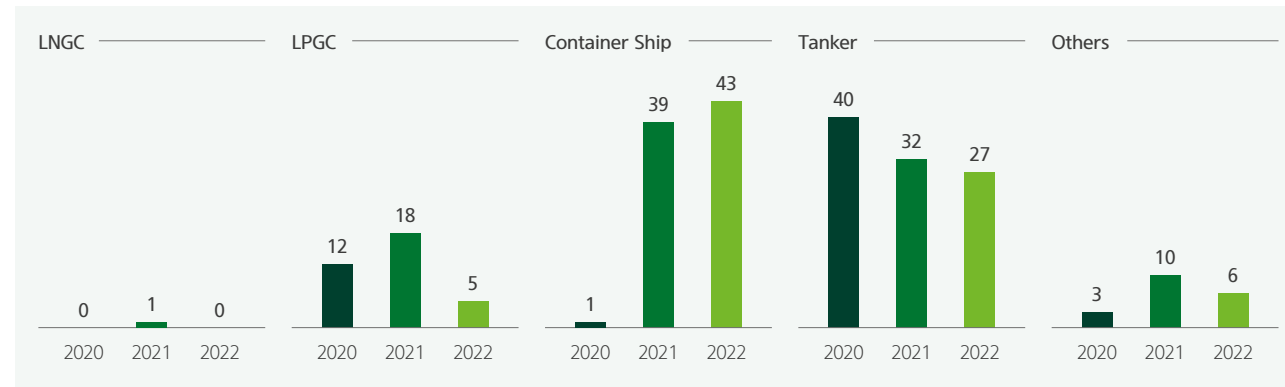
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## Company Overview

HMD maintains an unrivaled position as the world's foremost medium-sized shipbuilder, thanks to its industry-leading technology, exceptional productivity, continuous research and development led by a team of experts, and advanced design systems. Our flagship vessels, including petrochemical product carriers, container carriers, Con-Ro ships, and asphalt carriers, hold the top rank in the global market share. Additionally, we are bolstering our competitiveness in securing orders for high value-added special ships such as gas carriers. When it comes to "premium ships", HMD adheres to stringent quality standards and employs state-of-the-art facilities and automation systems to ensure utmost customer satisfaction. We remain steadfast in our commitment to developing eco-friendly ships, leveraging our profound technological expertise, and meeting the demands of the next generation.

## Shipbuilding Orders

Unit: No. of ships



(Unit: USD 100 million)

Classification	2020		2021		2022	
	No. of Ships	Amount	No. of Ships	Amount	No. of Ships	Amount
Shipbuilding	56		100		81	
LNGC	0		1		0	
LPGC	12		18		5	
Container Ship	1	23.2	39	47.9	43	37.9
Tanker	40		32		27	
Others	3		10		6	

## Company Profile

Company Name	Hyundai Mipo Dockyard
Head Office	100 Bangeojinsunhwandoro, Dong-gu, Ulsan, South Korea
Establishment	April 28, 1975
CEO	Kim Hyung-kwan
Employees	3,103

## Financial Highlights<sup>1</sup>

(Consolidated basis as of Dec. 2022)

Classification	Unit	2020	2021	2022
Total Revenue		27,920	28,872	37,169
Operating Profit (Loss)		367	(2,173)	(1,091)
Net Profit (Loss)	KRW 100 million	(123)	(1,601)	(438)
Total Assets		35,990	38,783	47,482
Total Liabilities		12,315	16,740	25,730
Total Equity		23,675	22,043	21,753
Debt Ratio		52.0	75.9	118.3
Net Debt-to-Equity Ratio <sup>2</sup>	%	- <sup>3</sup>	- <sup>3</sup>	- <sup>3</sup>
Operating Margin		1.3	(7.5)	(2.9)
Return on Assets		(0.3)	(4.1)	(0.9)

1. Subsidiary included: HD Hyundai Engineering & Technology,

Hyundai-Vietnam Shipbuilding

2. (Debts-Deposits) ÷ Total Equity

3. Debts less than deposits are not shown.

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## Performance in 2022

Despite the challenges posed by the prolonged war between Russia and Ukraine in 2022, the global supply chain instability caused by China's COVID-19 blockade, and interest rate hikes in major countries due to soaring prices, HMD successfully delivered 81 vessels, amounting to approximately 3.79 billion USD. Thereby, we surpassed our annual target of 72 ships, marking a significant accomplishment.

## 2022 Major Performance

**| Successfully Delivered the Electric Passenger Ship Ulsan Taehwa |** HMD successfully delivered Ulsan Taehwa, Korea's first electrically propelled passenger ship, which incorporates cutting-edge information and communication technology (ICT). This achievement has led to a new leap forward in the Korean shipbuilding industry and serves as a testament to the smart shipbuilding technology capabilities of HMD. Notably, Ulsan Taehwa features the pioneering application of a domestically developed DC-based electric propulsion system, resulting in substantial improvements in energy efficiency and a weight reduction of approximately 30% in related equipment.



**| Built the World's Largest LNG Bunkering Ship |** HMD successfully delivered 'K.LOTUS', the world's largest LNG bunkering ship, to the shipowner, making significant contributions to the development of LNG bunkering infrastructure worldwide. The vessel is outfitted with a 'Dual Fuel Engine' that significantly reduces harmful gas emissions such as nitrogen oxides (NOx) and sulfur oxides (SOx). Moreover, the LNG sub cooler ensures natural vaporization in the cargo hold, optimizing energy efficiency. By liquefying boil-off gas (BOG) at suitable temperature and pressure, it is supplied as propulsion fuel for the main vessels, further enhancing operational efficiency.



## 2023 Major Plan

**| Reinforcing Competitiveness in the Field of Eco-Friendly Passenger Ship Construction |** HMD aims to strengthen competitiveness in eco-friendly passenger ship construction. HMD is planning to bolster its competitiveness in the realm of eco-friendly passenger ship construction through the successful construction of a hybrid electric propulsion car ferry for Europe. The passenger ship is equipped with 280 hybrid lithium batteries, boasting a capacity of upto 3,164KWh. By minimizing engine operation and reducing the power peak of the generator during periods of high power consumption, greenhouse gas emissions are curtailed, and fuel costs are diminished. This eco-friendly passenger ship has a capacity to accommodate upto 1,000 passengers.



**| Promote the Development of New Decarbonized Fuel Ships |** HMD aims to expedite the advancement of next-generation eco-friendly fuels like ammonia and LCO<sub>2</sub>, further cementing its status as the world's leading mid-sized shipbuilder. In the future, when ammonia propulsion engines are commercially available, our plan is to initially implement them in medium-sized LPG ships. This strategic approach allows us to optimize the economic viability of ship operations and maintain our leadership in the mid-sized ship market through continuous technological enhancements, and maximizing differentiation from our competitors.



# HYUNDAI SAMHO HEAVY INDUSTRIES

**HSHI, a global leader in green and smart technology in the shipbuilding and offshore industry, is poised to take the lead**

**Shin Hyeon-dae**  
CEO



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**Dear Esteemed Stakeholders.**

We express our heartfelt gratitude for your interest and support towards HSHI. Despite challenging business conditions, such as the global economic downturn and supply chain risks, we have set ambitious management goals to achieve sales of KRW 6 trillion and an operating profit margin of 5% by 2023. Notably, these sales represent a 25% increase from previous record high of KRW 4.8 trillion in 2011. To surpass the achievements of previous boom years, we are dedicated to establishing a stable production system and ensuring a smooth production workforce. We embrace world-leading innovation and challenges in order to accomplish our management goals. Continuous growth will be attained through strategic acquisitions. Furthermore, HSHI places ESG management as its foremost priority. We strive to make fundamental improvements in our organization and aim for a significant leap forward by prioritizing the following initiatives.

**First, We will Respond to Climate Change through Eco-friendly Management.**

In a world where global attention towards environmental issues is intensifying due to changing weather patterns and natural disasters, the significance of corporate sustainability in addressing these concerns is growing exponentially. HSHI acknowledges that climate change response, achieved through eco-friendly management, is a pivotal factor for sustainable growth. To this end, we have established a carbon-neutral roadmap for 2050, enacted and declared an environmental management declaration, and become the first shipbuilding company to join K-EV100. Furthermore, we actively promote the utilization of new and renewable energy sources, while actively engaging in climate change mitigation efforts such as resource recycling and energy conservation.

Furthermore, aligning with the global emphasis on marine pollution prevention and greenhouse gas reduction, we are constructing ships equipped with exhaust gas reduction devices. Moreover, we have successfully developed the world's first LNG-fueled crude oil carriers, alongside various types of LNG-fueled ships including container ships and bulk carriers. By leading the market in eco-friendly shipbuilding, we actively contribute to a greener maritime industry. In light of the ongoing paradigm shift in the shipbuilding sector, focusing on eco-friendly ship technology, we have implemented a continuous construction system to build over 10 LNG carriers annually. This proactive approach enables us to meet the increasing global demand for LNG carriers effectively.

**Second, We will Achieve Shared Growth with Suppliers through ESG Management.**

To achieve our management goals through stable production activities, HSHI considers supply chain ESG management as a crucial undertaking, aiming to foster mutual growth with our suppliers. In 2023, we will prioritize supporting transparent business practices among our suppliers by implementing a supply chain ESG management system within the existing supplier evaluation and compensation framework.

We will conduct thorough evaluations of our suppliers' business management systems in the areas of environment, safety, and compliance. By leveraging ESG indicators, we will proactively identify and address potential ESG risks within the supply chain. Additionally, we will provide ESG consulting services to 20 companies to establish a sustainable risk management system, ensuring continuous maintenance and development of ESG management practices among our suppliers.

**Third, We will Expand ESG Management Activities**

In 2022, we developed ESG KPI indicators and declared our support for TCFD to spearhead the advancement of ESG management. Additionally, we established a foundation for promoting ESG management among internal and external suppliers through an MOU with the Small and Medium Venture Business Corporation. Thanks to the support of stakeholders and the dedication of our executives and employees, we achieved remarkable results in both ESG management and sales last year. We are committed to making continuous efforts to contribute to society. Furthermore, we will place greater emphasis on enhancing productivity by setting goals, considering our shipbuilding capacity. We will strive to establish a stable production system by incorporating digital transformation (DT) technology, expanding our facilities and equipment. Moreover, we remain committed to carrying out social contribution activities that foster coexistence with the local community. Additionally, we will continue to carry out the training and welfare improvement of our employees, as well as the enhancement of the working environment.

HSHI is fully dedicated to transparent and ethical management, development of eco-friendly technologies, and making impactful social contributions. With ESG management as our top priority and ultimate goal, we kindly request your continued interest and support in our pursuit of becoming the world's most competitive shipbuilding company. We are committed to pushing boundaries and achieving significant progress.

Thank you.

# HYUNDAI SAMHO HEAVY INDUSTRIES

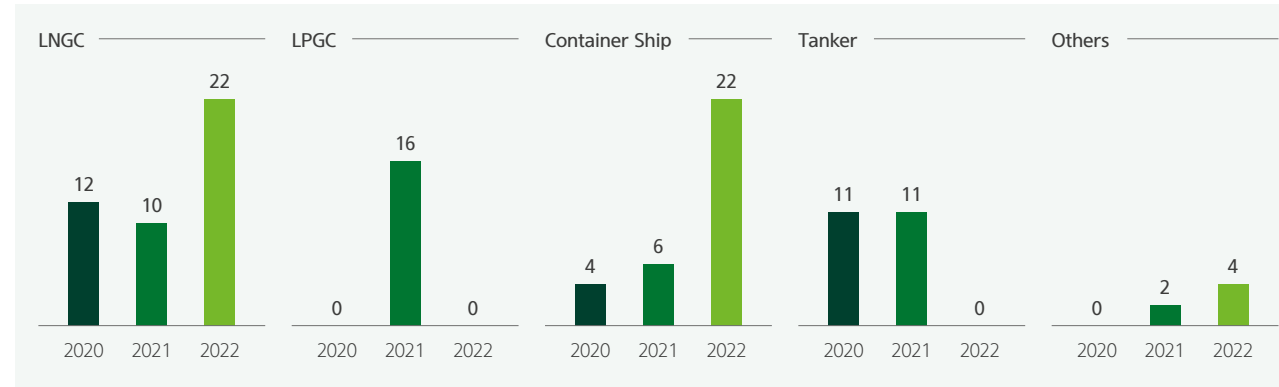
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## Company Overview

HSHI is globally recognized as the fourth-largest shipbuilding and offshore company, operating as a world-class shipyard that builds approximately 40 vessels annually. These vessels include super-large container ships, VLCC tankers, LNG carriers, LPG carriers, car carriers, and bulk carriers. As pioneers in eco-friendly shipbuilding, our shipbuilding division has played a leading role in the market by constructing various types of LNG-fueled ships, starting with the world's first LNG-fueled crude oil carrier. Furthermore, leveraging our extensive experience in the shipbuilding sector, we are expediting the development of our business structure by venturing into equipment manufacturing for overseas oil well exploration and development.

## Shipbuilding Orders

Unit: No. of ships



(Unit: USD 100 million)

구분	2020		2021		2022	
	No. of Ships	Amount	No. of Ships	Amount	No. of Ships	Amount
Shipbuilding	27		45		48	
LNGC	12		10		22	
LPGC	0		16		0	
Container Ship	4	37.5	6	55.5	22	86.8 <sup>1</sup>
Tanker	11		11		0	
Others	0		2		4	

1. Including industrial facility performance

## Company Profile

Company Name	Hyundai Samho Heavy Industries
Head Office	93, Daebul-ro, Samho-eup, Yeongam-gun, Jeollanam-do, South Korea
Establishment	November 4, 1998
CEO	Shin Hyeon-dae
Employees	3,778

## Financial Highlights

(Separate basis as of Dec. 2022)

Classification	Unit	2020	2021 <sup>1</sup>	2022
Total Revenue		39,180	42,410	46,464
Operating Profit (Loss)		156	(3,359)	177
Net Profit (Loss)	KRW 100 million	(591)	(2,341)	29
Total Assets		45,814	50,565	55,883
Total Liabilities		26,881	33,880	39,273
Total Equity		18,933	16,685	16,610
Debt Ratio		142.0	203.1	236.5
Net Debt-to-Equity Ratio <sup>2</sup>	%	38.9	48.6	40.9
Operating Margin		0.4	(7.9)	0.4
Return on Assets		(1.3)	(4.6)	0.1

1. 2020/2022: Separate basis, 2021: Consolidated basis



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## Performance in 2022

HSHI recorded its highest shipbuilding order volume since 2014, thanks to improvements in consumption and investment sentiment, as well as a recovery in trade volume. As a result, sales increased by approximately 9.56% compared to 2021, and the number of orders received in 2022 reached 48 vessels, representing an increase of approximately 56% compared to 2021. This growth can be attributed to the recovery of traffic volume and the increased demand for eco-friendly ships in compliance with environmental regulations.

## Major Performance

### | Concurrent Naming Ceremony for the Construction of 15 LNG Carriers |

HSHI held a simultaneous naming ceremony for the construction of 15 LNG carriers, valued at KRW 3.4 trillion, making it the largest project since the company's foundation. The four ships included in this ceremony are equipped with an air lubrication system that can reduce fuel consumption of the main engine by up to 8% by minimizing frictional resistance through the injection of air underneath the ship. Moreover, these ships can operate the main engine without the need for a diesel generator. They feature the latest linear design, equipped with a shaft generator that generates power efficiently.



Since delivering its first LNG carrier in 2008, HSHI has continuously pursued innovation. Since 2018, the company has been the only one in the world to adopt the land-based construction method for building LNG carriers. Based on the trust of the market, the company will persistently develop LNG carriers, a highly competitive business sector.

### | Launched the Automation Innovation Center |

HSHI launched the 'Automation Innovation Center' in 2022 that focuses on mechanization and automation, in response to the labor shortage. This center aims to implement advanced mechanization/automation technology and introduce newly commercialized technology to the industry by integrating production technology-related organizations. Through these efforts, it seeks to address the challenge of labor shortage by establishing a production system that relies on unskilled workers. Additionally, the HDKSOE Advanced Research Center plays a crucial role in swiftly adopting production technology and commercialized innovations, bridging the gap between future technology and industrial sites, with the ultimate goal of creating a more efficient and safer workplace.



## 2023 Major Plans

**| Increased Number of Eco-friendly Ships Built |** For 2023, we have set a sales target of KRW 6.51 trillion, representing a growth of approximately 30% compared to the previous year. To achieve this target, we have formulated a business plan that involves constructing 33 ships. Specifically, our vessel type targets include 15 gas carriers (8 LNG carriers and 7 LPG carriers), 13 container ships, 4 tankers, and 1 bulk carrier. This represents an increase of 6 container ships compared to the previous year. Notably, out of the total, 27 ships will be eco-friendly, accounting for 82% of the total order volume. In response to the market demand for environmentally friendly vessels, HSHI has designated eco-friendly ships as its flagship product for 2023, aiming to secure orders for high-quality ships and achieve strong business performance.

**| 2023 Ship Order Target |** HSHI has set its ship order target for 2023 at \$2.6 billion, which corresponds to 20 vessels. This represents a decrease of approximately 70% compared to the previous year's record-high performance of \$8.6 billion and 48 vessels. Our plan is to secure orders worth \$1.43 billion for commercial vessels and \$1.17 billion for gas carriers. Considering the significant overachievement of last year's order performance, we will carefully consider the available fleet capacity and prioritize profitable-oriented selective orders in order to enhance internal stability.

# Global Network

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## Overseas Branch

No.	Branch	Country	City	Affiliation	Address
1	Oslo Office	Norway	Oslo	HHI	HD KOREA SHIPBUILDING & OFFSHORE ENGINEERING OSLO LIAISON OFFICERÅDHUSGATA 20, 0151 OSLO, NORWAY
2	London Office	UK	London	HHI	2 <sup>nd</sup> floor, THE TRIANGLE, 5-17 HAMMERSMITH GROVE, LONDON, W6 0LG, UK
3	Athens Office	Greece	Athens	HHI	2 <sup>nd</sup> floor, 73, POSEIDONOS AVENUE, 175 62, PALEO FALIRO, ATHENS, GREECE
4	Dubai Office	UAE	Dubai	HHI	Level 2, Unit 205 Emaar Square, Building 4 Sheikh Zayed Road P.O.Box 252458, Dubai, UAE
5	New Jersey Office	USA	New Jersey	HHI	300 SYLVAN AVENUE, ENGLEWOOD CLIFFS, NJ 07632, USA
6	Huston Office	USA	Huston	HHI	1400 BROADFIELD BOULEVARD, SUITE 250, HOUSTON, TEXAS 77084, USA
7	Panama Office	Panama	Panama	HHI	HD KOREA Shipbuilding & Offshore Engineering Co., Ltd. (HD Hyundai Heavy Industries Co., Ltd.) Calle 50, Torre Global Bank, Piso 16, Oficina 1610, Panamá, Rep. de Panamá
8	Tokyo Office	Japan	Tokyo	HHI	9 <sup>th</sup> FLOOR NORTH WING YURAKUCHO DENKI BLDG, 1-7-1 YURAKU-CHO, CHIYODA-KU, TOKYO 100-0006, JAPAN
9	Singapore Office	Singapore	Singapore	HHI	9 Temasek Boulevard, #32-02 Suntec Tower Two, Singapore, 038989

## Overseas Subsidiaries

No.	Company Name	Country	Affiliation	Address	Business	2022 Total Asset (In Millions of KRW)
10	Hyundai-Vietnam Shipbuilding Co., Ltd.	Vietnam	HMD	01 My Giang, Ninh Phuoc, Ninh Hoa, Khanh Hoa, Vietnam	Shipbuilding	574,659
11	Hyundai Transformers and Engineering India PVT, Ltd.	India	HDKSOE	Shivalik Yash, B-401, Ring Road & Ankur Road Crossing, Naranpura, Ahmedabad-380015, Gujarat, India	Transformer manufacturing and sales	-
12	Hyundai Heavy Industries Miraflores Power Plant Inc.	Panama	HDKSOE	Omega Building 2 <sup>nd</sup> floor, Samuel Lewis Avenue and 53 <sup>rd</sup> Street, Panamá	Manufacturing	-
13	HHI Mauritius Limited	Mauritius	HDKSOE	10 <sup>th</sup> Floor, Raffles Tower, 19 Cybercity, Ebene, Mauritius	Manufacturing	-
14	Hyundai Arabia Company L.L.C	Saudi Arabia	HDKSOE	2 <sup>nd</sup> Floor, Al-Noor Bldg, No.2, Prince Sultan bin Abdullaziz Road, Al-Jawhrah District, P.O.Box 32140, Al Khobar 31952, KSA	Industrial Plant Construction	5,264
15	Hyundai Samho Heavy Industries Panama, Inc.	Panama	HDKSOE	Galindo Arias y Lopez Scotia Plaza, No 18 Avenida Federico Boyd y Calle 51, Piso 9, 10 y 11, Panama	Construction-industrial facility construction business	1,643
16	Hyundai Energy Solutions America, Inc.	USA	HDKSOE	4692 MacArthur Court, 11 <sup>th</sup> fl, Newport Beach, CA 92660	Solar module sales	71,012
17	Hyundai Heavy Industries Technology Center India Private Limited	India	HDKSOE	Plot No.A-2, MIDC Chakan Phase-II, Village-Khalumbre, Taluka-Khed Pune 410501, India	R&D	3,982
18	Pontos Investment LLC	USA	HHI	6100 Atlantic Boulevard, 2 <sup>nd</sup> floor, Norcross, GA 30071, USA	Investment	19,263
19	HD Hyundai Europe Research and Development Center GmbH	Germany	HDKSOE	Peter-Müller-Str. 14 40468 Düsseldorf Deutschland	R&D	-

# Our Business

## Shipbuilding



### » OVERVIEW

Since its establishment in 1972, HHI, HMD, and HSHI have flourished alongside our esteemed global clientele, solidifying our position as leaders in the industry based on the excellent design technology and rich experience accumulated over the past 50 years. HHI, renowned for its state-of-the-art production facilities, exceptional professional workforce, and outstanding technology, achieved a historic milestone in 2012 by becoming the first shipbuilding company worldwide to surpass the 100 million tons (GT) mark. By the end of 2022, our shipbuilding subsidiaries have successfully delivered a total of 4,467 vessels, reflecting our unwavering commitment to excellence. Rather than resting on our laurels, our shipbuilding subsidiaries actively respond to emerging demands for eco-friendly and smart ships. Through continuous technological innovation and a focus on enhancing competitiveness, we are dedicated to leading the global shipbuilding industry.

### » 2022 KEY PERFORMANCE

HDKSOE and its shipbuilding subsidiaries achieved notable success in securing orders worth approximately USD 11.2 billion in the gas ship sector and USD 11.4 billion in the commercial ship sector in 2022. Despite the global inflationary effects caused by COVID-19, order receipts have exhibited a steady upward trajectory since 2020. Furthermore, in line with our business performance, our executives and employees are diligently working towards completing the construction phase, exemplified by the successful delivery of 135 vessels in 2022, following the previous year.



HHI 15,300 TEU LNG Dual Fuel Propulsion Container Ship

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## Our Business

### ESG Integration in Shipbuilding Business

HDKSOE and its subsidiaries are actively promoting the development and implementation of eco-friendly technologies to comply with the environmental regulations set by the International Maritime Organization (IMO) and fulfill the performance improvement requirements of shipping companies. In response to the urgent need for decarbonization, we are responding quickly eco-friendly ships equipped with technologies such as green fuel utilization, pollutant purification, and navigation energy reduction. Our shipbuilding subsidiaries have established unparalleled expertise and technological advancements through the development of the “LNG dual fuel ship.” Additionally, the introduction of the air lubrication system in LNG carriers showcases our commitment to state-of-the-art energy-saving devices, resulting in potential energy reduction of upto 8% during operation. This technology is continuously developed as an in-house innovation and is being implemented not only in LNG carriers but also in large container ships. HHI’s methanol propulsion ships reduce greenhouse gas emissions by 25% compared to conventional ship fuel oil. Furthermore, HMD has successfully commercialized an electric propulsion ship that significantly reduces CO<sub>2</sub> emissions by 40% while improving fuel efficiency by 6%.

**Delivery Performance of LNG Dual-fuel Ships**  
(As of the end of March 2023)

**36** ships

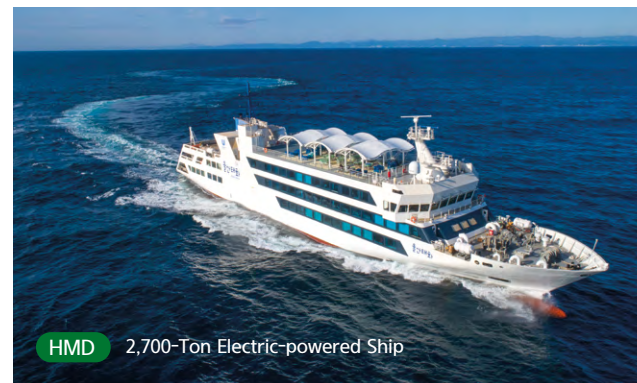
**Air Lubrication System Energy Savings Rate**

**8%** at maximum

Ship Delivery		(Unit: No. of ships)		
Classification		2020	2021	2022
Delivery		132	132	135
Orders		105	216	159



HSHI 174,000-Ton LNG Carrier



HMD 2,700-Ton Electric-powered Ship



HMD 50,000-Ton Methanol Fueled Ship

## Our Business

### Offshore Plant



#### » OVERVIEW

HHI carries out various types of offshore plant construction to develop and produce offshore oil and gas facilities in a turnkey manner. Our services encompass the entire process, including engineering, procurement, construction, transportation, installation and commissioning. To date, we have successfully delivered 170 offshore plants to our customers. Specializing in offshore plants, HHI offers world-class construction capabilities backed by excellent technology and over 40 years of rich experience. Our expertise is complemented by state-of-the-art, ultra-large production facilities, including two 1,600-ton Goliath cranes, a 10,000-ton floating crane barge and a million-ton class H-Dock. As an EPC company, we lead the way in delivering customer value.

#### » 2022 KEY PERFORMANCE

The offshore plant business encompasses fixed oil and gas production facilities as well as floating oil and gas production facilities (FPSO, FLNG, FPU, FSO, TLP, Spar, Jack-up rig). This diverse range of projects allows us to leverage our excellent technology and extensive experience, creating synergy effects. Our utmost priority is to achieve customer satisfaction by continuously striving to enhance our construction capabilities and competitiveness.



HHI 110,000-Ton FPSO

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## Our Business

### Naval & Special Ship



» OVERVIEW

HHI's Naval & Special Ship Business Unit has made a pioneering role to develop Korea's first combat ship, called Ulsanham, in 1975. Over the past 40 years, we have continued to pioneer and deliver cutting-edge ships, including Aegis destroyers and submarines, utilizing our own technology to Korean Navy and Coast Guard. As a designated defense industry company, HHI's Special Ship Business Unit possesses professional manpower, state-of-the-art facilities, and advanced technology required for ship and special vessel construction. We recently signed a contract for the next-generation Aegis destroyer project for Korean Navy, and we are committed to manufacturing even more advanced special ships, striving to exceed expectations.

» 2022 KEY PERFORMANCE

HHI's Naval & Special Ship Business Unit secured orders worth approximately 1.14 billion dollars in 2022, including the next-generation Aegis destroyer and the Philippine Coast Guard ship. Furthermore, the Republic of Korea Navy successfully launched the next-generation frigates B-II 'Cheonan' and 'Chuncheon', as well as the next-generation Aegis destroyer 'Jeongjo the Great.' ROKS Jeongjo the Great is considered a national strategic asset, equipped with the capability to detect, track, and intercept ballistic missiles. It is also the first Navy Aegis ship with the ability to intercept ballistic missiles.



HHI 8,200-Ton Aegis Destroyer

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HHI Ulsan Class Batch-I, II, III



HHI Son Won-il Class KSS-II



HHI Frigate FFX-III



HHI HMNZS Aotearoa Auxiliary Ship of the Royal New Zealand Navy

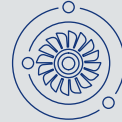


HHI Incheon Class Frigate FFX-I



# Our Business

## Engine · Machinery



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### » OVERVIEW

HHI is the world's largest engine manufacturer, owning over 36% of the global 2-stroke engine market and more than 30% of the 4-stroke engine market. As of 2022, we have produced 198.46 million horsepower in 2-stroke engines and over 14,000 HiMSEN engines. Particularly, HHI is the sole Korean company that has developed its own 4-stroke engine, HiMSEN, and HHI continues our reputation as the world's top marine engine maker, boasting cutting-edge production facilities, including state-of-the-art precision processing, assembly, and trial operation facilities. Additionally, the company provides eco-friendly solutions such as the Nitrogen Oxide Reduction System (SCR) and Ballast Water Treatment System (BWTS). Core equipment, such as propellers, are also produced and supplied to both domestic and international shipbuilders.

### » 2022 KEY PERFORMANCE

The Engine & Machinery Division, which started its engine business in 1978, has steadily grown along with the shipbuilding affiliates HHI, HMD, and HSHI, and, since 1989, has been maintaining the world's top market share in 2-stroke engines for 34 years.

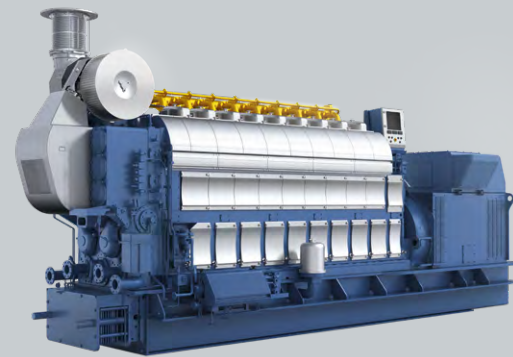
Equipped with the latest production facilities and excellent human resources, Engine & Machinery Business Unit is leading the eco-friendly ship engine market with superior technology.

In 2023, we produced the world's first ultra-large methanol dual-fuel engine, thereby achieving the world's first 200 million horsepower production in 2-stroke engines.

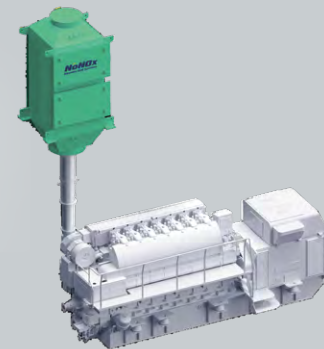


2-Stroke Engine

4-stroke Engine



Eco-friendly Machine



Stern Post



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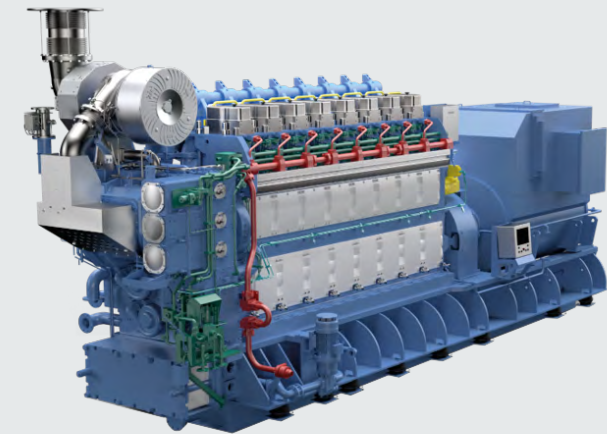
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### ESG Integration in Engine & Machinery Business Unit

On December 15, 2022, HHI Engine & Machinery Business Unit manufactured the world's first methanol dual-fuel 4-stroke HiMSEN engines (H32DF-LM) and successfully conducted the FAT (Factory Acceptance Test). The eco-friendly engines utilized prevents corrosion by utilizing special materials, and ensures stable, high-output performance by applying diesel cycle combustion and electronically controlled fuel injection in methanol mode. Notably, methanol, used as a fuel, is easy to store and transport even at atmospheric pressure, and it reduces sulfur oxides by more than 90%, nitrogen oxides by up to 80%, and particulate matter by more than 90% when compared to conventional heavy fuel oil. Therefore, when methanol is used with carbon-neutral technology from the production phase, it emerges as an environmentally friendly fuel capable of reducing greenhouse gas emissions by up to 90%. At present, there is an increase in orders and inquiries for methanol HiMSEN engines from numerous shipowners. We will continue to invest and conduct research to further development of sustainable shipbuilding and shipping industries through the use of eco-friendly technologies.



Himsen H32DF-LM



Himsen Hydrogen Engine<sup>1</sup>

1. aimed to develop in 2025



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### Gas · Eco-friendly System



#### » OVERVIEW

The SD (System Engineering & Digital/Decarbonization Solution) Business Unit, which was launched in July 2022 simultaneously with HDKSOE's transition to a business holding company, is developing the gas solution and eco-friendly solution market based on the technology and experience accumulated through the shipbuilding business. Currently, we offer gas solution products such as LNG, LPG, and methanol, as well as eco-friendly solution products that enhance the fuel efficiency of ships. We take responsibility from engineering to service by comprehensively controlling and optimizing all products and services through the Total Solution system, which has an established management system. SD Business Unit actively leverages the sales infrastructure of shipbuilding subsidiaries to secure orders consistently and strengthens its competitiveness through the research technology and performance accumulated in this field. We have plans to continue researching future ship technologies, including digital platforms such as electric/hybrid propulsion and energy management systems, fuel cells, water electrolysis, and small module reactors.

#### » 2022 KEY PERFORMANCE

After the launch in 2022, full-scale sales of ordered products will begin in 2023, and continuous operating profits are anticipated beyond 2023, driven by the growth of the carbon-neutral market with a focus on gas solution and eco-friendly solution products. Notably, Hi-GAS has a strong track record of meeting the diverse requirements of customers, including the supply of gas to marine propulsion engines and DF generator engines simultaneously.

#### Hi-GAS

Hyundai integrated fuel Gas System

Hi-GAS is a Fuel Gas Supply System comprising multiple components, such as an LNG supply pump, a high-pressure pump, an LNG vaporizer, and a BOG compressor. It incorporates superior design technology and advanced control logic to meet the specific pressure and temperature levels required by different engines, including ME-GI, X-DF, and DF generators, which are dual fuel engines operating on both high and low-pressure supplies. The system ensures stable gas supply. Apart from Hi-GAS, the SD Business Unit offers various gas supply systems that cater to the diverse needs of different markets.

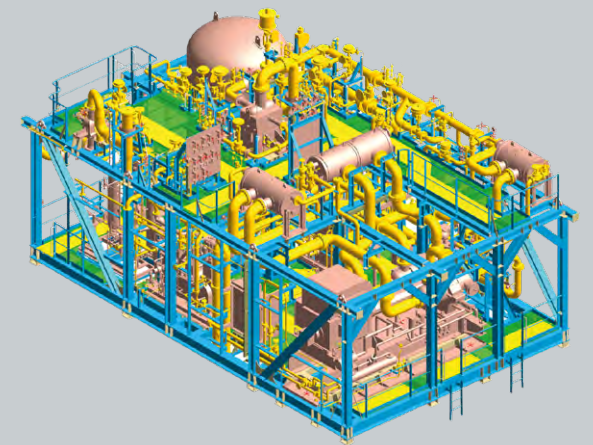


Hi-GAS

#### Hi-ERS (N)

Hyundai innovative Economical Reliquefaction System (Nitrogen)

The pressure inside the cargo hold of LNG carriers steadily rises due to the continuous generation of boil-off gas. Consequently, protective measures such as utilizing boil-off gas as fuel or incinerating it become necessary. As part of these measures, the re-liquefaction equipment known as Hi-ERS (N) is employed to re-liquefy the boil-off gas and return it to the cargo hold. Hi-ERS (N) utilizes nitrogen gas as a refrigerant, compresses and cools it, and then expands it to a cryogenic state, enabling the re-liquefaction of the boil-off gas.



Hi-ERS (N) AM Modeling

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## ESG Integration in SD Business Unit

### Reinforcing the Competitiveness of Eco-friendly Ship Solutions Hi-ALS (Hyundai Integrated Air Lubrication System)

Hi-ALS (Air Lubrication System), one of the primary eco-friendly solution products provided by the SD Business Unit of HDKSOE, is a straightforward and robust innovative system that effectively decreases fuel consumption in ships. Approximately 70% of the total resistance force encountered by a vessel stems from the friction between the hull and seawater. By covering the hull surface with air, which possesses a frictional force around one-fiftyth that of seawater, the energy required for propulsion can be significantly reduced due to the lubrication effect.

The first-generation air lubrication system had a limitation in that the lubrication effect was low due to the vertical injection of compressed air. However, the second-generation air lubrication system, Hi-ALS, is an eco-friendly energy-saving device that reduces fuel consumption and carbon emissions by minimizing frictional resistance through the supply of air to the hull surface. It utilizes a technology that injects and maintains a relatively small amount of air to achieve excellent lubrication effects within the boundary layer between seawater and the hull. Hi-ALS was awarded the IR52 Jang Yeong-sil Award in the 46<sup>th</sup> week of 2021 and is currently scheduled to be installed on 79 ships.

The SD Business Unit develops not only Hi-ALS but also carbon-zero fuel technology, enabling sustainable growth and aspiring to lead the ship market's journey towards carbon neutrality with a range of eco-friendly products.

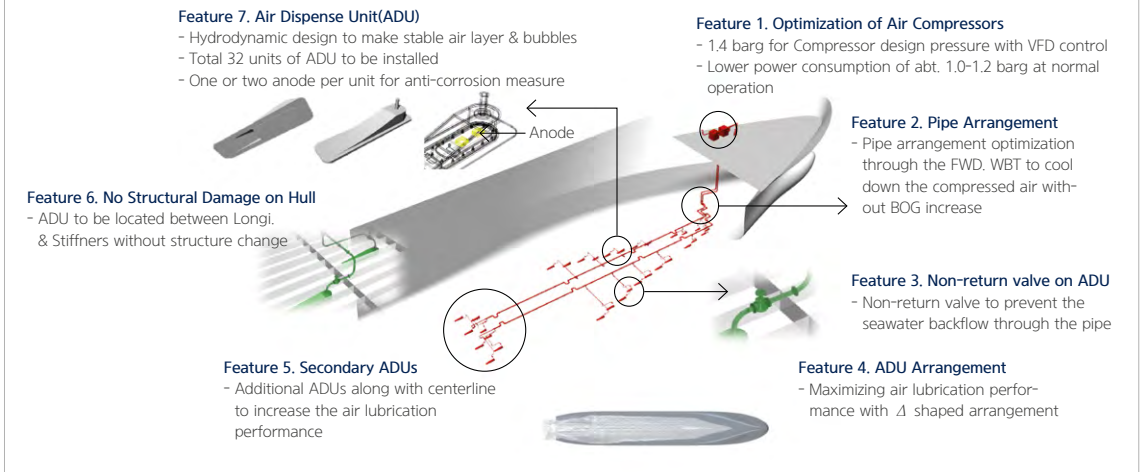
Type of Ship	Net Power Reduction <sup>1</sup>	Compressor Power Consumption <sup>2</sup>	Net Power Gain <sup>3</sup>
174K LNGC	~9.0%	~3.0%	~6.0%
45.7K CON-RO	~11.0%	~2.8%	~8.0%

1. The technology saves a certain percentage of power from the existing power consumption.  
 2. The amount of power consumed by a compressor during the compression of air or gas.  
 3. The actual utility power generated by the system



174K LNGC Hi-ALS (Air Lubrication System)

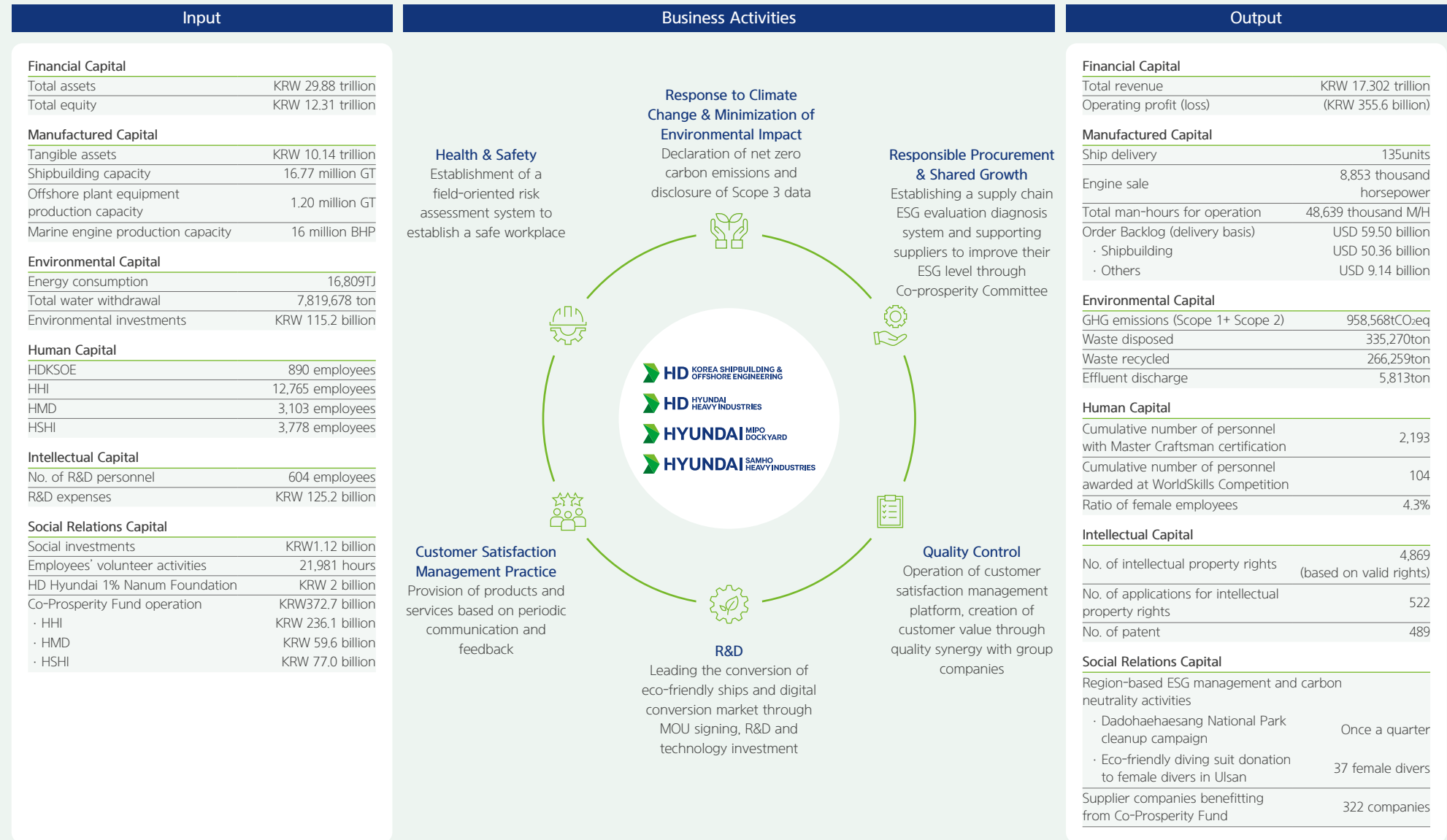
### Hi-ALS, The Most Advanced Air Lubrication System



# Value Creation

HDKSOE and its shipbuilding subsidiaries are generating economic, environmental, and social benefits through the utilization of the six major capital inputs necessary for corporate activities. By delivering value to stakeholders across the entire value chain and contributing to the sustainable growth of our society, our ultimate objective is to achieve the targets outlined in the SDGs (Sustainable Development Goals).

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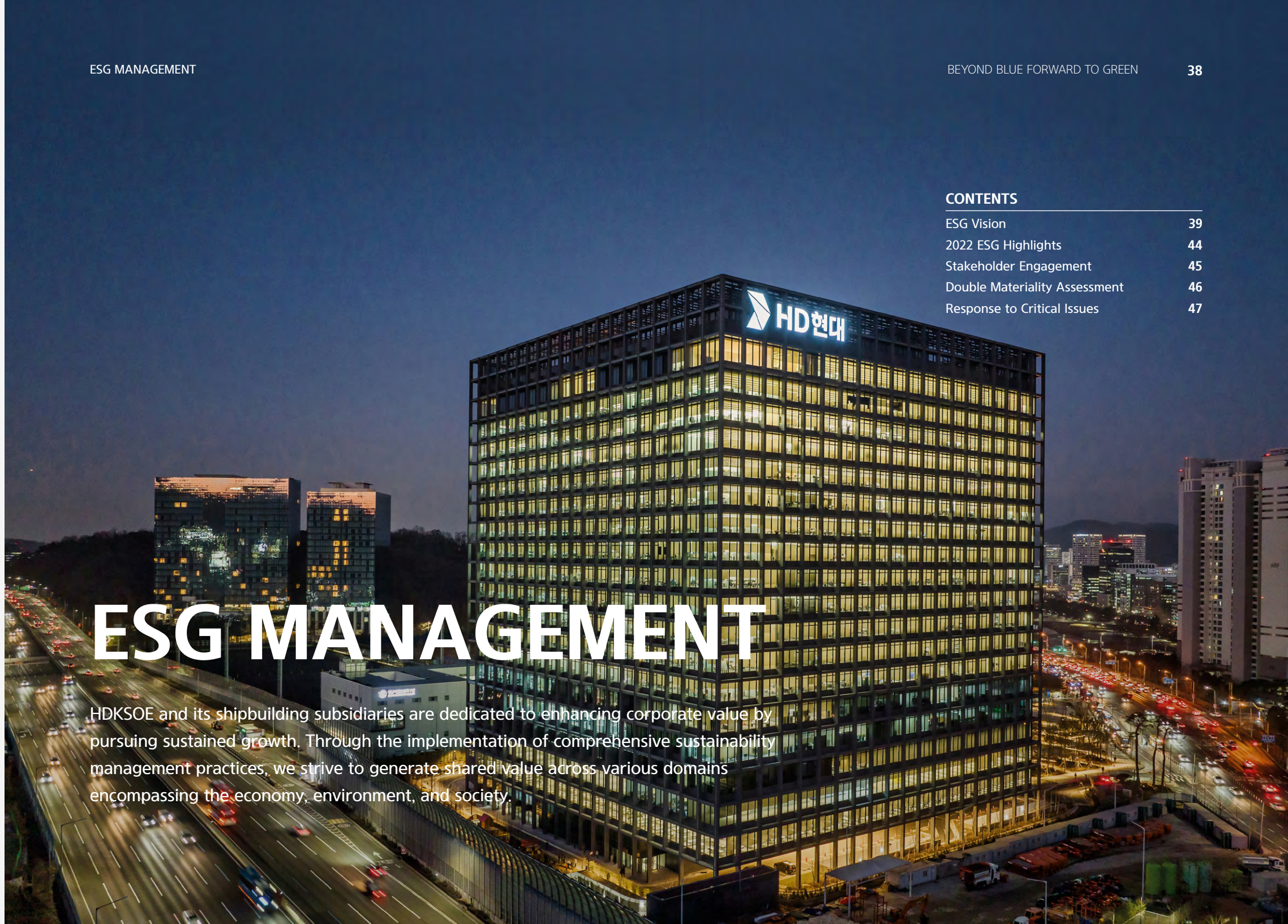
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# ESG MANAGEMENT

HDKSOE and its shipbuilding subsidiaries are dedicated to enhancing corporate value by pursuing sustained growth. Through the implementation of comprehensive sustainability management practices, we strive to generate shared value across various domains encompassing the economy, environment, and society.

# HD Hyundai ESG Management System

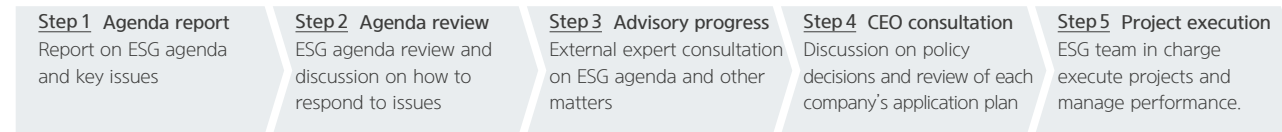
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## Building Group-level ESG Governance

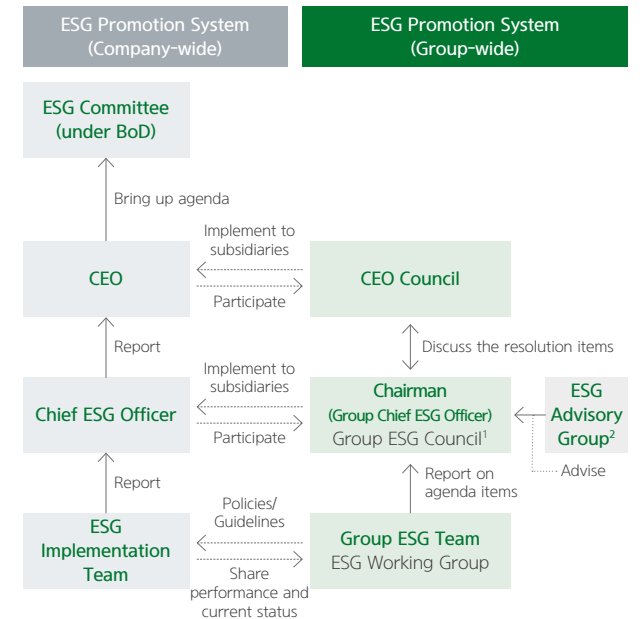
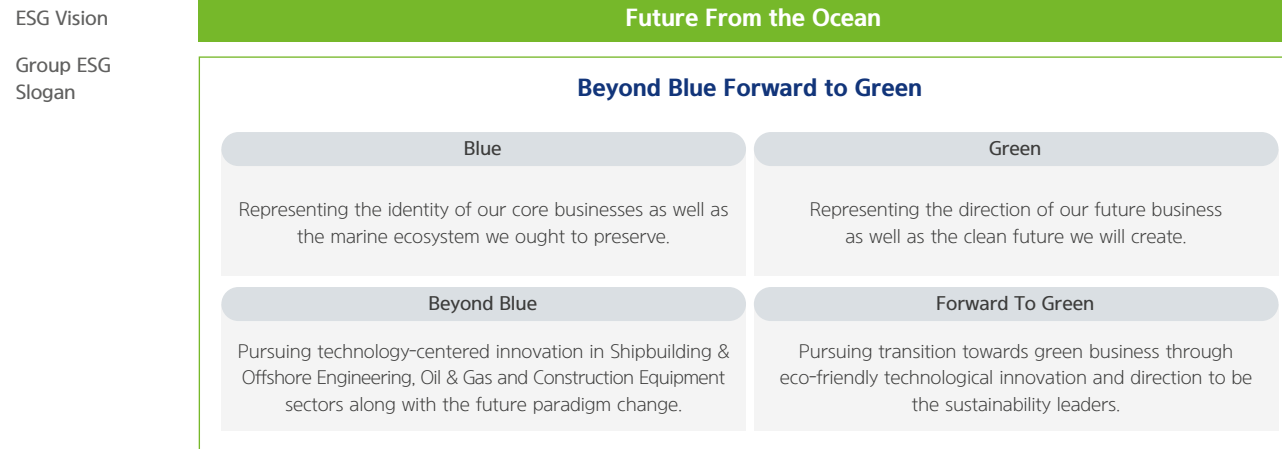
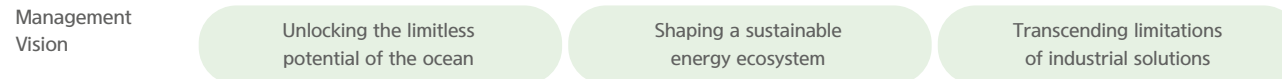
HD Hyundai, as a group company, plays a pivotal role in establishing and advancing the ESG management system of HDKSOE and its shipbuilding subsidiaries. HD Hyundai has implemented a group-level ESG governance system and established an efficient organizational structure by creating dedicated ESG organizations within each company or designating responsible departments. Notably, we have formed an ESG Advisory Group<sup>1</sup> consisting of four external experts specializing in areas such as environment, corporate disclosure, and governance. This initiative promotes seamless collaboration for the sustainable ESG management of our companies. Since 2021, the group ESG consultative body, comprising the ESG advisory group and the Group Chief ESG Officer, conducts comprehensive reviews of HD Hyundai affiliates' ESG direction, aiming to enhance the driving force towards a cleaner future in response to the company's intensified focus on ESG management.

1. ESG Advisory Group serves as an advisor on overall group ESG matters

## HD Hyundai ESG Council Operating System



## HD Hyundai ESG Vision



1. Composed of Chief ESG Officers of each subsidiary  
2. Composed of outside experts of each ESG section

## Group ESG Council Operation Status

Date	Main Agenda	Attendance
Mar. 18. 2022	<ul style="list-style-type: none"> <li>Education on the latest ESG trends</li> <li>Discuss each company's core promotion plan</li> <li>Establishment of climate change response strategy and disclosure of environmental information</li> <li>Promote disclosure of ESG human rights management information</li> <li>ESG KPI setting and management</li> </ul>	100%
Aug. 23. 2022	<ul style="list-style-type: none"> <li>Training on climate change response</li> <li>Discussion on HDKSOE's climate change response strategy</li> <li>Discussion of the group's climate change response strategy promotion plan</li> </ul>	100%

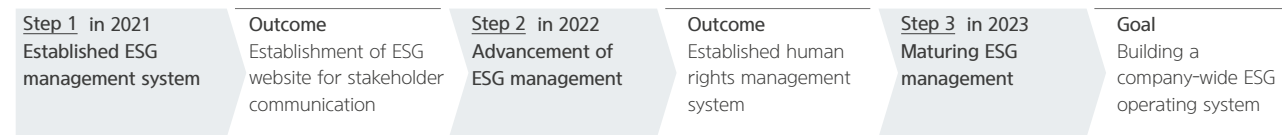
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## Strengthening ESG Management as an Intermediate Holding Company

To strengthen ESG-centered management, HDKSOE has decided to establish an ESG Committee during the 5<sup>th</sup> Board of Directors meeting in 2021 and has been consistently reviewing ESG strategic directions and plans. The committee comprises the CEO, CFO, CIO, Compliance Officer, and Security Officer (CAE), who collectively make decisions for ESG management. HDKSOE's ESG Committee has devised a three-step ESG management roadmap and continues its efforts to develop and internalize ESG capabilities. In 2021, the first step was accomplished with the establishment of the ESG management system, followed by the achievement of the second step, ESG management advancement, in 2022. For sustainable ESG management in 2022, HDKSOE has prioritized three key issues: first, establishing and disclosing climate change response strategies; second, implementing mid- to long-term ESG initiatives; and third, developing ESG management indicators. Moving forward, we remain committed to implementing the ESG slogan of 'Toward Eco-Ocean With Green Wave', which signifies our dedication to eco-friendly shipbuilding and offshore technology and the creation of a clean sea.

## ESG Management Roadmap Steps

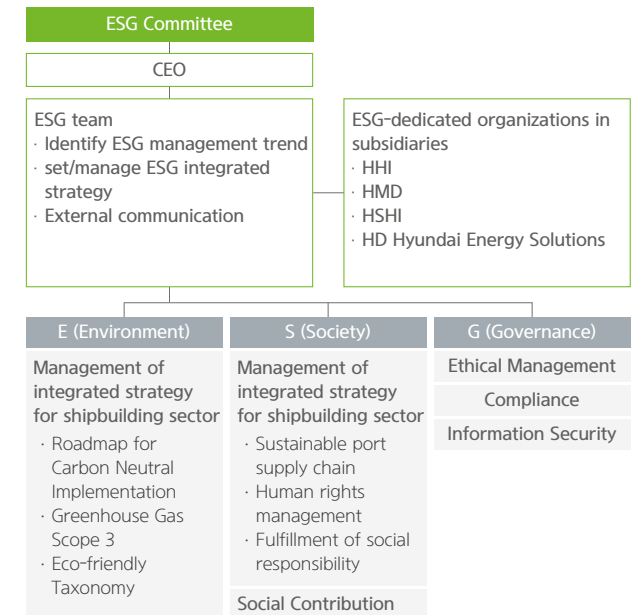


## 2023 Strategic Direction by ESG Area

**Goal for 2023: Building a Company-wide ESG Operating System**

<b>Response to climate change</b> <ul style="list-style-type: none"> <li>· Disclosure of stakeholders through external declaration of carbon neutrality and implementation of detailed strategies</li> <li>· Calculation standardization project of scope 3 in shipbuilding industry</li> <li>· Ship Life Cycle Assessment</li> </ul>	<b>Establishment of supply chain ESG management system</b> <ul style="list-style-type: none"> <li>· Establishment of supplier ESG management policy</li> <li>· Establishment of ESG evaluation system for supplier companies</li> <li>· Conducted ESG evaluation of supplier companies</li> </ul>
<b>Establishment of ESG data management system</b> <ul style="list-style-type: none"> <li>· Standardization of ESG data for HDKSOE and its shipbuilding subsidiaries</li> <li>· Development of an ESG data management platform</li> </ul>	<b>ESG activities and collaboration/support plans</b> <ul style="list-style-type: none"> <li>· ESG internship for college students for the second time</li> <li>· Acquisition of certification as 'a good company to work for'</li> <li>· Support for establishment of ESG management system for subsidiaries</li> </ul>

## Organization Chart of ESG Management



## ESG Committee Operation Results

Date	Agenda	Attendance
Feb. 7, 2022	· Report on ESG performance in 2021 and plans for 2022	100%
Feb. 7, 2023	· Approval of the carbon-neutral roadmap and external declaration · Report on ESG management performance in 2022 and action plans for 2023 · 2023 ESG KPI Establishment Report · Report on non-financial risk management plans: climate change/environmental management, safety and health management, sustainable supply chain, human rights management · 2022 integrated report materiality assessment report	100%
Mar. 28, 2023	· Appointment of ESG Committee Chairperson	100%



# HHI ESG Management System

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## HHI ESG Management

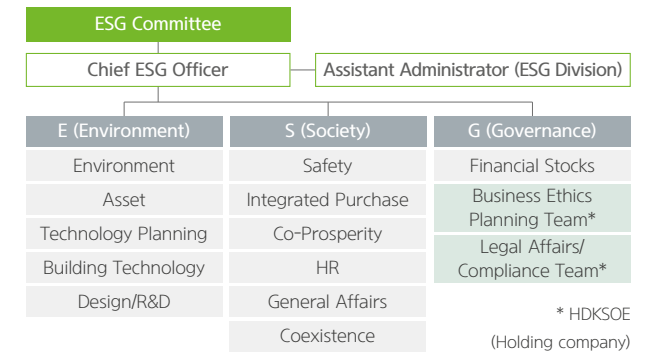
HHI recognizes the significance of ESG management and has established a comprehensive ESG promotion system, including the ESG Committee under the Board of Directors, the company-wide ESG Promotion Committee, and a dedicated ESG department. The ESG Committee under the Board of Directors was introduced in April 2021 and is responsible for reviewing the strategic direction and plans for ESG management. The ESG Promotion Committee plays a crucial role in enhancing the execution of ESG management, improving communication among ESG-related departments, and sharing ESG performance with the Chief ESG Officer and relevant departments to discuss ESG-focused goals and implementation strategies. Moreover, in 2022, HHI prioritized three key areas: “establishing” (establishing an ESG management system), “elevating” (elevating the ESG evaluation rating), and “promoting” (promoting activities to internalize ESG management). In 2023, the company plans to advance ESG management by strengthening its response to the climate change crisis and expanding socially responsible management activities. Additionally, HHI aims to enhance awareness of ESG management among all executives and employees, foster an ESG management culture, and explore diverse ways to transparently disclose its sustainability management activities to internal and external stakeholders.

## 2023 ESG Key Action Strategies

**2023 Goal Advancement & Systematization of ESG Management System**

<div style="background-color: #4CAF50; color: white; border-radius: 50%; width: 60px; height: 60px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">E Environment</div> </div>	<p style="text-align: center; margin: 0;"><b>Response to climate change crisis</b></p> <ul style="list-style-type: none"> <li>· Proceed with the implementation roadmap of renewable energy</li> <li>· Reinforce management of greenhouse gas emission trading system</li> <li>· Adopt a Life Cycle Assessment (LCA)-centered management system &amp; address the needs of major shipowners.</li> <li>· Standardize shipbuilding industry Scope 3* calculation</li> </ul>	
<div style="background-color: #4CAF50; color: white; border-radius: 50%; width: 60px; height: 60px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">S Society</div> </div>	<p style="text-align: center; margin: 0;"><b>Establish safety first culture</b></p> <ul style="list-style-type: none"> <li>· Secure field-oriented risk assessment operability</li> <li>· Establish an integrated safety culture diagnosis program</li> <li>· Advancement of big data-based accident prediction system</li> </ul>	<p style="text-align: center; margin: 0;"><b>Strengthen supply chain ESG</b></p> <ul style="list-style-type: none"> <li>· Establish supply chain ESG/Sustainability management system</li> <li>· Supply chain consulting due diligence</li> </ul>
<div style="background-color: #4CAF50; color: white; border-radius: 50%; width: 60px; height: 60px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">G Governance</div> </div>	<p style="text-align: center; margin: 0;"><b>Advance ESG governance &amp; strengthen communication</b></p> <ul style="list-style-type: none"> <li>· Establish ESG KPI indicators and performance management plans</li> <li>· Operate the ESG Promotion Committee</li> <li>· ESG risk/opportunity analysis and strengthen management</li> </ul>	<p style="text-align: center; margin: 0;"><b>Internalization of ESG management</b></p> <ul style="list-style-type: none"> <li>· Implement ESG training by job/position</li> <li>· Conduct ESG small practice campaign</li> </ul>

## Organization Chart of ESG Management



## ESG Committee Operation Results

Date	Agenda	Attendance
Mar. 22, 2022	· Appointment of the chairperson of ESG Committee and determination of the order of acting in case of absence of the chairperson	100%
Dec. 9, 2022	· Report on environmental, social, governance management performance and issue management · Report on ESG implementation plan	100%
Apr. 26, 2023	· Report on the carbon-neutral roadmap and external declaration plan · Report on non-financial risk management promotion plan · 2022 integrated report materiality assessment report	100%

# HMD ESG Management System

## HMD ESG Management

HMD establishes goals and systematically manages them to advance ESG management and promote employee participation. The company actively responds to the climate change crisis, increases sales of eco-friendly products, strengthens supply chain ESG management, expands communication with stakeholders, and establishes eco-friendly management practices.

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ESG Performance

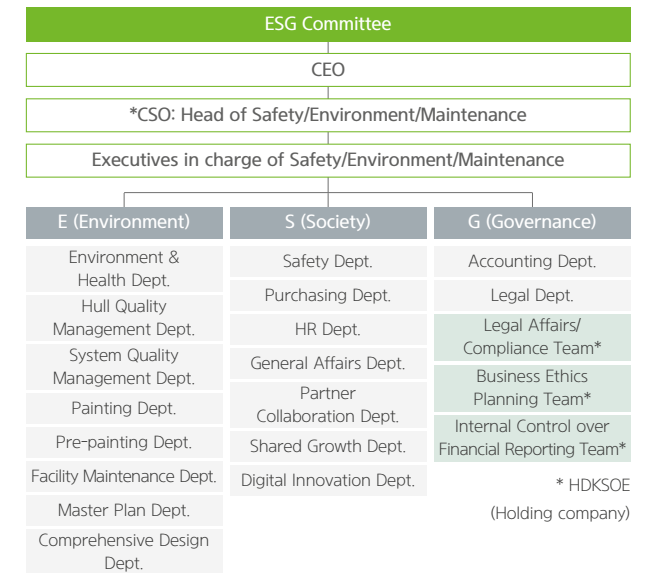
ESG Fact Book

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## 2023 ESG 10 Action Strategy Goals

Climate Change Response Strategy				
<b>Sales of eco-friendly products</b> Expansion of eco-friendly ship sales ratio more than 10%	<b>Practice environmental management</b> Number of environmental violations zero cases	<b>GHG emissions reduction</b> Manage below annual quota 175 thousand tCO <sub>2</sub> eq		
Social Value Creation Strategy				
<b>Realize an accident-free workplace</b> Zero serious accident	<b>Strengthen supply chain management</b> Conduct supply chain ESG assessment Conduct initial assessment	<b>Introduction of eco-friendly car</b> Proceed with K-EV100 and establishment of electric vehicle system	<b>Labor-management relation</b> No. of labor disputes 0 or less	<b>Practice human rights management</b> Execution rate after Human Rights Impact Assessment 100%
Safety & Health Management				
<b>Response to ESG assessment initiatives management</b> Rating improvement by one level up		<b>Internalization of employee ESG</b> Implementation of ESG training for employees Implementation rate 100%		

## Organization Chart of ESG Management



## ESG Committee Operation Results

Date	Agenda	Attendance
Feb. 7. 2022	· 2021 ESG task promotion progress and 2022 plan report	100%
Mar. 22. 2022	· Report on environmental, social, governance management performance and issue management · ESG implementation plan report	100%
Apr. 27. 2022	· Appointment of ESG Committee Chairperson	100%
Jul. 28. 2022	· 2022 Q1 ESG task progress and plan report	100%
Oct. 25. 2022.	· 2022 Q2 ESG task promotion progress and plan report	100%
Dec. 9. 2022	· 2022 Q3 ESG task promotion progress and plan report	100%
Feb. 7. 2023	· 2022 ESG management performance and 2023 ESG management plan report	75%
Apr. 26. 2023	· 2023 ESG task promotion progress and plan report · Approval of the carbon-neutral roadmap and external declaration	100%

# HSHI ESG Management System

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## HSHI ESG Management

HSHI has enacted and declared the 2022 Environmental Management Declaration, committing to more active resource circulation and energy-saving initiatives. Furthermore, the company has established a mid- to long-term roadmap aligned with climate change response strategies, aiming to achieve carbon neutrality and calculate Scope 3 emissions.

To prioritize human rights management and foster an advanced corporate culture, HSHI has established the Human Rights Management Committee, conducted human rights impact assessments, and obtained certification for the anti-corruption management system (ISO 37001). Additionally, the company is expanding its ESG management activities by publishing an integrated report, participating in the declaration of support for TCFD, and continuously growing across the environmental, societal, and supply chain dimensions.

## Organization Chart of ESG Management



## 8 ESG management plans for 2023

Strengthening the ESG Management System		ESG Management Evaluation/Disclosure Management	
<b>Strengthen the ESG management governance system</b> Clarification of responsible organization for each ESG category Discussion of environment and safety strategies and improvement plans	<b>Expand company-wide ESG management</b> Review executive innovation activities and ESG-linked promotion plans Assignment and execution of tasks by department based on ESG evaluation	<b>ESG Management Sustainability Management</b> Reinforce management of evaluation indicators Discover management indicators suitable for the company	<b>Reinforce sustainability management disclosure</b> Publish safety, health and environment management plan report Public disclosure of performance through the ESG website
Environmental Impact Management		Safety & Health Management	
<b>Sales of eco-friendly products</b> Climate change (GHG) response risk management CDP, RE100 review establishment of mid- to long-term ESG strategy	<b>Environment pollution (non-GHG) management</b> Disclosure of ESG activities to stakeholders Build website	<b>Setting safety and health goals, managing disaster indicators</b> Improving employee awareness of ESG management and forming a consensus	<b>Safety, health and environmental management system linked operation</b> Safety message contest in progress

## ESG Committee Operation Results

Date	Agenda	Attendance
Dec. 9, 2022	· 2022 ESG management performance and 2023 plan report	80%
Mar. 27, 2023	· Appointment of ESG Committee Chairperson	100%

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## Establishment of Climate Change Response Strategy

HDKSOE HHI HMD HSHI

First in the Domestic Shipbuilding Industry  
**Declared Carbon Neutrality & Released Implementation Roadmap**



HDKSOE

First Response to CDP  
**Achieved Management level (B) & Won the Carbon Management Special Award**



HDKSOE HHI HMD HSHI

Scope 3 Emission Calculation and Disclosure for the First Time in the Shipbuilding Industry  
**Promote Standardization of Scope 3 Emission Calculations**



HDKSOE HHI HMD HSHI

Participation in Korea TCFD<sup>1</sup> Alliance  
**Declared to Support TCFD**  
1. Task Force on Climate-Related Financial Disclosures



## Build Human Rights Management System

HDKSOE HHI HMD HSHI

Human Rights Management  
**Completed Human Rights Management Declaration**



HDKSOE HHI HMD HSHI

Human Rights Impact Assessment  
**Implemented Human Rights Impact Assessment & Established Governance System**



HDKSOE HHI HMD HSHI

Promotion of Welfare Benefits for Employees  
**Acquired Family-friendly Corporation Certification**



HDKSOE HHI HMD

Opened Company Daycare Center 'Happy Boat'  
**Total Floor Area 2,863m<sup>2</sup>, 3 floors**



## ESG KPI Development and Application

HDKSOE HHI HMD HSHI

Completed the Development of ESG Performance Management Indicators  
**Established 148 KPI Pools & Prepared Indicator Definitions**



HDKSOE HHI HMD HSHI

Established ESG Organization KPI for 2023<sup>1</sup>  
**Establish and Implement 2 Common KPIs and 1 Selected KPI**

1. Subject to shipbuilding subsidiaries



## ESG Practice Activities and Collaboration/Support

HHI HMD HSHI

**Obtained an Excellent Weather Management Company Certification**



HDKSOE HHI HMD HSHI

Use of Waste Plastic Bottles  
**Introduction of Eco-friendly Work Clothes**  
(HHI), (HMD) In-house waste plastic collection  
**3,410kg Collected**  
(8.08 tons of greenhouse<sup>1</sup> gas reduction)



HDKSOE HHI HMD HSHI

ISO 37001  
**Anti-bribery Management System Certification**



HHI HMD

ESG Management Idea Contest  
**Received more than 480 Applications**








**Received more than 93 Applications**



# Stakeholder Engagement

HDKSOE and its shipbuilding subsidiaries are committed to enhancing corporate value through continuous company growth. Recognizing that being a global corporate citizen entails the responsibility of promoting co-prosperity for humanity, we are dedicated to fulfilling our corporate social responsibility and role. HDKSOE and its shipbuilding subsidiaries engage with stakeholders to identify actual and potential impacts, aiming to prevent and mitigate negative consequences while ensuring compliance with legal standards. Through these efforts, we actively respond to future societal needs, aspiring to create a better tomorrow.

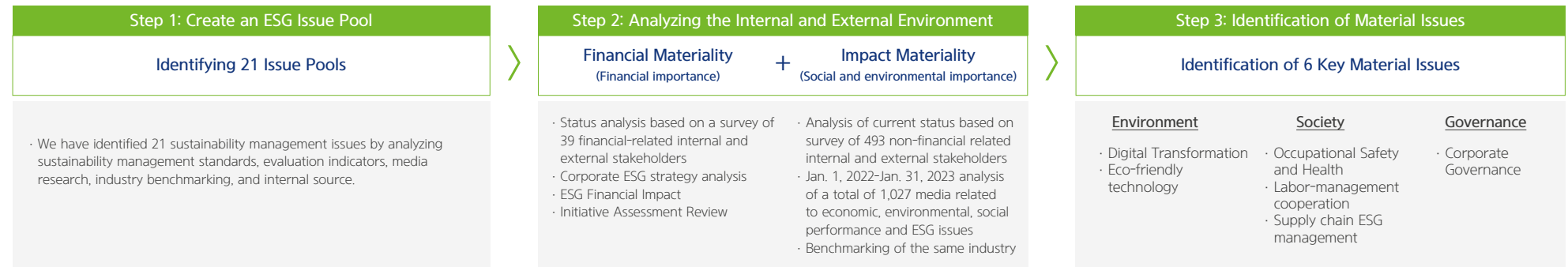
## Communication Channels by Stakeholder Group

Stakeholder Classification	Major Issues and Interests	Main Communication Channels	Response Activity	Major Communication Activities in 2022
<b>Customer</b> 	<ul style="list-style-type: none"> <li>Strengthen product and technology competitiveness</li> <li>Development of eco-friendly and high value-added products</li> <li>Improved product quality and reliability</li> <li>Improve quality satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>Fair, exhibition, forum</li> <li>Overseas branch operation</li> <li>Sales meeting and customer visit</li> <li>Customer Satisfaction Survey</li> </ul>	<ul style="list-style-type: none"> <li>Participation in fairs, exhibitions and technical forums</li> <li>Customer visits and technology promotion</li> <li>Advanced customer satisfaction management</li> <li>Reinforcing initial equipment/technical risk management</li> </ul>	<ul style="list-style-type: none"> <li>Participation in CES 2022</li> <li>Participated in major shipbuilding and shipping exhibitions such as Norshipping 2022, Posidonia 2022, and Gastech 2022</li> </ul>
<b>Shareholders and Investors</b> 	<ul style="list-style-type: none"> <li>Shareholder value enhancement</li> <li>Creation of stable management performance</li> <li>Business opportunity and risk management</li> <li>Transparent Governance</li> </ul>	<ul style="list-style-type: none"> <li>Shareholders meeting</li> <li>Company briefing session</li> <li>Disclosure and homepage information posting</li> <li>Investor meeting, conference call</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly performance announcement and IR data provided</li> <li>IR activities for analysts and institutional investors</li> <li>Disclosure of major information such as board decisions</li> <li>Publication of Corporate Governance Report</li> </ul>	<ul style="list-style-type: none"> <li>Monthly/annual IR news publication (13 times)</li> <li>Published monthly/quarterly IR presentations (16 times)</li> </ul>
<b>Suppliers</b> 	<ul style="list-style-type: none"> <li>Promotion of co-prosperity activities</li> <li>Reinforcing fair trade</li> <li>Support for strengthening supplier competencies</li> <li>Share market information and activate communication</li> </ul>	<ul style="list-style-type: none"> <li>Supplier company meeting</li> <li>Regular VOC Listening</li> <li>Visiting and interviewing supplier companies</li> <li>Operation of Co-prosperity Council</li> <li>Consultation counter for unfair trade with supplier companies</li> </ul>	<ul style="list-style-type: none"> <li>Operation of integrated purchasing system (HiPRO)</li> <li>Support for online/offline education and employment-linked education</li> <li>Financial support for supplier companies</li> <li>Technology protection support</li> <li>Supplier quality evaluation and technical guidance</li> </ul>	<ul style="list-style-type: none"> <li>(External suppliers) Conduct the HD Hyundai Integration Council once a year</li> <li>(Meetings with external suppliers) Held at least once a quarter</li> <li>(In-house suppliers) Conducting Co-prosperity Council once a quarter or more</li> </ul>
<b>Community</b> 	<ul style="list-style-type: none"> <li>Community revitalization</li> <li>Attract industry in the region and increase recruitment</li> <li>Community environment protection and improvement</li> <li>Community-centered social contribution activities</li> <li>Communication with the community</li> </ul>	<ul style="list-style-type: none"> <li>Municipal Council</li> <li>Visit local public institutions</li> <li>Community civic group meeting</li> <li>Community service group meeting</li> <li>Community event</li> <li>Local Social Security Working Group</li> </ul>	<ul style="list-style-type: none"> <li>Employee-participatory social contribution activities such as volunteer activities</li> <li>Organize and participate in community councils</li> <li>Operation of local talent development programs</li> <li>Investment support for community development</li> <li>Support and participation in community events</li> <li>Community Security Survey and Indicator Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>(HHI) Local Social Security Council (3 times)</li> <li>(HMD) Local community consultation channel operation (3 times)</li> <li>(HSHI) Wolchulsan National Park Volunteer Activities (once)</li> </ul>
<b>Employees</b> 	<ul style="list-style-type: none"> <li>Fair Evaluation and Compensation</li> <li>Welfare benefits</li> <li>Employee competency enhancement</li> <li>Vitalization of labor-management relations and communication</li> <li>Share company management situation</li> <li>Safe workplace operation</li> </ul>	<ul style="list-style-type: none"> <li>Labor-Management Council</li> <li>Grievance handling system and reporting system</li> <li>Intranet and company newsletter</li> <li>In-house CATV broadcasting</li> <li>Management meeting</li> <li>Management status briefing</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly labor-management council</li> <li>CEO meeting</li> <li>Publication of company newsletter and web zine</li> <li>Intranet communication channel operation</li> <li>Talent development program operation</li> </ul>	<ul style="list-style-type: none"> <li>Labor-management council held once a quarter</li> <li>(HHI) Management status briefing held once a quarter</li> <li>(HHI) VISION 2030 Information Session</li> <li>(HSHI) Human Rights Management Committee established and conducted once</li> </ul>
<b>Gov./National Assembly</b> 	<ul style="list-style-type: none"> <li>Law revision issues</li> <li>Safety and labor related issues</li> <li>Government event participation and support</li> <li>Industry and corporate information support</li> <li>Local economy issues</li> </ul>	<ul style="list-style-type: none"> <li>Visits to the National Assembly and government departments</li> <li>Government audit</li> <li>Participation in economic organization activities</li> <li>Policy meeting</li> <li>Municipal Council</li> </ul>	<ul style="list-style-type: none"> <li>Relevant Standing Committee and Institutional Meetings</li> <li>Participate in regular government audits</li> <li>Participation in seminars of major economic organizations</li> <li>Participation in councils of local governments</li> <li>Survey of external institutions and provision of requested materials</li> </ul>	<ul style="list-style-type: none"> <li>Participated in the ESG Management Committee of Korea Employers Federation twice</li> <li>Participated in 'Open Innovation' hosted by the Korea International Trade Association</li> <li>Support activities for Busan 2030 World Expo</li> </ul>
<b>Media</b> 	<ul style="list-style-type: none"> <li>Business Performance and Industry Issues</li> <li>Major issues across the company</li> <li>Company's main business direction</li> </ul>	<ul style="list-style-type: none"> <li>Press release</li> <li>Homepage Media Center</li> <li>Press meeting</li> </ul>	<ul style="list-style-type: none"> <li>Timely delivery of press releases</li> <li>Reporter coverage support</li> <li>Conducting a press conference</li> </ul>	<ul style="list-style-type: none"> <li>Press release on the homepage (<a href="http://www.hdhyundai.co.kr/press">http://www.hdhyundai.co.kr/press</a>)</li> </ul>

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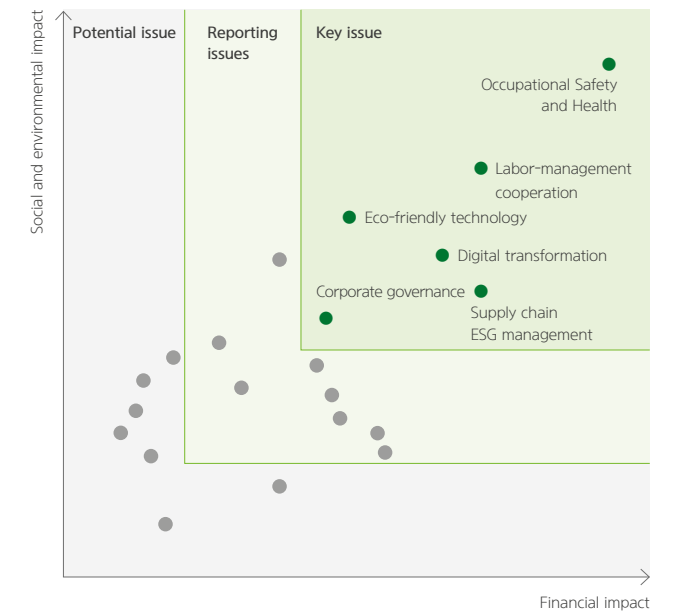
HDKSOE and its shipbuilding subsidiaries conduct a materiality test annually to capture the perspectives of key stakeholders both domestically and internationally. This process helps identify the key topics that warrant focus for sustainable management. This year, the materiality test integrated the 'Materiality' guidelines of the GRI Standards along with the concept of double materiality. The materiality assessment considers not only the impact of external risks on the company's business and financial environment but also the environmental and social impact of the company's business activities. Based on the evaluation, 'industrial safety and health' was chosen as a material issue for two consecutive years. Additionally, 'labor-management cooperation', 'supply chain ESG management', and 'eco-friendly technology' were identified as new material issues. HDKSOE and its shipbuilding subsidiaries will continue to gather the interests and demands of stakeholders, actively incorporating them into future ESG strategy development and corporate activities.



Core Issue	Issues	Pages
	Pollutant and hazardous waste management	71
	Climate change response	64-67
●	Eco-friendly technology	74-80
	Building a hydrogen value chain	79-80
●	Digital transformation	81-84
	Biodiversity	73
	Water and wastewater	68, 70
	Resource circulation	71
●	Occupational safety and health	86-91
●	Labor-management cooperation	97-100
	Community contribution	106-109
	Smart shipbuilding maritime talent development	101-103
	Responsible technology and innovation	9
●	Supply chain ESG management	92-96
	Human rights management	53-54, 104-105
	Information security	127-129
	Ethics and compliance management	124-126
●	Corporate governance	114-123
	Risk management	130-131
	Stakeholder engagement	45
	Advancement of ESG management	39-43

Material Issue in 2021	Material Issue in 2022
Occupational safety and health	Occupational safety and health (-)
Eco-friendly digital technology development	Labor-management cooperation (New)
Clean tech	Digital transformation (▼1)
Building a hydrogen value chain	Supply chain ESG management (New)
Expansion of ESG management	Eco-friendly technology (New)
Climate change response	Corporate governance (▲1)
Corporate governance	

## Material Issue Matrix



# Response to Critical Issues

HDKSOE and its shipbuilding subsidiaries conduct objective analysis of the company's ESG risks and current status by collecting and actively engaging with various stakeholders on the six core ESG issues selected through the double materiality test. Additionally, we will establish specific mid- to long-term management goals for these six major issues and align them with our management KPIs.

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Topic	Context	Our Approach	Performance in 2022	Long-term Goal	KPI
<b>Occupational Safety and Health Management</b> GRI 403	Global regulations are strengthening to ensure safety in the workplace. Korean government also implemented Serious Accident Punishment Act to emphasize safety.	We have established a comprehensive and systematic safety and health management system by acquiring and maintaining the safety and health management system (ISO 45001) certification, and strengthening safety and health capabilities through statutory safety and health education and education by class. In addition, regular compliance assessments and risk assessments are conducted to monitor compliance with relevant laws and prevent safety accidents in advance, and safety and health management is carried out in proximity to sites by expanding manpower and improving expertise in each company's safety and health organization.	<ul style="list-style-type: none"> <li>· Advance risk assessment system and improve discovered risk factors</li> <li>· Offer rewards to supplier companies to promote safety management competency</li> </ul>	<ul style="list-style-type: none"> <li>· ZERO Serious Industrial/Civil Accidents</li> <li>· Ameliorate workplace comfort and health</li> </ul>	<ul style="list-style-type: none"> <li>· Lost Time Injury Frequency Rate (LTIFR)</li> <li>· Occupational disease rate</li> </ul>
<b>Labor -management Relations</b> GRI 407	The shipbuilding industry, which is a typical labor-intensive sector, is facing difficulties from loss of manpower and occasional strikes. Thus, efforts are being taken to create a workplace with high job engagement.	Recently, the issue of fairness in evaluation and distribution has become a hot topic, centering on the MZ generation. HDKSOE and its shipbuilding subsidiaries are appropriately operating various evaluation methods such as multidimensional evaluation to ensure fairness in evaluation and to enhance the acceptance and reliability of the evaluation system by employees. We are sensitively responding to issues regarding the fairness of performance distribution, and are striving to devise and operate a flexible compensation system. In addition, we are constantly discussing corporate management with employees by expanding opportunities for labor-management communication, such as aiming for win-win growth through the regular operation of the labor-management council and securing fair personnel management.	<ul style="list-style-type: none"> <li>· Regular and dispute-free Labor-management conference</li> <li>· Increased member diversity</li> </ul>	<ul style="list-style-type: none"> <li>· ZERO strikes</li> <li>· 100% rate of collective agreement application</li> <li>· 100% rate of joining union</li> <li>· Advance workforce diversity</li> <li>· Minimize voluntary turnover rate</li> </ul>	<ul style="list-style-type: none"> <li>· Number of strike and strike participants</li> <li>· Collective agreement application rate</li> <li>· Labor union membership rate, workforce diversity, voluntary turnover</li> </ul>
<b>Digital Transformation (Non-GRI)</b>	Digital transformation of shipbuilding and offshore manufacturing environments, such as future ship products, design, production, and logistics, is emerging as a core competency that will support business expansion and new growth beyond the existing added value.	We are developing autonomous navigation solutions and digital twin technologies for efficient ship operation and verification using ICT technology. Through this, fuel consumption and greenhouse gas emissions can be monitored and predicted in real time to contribute to fuel savings and greenhouse gas reduction. In addition, we are promoting the FOS (Future of Shipyard) project to transform into a 'smart shipyard'. After realizing a smart and efficient shipyard by monitoring and connecting all processes in real time according to the FOS roadmap, we will gradually transform into an intelligent and autonomously operated shipyard by 2030.	<ul style="list-style-type: none"> <li>· Successful feat of sailing a super-large LNGC with HiNAS 2.0 across the Pacific Ocean</li> <li>· Full-scale start of the 2<sup>nd</sup> phase of FOS</li> </ul>	<ul style="list-style-type: none"> <li>· Advancing HINAS to the fourth stage</li> <li>· FOS (2026) Phase 2 construction (2030) Phase 3 construction</li> </ul>	<ul style="list-style-type: none"> <li>· R&amp;D expenditure</li> </ul>
<b>Supply Chain ESG Management</b> GRI 414	The release of the EU's Corporate Sustainability Due Diligence Directive has mandated human rights and environmental due diligence across the supply chain. It is necessary to preemptively manage the supply chain and prepare for due diligence.	In response to the strengthening of international regulations, we have strived to build a sustainable supply chain by advancing the supply chain ESG management system and expanding shared growth with suppliers. Opportunities for mutual growth have been expanded by advancing supply chain ESG management policies (supplier code of conduct, etc.), operating training programs and technology protection systems to strengthen the competitiveness of suppliers, and strengthening communication activities through the shared growth consultative body.	<ul style="list-style-type: none"> <li>· Assist supplier companies' ESG management (by setting evaluation indicators, providing ESG education, conducting consultation and checking the performance)</li> </ul>	<ul style="list-style-type: none"> <li>· Establish risk management system for sustainable supply chain</li> <li>· Monitor supplier companies' ESG level and improvement methods</li> </ul>	<ul style="list-style-type: none"> <li>· Number of suppliers that received ESG evaluation</li> <li>· Number of supplier companies with material negative impacts on the environment/society</li> </ul>
<b>Eco-friendly Technology (Non-GRI)</b>	Orders for gas/eco-friendly products, our flagship product, increased due to carbon emission regulations and an increase in orders for eco-friendly ships. Accordingly, we recognize the importance of developing eco-friendly products and are developing our technological capabilities.	We establish technology development strategies by monitoring eco-friendly ship-related regulations and trends of International Maritime Organization (IMO), and discover and implement research tasks accordingly. In order to respond to eco-friendly regulations, we are developing fuel efficiency optimization and related additional technologies to reduce greenhouse gas emissions. In addition, we are working on converting to eco-friendly fuels such as ammonia, methanol, and hydrogen, and developing new types of ships such as ammonia-FSRUs (Floating, Storage, Re-gasification Units), and hydrogen carriers. In addition, we will strengthen cooperation with overseas companies and participation in EU funding projects through European research corporations.	<ul style="list-style-type: none"> <li>· Joint project to define and standardize eco-friendly products in shipbuilding</li> </ul>	<ul style="list-style-type: none"> <li>· Disclose green revenue based on the standardized green product sales</li> <li>· Transition to green product portfolios</li> </ul>	<ul style="list-style-type: none"> <li>· Standardization of eco-friendly ship</li> <li>· Standardization of green revenue</li> </ul>
<b>Corporate Governance (Non-GRI)</b>	Establishing a sound governance structure by guaranteeing the independence of the board of directors and establishing a transparent decision-making system is essential for protecting shareholder rights and interests and for the company's sustainable growth.	The board of directors and disclosure regulations are distributed throughout the company, and important transactions exceeding the standard amount that can affect the organization are subject to decision-making by the board of directors through sufficient understanding in advance, and Internal Accounting Control Regulations are established and operated in accordance with relevant laws. We are improving the reliability of statements. We have an accurate and transparent decision-making system based on relevant laws and regulations, updated annually, and reviewing various issues in advance to prevent omissions in decision-making at the board of directors.	<ul style="list-style-type: none"> <li>· Regularly operated the ESG Committee (under BoD)</li> <li>· Improved gender diversity within the board of directors</li> </ul>	<ul style="list-style-type: none"> <li>· Securing expertise and diversity within the board of directors</li> <li>· Establishment and operation of Compensation Committee</li> </ul>	<ul style="list-style-type: none"> <li>· Board composition</li> <li>· Board operation</li> <li>· Board member expertise</li> <li>· Board member diversity</li> </ul>

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# FOCUS AREA

HDKSOE and its subsidiaries are practicing ESG management with dynamic energy and explore to build a sustainable future



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## Action 1. Declaration of Net Zero Carbon Emissions

### Global Leading Net Zero Shipbuilder

Due to unprecedented climate change and acceleration of global warming, the climate change crisis has become a common survival task facing all mankind, rather than a danger of a vague future. The international community agreed to limit the rise in global average temperature to 1.5°C from pre-industrial levels through the Paris Climate Agreement in 2015, and Korea held the 2021 United Nations Framework Convention on Climate Change (UNFCCC) COP26 announced the Nationally Determined Contributions (NDC), which raises the reduction amount by 2030 from '26.3% reduction' to '40% reduction' compared to 2018.

HDKSOE and its shipbuilding subsidiaries recognized that a swift transition to carbon net zero is a matter directly related to corporate sustainability and a task to be implemented with a sense of responsibility, and we established a management strategy for a climate change response and risk 2022.

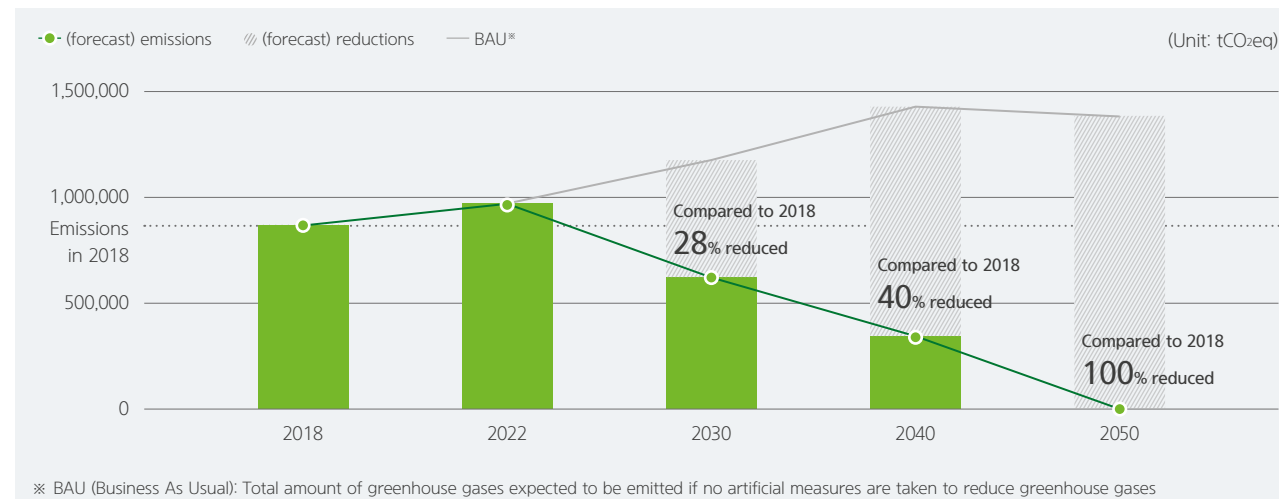
Drawing upon our shipbuilding and offshore technology and extensive shipbuilding expertise accumulated over the past 50 years, we are focusing all our capabilities on the development and commercialization of low-carbon and non-carbon fuel-powered ships. Through the 2030 FOS (Future of Shipyard) project, we are committed to transforming our shipbuilding site into an eco-friendly and low-carbon facility. Additionally, we recognize the importance of managing and reducing greenhouse gas emissions across the entire value chain throughout the entire life cycle of shipbuilding. Therefore, we are actively reinforcing cooperative relationships with our customers and supply chain partners.

Compared to our major competitors, the roadmaps of HDKSOE and its shipbuilding subsidiaries are the most ambitious and well-defined. As industry-leading global companies, we will be focusing on energy efficiency, electrification, expansion of renewable energy use, and carbon offset projects to achieve carbon net zero by 2050. We are fully committed to the target and will exert our utmost efforts to fulfill this vision.

HDKSOE and its shipbuilding subsidiaries announced the '2050 Carbon Net Zerp' declaration and implementation roadmap on May 3, 2023. The approval and reporting of the carbon net zero implementation roadmap, established in 2022, was completed by the board of directors in the first half of 2023. The roadmap was developed through a thorough examination of domestic and international environmental regulations, market and technology trends, as well as client and industry demands.

We are committed to demonstrating our qualifications as a Global Leading Net Zero Shipbuilder, aligning with increasingly stringent greenhouse gas reduction standards and the rising demand for eco-friendly ships, including low-carbon and non-carbon ship engines. To achieve carbon net zero, HDKSOE and its shipbuilding subsidiaries aim to reduce 28% of GHG emissions by 2030, 40% by 2040, and ultimately 100% by 2050. We will strive to meet these targets and contribute to a sustainable future.

### Scope 1, 2 Carbon Neutrality Scenario



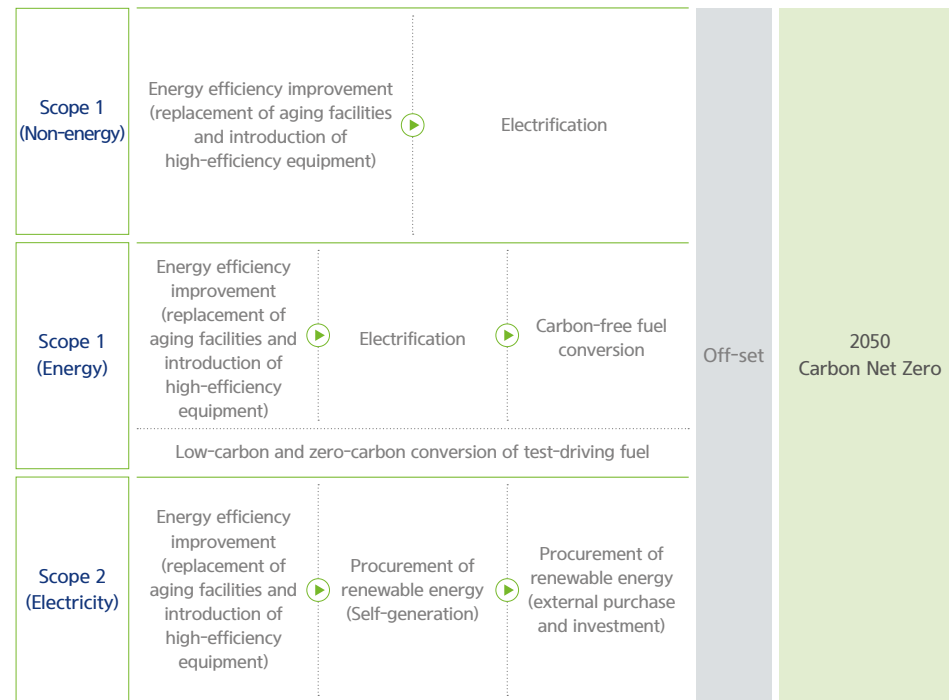
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## Action 1. Declaration of Net Zero Carbon Emissions

### Carbon Net Zero Implementation Strategy

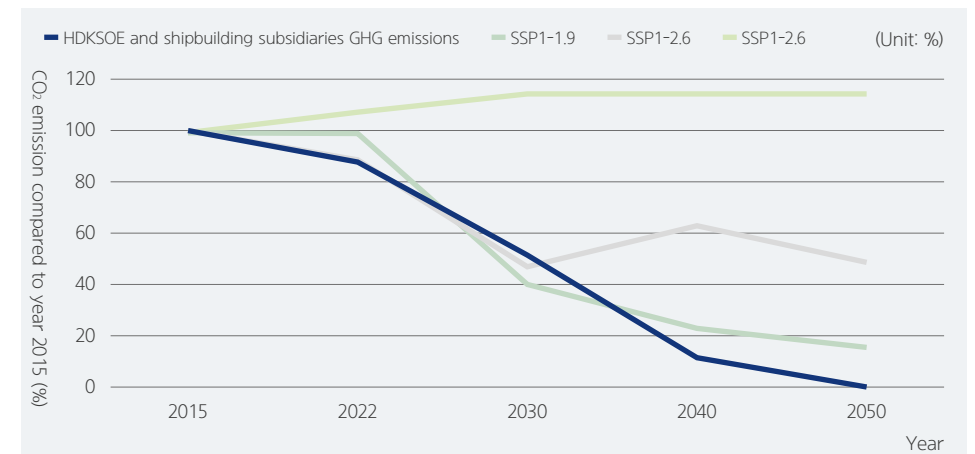
HDKSOE and its shipbuilding subsidiaries have implemented strategies to achieve carbon net zero, focusing on energy efficiency, the conversion to eco-friendly fuels, and the integration of renewable energy sources. To reduce Scope 1 greenhouse gas emissions originating from fossil fuels used in ship commissioning, transportation vehicles, as well as fossil fuel boilers and heaters, we will transition to low and carbon-free fuels like electricity, methanol, and hydrogen. Additionally, we aim to decrease Scope 2 GHG emissions resulting from the purchase and use of electricity by replacing outdated facilities, such as cranes and air compressors, with high-efficiency equipment. Furthermore, our plans include the promotion of 'RE100'—the procurement of 100% renewable energy—by 2050 through the self-generation of renewable energy from sources like solar and wind power, as well as external procurement.

### Scope 1, 2 Carbon Net Zero Implementation Strategy



- Scope 1 (Non-Energy): Greenhouse gases emitted directly during the production process by facilities owned or controlled within the business site, such as CO<sub>2</sub> welders and ethylene cutters.
- Scope 1 (Energy): GHG emissions directly resulting from the combustion of energy in facilities owned or controlled within the business site, for example, during ship commissioning or the use of boilers.
- Scope 2: Greenhouse gases arising from the production of purchased and used energy sources, including electricity and steam.

### Carbon-neutral Roadmap of HDKSOE and Shipbuilding Subsidiaries against IPCC SSP Scenarios



### IPCC SSP<sup>1</sup> Global Surface Temperature Changes by Scenario

Scenario		SSP1-1.9	SSP1-2.6	SSP2-4.5
YR2021 - 2040	Best estimate (°C)	1.5	1.5	1.5
	Very likely range (°C)	1.2 to 1.7	1.2 to 1.8	1.2 to 1.8
YR2041 - 2060	Best estimate (°C)	1.6	1.7	2.0
	Very likely range (°C)	1.2 to 2.0	1.3 to 2.2	1.6 to 2.5
YR2061 - 2100	Best estimate (°C)	1.4	1.8	2.7
	Very likely range (°C)	1.0 to 1.8	1.3 to 2.4	2.1 to 3.5

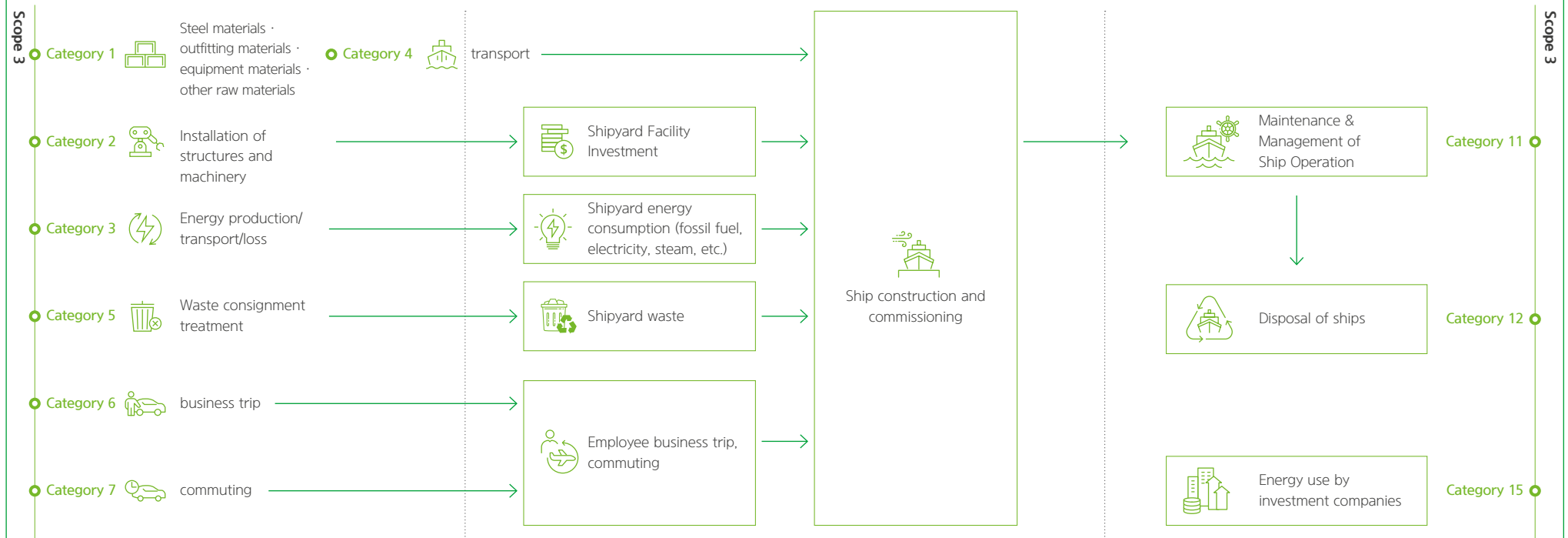
1. IPCC SSP: Intergovernmental Panel on Climate Change Shared Socio-economic Pathway Common Socio-Economic Pathway of the Intergovernmental Panel on Climate Change is a scenario projecting greenhouse gas emissions resulting from global socio-economic changes by 2100

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## Action 1. Declaration of Net Zero Carbon Emissions

### HDKSOE & its Shipbuilding Subsidiaries Value Chain Analysis

HDKSOE and its shipbuilding subsidiaries aim to identify energy efficiency opportunities and cost reduction within the value chain through the verification of Scope 3 emissions. Moreover, we strive to achieve carbon net zero by maintaining ongoing cooperation with suppliers. In line with this objective, the value chain of HDKSOE and its shipbuilding subsidiaries has been analyzed, taking into account our industrial characteristics and business activities.



Upstream	
<b>Greenhouse Gas Scope 3 Emissions in 2022</b>	(Unit: tCO <sub>2</sub> eq)
HDKSOE	5,960
HHI	2,736,292
HMD	1,283,510
HSHI	2,250,296

Activity			
<b>Greenhouse Gas Scope 1 Emissions in 2022</b>	(Unit: tCO <sub>2</sub> eq)	<b>Greenhouse Gas Scope 2 Emissions in 2022</b>	(Unit: tCO <sub>2</sub> eq)
HDKSOE	3,333	HDKSOE	4,858
HHI	244,228	HHI	305,331
HMD	55,481	HMD	105,476
HSHI	102,257	HSHI	137,613

Downstream	
<b>Greenhouse Gas Scope 3 Emissions in 2022</b>	(Unit: tCO <sub>2</sub> eq)
HDKSOE	20,486
HHI	49,171,186
HMD	20,343,289
HSHI	38,921,678

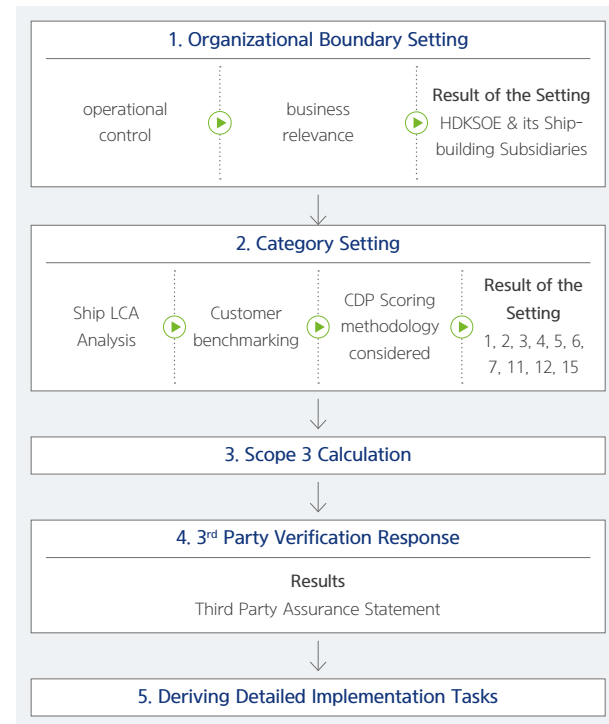
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## Action 1. Declaration of Net Zero Carbon Emissions

### Scope 3 Calculation for the First Time in the Domestic Shipbuilding Industry

HDKSOE and its shipbuilding subsidiaries took the pioneering step of measuring and disclosing Scope 3 emissions in 2022, marking a first in the domestic shipbuilding industry. Through this initiative, we aim to minimize our environmental footprint by transparently measuring and disclosing all carbon emissions associated with our business activities, both upstream and downstream. By actively responding to climate change and conducting responsible business practices, we are committed to reducing our environmental impact.

#### Scope 3 Calculation Process



#### Scope 3 Calculation Promotion Methodology Disclosure

HDKSOE and its shipbuilding subsidiaries are diligently undertaking the calculation and disclosure of our increasingly significant Scope 3 emissions. These emissions are calculated in accordance with the GHG Protocol's Corporate Value Chain Accounting Reporting Standard and Scope 3 Calculation Guidance. Taking into consideration our industrial characteristics and emissions impacts, HDKSOE and its shipbuilding subsidiaries have successfully calculated emissions for 10 out of the total 15 categories. This effort reflects our commitment to comprehensive emissions accounting and transparency.

We check the calculated GHG emissions to identify key response areas and use them to establish strategies to reduce GHG emissions throughout the value chain. HDKSOE and its shipbuilding subsidiaries will strive to disclose transparent and reliable information by expanding the scope of original data collection in the value chain and upgrading calculation methods that reflect the characteristics of the shipbuilding industry.

#### Scope 3 Category

Calculation Methodology		Calculation Methodology	
	<b>1 Purchased Goods and Services</b> Σ GHG emissions from the entire life cycle of major raw materials (steel, outfitting materials, equipment, others) purchased annually		<b>6 Business Travel</b> Σ GHG emissions caused by employees using transportation for business trips for annual production activities
	<b>2 Capital Goods</b> Σ GHG emissions occurring throughout the life cycle of major capital goods (structures and mechanical equipment installation) purchased annually		<b>7 Employee Commuting</b> Σ GHG emissions caused by employees using transportation to and from work for annual production activities
	<b>3 Fuel and Energy Activities Not Covered by Scope 1 &amp; 2</b> Σ Use of fuel, power and steam and GHG emissions from transportation annually		<b>11 Use of Sold Products</b> Σ GHG emissions from the use of products produced in the relevant year
	<b>4 Upstream Transportation &amp; Distribution</b> Σ Annual GHG emissions from the transportation of products purchased from suppliers		<b>12 End-of-life Treatment of Sold Products</b> Σ GHG emissions from the disposal process of products at the end of their lives in the relevant year
	<b>5 Waste Generated in Operations</b> Σ Annual GHG emissions from third-party consignment treatment facilities for waste generated within the business site		<b>15 Investments</b> Σ Annual GHG emissions from the production activities of invested companies

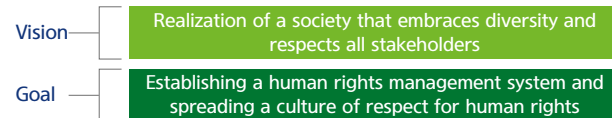
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## Action 2. Human Rights Management System

### Context

HDKSOE and its shipbuilding subsidiaries recognize the significance of upholding the dignity and human rights of employees and field workers across various domestic and international sites. Moreover, we acknowledge that human rights concerns can emerge as critical management issues in the course of business. As societal awareness regarding human rights management and issues continues to grow, there is a need to foster a workplace that embraces diversity and safeguards human rights. Therefore, HDKSOE and its shipbuilding subsidiaries are dedicated to making concerted efforts to establish such an environment.

### Vision & Goal



### Human Rights Management Process



HDKSOE declares its support for the international standard human rights guidelines designated by the United Nations and intends to establish a human rights protection framework management system. In addition, we plan to designate 10 human rights issues based on the UN-SDGs (Sustainable Development Goals), confirm the right implementation of the practice regulations, and conduct management analysis to preemptively respond to possible risks. In addition, we will do our best to create a corporate culture with improved awareness of human rights through training and participation for employees.

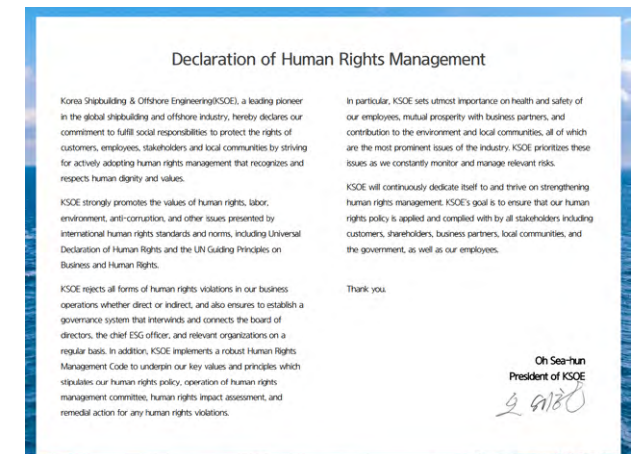
### Human Rights Management Governance



1. Team in charge: HR Dept.

### Human Rights Management Promotion System

HDKSOE and its shipbuilding subsidiaries have implemented a comprehensive human rights management governance system aimed at safeguarding the rights of stakeholders affected by our business activities. Building upon the human rights management declaration, the companies have established practice regulations to ensure consistent and effective implementation of human rights management practices. The Human Rights Management Committee has been established to oversee the implementation process, with various departments identifying human rights risks within their respective sectors and working towards improvement. HDKSOE and its shipbuilding subsidiaries are committed to upholding the dignity and human rights of all stakeholders, both directly and indirectly impacted, and strive to incorporate human rights management principles throughout our operations.



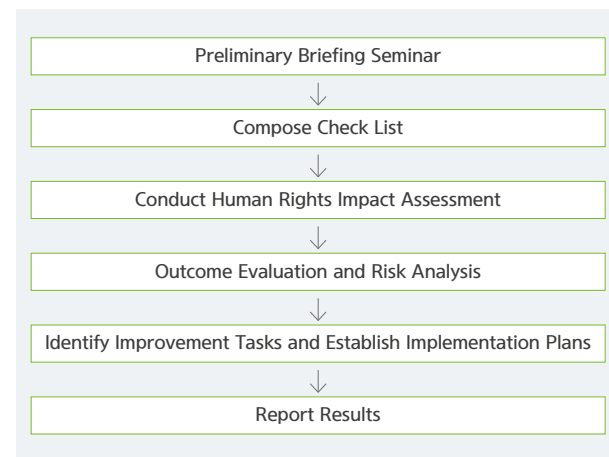
- HDKSOE Human Rights Management Declaration and Practice Regulations
- HHI Human Rights Management Declaration and Practice Rules
- HMD Human Rights Management Declaration and Practice Regulations
- HSHI Human Rights Management Declaration and Practice Regulations

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## Action 2. Human Rights Management System

### Advancement of Human Rights Management Evaluation System Human Rights Impact Assessment

HDKSOE and its shipbuilding subsidiaries undertake annual human rights impact assessments to systematically review our policies, procedures, and systems related to human rights issues at domestic business sites. This process enhances the company's human rights management by identifying potential human rights risks at each site, deriving improvement tasks, and actively incorporating them into system enhancements. The human rights impact assessment conducted by HDKSOE and its shipbuilding subsidiaries follows the evaluation indicators set by National Human Rights Commission of Korea. However, certain indicators are modified to align with the latest trends and business conditions related to human rights. Additionally, drawing on the results of the human rights materiality evaluation, the assessment covers 29 items and 127 detailed indicators across nine areas, including remedies for human rights violations and the safeguarding of labor rights in the workplace. To perform a self-diagnosis and identify human rights risks and areas for improvement within the company, relevant departments conduct self-evaluations. However, to ensure objectivity and validity, the evaluation results undergo deliberation by the working-level council and the Human Rights Management Committee.

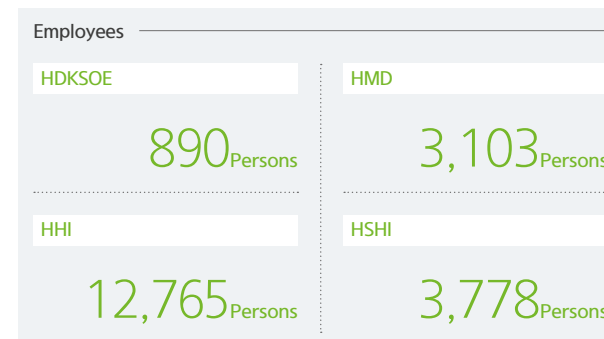


In 2022, as the inaugural year of human rights management, we conducted an internal human rights impact assessment. This assessment involved thorough deliberations by the working-level council and the Human Rights Management Committee to identify areas for improvement in terms of human rights management across various company fields. The diagnosis revealed that we are diligently adhering to relevant laws and regulations in all areas, and our human rights management practices are at a commendable level. For the 2023 human rights impact assessment, we aim to enhance the validity and reliability of the evaluation process. To achieve this, we plan to engage a professional company to conduct the human rights impact assessment. Additionally, we will develop company-customized evaluation indicators to effectively identify specific human rights risks. By adopting an objective perspective, we will ensure the operation of human rights policies that align with the findings of the assessment.

### Human Rights Materiality Assessment

HDKSOE and its shipbuilding subsidiaries conduct human rights materiality assessments to determine the impact and priority of major human rights issues. The human rights materiality assessment identifies the impact of each human rights issue by dividing it into probability and severity, and takes the form of a survey to listen to the opinions of members of the Human Rights Management Committee and those in charge of related affairs.

### Scope of Human Rights Impact Assessment for HDKSOE and Shipbuilding Subsidiaries

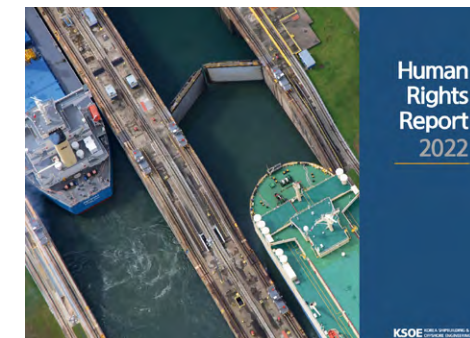


The survey items aimed at stakeholders cover various human rights aspects, including environmental rights, child labor, forced labor, the prevention of labor exploitation, compliance with working conditions, discrimination, workplace bullying, and sexual harassment. These survey items were designed based on the reporting framework of the UNGPs (UN Guiding Principles on Business and Human Rights) and encompass general principles across eight key areas. These areas include the prohibition of human rights violations, ensuring health and safety, protecting customer rights, ensuring product safety and quality, safeguarding the human rights of local residents, and upholding freedom of association and collective bargaining.

### Publication of Human Rights Management Report

HDKSOE and its shipbuilding subsidiaries' publish human rights management reports that incorporate the findings from the human rights materiality assessment and human rights impact assessment. These assessments help determine the significance and priority of major human rights issues. By transparently disclosing the management status of each issue, the reports actively contribute to shaping and enhancing the future direction of human rights management within the organization.

1. HSHI conducted a human rights impact assessment, but did not release a separate report.



- HDKSOE Human Rights Report
- HHI Human Rights Report
- HMD Human Rights Report

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## Action 3. Establish Enterprise-wide ESG KPIs

### Context

There is a growing demand for the establishment of a Key Performance Indicator (KPI) system related to ESG (Environmental, Social, and Governance) performance. This is aimed at promoting companies to actively monitor and improve their social and environmental practices, as well as enhancing overall social and environmental performance. It is particularly recommended to conduct regular monitoring and evaluation of management's ESG activities and performance to ensure the sustainability of corporate ESG management. Recognizing the importance of leading ESG activities, HDKSOE and its shipbuilding subsidiaries have implemented a company-wide system capable of driving ESG initiatives. As part of this system, company-wide ESG KPIs have been established and disclosed to external stakeholders, granting responsibility and authority for ESG management and performance. The organization sets both short-term and mid- to long-term ESG management goals and performance indicators, aligning them with the company's material issues. These goals and indicators are managed internally, and performance improvement is facilitated by linking them to the compensation system.

### Purpose of KPI Development and System Establishment

HDKSOE and its shipbuilding subsidiaries have formulated Key Performance Indicators (KPIs) with four primary objectives.

- Firstly, the KPIs serve to assess and monitor ESG management performance, promoting systematic management and driving continuous performance improvement.
- Secondly, we establish a company-wide framework to enhance responsiveness towards the evolving and intricate ESG risks faced by the organization.
- Thirdly, the KPIs enable the prompt identification of ESG improvement tasks through well-defined goal setting, facilitating efficient execution.
- Lastly, the KPIs play a crucial role in transparently communicating the company's ESG goals and performance to both internal and external stakeholders, fostering effective stakeholder engagement and accountability. These KPIs collectively contribute to strengthening ESG practices, improving organizational performance, and ensuring effective communication of ESG-related matters.

### Establishment of ESG KPI POOL and Establishment of Performance Management Indicators

In the establishment of ESG Key Performance Indicators (KPIs), we have defined each indicator and provided target guidelines to enable the setting of appropriate tasks and strategies aligned with the intended purpose. Firstly, we derived the ESG KPI Pool by considering the requirements of the capital market and domestic and international ESG evaluation institutions. By analyzing industry-specific issues and gathering input from relevant stakeholders, we identified priority indicators and established a management system. Next, while incorporating the existing KPI methods, we analyzed methodologies taken by global ESG evaluation and disclosure standards institutions that assess our ESG management. Simultaneously, we reviewed processes taken by similar industries to establish KPIs. Lastly, to establish target guidelines for each area, we conducted a comprehensive analysis of best practices, evaluating the level of ESG response within our industry and comparing with similar companies. Through benchmarking the KPI levels for each ESG area, we set target guidelines accordingly. HDKSOE and its shipbuilding subsidiaries are committed to further advancing the establishment of performance management indicators, ensuring efficient and comprehensive ESG KPI

implementation. By closely analyzing various cases and actively embracing successful ESG projects, we aim to achieve sustainable profits. Our ultimate objective is to foster both value creation and effective ESG management practices.

### ESG KPI Management Area Revision

HDKSOE and its shipbuilding subsidiaries conducted an extensive discussion on the enhancement of the KPI management system. As a result, the existing 24 management areas in 4 categories have been further subdivided into 30 management areas. Specifically, the environmental sector has been expanded to encompass 14 areas, the social sector has been extended to cover 9 areas, the governance sector now includes 6 areas, and the R&D sector has been assigned 1 area. To address emerging priorities and strengthen management focus, new areas have been established. These include water resource management, water pollutants, carbon footprint, eco-friendly products, waste management, chemical management, human rights, diversity and inclusion, composition and operation of the board of directors, ethical management, compliance and environmental management. Additionally, the environmental investment and finance areas have been newly incorporated.

Former KPI Management Area	Criteria	Current KPI Management Area		
<div style="text-align: center;">24 areas 188 KPIs</div>	<b>Strategic Alignment</b> <ul style="list-style-type: none"> <li>Any relation to ESG strategic tasks</li> <li>Any relation to existing KPIs</li> </ul>	<b>Environment</b> 14 <ul style="list-style-type: none"> <li>Greenhouse Gas emissions</li> <li>Energy management</li> <li>Water resource management*</li> <li>Procurement of raw materials</li> <li>Eco-friendly products*</li> <li>Waste management*</li> <li>Environmental management*</li> </ul>	<b>Society</b> 9 <ul style="list-style-type: none"> <li>Air pollution response</li> <li>Water pollutants*</li> <li>Biodiversity</li> <li>Carbon footprint*</li> <li>Chemical management*</li> <li>Environmental investment*</li> </ul>	<ul style="list-style-type: none"> <li>Labor-management relations</li> <li>Supply chain management</li> <li>Employee health and safety</li> <li>Information security</li> <li>Human rights*</li> <li>Personal information</li> <li>Community relations</li> <li>Product quality and safety</li> <li>Human resources development</li> <li>Diversity and inclusion*</li> </ul>
	<b>Assessment Relevance</b> <ul style="list-style-type: none"> <li>Any reflection of international initiatives</li> </ul>			
	<b>Feasibility</b> <ul style="list-style-type: none"> <li>Consideration of urgency, reality, and needs of internal and external stakeholders</li> <li>Consideration of legislation and regulations</li> </ul>	* Areas newly added through revision		

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## Action 3. Establish Enterprise-wide ESG KPIs

### ESG KPI Establishment and Evaluation Process

HDKSOE and its shipbuilding subsidiaries incorporate ESG (Environmental, Social, and Governance) factors into our key performance indicators (KPIs) to evaluate the organization's management performance. Additionally, executives responsible for key functions are assigned specific ESG KPIs to align their responsibilities with ESG objectives. The group's ESG organization establishes guidelines for setting ESG KPIs, including the establishment of common ESG KPIs at the group level. Each affiliate's ESG organization also sets guidelines for ESG KPI establishment, considering factors such as the company's ESG management maturity, urgency of improvement tasks, and ESG risks. The proportion and specific items of the ESG KPIs are determined based on each entity's industrial characteristics. The established ESG KPIs undergo a reporting process to Chief ESG Officer and the ESG Committee for finalization. The current status and performance of these KPIs are regularly monitored and managed. HDKSOE and its subsidiaries rigorously evaluate ESG KPI targets through a robust evaluation process. The performance is assessed based on the achievement level of the KPIs and is reflected in the compensation system. By implementing ESG KPIs, HDKSOE and its shipbuilding subsidiaries promote accountability, performance tracking, and alignment with ESG objectives across the organization.

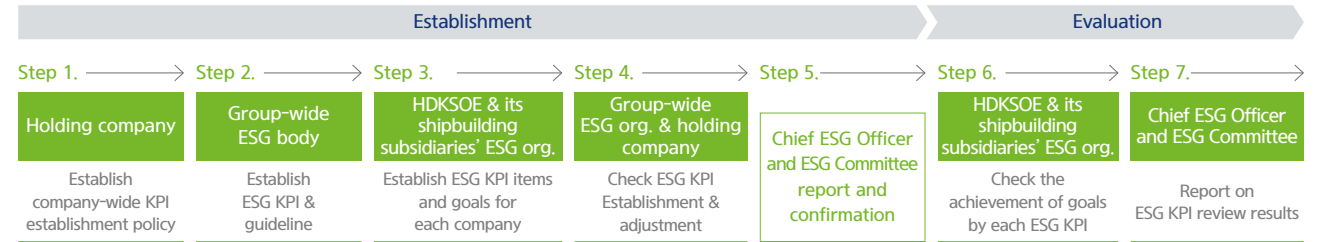
### ESG KPI Management System Advancement Roadmap

HDKSOE and its shipbuilding subsidiaries have developed a comprehensive roadmap to systematize ESG management, progressing through three stages to fully integrate ESG KPIs into our operations. At present, all subsidiaries have implemented ESG KPIs at the executive level, while certain subsidiaries have also extended their application to departments and team level based on their progress in ESG promotion.

### 2023 KPI Goal

HDKSOE and its shipbuilding subsidiaries are preparing to fully implement ESG KPIs starting in 2023. This initiative aims to systematically evaluate and manage ESG management performance at the company level. In line with this, specific goals have been set for 2023, including the reduction of energy consumption per unit, the establishment of a supply chain ESG management system, and an increase in the waste recycling rate.

### ESG KPI Establishment & Evaluation Process



### ESG KPI Adoption Process<sup>1</sup>

	Stage 1 Early Stage of Introduction (2023)	Stage 2 Application to Executives Stage (2023)	Stage 3 Organizational Utilization (After 2024)
<b>Level per Stage</b>	Affiliate KPI (Organizational KPI Level)	Division KPI (Executive KPI Level)	Subsidiary Department/Team (Corporate level)
<b>Scope of Application</b>	CEOs of affiliates	Executives of affiliates	Departments and teams

1. HHI introduced KPIs at the department/team level from 2022. Starting in 2023, we have introduced organizational, executive, and departmental/team-level KPIs to apply company-wide ESG KPIs.

### 2023 KEY ESG KPI

Evaluation Parameters	2023 Major Goals	Company
Reducing energy consumption (unit: KRW)	· Reduced consumption in KRW compared to the previous year	· HHI · HMD · HSHI
Establishment of supply chain ESG management system and information disclosure	· Supply chain ESG policy advancement · Establishment of supply chain sustainability risk management system · Establishment of supplier ESG evaluation system · Conduct ESG evaluation of suppliers · Establishment of supplier ESG improvement management and due diligence system	· HHI · HMD · HSHI
Increased total waste recycling rate	· Increased total waste recycling rate compared to the previous year	· HMD · HSHI



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## Action 4. Establishment of ESG Data Management System

### Purpose of Building ESG Data Management System

HDKSOE and its shipbuilding subsidiaries aim to achieve three key values through the establishment of an ESG data management system. The first value is "Accuracy", which aims to prevent risks associated with insincere disclosure in preparation for the mandatory ESG disclosure requirements scheduled for 2025. By managing big data through a dedicated web page, the system enables the detection of risk occurrences through alarms and warnings. Real-time updates on the status of domestic and overseas sites ensure the integrity and safety.

The second value is "Efficiency", which focuses on reducing the manpower and time required for data organization and analysis. AI-based data analysis and forecasting enable all employees to intuitively monitor the progress towards ESG goals. This facilitates business insights and allows for efficient and prompt improvements through operational measures.

Lastly, by standardizing data management practices across HDKSOE and its subsidiaries, we would like to increase the 'comparability' by managing indicators at the group level.

Through the implementation of the ESG data management system, HDKSOE and its shipbuilding subsidiaries enhance the accuracy, efficiency, and comparability of our ESG practices. This system plays a crucial role in our commitment to transparent and effective ESG management, ensuring compliance with regulations and driving continuous improvement in sustainable business practices.

### Stages of Building an ESG Data Management System

HDKSOE and its shipbuilding subsidiaries have formulated a three-stage plan to establish a mid- to long-term ESG data system. The initial stage, scheduled for 2023, focuses on developing a dedicated ESG webpage to identify data collection requirements for each sector and design a structure for analysis. This stage will also involve stabilizing the system through verification tests and user feedback.

In the advanced stage, planned for 2024, the collected data will be defined and standardized to create a comprehensive list of ESG data shared across the entire group. Following platform verification, user testing, and training, the focus will shift to system operation and maintenance. Subsequently, the system will be extended to subsidiaries and suppliers, with the integration of blockchain technology to facilitate the alignment towards a unified ESG goal.



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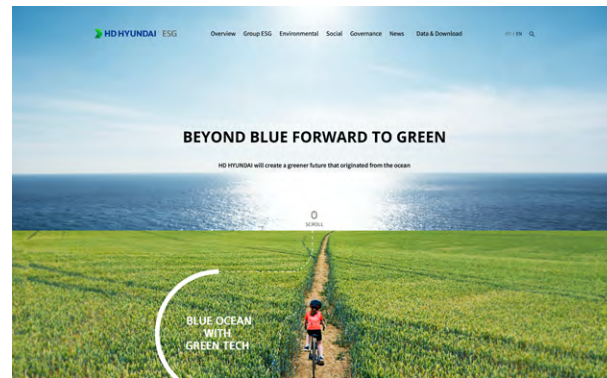
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### ESG Website Operation

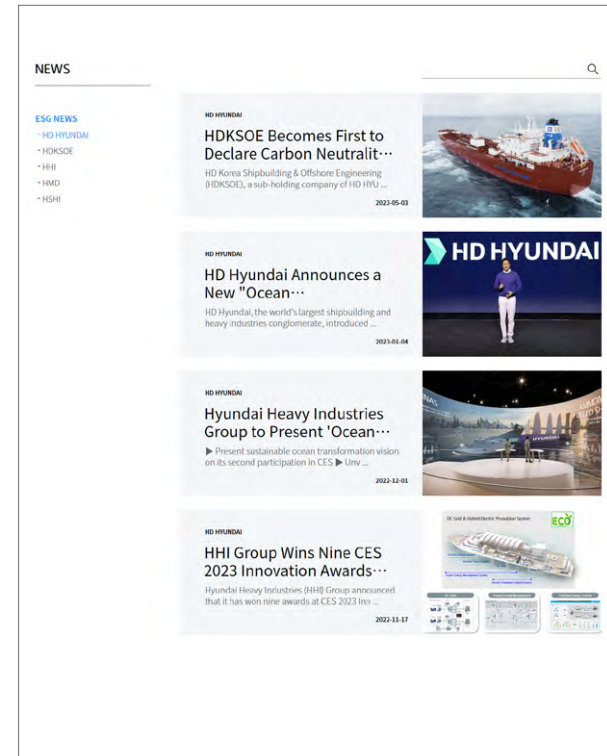
HDKSOE and its shipbuilding subsidiaries ensure transparent disclosure of all relevant activities and data through the HD Hyundai ESG website. This platform allows unrestricted access to ESG management and ongoing projects of each company, enabling anyone, including external parties, to review the evaluation status, international certifications, and SASB (Sustainable Accounting Standard Board) indicators. By promoting openness and transparency, HDKSOE and its shipbuilding subsidiaries aim to build trust with stakeholders. We remain vigilant against greenwashing by maintaining a robust data management and disclosure system that fosters transparency. Through these efforts, we are committed to conducting ESG management in an accountable and trustworthy manner.



[HD Hyundai ESG website \(https://esg.hdhyundai.co.kr/en/\)](https://esg.hdhyundai.co.kr/en/)

### ESG NEWS

We share a wide range of ESG-related news and stories from HDKSOE and its shipbuilding subsidiaries on the ESG webpage.



[ESG News from HDKSOE and its shipbuilding subsidiaries](#)

### International Certification Disclosure Status

HDKSOE and its shipbuilding subsidiaries provide updates on international certification status and share ESG-related policies through the ESG website.

POLICIES & CERTIFICATES		
Certificates		
HDKSOE	ISO 45001: Occupational Health and Safety	<a href="#">Download</a>
HDKSOE	ISO 14001: Environmental Management	<a href="#">Download</a>
HDKSOE	ISO 37001: Anti-Bribery Management	<a href="#">Download</a>
HHI	ISO 45001: Occupational Health and Safety	<a href="#">Download</a>
HHI	ISO 14001: Environmental Management	<a href="#">Download</a>
HHI	ISO 50001: Energy Management	<a href="#">Download</a>
HHI	ISO 27001, ISO 27701: Information Security Management	<a href="#">Download</a>
HHI	ISO 37001: Anti-Bribery Management	<a href="#">Download</a>
HMD	ISO 45001: Occupational Health and Safety	<a href="#">Download</a>
HMD	ISO 14001: Environmental Management	<a href="#">Download</a>
HMD	ISO 50001: Energy Management	<a href="#">Download</a>
HMD	ISO 27001: Information Security Management	<a href="#">Download</a>
HMD	ISO 37001: Anti-Bribery Management	<a href="#">Download</a>
HVS	ISO 45001: Occupational Health and Safety	<a href="#">Download</a>
HD E&T	ISO 45001: Occupational Health and Safety	<a href="#">Download</a>
HD E&T	ISO 14001: Environmental Management	<a href="#">Download</a>
HSHI	ISO 45001: Occupational Health and Safety	<a href="#">Download</a>
HSHI	ISO 14001: Environmental Management	<a href="#">Download</a>
HSHI	ISO 50001: Energy Management	<a href="#">Download</a>
HSHI	ISO 37001: Anti-Bribery Management	<a href="#">Download</a>

[https://esg.hdhyundai.co.kr/en/c\\_cert](https://esg.hdhyundai.co.kr/en/c_cert)

# ESG PERFORMANCE

We are committed to practicing ESG management with enthusiasm and aiming for a sustainable future.

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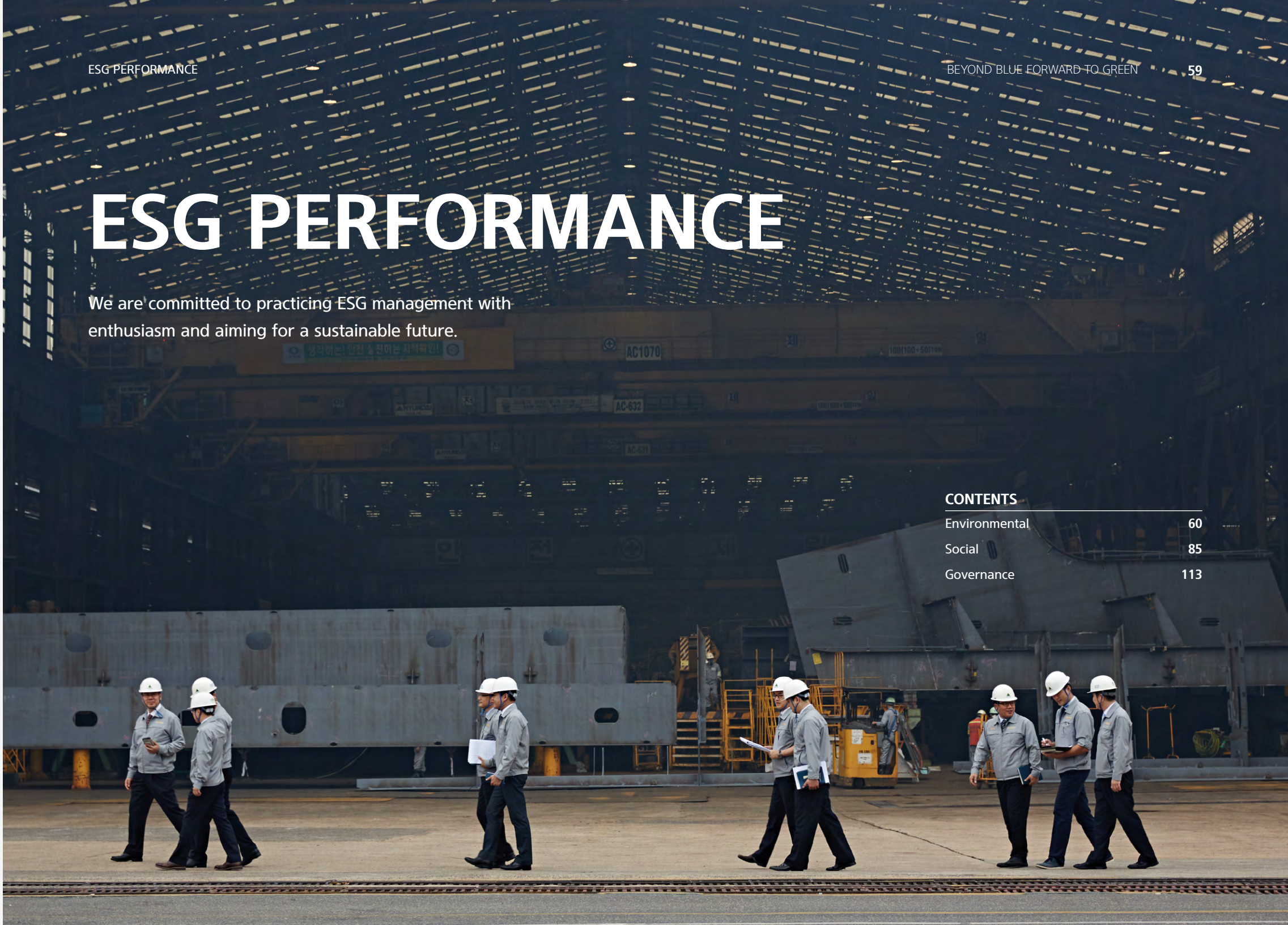
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# ENVIRONMENTAL

HDKSOE and its shipbuilding subsidiaries aim to minimize our environmental impact and achieve carbon neutrality through advancements in environmental management, innovation in eco-friendly technology, and proactive measures to address climate change.

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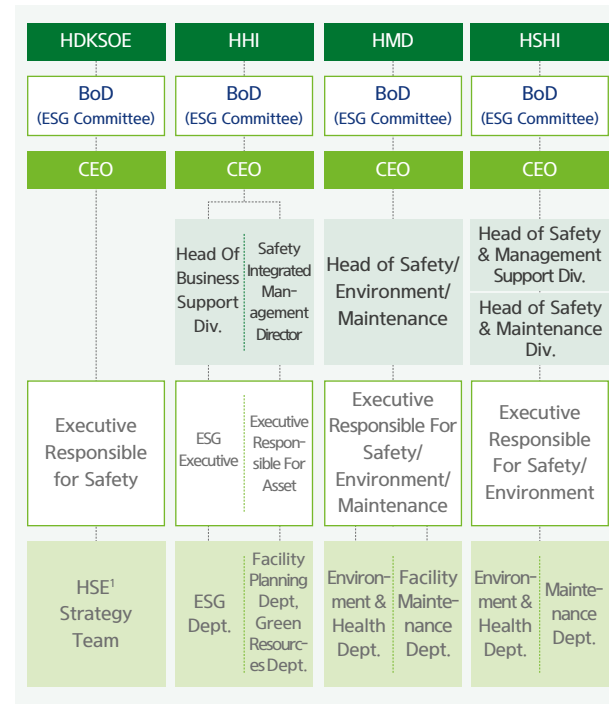
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## GOVERNANCE

### Dedicated Organization for Environmental Management

As a global company, HDKSOE and its shipbuilding subsidiaries are committed to practicing systematic environmental management in order to minimize the environmental impact of our business activities. Each company has a dedicated environmental management organization, and regularly check the environmental performance by establishing and implementing policies and goals based on ISO 14001. Additionally, we take a proactive approach to eco-friendly management by continuously replacing outdated facilities and making new environmental investments to reduce environmental pollutant emissions.



<sup>1</sup> Abbreviation for Health · Safety · Environment

### HDKSOE

HDKSOE's environmental management organization is responsible for managing the system based on ISO 14001, and analyzing environmental risk, opportunity and mitigating actions. We also manage manages environmental guidelines and emerging issues along with proper measures.

### HHI

HHI's environmental management organization consists of ESG Dept. (directed by Chief ESG Officer), and Dept. of Facility Planning and Green Resources (directed by Chief Safety Officer). ESG Promotion Dept. is responsible for planning environmental policies and systems, business plans, carbon-neutral strategy and vision establishment, operation of the environmental management system, management of external environmental regulations and environmental information, environmental permission, environmental facility management, response to greenhouse gas emissions trading system, and HSE (Health, Safety, and Environment) for shipowners. Facility Planning Department is responsible for the operation of the energy management system, planning of energy-related policies and institutions, and business plans. Green Resources Dept. is responsible for waste collection, transportation, and legal treatment management, as well as the operation and management of incineration plants. The performance and future plans for overall environmental management implemented by these dedicated organizations are reported to the Board of Directors.

### HMD

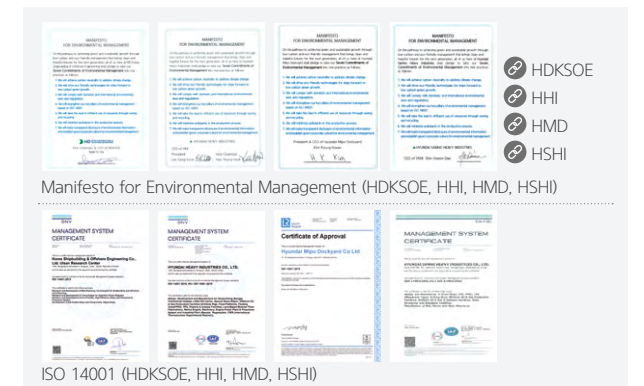
The working-level organization responsible for environmental management consists of Environment & Health Dept. and Facility Maintenance Dept. Environment & Health Dept. is responsible for environmental monitoring, waste management, and related activities. Facility Maintenance Dept., on the other hand, handles tasks such as responding to the greenhouse gas emissions trading system, managing energy planning, operating the energy management system (ISO 50001), managing energy equipment and facilities, and overseeing water management.

### HSHI

Departments dedicated to environmental management include Environment & Health Dept. and Maintenance Dept. (directly under the Chief ESG Officer). Dept. of Environment and Health operates the environmental management system (ISO 14001), environmental policy, environment-related (licensing, policy, information, facility management), response to the greenhouse gas emission trading system, environmental (air, water quality, waste, etc.) management, and external communications. The Maintenance Dept. is in charge of energy management system (ISO 50001) operation, energy-related facility management, and water management.

### Environmental Management Declaration

In response to the increasing attention to environmental management, HDKSOE and its shipbuilding subsidiaries are making ongoing efforts to minimize our environmental impact by establishing an environmental management system based on ISO 14001 (Environmental Management System). With a strong commitment to this objective, the shipbuilding subsidiaries have announced Manifesto for Environmental Management to express our vision for environmental management and our specific commitment to sustainable and eco-friendly practices. This declaration lays the foundation for sustainable and environmentally responsible management. The shipbuilding subsidiaries' environmental management declaration represents dedication and promise to achieve sustainable green growth, preserve a clean and bright future, and fulfill the aspirations of future generations.



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## STRATEGY

### Green Investment

HDKSOE operates an air pollution prevention facility to effectively manage air pollutants. In order to address issues related to the work environment and structural stability arising from long-term use and corrosion, we invested KRW 1.4 billion to renew pollution prevention facilities. This replacement aims to improve the overall working conditions and ensure the facility's continued effectiveness in mitigating air pollution.

HHI takes into consideration the environmental impact of its business activities across all areas of the company, including R&D, design, and production. It establishes improvement plans to mitigate environmental impacts and actively engages in improvement activities. The environmental department evaluates the necessity and technical feasibility of new investment plans, considering factors such as environmental pollution risks. During this evaluation, the department assesses whether measures to reduce environmental pollution risks are in place and whether the plans comply with environmental laws and regulations, including any necessary permission or approvals. Additionally, the company examines both environmental risks and opportunities to ensure effective environmental management.

### » CASE STUDY

#### Issue of Green Bond

In February 2021, HHI issued domestic green bonds worth KRW 300 billion after receiving the highest green bond rating (Green 1) from NICE Credit Ratings. In March 2022, HHI issued an additional green bonds worth USD 300 million backed by ESG certification from DNV and guarantee from KDB Industrial Bank. The bonds are to be used in eco-friendly shipbuilding and technology development.



HHI Green Bond Allocation and Impact Report

To minimize the potential environmental impact of their business activities, they are dedicated to ongoing improvements. This includes upgrading outdated facilities, replacing pollutant reduction equipment, and making investments in new facilities. By taking these measures, they strive to reduce our environmental footprint and promote sustainable practices in our operations.

HMD is currently engaged in a comprehensive deliberation process to assess environmental risks and opportunities associated with new investment projects. Green Management Impact Assessment is conducted prior to facility expansion which addresses calculation accuracy, investment redundancy check, technological compliance, safety and environmental impacts, etc. The selection of investment projects is determined through a thorough review of these assessments.

HSHI focuses on environmental management by reducing pollutants such as air emissions, maintaining water quality, and treating wastewater. The company also emphasizes resource recycling, including the recycling of scrap metal and wastewater. Energy-saving initiatives are implemented through the use of high-efficiency equipment, and the company has made commitments to sustainable transportation by declaring the K-EV100 initiative and introducing electric vehicles. Furthermore, on July 8, the company issued two green bonds, as reported in the Securities Report, to support its environmental sustainability efforts.

The purpose of the funds listed in the securities registration statement includes facility funds and operating funds. The funds obtained will be primarily used for financial products with high liquidity and will later be allocated as eco-friendly shipbuilding funds once the actual project commences. To enhance the credibility of the specific fund utilization details, post-operational report of the ESG bond will be published in the SRI bond segment of the Korea Exchange.

### Environmental Education

HDKSOE conducts regular environmental education for environmental facility operation managers to proactively prevent environmental accidents and minimize any potential damage. Additionally, regular reviews are conducted semi-annually to identify changes in environmental laws and regulations, and training is provided accordingly. Recent cases of environmental violations are also shared to raise awareness among executives and employees.

HHI and HMD provide environmental education and training to executives, employees, and supplier companies, with a focus on chemical substance management and marine pollution prevention. The chemical substance education aims to equip participants with a solid understanding of basic concepts related to chemical substances and how to effectively handle accidents that may occur unexpectedly. This training is essential in ensuring preparedness and effective response in the event of chemical incidents.

HSHI complies with a wide range of environmental laws and regulations, including the Environmental Conservation Act, Chemical Substances Control Act. Additionally, the company adheres to international conventions such as the Climate Change Convention, Convention on Substances that Deplete the Ozone Layer, and Convention on the Prevention of Marine Pollution. To stay up-to-date with the latest regulations and technological advancements, HSHI conducts regular reviews and maintenance of its environmental compliance protocols. The company also provides education and training on relevant environmental topics to ensure employees are well-informed and capable of preventing various forms of environmental pollution.

### » CASE STUDY

#### ESG Point System

HMD provides incentives based on ESG activity performance to employees and in-house contractors by implementing the ESG Point system.

#### Incentive items

Develop eco-friendly patent	Adopt eco-friendly vehicles
Adopt renewable energy	Return plastic waste
Join PET recycling campaign	Donate to local communities

#### Key Performance in 2022

**HDKSOE**  
Achieved certification for  
**ISO 14001**

**HHI**  
Successfully issued  
**Foreign Green Bonds**

**HMD**  
Achieved certification for  
**ISO 50001**

**HSHI**  
Joined the initiative of  
**K-EV100**

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## RISK MANAGEMENT

### Environmental Pollution Accident Prevention and Management

HDKSOE is actively engaged in proactive measures to prevent environmental accidents that may occur during research activities. The company places a strong emphasis on preventing the leakage of environmental pollutants by regularly inspecting and addressing any issues with air, water quality, and waste environmental facilities. This includes the identification and improvement of damaged or outdated facilities, addressing malfunctions, damages, and wear. Furthermore, to ensure preparedness in the event of an environmental accident, the company conducts emergency response training for researchers and managers of environmental facilities.

**HHI** implements a comprehensive plan for self-inspection of environmental facilities in preparation for potential workplace environmental pollution accidents. Various training programs are conducted to ensure prompt response and effective management of environmental pollution incidents. By conducting regular self-inspections of environmental facilities, outdated pollutant emission equipment is upgraded to contribute to pollutant reduction efforts. Additionally, proactive measures are taken to identify and address potential accident factors in hazardous chemical handling facilities. To minimize marine pollution, annual drills are conducted to enhance preparedness and enable swift response to marine pollution incidents.

**HMD** carries out routine self-inspections of environmental facilities and regularly monitors pollutant emission levels to prevent environmental pollution accidents within the workplace. Aged environmental facilities are carefully managed, ensuring optimal conditions through prompt maintenance requests to the relevant departments. Moreover, a system is being established to enable rapid response in case of marine pollution emergencies, with annual drills conducted in collaboration with related departments.

**HSHI** conducts emergency preparedness training to prevent environmental pollution accidents during the production process. Each department undergoes training to ensure proper response to various environmental emergencies. Feedback from the training sessions is provided to working-level staff to systematically manage risks and address any vulnerabilities identified in response to scenarios.

## METRICS AND TARGETS

### Environmental Management Activities in 2022 & Plan for 2023

Environment Management Activities in 2022			
HDKSOE	HHI	HMD	HSHI
<p><b>Build a comprehensive and systematic environmental management system</b></p> <ul style="list-style-type: none"> <li>Acquisition of international standard ISO 14001 certification</li> <li>Establishment of chemical substance management database</li> <li>Establishment of countermeasure strategies for enumeration of environmental permits and permit management and pollutant emission status management</li> <li>Promotion of preemptive prevention activities for environmental accidents through regular inspections of environmental facilities and emergency drills for environmental accidents</li> </ul>	<p><b>Establish climate change response management system and strengthen environmental management capabilities</b></p> <ul style="list-style-type: none"> <li>Establishment and monitoring of quantitative environmental management goals</li> <li>Environmental law violation risk management</li> <li>Execution of Voluntary Agreement on Fine Dust Reduction</li> <li>Setting greenhouse gas reduction targets and managing reduction results</li> <li>Improving chemical substance education methods and implementing customized education</li> <li>Eco-friendly ecological activities and public-private joint prevention training</li> </ul>	<p><b>Establish foundation for green growth and secure transparency and reliability through open environmental management</b></p> <ul style="list-style-type: none"> <li>GHG emissions reduction target setting (within 175,000 tCO<sub>2</sub>eq)</li> <li>Establish management system such as acquisition of hazardous chemical environment licenses and compliance with related laws</li> <li>Conduct intensive training for workers who handle hazardous chemicals along with training on hazardous chemicals for all employees</li> </ul>	<p><b>Realize an eco-friendly workplace by saving energy and minimize pollutant emissions</b></p> <ul style="list-style-type: none"> <li>Reinforcing monitoring related to energy use/GHG emissions, introducing high-efficiency facilities and eco-friendly methods</li> <li>Establishment and compliance with internal standards related to air and water quality that are stricter than legal standards</li> <li>Expansion of water/waste recycling and reuse as well as clean-up activities with local communities</li> </ul>
Goal for 2023			
Realization of sustainable eco-friendly management	Responding to climate crisis by strengthening the environmental management system and advancing eco-friendly technology	Establishment of foundation for green growth and securing transparency and reliability through open environmental management	Realization of an eco-friendly workplace by saving energy and minimizing pollutant emissions

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## GOVERNANCE

### Climate Change Response Governance

HDKSOE and its shipbuilding subsidiaries have established a comprehensive climate change response framework with the involvement of executives and working-level organizations, including the CEO and Chief ESG Officer. Group ESG Council, consisting of the Chief ESG Officers from the group companies, plays a central role in monitoring the development and implementation of climate change response strategies. This ensures the establishment of a systematic management system. To lead climate change activities, HDKSOE and its shipbuilding subsidiaries have established a company-wide ESG Committee since 2021. The CEO holds the position of executive director within the ESG Committee and is responsible for formulating the company's mid- to long-term climate change management strategy. The committee serves as a platform for consulting, reviewing ESG-based management for sustainable growth, and providing final approvals. It oversees climate-related activities and regularly evaluates the progress of climate change response plans, discusses future plans, and makes decisions. The committee also manages, evaluates, and mitigates climate change-related risks faced by HDKSOE and its shipbuilding subsidiaries. Additionally, the committee addresses matters related to the company's environmental responsibility, development and internalization of climate change response capabilities, and other relevant issues. It deliberates and decides on these matters based on discussions held within the committee.

### Climate Change-related Decision Reporting and Execution Process<sup>1</sup>



1. The CEO reports important agendas to ESG Committee under the Board of Directors to seek approval.

## STRATEGY

### GHG Management

HHI has established a company-wide Greenhouse Gas Management System (HGMS) that calculates greenhouse gas emissions in accordance with international standards set by IPCC and domestic guidelines for greenhouse gas emission calculation. Through this system, they monitor energy consumption and greenhouse gas emissions at each business site and emission facility. By utilizing the accumulated data, they estimate emissions and efficiently respond to the GHG Emissions Trading Scheme. Internal audits and third-party verification ensure the accuracy, completeness, and transparency of our GHG emissions. They set annual targets for GHG emissions and strive to reduce emissions by improving energy efficiency, utilizing alternative fuels, and adopting renewable energy sources for each facility. In 2022, HHI successfully achieved its GHG reduction goal, resulting in 6.6% less emission compared to the original emission goal. They generated profits by selling some of the surplus emission rights, and the remaining rights will be carried over to the next implementation year to support future business recovery.

HMD has established a greenhouse gas inventory based on the 2010 IPCC Guidelines. They monitor GHG emissions from all emission facilities that fall under the company's operational control, including production facilities, employee training facilities, and dormitories, on a monthly basis. Third-party verification is conducted annually to ensure compliance with the IPCC guidelines and domestic greenhouse gas emission calculation guidelines. GHG emission information is reported and reviewed during meetings led by the CEO. Furthermore, a control system is employed to monitor and manage energy consumption (GHG emissions) in facilities, optimizing their capacity for improved energy efficiency.

HSHI has implemented a company-wide greenhouse gas management system to monitor energy consumption and greenhouse gas emissions at various locations and facilities for efficient management. To reduce greenhouse gas emissions, they have implemented several initiatives, including a company-wide energy management responsibility system, advancements

in commissioning methods, simultaneous commissioning of LNG carriers and LNG dual-fuel offshore vessels, and the establishment of an ICT remote control and monitoring system. In 2020, they sold some surplus emission rights to contribute to cost reduction and improvement efforts. In 2022, they obtained the 'Korean Type Emission Vehicle Conversion 100 (K-EV100) Approval', and their plan is to convert a total of 117 in-house vehicles to zero-emission vehicles and install slow charging stations at 20 locations within the company by 2030.

### GHG Reduction Performance in 2022

<b>HHI</b>	<b>GHG emission performance compared to target</b>	<b>93.4% emission</b>
		- 2022 target: 588,170 tCO <sub>2</sub> e (or less)
		- 2022 emission: 549,552 tCO <sub>2</sub> e
.....		
<b>HMD</b>	<b>GHG emission performance compared to target</b>	<b>92.2% emission</b>
		- 2022 target: 175,000 tCO <sub>2</sub> e (or less)
		- 2022 emission: 160,950 tCO <sub>2</sub> e
.....		
<b>HSHI</b>	<b>GHG emission performance compared to target</b>	<b>90.14% emission</b>
		- 2022 target: 266,106 tCO <sub>2</sub> e (or less)
		- 2022 emission: 239,869 tCO <sub>2</sub> e



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## PERFORMANCE

### » CASE STUDY 1

#### CDP's Special Award for Carbon Management

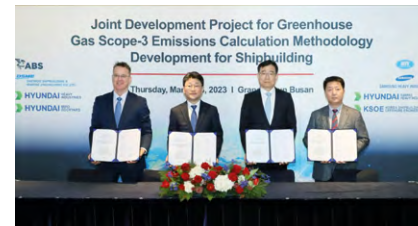
HDKSOE and its shipbuilding subsidiaries have become the first in the Korean shipbuilding industry to disclose Scope 3 emissions. In particular, HDKSOE has been recognized for its efforts in carbon reduction across the entire value chain and was awarded Special Award for Carbon Management at the 2022 CDP Korea Awards. Through the 2021 Integrated Report (published in 2022), HDKSOE and its shipbuilding subsidiaries provide information on greenhouse gases emitted directly and indirectly during the shipbuilding process (Scope 1 and 2). Additionally, greenhouse gases generated at all stages from raw material procurement to ship operation and final disposal (Scope 3) were calculated and disclosed, including gas emissions. In the future, HDKSOE plans to focus its efforts on research and development of eco-friendly shipbuilding and offshore technology to reduce greenhouse gas emissions from product sales. We also aim to strengthen cooperation within the supply chain to procure low-carbon and zero-carbon raw materials and equipment.



### » CASE STUDY 2

#### Establishment of Carbon Footprint One Team

HDKSOE and its shipbuilding subsidiaries have signed an agreement with domestic shipbuilders and classification societies to establish the first "Carbon Footprint One Team" in the shipbuilding industry. Through this agreement, the companies aim to share, analyze, and compare the methods of calculating Scope 3 emissions, as well as to standardize the calculation method through consultations with domestic and foreign classification societies such as ABS and KR. The ultimate goal is to establish a global guideline for measuring carbon emissions in the shipbuilding industry using a standardized Scope 3 calculation methodology. By doing so, we aim to contribute to the creation of a new global standard for reducing greenhouse gas emissions. Additionally, we intend to lead the way as the focal point of the shipbuilding industry's carbon neutrality journey.



## METRICS AND TARGETS

### GHG Reduction Target by 2023

HDKSOE has unveiled its 2050 carbon-neutral implementation roadmap by declaring the Green Ocean Transformation strategy. The company aims to fulfill its environmental responsibilities across the entire shipbuilding value chain. As a control tower, we will manage greenhouse gas emission rights and facilitate the integrated procurement and distribution of renewable energy to achieve carbon neutrality.

HHI is making various efforts to reduce greenhouse gas emissions, considering the projected increase in the shipbuilding orders and emissions. In 2023, the company plans to continue its emission reduction efforts, aiming to adjust GHG emission within the limits of the allocated emission permit, instead of relying on emissions trading. Furthermore, HHI will establish and implement a 2050 carbon-neutral implementation strategy aligned with the national greenhouse gas reduction target. This strategy will involve the procurement and utilization of renewable energy, energy efficiency measures, electrification, and the transition to low-carbon or no-carbon fuels.

HMD plans to conduct independent assessments of climate change risks and establish operational strategies through its response to CDP from 2023. The company has established a 2050 carbon-neutral roadmap (covering Scope 1 and 2 emissions) with a target of reducing emissions by 53% by 2030 compared to 2018 levels. In 2023, expertise in managing Scope 3 emissions will be developed to reduce annual carbon emissions across the entire value chain, ensuring a gradual reduction over time.

HSHI is focusing on the construction of eco-friendly ships, including LPG, methanol, ethanol, hydrogen dual fuel ships, electric-powered ships, and renewable energy transition. These initiatives align with the recovery of the shipbuilding industry and the national greenhouse gas reduction target of 40% by 2030 compared to 2018 levels. Furthermore, by 2022, HSHI plans to replace a total of 117 in-house vehicles to zero-emission vehicles by 2030, building slow charging stations at 20 in-house locations.

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## GOVERNANCE

### Energy Management System

HHI has implemented an energy management system based on the international standard ISO 50001 to effectively manage energy consumption and measure energy cost savings as performance indicators for the energy management department. To achieve efficient and cost-effective energy management, the company is establishing a systematic system for energy management at the plant and building level by upgrading the Factory Energy Management System (FEMS). Additionally, HHI is participating in the voluntary energy efficiency target system pilot project overseen by Korea Energy Agency, which helps in supplementing energy intensity, setting energy efficiency improvement goals, and actively engaging in continuous improvement activities.

HMD has established an energy consumption facility control system that utilizes remote control and automatic control technology to regulate energy consumption. The company operates an Energy Storage System (ESS) to manage peak power. In particular, in 2020, upgrades were made to the energy management system by enhancing the energy consumption control system. Furthermore, HMD obtained ISO 50001 certification in 2022, demonstrating its commitment to efficient energy use.

Since acquiring ISO 50001 certification in 2014, HSHI has implemented management standards to ensure the efficient utilization of energy. The company has implemented an energy-saving Task Force Team (TFT), and created a control tower for production facilities to optimize energy usage. Company-wide initiatives for energy conservation include lighting upgrades in yards, enhanced air conditioner management, increased utilization of the ESS, replacement of outdated facilities with high-efficiency alternatives (such as LED lights and motors), improvement of air compressor pressure management processes, and the implementation of ICT-linked remote control for large-capacity facilities.

## STRATEGY

### Energy Efficiency Strategy

Based on the energy management policy, HHI recognizes energy management as a critical factor in corporate operations and promotes a company-wide culture of energy conservation, aiming for energy-efficient workplaces. The company is actively engaged in various energy-saving initiatives, including the commissioning of high-voltage power facilities, optimization of air compression facilities, utilization of gas heaters for shipbuilding, replacement of conventional lighting with LED lights, and adoption of high-efficiency devices. In 2022, the company achieved energy savings of 188.7TJ through improved energy efficiency in production facilities and the transition to low-carbon fuels. Additionally, HHI has contributed to the establishment of a data-driven smart shipyard by implementing an energy source monitoring system (for city gas, water, etc.) and enhancing crane control.

HMD has upgraded the monitoring system and implemented a dualization system for compressed air in its painting plant, which was initially installed in 2016, to further enhance energy efficiency. The company closely monitors energy consumption through an optimized control system. Moreover, HMD is currently pursuing an energy efficiency strategy by replacing outdated facilities such as air compressors and boilers.

Since 2020, HSHI has been developing a remote control system for large-capacity facilities including painting facilities, air conditioning and heating systems for LNG vessels, and boilers. The company is enhancing energy efficiency through the expansion of centralized remote management. Furthermore, there are plans to continuously replace outdated facilities with high-efficiency alternatives such as LED lights and motors.

## METRICS AND TARGETS

### 2023 Energy Management Goal

HHI is committed to effectively managing energy consumption and reducing company-wide energy costs and greenhouse gas emissions. Starting from 2021, the company actively monitors the energy intensity of each product (energy consumption per ton of annual ship production) through the energy efficiency target management system of Korea Energy Agency. The goal is to achieve an annual energy intensity improvement rate of 1% or more compared to the previous year. HHI continuously strives to achieve this target. In the short and medium term, the company focuses on improving the efficiency of process facilities and expanding the use of renewable energy. In the long term, HHI aims to transition to carbon-free renewable energy through the development of eco-friendly technologies.

HMD plans to proactively manage energy consumption in 2023, considering the changes in flagship ship types (from PC ships to CNTR ships) and identifying areas of potential energy waste. The company aims to eliminate energy waste elements, ranging from small leaks to unnecessary operation of energy-consuming painting equipment. To raise awareness about the importance of energy conservation among employees, HMD plans to launch a company-wide “Energy Saving Challenge” program. This initiative will include activities such as turning off lights during lunchtime, maintaining appropriate office temperatures, encouraging the use of commuter buses, and promoting walking.

HSHI allocates approximately KRW 60.6 billion to annual energy costs and actively seeks opportunities for energy savings, such as improving air system operations and implementing facility remote control. The company is dedicated to leading energy-saving efforts through optimal operation and voluntary participation. Initiatives include the implementation of an energy-saving participation system, strengthening operating standards for integrated control of air conditioning facilities, and expanding gas tank monitoring.

#### 2022 Energy Management Performance

#### HHI

Energy consumption target (Cap): **10,149 TJ**  
 Actual energy consumption: **9,345 TJ (7.9% ↓)**

#### HMD

Energy consumption target (Cap): **3,186 TJ**  
 Actual energy consumption: **2,903 TJ**

#### HSHI

Energy consumption target (Cap): **104,847 TOE**  
 Actual energy consumption: **96,773 TOE (8.3% ↓)**

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## PERFORMANCE

### > CASE STUDY 1

#### Energy Source Monitoring System

HHI operates an integrated energy management system called Hi-energy, which leverages digital transformation technologies such as big data, artificial intelligence (AI), and the Internet of Things (IoT). This system plays a crucial role in maximizing facility utilization and reducing costs through efficient asset management and energy savings.

In addition to the existing Factory Energy Management System (FEMS), HHI plans to further enhance energy management capabilities in 2023. The company aims to visualize energy consumption data across various areas, including electricity, city gas, water, and compressed air. By monitoring and analyzing this data, HHI will lay the foundation for implementing carbon neutrality and achieving sustainable smart green factory operations.

### > CASE STUDY 2

#### Paint Factory Automatic Control System

HMD has implemented an automatic control system for its painting facilities, which account for approximately 30% of the company's total energy consumption. This system integrates and operates 90 energy-consuming facilities, including dehumidifiers, gas heaters, and freezers, based on various factors such as internal and external temperature, humidity, screen door status, process requirements, and paint types. Through the implementation of this automated system, the company anticipates an annual reduction of 2,178 tons of greenhouse gas emissions and 1.2 tons of nitrous oxide emissions.

### > CASE STUDY 3

#### ESS Infrastructure

HSHI is dedicated to improving energy efficiency through various initiatives at the company level. These efforts include implementing energy-saving measures, adopting a strategic demand management system, upgrading to high-efficiency facilities, optimizing the operation of ICT-integrated facilities, establishing a comprehensive monitoring system, participating in K-EV100, and enhancing the overall efficiency of the air compression system. In recognition of these endeavors, HSHI received the Prime Minister's Commendation for "Improvement of Energy Efficiency" at Korea Energy Awards Ceremony in 2022.

The company's comprehensive energy-saving activities resulted in daytime energy savings of 3,000MWh and the peak power reduced to 8,786kW last year. In addition, renewable energy sources such as solar power produced electric energy worth 9,800MWh for the year.

#### Expected effects :

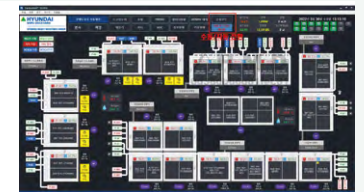
Energy intensity management and big data measurement/analysis



#### Reduction effects

GHG emissions  
**2,178ton**

Nitrogen Oxides  
**1.2ton reduction**



Peak power  
**8,786kW**

ESS facilities/  
Renewable Energy Sources  
**12,800MWh**  
Electricity saving effect



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## STRATEGY

### Water Use Management

Water resources are crucial for the production and operations of HDKSOE and its shipbuilding subsidiaries. Recognizing the importance of water resources as a significant energy source at business sites, HDKSOE and its shipbuilding subsidiaries are implementing water saving measures through tailored strategic management initiatives.

Furthermore, understanding that effective water resource management at business sites is a critical concern, efforts are being made to mitigate water scarcity risks by assessing water stress levels in accordance with the guidelines provided by the World Resources Institute (WRI). HDKSOE and HSHI fall in the High water stress category ranging between 40% and 80%, and HHI and HMD fall in the Medium-high water stress category ranging between 20% and 40%.



Source: <https://www.wri.org/>

HHI is implementing measures to reduce water consumption across the company. This includes investing in water-saving devices for in-house facilities and minimizing water usage by reducing the amount of water drainage used for preventing freezing at quay walls and docks during winter. Furthermore, there are plans to establish a water usage monitoring system to analyze and manage water usage in the future.

HMD conducts regular inspections and analysis of water consumption at the head office and external factories three times a month. To minimize water consumption, efforts are made to address water leakage issues by closing hot water in office building shower rooms and repairing or replacing old pipes.

HSHI meters, records, and manages daily and industrial water usage at the head office and Daebul Plant. Communication with the main water use department is maintained to analyze water usage and ensure a stable water supply. Water reuse is also practiced through gray water recirculation system. In 2023, a remote monitoring system for water facilities is scheduled to be established. Additionally, investments in pressure monitoring for residential and industrial water are being promoted to ensure stable water management.

## » CASE STUDY

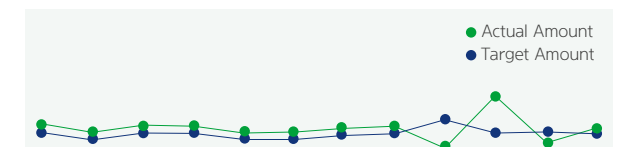
### Reduce Water Consumption through Wastewater Reuse

HSHI utilizes gray water recirculation system introduced in 2010 to reuse water discharged after wastewater treatment. The sewage and wastewater generated in the yard undergo treatment, and the collected water is subjected to a reprocessing process to be reused as gray water. The gray water obtained through this process is primarily used for yard cleaning and as ballast water.

Year	2018	2019	2020	2021	2022
Reused gray water amount (ton)	133,645	184,034	179,740	206,026	234,681
Estimated cost saving (thousand KRW)	68,961	94,962	92,746	106,310	121,095

HMD reduces water consumption by self-circulating industrial water required for cargo tank strength test when building LPG ships. In 2022, the target amount of self-circulated water was set at 119,233 tons<sup>1</sup>, and 127.6% of the target was achieved.

1. Calculation: FY2021 self-circulated water (108,394 tons) × 110%



2. Target for September was excluded due to the change of plan caused by Typhoon Hinnamnor.

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## STRATEGY

### Air Pollutant Management

HDKSOE regularly conducts air pollutant measurements by engaging an measuring agency to manage air pollutants and ensure permissible emission level. Additionally, we are committed to improving the atmospheric environment by addressing aging facilities and installing pollutant reduction equipment.

**HHI** installs and operates air pollution prevention facilities that are optimized for air pollutant emission sources, ensuring that pollutant emissions remain within 30% of the legal permissible emission level. They closely manage products with varying standards based on their characteristics. Furthermore, periodic measurements of pollutants are conducted for each facility, and necessary repairs are carried out for facilities exceeding the management standards.

**HMD** manages air pollutant emissions by adhering to its own standards, which are set at 30% or less of the relevant legal standards. They conduct measurements in accordance with the prescribed self-measurement cycle for each facility, and perform maintenance activities, such as replacing bag filters, for facilities exceeding the self-management standards. Additionally, visual inspections are conducted on a weekly basis to identify equipment failures and detect any leaks in piping. As part of our efforts to reduce nitrogen oxides (NOx), they have replaced 12 old boilers with low-NOx type boilers to mitigate NOx emissions.

**HSHI** implements and maintains air pollutant permissible emission level that are set at 30% less than the domestic legal standards. To measure air pollutant emissions, we conduct self-measurements following the prescribed legal cycle as stipulated in Article 39 of the Clean Air Conservation Act. Monthly operation records and self-measurement data are uploaded to Stack Emissions Management System (SEMS) for reporting purposes. Furthermore, our company manages emissions data by calculating the amount of air emissions on a semi-annual basis.

### VOCs Emission Management

**HHI** has installed air pollutant prevention facilities in certain large-scale painting factories with a capacity of over 50,000 m<sup>3</sup> to reduce fugitive emissions of hazardous air pollutants (HAPs) and volatile organic compounds (VOCs) during indoor and outdoor painting operations. Additionally, we are promoting the use of paints with low VOC content. Regular measurements of Total Hydrocarbons (THC) are conducted every six months to monitor pollutant emission concentrations.

**HMD** conducts regular measurements of THC every six months to monitor the concentration of VOCs. Furthermore, to enhance the efficiency of VOC reduction, the adsorbent (zeolite) used in the VOC reduction facility is periodically inspected and regenerated.

**HSHI** collects and treats VOCs generated in large painting plants using catalytic oxidation facilities. We establish and manage our own standards within the permissible emission level, and conduct monitoring activities, including semi-annual self-measurements.

### Air Pollutant Management Goal for 2023

Company	Goal	Target No.
<b>HHI</b>	Execution of voluntary agreements <sup>1</sup> to reduce fine dust 1. Agreement signed with Nakdong River Basin Environmental Office and Ulsan City Gov.	<b>Dust/VOCs reduction (compared to 2016)</b> <b>20% or more reduction</b>
<b>HMD</b>	Reduce NOx emission within 90% of permissible level	<b>NOx emissions</b> <b>90% or less</b>
<b>HSHI</b>	Reduce NOx emission within 90% of permissible level	<b>NOx emissions</b> <b>90% or less</b>

### Air Pollutant Management Performance in 2022

**HHI**  
Voluntary agreement to reduce fine dust and VOCs

**Target achieved: Reduced pollutants by at least 40% compared to 2014**

**HMD**  
Nitrogen Oxide emissions  
**57% reduction**

**HSHI**  
Nitrogen Oxide emissions  
**52% reduction**

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### STRATEGY

#### Wastewater and Water Pollutant Management

HDKSOE generates experimental wastewater in the test building of the Future Technology Research Institute (Ulsan), and the generated wastewater is collected in a wastewater collection tank. When a certain amount is accumulated in the collection tank, a collection request is made to a licensed wastewater treatment company, and the entire amount is entrusted to them for treatment.

HHI appropriately treats and manages wastewater generated from business sites based on the best method for each discharge source (entrustment treatment, physicochemical self-treatment, etc.). Wastewater transfer is transparently managed and supervised on a public wastewater management system (Mulbaro). All water pollutants discharged from business sites are strictly controlled with different standards depending on the type of facility and the characteristics of the pollutants, aiming to manage within 30% of the legal permissible discharge limits. Water quality analysis is regularly conducted (semi-annually or semi-monthly) to enhance the accuracy of the examination of the discharge quantity of specific substances harmful to water quality and to minimize their release.

HMD manages the discharge concentration of water pollutants in wastewater by applying its own level within 50% of the legal discharge level. Wastewater treated below the permissible discharge standard at the wastewater treatment plant is ultimately directed to the terminal treatment plant operated by Ulsan City. Discharged wastewater is subjected to component analysis by an external specialized agency at least once a quarter, and the results are registered in the self-management system to monitor the discharge concentration of water pollutants.



HMD's ESG Digital Signage

HSHI is actively implementing water pollutant discharge concentration management by setting internal discharge standards that ensure the discharge of BOD, COD, SS, etc. is below 50% of the permissible level for discharge. Additionally, an automatic water quality monitoring system (TMS) is installed to continuously monitor the discharge concentration of water pollutants in real time. For pollutants that cannot be measured by automatic monitoring devices, self-measurement is conducted once a quarter to manage the concentration of pollutant emissions. Furthermore, efforts are made to enhance effluent water quality standards by analyzing operational data and providing daily feedback.

#### 2023 Water Pollution Management Goal

Company	Goal	Target No.
HHI	1. Reduction of wastewater discharge 2. ZERO cases of exceeding the permissible level	1. Compared to 2020 (base year) 1% reduction every year from 2022 2. Exceeding case "0"
HMD	Reduce within 50% of the permissible level	1% reduction per year compared to 2020 (base year)
HSHI	Reduce within 20-50% of the permissible level	Compared to legal limits - BOD: 6ppm or less - SS: 6ppm or less

#### » CASE STUDY

##### Eco-friendly Diving Suit for Shell Fish Divers

Ulsan, a major shipbuilding city, is home to approximately 190 shell fish divers (haenyeo), making it the second-largest population of haenyeo in Korea. Haenyeos typically wear a special diving suit to maintain body temperature, but the suit's rubber material (neoprene) is not suitable for biodegrading and recycling.

In line with this, HDKSOE and HHI have invested KRW 24 million to young companies and small businesses in Ulsan, including 'Namo' and 'Haewang Wetsuit', which came up with a plant-based rubber material called Yulex. Diving suits made from Yulex is biodegradable and has a good function with elasticity, durability and warmth. With less rubber waste, we wish to protect natural habitats and biodiversity in Ulsan.



Eco-friendly diving suit for shell fish divers

#### Wastewater & Water Pollutant Management Performance in 2022<sup>1</sup>

**HHI**  
Wastewater emissions compared to 2020 (base year)

**Overachieved 1% reduction target**

**HMD**  
- BOD: 1.0mg/L  
- TOC: 9.0mg/L  
- SS: 2.0mg/L

**HSHI**  
- BOD: 1.9mg/L (overachieved)  
- TOC: 3.0mg/L  
- SS: 1.2mg/L (overachieved)

1. HDKSOE consigns all wastewater (consigned amount: 18.4m<sup>3</sup>) and does not have wastewater pollutants output of its own.

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## STRATEGY

### Waste Management

HDKSOE identifies aspects of environmental management and evaluates the environmental impact of waste generated during the organization's activities. By raising awareness of laws and regulations and conducting workplace inspections, we guide and inspect whether waste is being treated legally and monitor the management status of waste storage facilities. Additionally, non-hazardous waste and hazardous waste are sorted and disposed of in accordance with legal requirements. To minimize waste and reduce costs, priority is given to the recycling of waste materials that can be recycled.

HHI recognizes the impact of waste generated in the production process and manages the appropriate categorization and treatment methods based on waste property analysis. They make various efforts to reduce, reuse, and recycle waste in order to minimize the environmental impact caused by waste generation. Further activities include reduced resource use, uniforms made from plastic bottles, steam generation from incineration heat, and reuse and recycling of engine packaging materials.

HMD classifies waste generated from business sites into non-hazardous waste and hazardous waste through waste property analysis, in accordance with relevant laws. Waste is then treated by consignment companies through recycling, incineration, and landfill methods based on waste characteristics. We continuously expand and implement the recycling of waste materials, such as transparent PET bottles and waste ropes, to increase waste recycling.

SHSI manages waste generated in the workplace through four methods: waste box collection, collection, sale/consignment treatment, and sorting/storage. Starting from April 2023, waste Styrofoam, which was previously used as a buffer for transporting ship equipment, is being recycled to produce ingots as a recycled raw material. This process helps reduce environmental pollutants such as microplastics and carbon emissions associated with waste Styrofoam incineration, while improving the recycling rate and contributing to the creation of a resource recycling ecosystem.

### Waste Management Goal for 2023

Company	Goal	Target No.	
HHI	Manage within the target set for 2023 resource circulation management system	Recycling rate <b>26.82% or more</b>	Final disposal rate <b>below 32.38%</b>
HMD	Reinforcing waste selection and expanding recycling items to achieve waste recycling rate target	Waste recycling rate <b>64% or more</b>	Final disposal rate <b>below 24.29%</b> Recycling rate <b>30.9% or more</b>
SHSI	Manage within the target set for 2023 resource circulation management system	Recycling rate <b>66.13% or more</b>	Final disposal rate <b>below 17.72%</b>

### Waste Management Performance in 2022

<b>HDKSOE</b>	Waste oil <b>740kg recycled</b> (Manufacture of fuel products)	<b>HHI</b> Recycling rate <sup>1</sup> <b>Overachieved recycling target 42.25% achieved</b> (Target: 26.58% or more)
<b>HMD</b>	Recycling rate <sup>1</sup> <b>Overachieved recycling target 75.18% achieved</b> (Target: 16.24% or more)	Final disposal target <sup>1</sup> <b>Overachieved final disposal target 19.31% achieved</b> (Target: below 31.29%)
	Final disposal target <sup>1</sup> <b>Overachieved final disposal target 2.47% achieved</b> (Target: below 30.69%)	<b>SHSI</b> Recycling rate <sup>1</sup> <b>74.12% achieved</b> (Target: 59.55% or more)
	Simple recycle rate <b>62.5% achieved</b> (Target: 63.5% or more)	Final disposal target <sup>1</sup> <b>9.31% achieved</b> (Target: below 19.96%)

1. Achievement of goals granted by the Ministry of Environment according to the resource circulation performance management system in 2022.

### CASE STUDY

#### Eco-friendly Uniforms from Recycled Fiber

HDKSOE and its shipbuilding subsidiaries signed an MOU to produce uniforms made from recycled plastic bottles. PET bottles were collected from all business sites to make recycled fibers, and the eco-friendly uniforms were distributed to workers in 2022.



#### Recycled Resources Certificate for Scrap Metal

SHSI has obtained Recycled Resources Certificate for scrap metal, marking the first in the shipbuilding industry. The company generates over 30,000 tons of scrap metal annually, with scrap metal accounting for 75% of the total waste, a significant proportion. To address this, a steel material reduction system was implemented to minimize the use of unnecessary steel plates by predicting their usage in advance. Through the company-wide "Samcheolli" Campaign (Reduce, Collect, Reuse Iron!), the scrap metal recycling rate increased by 8%, leading to a reduction in waste generation. Furthermore, the company is actively working to recycle scrap metal resources by signing an MOU to develop technology that reduces welding necessity caused by thickness difference by 20%.



SHSI's Recycled Resources Certificate

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### Chemical Management

**HDKSOE** conducts a thorough review of chemical substances received in advance to ensure compliance with chemical substance-related laws and to facilitate efficient chemical management. Chemical safety training is provided to all employees to ensure proper handling, disposal, and actions to take in case of exposure according to the legal standards.

**HHI** conducts advanced hazard assessments for chemical products scheduled to be handled at their business sites. The assessments determine whether the products can be safely introduced. In the chemical product handling department, guidance and management of chemical substance labeling, as well as the provision of protective equipment, are in place to prevent leakage accidents. Furthermore, external agencies conduct annual inspections of hazardous chemical handling facilities.

**HHI** carried out "VALFS (Valve, Flange, Switch) Safety Campaign" to prevent chemical accidents in 2021, followed by "VALFS Plus Chemical Safety Campaign" in 2022. Additionally, HHI achieved its annual target of reducing chemical substance emissions by 1% based on 2021 levels in 2022. The company plans to develop and employ paints with low volatile organic compound content to further decrease chemical emissions, and also adopts alternative products to reduce the usage of hazardous chemicals.

**HMD** conducts hazard assessments for chemical products that are currently in use or planned to be used at their business site. The purpose is to ensure the safe handling of chemical substances and prevent leakage accidents. Based on the assessment, substances that can be safely brought in are identified, and guidelines for their safe handling are provided. Regular inspections are conducted to prevent any leakage or spillage of hazardous chemicals, and proactive management measures are implemented to prevent such incidents.

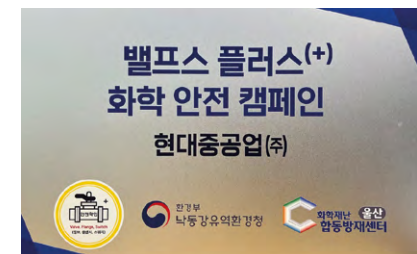
**HSHI** carries out a comprehensive hazard review using its own program prior to the delivery of in-house chemicals, which determines the chemicals' acceptability or need for alternatives. Additionally, small quantities of hazardous chemicals used in their in-house laboratories are subject to weekly self-inspections to ensure proper handling. External agencies conduct regular inspections of the hazardous chemical handling facilities every two years. Furthermore, HSHI, in collaboration with group companies, aims to reduce emissions by approximately 1% per year based on 2021 levels. The reduction target was successfully achieved in 2022 as well. The company will continue working closely with the affiliates to further reduce the usage of hazardous chemicals and promote environmentally responsible practices.

## » CASE STUDY

### VALFS Plus Chemical Safety Campaign

**HHI** participated "VALFS (Valve, Flange, Switch) Safety Campaign" in 2021. Additionally, on April 19, 2022, the company took part in the launch ceremony of VALFS Plus Chemical Safety Campaign hosted by the Nakdong River Basin Environmental Office. The campaign ran from April to October and aimed to prevent accidents related to chemical substances by conducting thorough inspections of high-risk auxiliary facilities such as valves, flanges, and switches.

As part of its commitment to safety, HHI has enhanced its autonomous safety management capabilities. This includes the designation and management of individual managers responsible for high-risk hazardous chemical handling facilities. The company also conducts self-inspections to proactively prevent chemical accidents.



### Internal & External Environmental Protection Activities in 2022

#### HHI

- Participated in Ulsan North/East District's Environmental Autonomous Patrol Team
- Formation of 'HHI Dolphin', Civil Disaster Prevention Team, and implementation of marine pollution prevention training
- Offshore water purification activities carried out
- 1 company 1 river cleanup activity

#### HMD

- Participated in Ulsan North/East District's Environmental Autonomous Patrol Team
- Formation of 'autonomous HMD control team' and implementation of marine pollution control drills
- Participated in river (Ungokcheon) purification campaign (quarterly)
- Cleaning activities in the shore of Khanh hoa conducted by HVS (semi-annual)

#### HSHI

- Facility<sup>1</sup> regular inspection Compliant with Korea Environment Corporation inspection results (as of February 2023)

1. Wastewater treatment plant, laboratory with small usage of hazardous chemicals, storage and handling facilities



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### Biodiversity Management System and Strategy

HDKSOE and its shipbuilding subsidiaries categorize 30 ecosystem conservation areas, as designated by the Ministry of Environment, Ministry of Oceans and Fisheries, and local authorities, into three classifications: within 50 km, within 100 km, and within 150 km. Based on these classifications, plans are being developed for biodiversity conservation. The company is actively engaged in monitoring activities to ensure that its management practices do not negatively impact the ecosystem conservation areas. Moving forward, specific strategies will be established to prevent the destruction of ecosystem preservation areas, protect and restore habitats, and expand survey and management activities for endangered species as part of biodiversity conservation efforts. Recognizing the potential impact of our activities on biodiversity, HDKSOE and its shipbuilding subsidiaries are committed to effective communication with stakeholders. This commitment will be demonstrated through a declaration, announcing our dedication to biodiversity conservation and engagement with stakeholders.



### Efforts to Conserve Biodiversity

HDKSOE and its shipbuilding subsidiaries acknowledge that the products we manufacture, specifically ships and our usage, can have an impact on biodiversity. Therefore, we are dedicated to development of technologies and capabilities aimed at enhancing biodiversity conservation.

### Building a Low-noise Ship to Protect Dolphins

HDKSOE and its shipbuilding subsidiaries recognize the detrimental impact of underwater radiated noise generated by ships on marine lives, leading to marine pollution. Consequently, we have been actively engaged in biodiversity preservation efforts. The noise produced by ship propellers, in particular, intersects with the frequency bands crucial for marine mammals such as dolphins, posing a significant threat to the marine ecosystem. In collaboration with the Ships & Offshore Plant Research Institute (KRISO) and the Ministry of Trade, Industry and Energy, HDKSOE, HHI and HMD embarked on the development of 'ship underwater radiation noise monitoring and noise reduction technology' for marine environment protection starting in 2020. The project is currently ongoing, with the aim of securing the technology by 2023. In 2021, HSHI achieved a significant milestone by delivering a 115,000-ton crude oil carrier, which received the Silent E-Notation from DNV, an international certification body. This marked the first instance of a commercial vessel obtaining such notation. With these accomplishments in mind, continuous efforts will be made to develop and implement underwater noise reduction technology, fostering an environment that safeguards marine biodiversity.



HMD Silent LNG-fueled crude oil carriers

### Prevention of Disturbance of Marine Ecosystem due to Ballast Water

Ballast water is seawater loaded onto the hull of a ship to ensure its stability. While it is a necessary component for safety, it has been identified as a potential cause of ecosystem disturbance. When a ship discharges ballast water from one sea area to another, it unintentionally releases marine organisms that were originally contained within the ballast water, thereby disrupting the local ecosystem. Thus, HHI has independently developed and implemented a ballast water treatment device called 'HiBallast'. This device effectively eliminates microbes and pathogens present in the ballast water. It has obtained type approval by adhering to the International Maritime Organization's (IMO) guidelines (G8) for ballast water management. HMD has jointly developed a revolutionary 'ballast-free' eco-friendly container ship in collaboration with KMTC and Korean Register and has received an Approval In Principle (AIP). The unique design of the container ship allows it to operate without discharging any ballast water into the sea. Instead, it replaces the conventional ballast water with solid weights and portable permanent ballast water, serving as a proactive measure to prevent ecosystem disturbance.

### Biodiversity Conservation and Deforestation Prohibition Declaration

HMD incorporates and implements measures for biodiversity conservation and the prevention of deforestation within its environmental management policies. To further enhance its efforts in conserving biodiversity and minimizing environmental impact, the company has created and declared "Biodiversity Conservation and No Deforestation Commitment" in 2022. These declarations signify HMD's commitment to proactive actions and responsible practices for the preservation of biodiversity and the prevention of deforestation.

HMD's Biodiversity Conservation and No Deforestation Commitment

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## Toward Green Ocean with Eco-friendly Technology

HDKSOE and its shipbuilding subsidiaries are dedicated to the development of eco-friendly technologies aimed at reducing ship energy consumption in alignment with the rigorous greenhouse gas reduction standards mandated by the shipping and shipbuilding industry. With a commitment to enhancing the energy efficiency of ships, our efforts include the planned commercialization of the ammonia-powered HIMSSEN DF engine by 2025, paving the way for a new era of zero carbon emissions. These endeavors reinforce our position as the leading global shipbuilder, poised to dominate the international market.



### RISK

- A growing demand for the expedited development of eco-friendly ship technologies in response to the increasingly stringent carbon emission reduction targets set within the shipping sector
- A high demand for GHG reduction measures within the shipping and shipbuilding industry.

### OPPORTUNITY

- Increasing orders for gas and eco-friendly products due to carbon emission regulations and increased orders for eco-friendly ships

### KEY PERFORMANCE

**Acquired AIP for ammonia fueled/Ammonia carrier**  
(60,000/40,000m<sup>3</sup> class)

**Acquired AIP for liquefied carbon dioxide carrier**  
(74,000m<sup>3</sup> and 40,000/30,000m<sup>3</sup>class)



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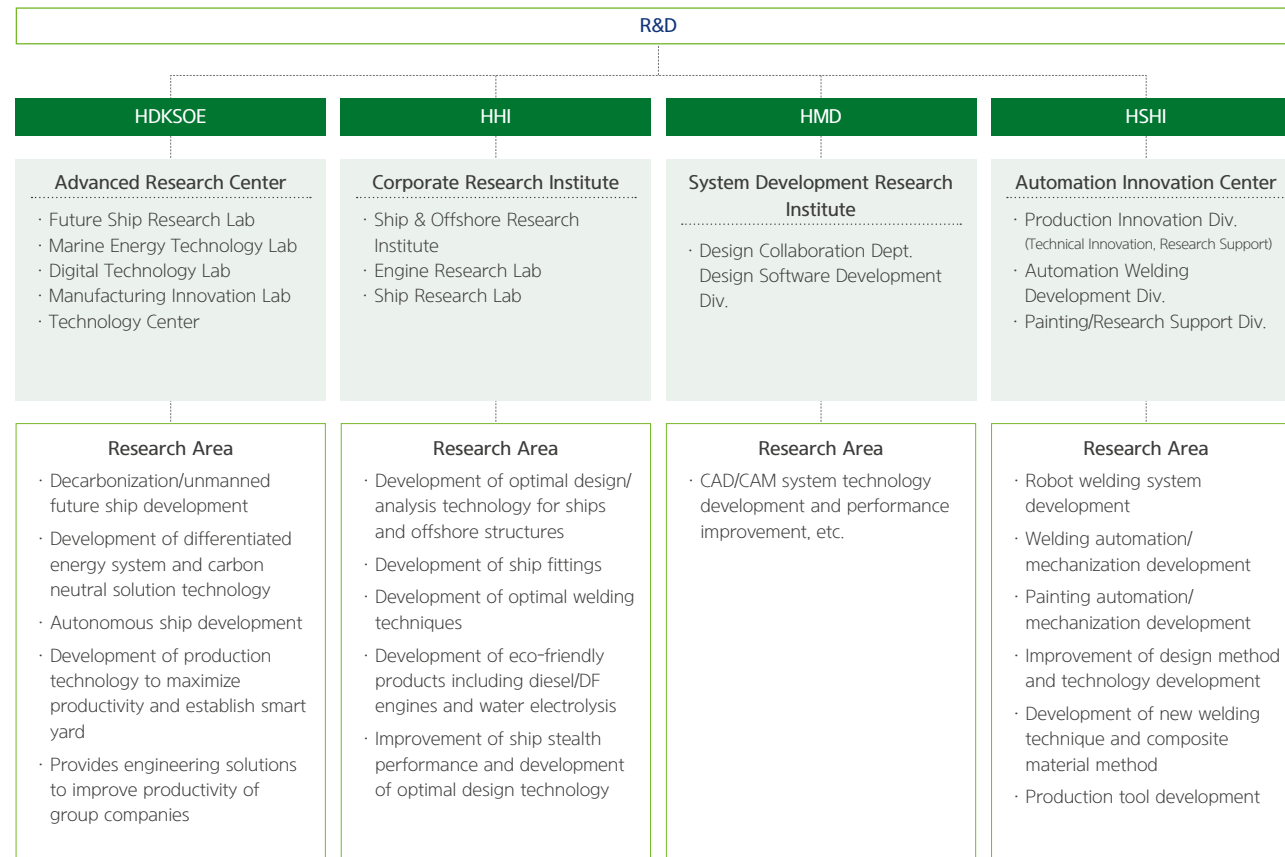
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## GOVERNANCE

### Integrated Shipbuilding & Offshore Engineering R&D System

HDKSOE and its shipbuilding subsidiaries are focused on leveraging research capabilities to develop cutting-edge and environmentally friendly ships, aiming to strengthen our competitive advantage in the shipbuilding and offshore engineering industry. To achieve this goal, each company has implemented robust R&D governance, expanded infrastructure, and recruited and nurtured exceptional R&D personnel to take a leading role in the growth and advancement of eco-friendly ship technology. We have also established clear role divisions within the research sector to maximize R&D efficiency. HDKSOE, along with its offshore and shipbuilding subsidiaries, is dedicated to becoming a technology-driven company with world-class R&D capabilities, enhancing its competitiveness in the eco-friendly ship market, and striving to develop sustainable products.

### R&D Governance of HDKSOE & its Shipbuilding Subsidiaries



**Vision**  
Past 50 years with challenge and passion,  
Future 50 years with technology and innovation

**Goal**  
Secure insurmountable technology for the world's best  
shipbuilding and offshore business

**R&D Expense**  
KRW 125 billion

**R&D Personnel**  
604

**Eco-friendly Patent Application**  
271

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### Eco-friendly Technology Development Process

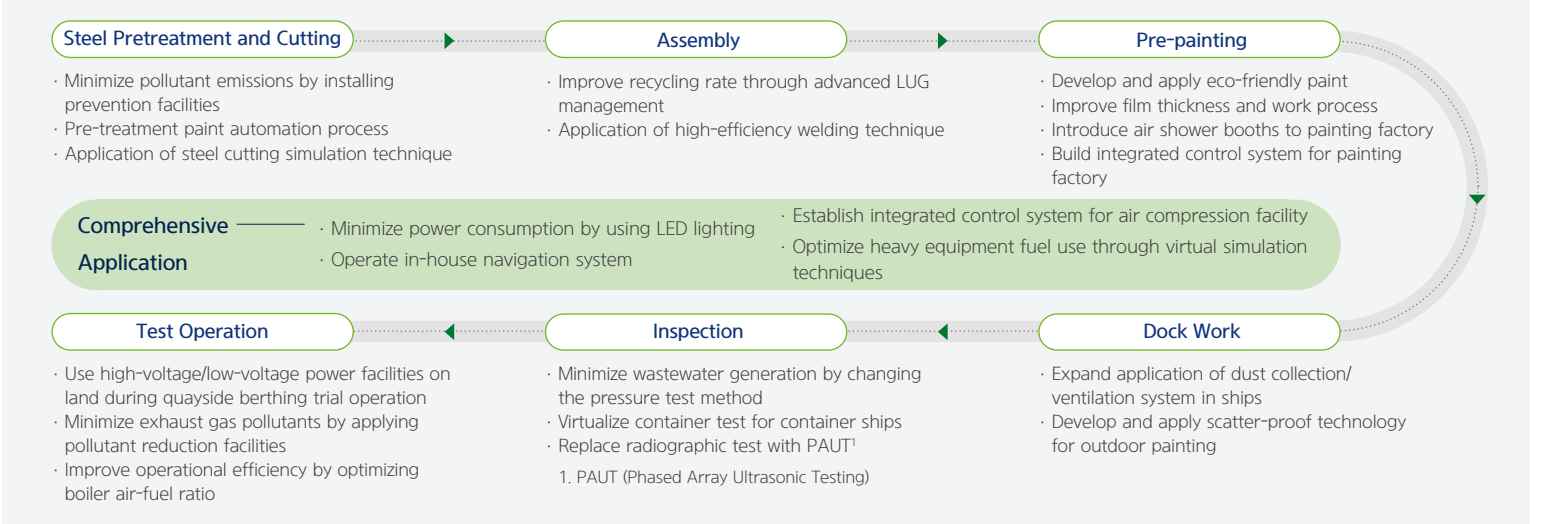
HDKSOE and its shipbuilding subsidiaries are currently investigating targeted countermeasures by analyzing market prospects and technology trends through the process of eco-friendly technology development and formulating strategies for relevant technologies. We establish a development strategy by following the shipbuilding industry technology development roadmap. Upon the completion of technology development, we set quantitative targets for decarbonization in order to materialize an eco-friendly portfolio. The developed eco-friendly technology is effectively applied to ships, and real-time improvements are derived and incorporated to ensure successful completion of the development process.



### Shipbuilding Based on Eco-friendly Technology

HDKSOE and its shipbuilding subsidiaries are integrating eco-friendly technologies into every stage, ranging from product design to delivery. This includes technology development aimed at reducing greenhouse gas emissions and environmental pollution, as well as establishing infrastructure through substantial investments in large-scale facilities. By doing so, we aim to minimize energy consumption, prevent environmental impacts caused by pollutants during the shipbuilding process, and enhance the efficiency of production facilities.

### Major Eco-friendly Technologies for Each Shipbuilding Process



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**PERFORMANCE**

**Total Solution Provider**

HDKSOE and its shipbuilding subsidiaries are dedicated to the development of cutting-edge future technologies to establish themselves as a sustainable company. We are focusing our efforts on the development of eco-friendly fuel propulsion ships, including ammonia and hydrogen, which are emerging as promising green fuels for the future. Our current focus also extends to LNG DF ships, which are widely commercialized as an initial step towards eco-friendly vessels, as well as methanol DF propulsion ships, which have garnered significant attention recently. Moving forward, we will continue to lead the market as a 'Total Solution Provider' by offering a diverse portfolio of eco-friendly ships that can cater to the evolving market demands.

**LNG DF Ship**

To progress towards a cleaner marine environment, we are accelerating the development of hybrid propulsion ships that utilize carbon-free fuels such as ammonia and hydrogen. However, the transition from fossil fuels to carbon-free fuels presents practical limitations and challenges that need to be addressed. As a company with world-class technology, we are leading a gradual transformation by utilizing LNG DF propulsion vessels as a stepping stone towards carbon-free ships.

Although LNG itself is classified as a fossil fuel, it offers significant environmental benefits compared to the main propulsion fuel, bunker C oil. LNG reduces sulfur oxides by 99%, nitrogen oxides by 90%, and carbon dioxide by 30%. Taking into account the pace of port infrastructure development and advancements in fuel supply technology, we aim to achieve cleaner seas by employing LNG DF propulsion ships that can promptly comply with the most stringent and realistic shipping regulations.



**Methanol DF Vessel**

Methanol is considered one of the eco-friendly ship fuels, alongside ammonia and hydrogen, following LNG. It is recognized for its ability to reduce sulfur oxides by 99%, nitrogen oxides by 80%, and greenhouse gases by 25% compared to conventional ships. Methanol-powered vessels are seen as the next-generation eco-friendly ships capable of meeting and surpassing environmental regulations in the shipping industry, and they are gaining significant traction in the methanol ship market. The competition in this sector is intensifying.

In April 2023, HMD successfully launched the world's first methanol DF container ship. HSHI also secured contracts for 13K (12 vessels) methanol DF container ships in January 2023 and 9K (7 vessels) methanol DF container ships in February 2023, signaling their commitment to building eco-friendly ships. These vessels are scheduled to be delivered in March and April 2025, respectively. HDKSOE and its shipbuilding subsidiaries aim to capture a significant share of the market and maintain a competitive advantage by securing more than half of the global orders for methanol-powered vessels by February 2023.



**Ammonia-fueled Ships**

Ammonia-fueled ships are considered as part of the eco-friendly vessels that will usher in an era of zero carbon emissions by replacing traditional ship fuel with ammonia. It is anticipated that shipping companies will increasingly order ammonia-fueled ships in response to stricter maritime regulations. HDKSOE and its shipbuilding subsidiaries are devoting our efforts to the development of ammonia-fueled shipbuilding technology to meet the future market demands and customer requirements.

HHI is currently developing an ammonia-fueled HiMSEN DF engine and an ammonia carrier that can also function as a hydrogen carrier, with the goal of commercializing these technologies by 2025. Furthermore, considering the potential hazards associated with ammonia, including its significant impact even in the case of minor leaks, measures are being devised to enhance safety. This includes the establishment of a double leakage prevention system to effectively block even the slightest amount of leakage and mitigate potential risks.



**Electricity-powered Ships**

Electric propulsion ships represent the next generation of future vessels, offering enhanced energy efficiency in transporting the same cargo over the same distance when compared to conventional liquid-based fuel propulsion systems.

HDKSOE and HMD have achieved a significant milestone by successfully commercializing our own electric propulsion solution for ships, marking the first such accomplishment in Korea. The installed electric propulsion solution serves as a vital component of the electric propulsion ship developed by HDKSOE. This solution is built upon a DC Grid-based LNG dual-fuel (DF) engine and an energy storage system (ESS) that enables engine variable speed control and an energy optimization control system called HICONIS-PEMS. Additionally, other low-carbon and high-efficiency technologies have been implemented.

During sea trials, it has been demonstrated that the electric propulsion solution can reduce carbon dioxide (CO<sub>2</sub>) emissions by 40% compared to conventional marine diesel engines. Furthermore, through optimal engine control, fuel efficiency can be improved by 6%.



**Hydrogen Carriers & Hydrogen-powered Ships**

HD Hyundai aims to establish itself as the leading and most competitive company in the hydrogen market, which is currently receiving significant global attention, by establishing a comprehensive hydrogen value chain with hydrogen as a major driver of future growth. As part of this endeavor, HDKSOE and its shipbuilding subsidiaries are actively engaged in the development of liquefied hydrogen carriers designed to transport produced hydrogen.

When hydrogen energy is transported in liquefied form, the most efficient approach is to utilize the naturally evaporated hydrogen gas from the cargo as a propulsion fuel for ships. Consequently, the development of hydrogen-powered or hydrogen fuel cell-powered hydrogen carriers is underway to leverage this optimal utilization of hydrogen gas during transportation.



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## PERFORMANCE

### Development of Core Technology for LNG Propulsion

The Cargo Handling System and the Cargo Containment System, the core technologies of HDKSOE and its shipbuilding subsidiaries, have gained recognition from customers and classification societies as being at the forefront of technological excellence. HDKSOE and HHI have recently developed Hi-eGAS (Hyundai High Efficient Gas Supply System), a cutting-edge LNG fuel supply system, and have obtained AIP from renowned classification societies such as the Det Norske Veritas(DNV) and the Lloyd's Register(LR). This advanced system is capable of reducing fuel consumption and carbon emissions by 1.5% each, in comparison to the previous system. It achieves this by effectively recycling the waste heat generated during the refueling process of LNG-propelled ships, thereby resulting in reduced fuel costs.



HMD has successfully developed the engineering technology for LNG bunkering ships and secured an order for an 18,000 m<sup>3</sup> LNG bunkering vessel. HSHI has achieved a significant milestone by successfully commissioning the fuel gas supply system of an LNG-fueled container carrier. This accomplishment has played a crucial role in ensuring the early delivery of the world's first large LNG-fueled container carrier.

Moving forward, our shipbuilding subsidiaries are committed to further advancing our capabilities by developing systems that outperform those offered by international engineering companies in the rapidly expanding LNG carrier and LNG propulsion market.

### Advancement of New Concept Eco-friendly Ships

HHI's Shipbuilding and Offshore Research Institute has achieved a significant milestone by obtaining Design Approval for the Hi-Rotor, an innovative independent rotor sail model, from Korean Register. This marks the first time such approval has been obtained within the domestic shipbuilding industry. The Hi-Rotor technology harnesses the Magnus effect to convert wind energy into propulsion, resulting in reduced fuel consumption and carbon emissions. HHI has been conducting successful land-based demonstrations of Hi-Rotor since the second half of 2022. Moving forward, the company is committed to further advancing eco-friendly ship technologies and actively securing future orders in this domain.



### Investment in Small Modular Reactor (SMR) Technology

HDKSOE is actively positioning itself in the forefront of the next-generation energy market by entering into a 30-million-dollar investment agreement with 'TerraPower.' TerraPower possesses cutting-edge technology for eco-friendly future energy sources that generate power without emitting greenhouse gases. Moreover, their technology has a lower risk of accidents, such as leaks and explosions, in comparison to traditional large-scale nuclear power plants. Utilizing HHI's expertise in the nuclear field, HDKSOE aims to lead advancements in offshore nuclear power generation and nuclear power propulsion. By capitalizing on these capabilities, HDKSOE plans to spearhead the development of future technologies in this domain.

### HD Hyundai Europe R&D Center

In April 2022, HDKSOE established a research branch in Düsseldorf, Germany, with the aim of enhancing global R&D collaboration and gaining a competitive edge in future eco-friendly and digital technologies. Subsequently, in March 2023, the branch was upgraded to HD Hyundai Europe R&D Center and transformed

into a local corporation. Building upon this milestone, the center will collaborate with research institutes to acquire advanced ship technologies for the future, encompassing areas such as hydrogen, fuel cells, ammonia, and electric propulsion. Moving forward, there are plans to expand the technological cooperation network to include major European countries, including the United Kingdom and Norway. By extending partnerships in these regions, HDKSOE aims to further strengthen its research and development capabilities and stay at the forefront of innovation in the offshore engineering industry.



### Fuel Cell Development & Demonstration

HDKSOE aims to obtain essential technologies in the realm of eco-friendly hydrogen production and fuel cell manufacturing through strategic collaborations. To this end, we have signed a memorandum of understanding with Fraunhofer in Germany and Elkogen in Estonia for the development of a solid oxide fuel cell (SOFC)<sup>1</sup> and water electrolysis system. Furthermore, HDKSOE has entered into a consortium agreement with Shell, Doosan Fuel Cell, Hi-Exium, and DNV Classification to undertake the Demonstration of Fuel Cells for Ships project. Notably, starting from 2025, solid oxide fuel cells will be installed on LNG carriers operated by Shell, where they will be utilized for power generation. This initiative demonstrates HDKSOE's commitment to deploying advanced technologies in practical applications within the offshore engineering industry.

1. A solid oxide fuel cell is a device that generates electrical energy by reacting not only with hydrogen but also with various fuels such as natural gas, ammonia, and methanol in the presence of oxygen. This technology offers high power generation efficiency and the ability to recover waste heat generated during its operation at high temperatures (ranging from 600 to 1000°C). As a result, solid oxide fuel cells are well-suited for ship engines and cogeneration applications.

# Eco-friendly Technology

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## METRICS AND TARGETS

### Roadmap for Super-advanced Technology Development

HDKSOE and its shipbuilding subsidiaries have devised a comprehensive technology development roadmap that encompasses advanced eco-friendly technology. This roadmap is aimed at setting and achieving tangible R&D objectives related to carbon-free (ammonia, hydrogen) and low-carbon (LNG, methanol, biofuel) fuel-based eco-friendly propulsion technology. It also emphasizes ship efficiency enhancements and the implementation of greenhouse gas reduction technology through exhaust gas post-treatment. All efforts are being focused on the successful realization of these goals.

### Roadmap for Eco-friendly Technology Development

Category	Tech List	Focus Goals and Directions	Short- and Mid-term Roadmap('23-'27)	Long-term Roadmap('28-'30)
Future ships	Ammonia propulsion	<ul style="list-style-type: none"> <li>Securing the technological advantage of ammonia propulsion vessel to respond to the global Net-Zero trend</li> <li>Differentiation of ammonia vessels</li> </ul>	<ul style="list-style-type: none"> <li>Develop ultra-large ammonia carrier, FSRU, and bunkering vessel</li> <li>Develop ammonia fuel supply/cargo handling system</li> </ul>	<ul style="list-style-type: none"> <li>Advance ammonia fuel supply/cargo handling system</li> </ul>
	Hydrogen carrier	<ul style="list-style-type: none"> <li>Building a hydrogen carrier by developing differentiated technology</li> <li>Advance into new hydrogen business by developing core hydrogen technology</li> </ul>	<ul style="list-style-type: none"> <li>Commercialize small liquefied hydrogen carrier</li> <li>Develop a large liquefied hydrogen storage tank</li> </ul>	<ul style="list-style-type: none"> <li>Receive an order for a large liquefied hydrogen carrier</li> </ul>
	Fuel cell propulsion	<ul style="list-style-type: none"> <li>Preoccupation with next-generation marine power generation/propulsion systems</li> <li>Maintaining the technological power in the eco-friendly ship market</li> </ul>	<ul style="list-style-type: none"> <li>Develop fuel cell propulsion system for small &amp; mid-sized ships</li> </ul>	<ul style="list-style-type: none"> <li>Develop fuel cell propulsion system for large ships</li> </ul>
Eco-friendly technology	Electricity propulsion	<ul style="list-style-type: none"> <li>Leading the ship propulsion solution market by developing a next-generation eco-friendly/high-efficiency proprietary electric propulsion system</li> </ul>	<ul style="list-style-type: none"> <li>Commercialize hybrid electric propulsion system (4, 15, 30MW in order)</li> </ul>	<ul style="list-style-type: none"> <li>Commercialize 50MW class hybrid electric propulsion system</li> </ul>
	Reduction of GHG in ships	<ul style="list-style-type: none"> <li>Commercialization of newbuilding/ retrofit business through the development of independent eco-friendly technologies</li> <li>Reinforcing the competitiveness of eco-friendly solution technology</li> </ul>	<ul style="list-style-type: none"> <li>Develop and demonstrate an independent model of CO<sub>2</sub> capture/processing/storage system for ships</li> <li>Develop and demonstrate methane slip reduction device</li> <li>Demonstrate and commercialize independent wind assisted propulsion system model</li> </ul>	

### 2022 Achievements and 2023 Plans

**2022 Achievement**

- Improved fuel efficiency through the development of new concept eco-friendly ships
- Developed LNG complete re-liquefaction technology (Single Mixed Refrigerant) and applied to actual vessels
- Developed a robot system for manufacturing atypical hulls
- Led the development of advanced digital ships based on electric propulsion system and autonomous navigation technology

**2023 Plan**

- Promote the development of future technologies to secure a competitive edge in cutting-edge advancements.
- Enhance profitability through the development of cost reduction and product differentiation technologies.
- Maximize synergy through collaborative research and development (R&D) with group companies and strengthening the cooperation system.

**Details of the Plan**

Development of eco-friendly, highly-efficient fuel-powered ships	Development of next-generation proprietary LNG gas system	Development of autonomous ships	Accelerating Smart Yard Deployment
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## PERFORMANCE

### Low-carbon Fuel-propelled Ships

#### Reinforcing Competitiveness through Advancement of Eco-friendly Technology



HDKSOE and its shipbuilding subsidiaries have secured multiple orders for vessels powered by low-carbon fuels, including LNG DF container ships, tankers, and PCTCs. We are actively promoting the development of methane slip reduction technology for LNG-fueled ships, aiming to enhance the competitiveness of such vessels in compliance with environmental regulations by minimizing methane leakage. HHI has entered into a contract with Maersk, the world's largest shipping company, to construct 18 container ships that will be powered by methanol. This significant development marks the first time large ships will be equipped with methanol fuel propulsion engines, contributing to a reduction in carbon emissions. Furthermore, HSHI has successfully delivered a 180,000-ton bulk carrier that operates on LNG fuel. This vessel has the capability to significantly reduce sulfur oxide and particulate matter emissions by 99%, nitrogen oxide emissions by up to 85%, and greenhouse gas emissions by 30% compared to existing ships.

<p><b>HHI</b> Equipped with methanol fuel propulsion engine</p>	<p><b>Expected to reduce CO<sub>2</sub> emission by about 160,000 tons per year</b></p>	<p><b>HSHI</b> LNG-fueled bulk carrier</p>	<p><b>30% reduction in GHG compared to existing ships</b></p>
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### CO<sub>2</sub> Carriers and Hydrogen Propelled Ships

#### Spurring the World's First Building Liquefied Carbon Dioxide Carriers & Developing Hydrogen Engines



HDKSOE has entered into a business agreement (MOU) with GE, Plug Power, and SK E&S to collaborate on investment in the life cycle business for blue hydrogen production, distribution, and utilization. Through the signing of the MOU, we became the first in the world to build a 40,000m<sup>3</sup>-class large-capacity liquefied carbon dioxide (LCO<sub>2</sub>) carrier that will safely transport carbon dioxide captured in the blue hydrogen production process. As carbon capture and storage (CCS) technology is expected to expand and demand for carbon dioxide carriers will increase in the future, we will make this an opportunity to preoccupy the market for carbon dioxide carriers. Additionally, in December 2022, HDKSOE and HHI successfully completed the performance verification of the 1.5MW-class LNG/hydrogen hybrid engine (HIMSEN), developed using our proprietary technology. The LNG/hydrogen hybrid engine represents an eco-friendly engine that significantly reduces emissions of various harmful pollutants such as sulfur oxides, nitrogen oxides, carbon dioxide, and particulate matter. By selectively utilizing diesel fuel and a mixture of LNG/hydrogen as fuel, it marks the initial stage of hydrogen engine development.

<p><b>HDKSOE</b> <b>Liquefied CO<sub>2</sub> Carrier Planned to be the first shipbuilder in the world</b></p>	<p><b>HDKSOE, HHI</b> LNG · hydrogen hybrid engine development</p>	<p><b>Satisfying Nitrogen Oxide Regulations Tier 3<sup>1</sup></b> <b>Demonstration of carbon dioxide and methane slip reduction</b></p>
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1. The highest grade among the nitrogen oxide regulations of International Maritime Organization (IMO)

## » CASE STUDY

### Methanol-fueled Ships

HMD successfully launched the world's first eco-friendly container ship powered by methanol on April 4, 2023. This landmark vessel, with a capacity of 2,100 TEUs, was constructed by HMD and represents the first of 19 methanol-fueled eco-friendly ships ordered by Maersk. The construction process commenced in July 2021 and the delivery of the ship is expected to take place around September 2023.

HSHI has secured a contract for 12 methanol DF container ships with a capacity of 13,000 TEUs in January 2023, as well as 7 methanol DF container ships with a capacity of 9,000 TEUs in February. The construction of these eco-friendly vessels is progressing as planned, and their delivery is scheduled for March and April 2025, respectively.

Methanol is one of the eco-friendly ship fuels following LNG, along with ammonia and hydrogen. It can reduce sulfur oxides by 99%, nitrogen oxides by 80%, and greenhouse gases by 25%, respectively, compared to the previous ones, which will contribute to Maersk's goal of carbon neutrality by 2040. In addition, if Maersk replace old ships with 19 methanol-fueled ship newbuilds, it will be able to reduce greenhouse gas emissions by about 2.3 million tons per year.

HDKSOE and its shipbuilding subsidiaries have won 54 orders out of 99 methanol-fueled ships ordered by February 2023, taking the lead in the methanol ship sector.

### Joint Development of Ammonia FSRU

HDKSOE and HHI entered into an 'Ammonia-FSRU<sup>2</sup> Joint Development Agreement' with Korea National Oil Corporation and Lloyd's Register. Subsequently, in April 2023, the 'Ammonia-FSRU' concept developed in collaboration with Lloyd's Register obtained AIP (Approval in Principle). The development of this ammonia-FSRU is anticipated to have a proactive impact as the market expands with the projected rise in ammonia demand in the future.

2. Ammonia-FSRU (Floating Storage Re-gasification Unit): A vessel designed to store and regasify liquefied ammonia, transported from production areas, into a gaseous state for supply to onshore customers.



# Material Topic 2. Digital Transformation



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## Sustainable Growth through Smart Shipyard Construction

HDKSOE and its shipbuilding subsidiaries are actively advancing the establishment of the safest and most efficient smart shipyard. Specifically, we are directing our efforts towards leveraging AI technology to enhance business stability by eliminating human errors and addressing labor shortages within the maritime transportation industry. In 2022, the effectiveness of key process performance data collection automation was acknowledged, and we are committed to further expansion to gather precise data and upgrade the system with advanced big data and AI capabilities for comprehensive analysis. With these foundations in place, our goal by 2030 is to create a high-quality future shipyard that achieves a 30% improvement in productivity and minimum waste, ultimately realizing autonomous operation across all processes through simulation verification (CPS, Cyber Physical System).

Financial Impact ●●●○○ Social & Environmental Impact ●●●○○



### RISK

- Reorganization of the economic structure centering on high-tech manufacturing and service industries
- Increased inefficiency due to weather risk and complex requirements in structural design

### OPPORTUNITY

- Improving inefficiency and productivity by introducing ICT technology
- Leading the industry through changes in construction methods

### KEY PERFORMANCE

## Performance-data collection automation of key manufacturing process

About 10 digital technologies such as welding monitoring system (HHI), non-face-to-face remote inspection platform (HMD), AR marker recognition vision sensor system (HSHI)

## Real-time material/logistics visualization

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## STRATEGY

### 2030 Future of Shipyard

HDKSOE and its shipbuilding subsidiaries are accelerating the development of a 'smart shipyard' to establish a leading position in the future market and achieve sustainable growth. This digital shipyard incorporates technologies of the Fourth Industrial Revolution, transforming traditional labor-intensive shipyards into advanced and intelligent facilities. Through automation and intelligent systems, the aim is to enhance process efficiency and stability by proactively identifying potential issues in the demanding shipyard environment. We are collaboratively driving the 'Future of Shipyard (FOS)' initiative, a comprehensive project to construct a cutting-edge smart shipyard by 2030. The ongoing efforts include the implementation of a yard monitoring system, integrated data platform, automation of production performance tracking, and IoT-based factory/process control system. The ultimate goal is to realize the transition to a fully functional smart shipyard through incremental steps, including the enhancement of yard layout and other crucial components.

### » CASE STUDY

#### Building a State-of-the-art Smart Shipyard in Partnership with US Palantir

HDKSOE and its shipbuilding subsidiaries have entered into a contract to adopt Palantir's enterprise big data platform, 'Foundry', as part of our efforts to expedite the implementation of the Future of Shipyard (FOS) project. This collaboration aims to achieve several key outcomes, including enhancing work efficiency through improved data reliability and utilization. Furthermore, the objective is to establish a data-centric work culture across all domains, ranging from top management decision-making to sales, engineering, R&D, and the production process.

Since January and May, respectively, HHI and HSHI have conducted pilot tests of big data platforms in collaboration with Palantir. By effectively integrating and complementing their extensive accumulated data, they have developed optimization plans for design and production processes. These efforts aim to accelerate the digital transformation and further enhance operational efficiency.

### FOS Second-Year Project in Full Swing

The shipbuilding subsidiary conducted a performance review of the first year in April 2022 and embarked on the second year of business in full swing. Among the promotional initiatives of the first year, around 10 digital technologies, including the Welding Monitoring System (HHI), Non-face-to-face Remote Inspection Platform (HMD), and AR Marker Recognition Vision Sensor System (HSHI), demonstrated excellent effectiveness and are planned to be expanded across all subsidiaries. Furthermore, the virtual shipyard platform 'Twin-FOS' enables users to access visual information on construction status and greenhouse gas emissions by clicking on a specific vessel, and monitor power equipment, such as cranes and forklifts. The aim is to fully implement FOS project by 2023.

### » CASE STUDY

#### Advanced AI Team, an Organization Dedicated to Artificial Intelligence

In January 2023, HDKSOE established the Advanced AI Team, a dedicated organization focused on artificial intelligence, aiming to serve as a "solution provider", addressing core challenges within the group through the utilization of AI technology.

The Advanced AI Team will plan and coordinate AI-related initiatives across all group affiliates, devise growth strategies for the group's three core businesses - shipbuilding, energy, and construction equipment - based on AI technology, and oversee data management.

Additionally, HDKSOE has established a DT (Digital Transformation) Innovation Office from 2023 to facilitate the implementation of digital transformation initiatives. Through the DT Innovation Office and its collaboration with the Advanced AI Team, HDKSOE aims to further solidify its position as a leading company in autonomous navigation by leveraging its expertise in digital transformation and artificial intelligence technology.

## FOS Goal by Step

### FOS Step 1 (2023) Goal

Building a visible shipyard by transparently visualizing the entire process from material introduction to block assembly and ship building

### FOS Step 2 (2026) Goal

Build a shipyard that integrates and connects numerous data collected during the shipbuilding process, increases work productivity through analysis and simulation, and eliminates risk factors in advance through preemptive predictive management

**Production cost reduction effect**      **about KRW 70 billion**

### FOS Step 3 (2030) Goal

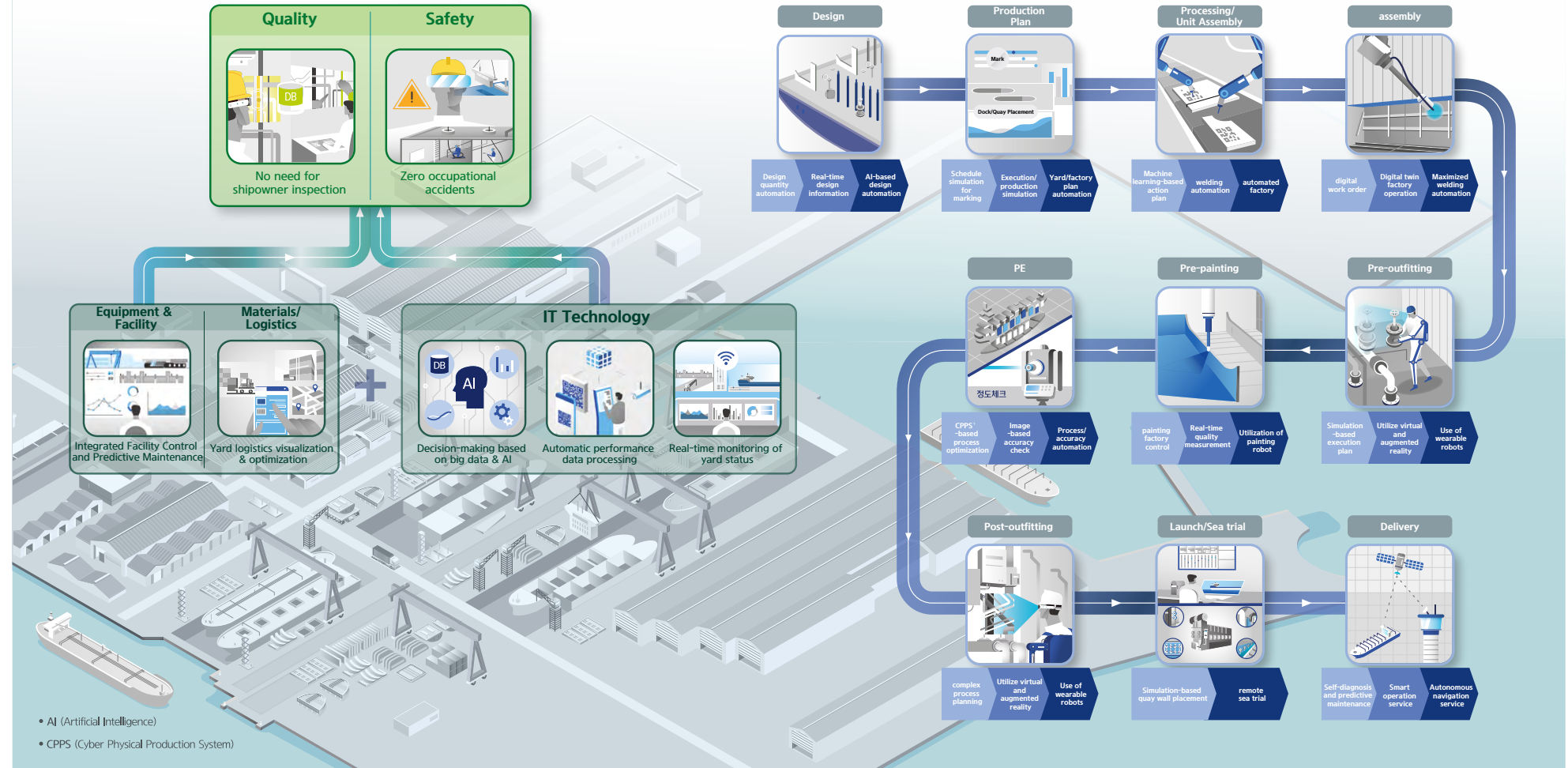
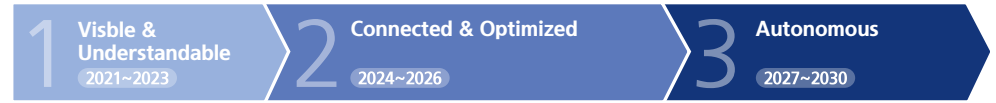
Reduce unnecessary process delays and inventory through simulation verification (CPS) in all processes from ship design to delivery, and build a shipyard that minimizes human intervention with the latest smart technology and robots

**Productivity 30% up**      **Air Quality 30% improved**      **Waste Zero (0) achieved**

# Digital Transformation

## 2030 SMART SHIPYARD

### Future of Shipyard



• AI (Artificial Intelligence)  
• CPPS (Cyber Physical Production System)

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## METRICS AND TARGETS

### Digital Transformation Roadmap

HDKSOE and its shipbuilding subsidiaries leverage the world's finest shipbuilding technology and ICT capabilities to enhance the efficiency and safety of ship manufacturing processes. A comprehensive roadmap has been established and implemented to construct a smart shipyard, consisting of the 1<sup>st</sup> stage 'visible & understandable shipyard', the 2<sup>nd</sup> stage 'connected and optimized factory with predictive capabilities', and the 3<sup>rd</sup> stage 'intelligent self-operating shipyard.' Furthermore, there is a strong emphasis on accelerating the development of 'smart ships with autonomous navigation systems' and expediting the commercialization of such vessels. Through these endeavors, we are poised to spearhead the digital ship era in the near future, solidifying our position as premier shipyards of distinction.

Short-term goal ('22-'24) Mid-term goal ('25-'27) Long-term goal ('28-'30)

### Smart Yard



#### Digital Twin Yard

- Establishment of digital twin yard based on production performance/ simulation
- Maximize productivity through optimal operation of simulation/ AI-based production resources

#### Short-term Goal

- Simulation-based integrated yard operation system

#### Mid-term Goal

- AI-based autonomous & integrated yard operation system



#### Intelligent Automation

- Building a first-class shipyard through the development and expansion of an intelligent production automation system

#### Short-term Goal

- Intelligent robot/carriage-based welding automation

#### Mid-term Goal

- Intelligent robot-based painting automation

### Smart Ship



#### Autonomous Navigation

- Leading the autonomous ship market and technology through commercialization of autonomous ship solutions

#### Short-term Goal

- Commercialization of autonomous ship solution (minimum crew/remote control)
- Demonstration of small vessel autonomous operation

#### Long-term Goal

- Commercialization of fully autonomous operation



#### Digital Twin Ship

- Digitally replicating ships in cyberspace to replace actual ship commissioning, training crews and promoting new life cycle asset management services

#### Short-term Goal

- Commercialization of virtual commissioning solution
- Commercialization of operator training solution

#### Mid-term Goal

- Commercialization of digital twin life cycle management

## » CASE STUDY

### Opening of Digital Convergence Center for Autonomous Ship Operation Demonstration

Last year, Avikus, an affiliate of HDKSOE, achieved a groundbreaking feat by autonomously crossing the ocean on a large merchant ship for the first time worldwide. Subsequently, HDKSOE obtained essential certifications, including AIP for the engine automation system (HiCBM) and the integrated safety control system (HiCAMS). This remarkable accomplishment establishes HDKSOE as a leader in autonomous ship technology.

To further advance the demonstration of autonomous navigation technology and enhance safety evaluations, HDKSOE has established a digital convergence center. This center enables virtual piloting of ships in a space called 'Digital Twin.' The opening of this center is expected to accelerate the development of the first-ever "unmanned ship" in the field of large commercial vessels capable of operating autonomously over extended durations, without the assistance of navigators, engineers, and deckhands.



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# SOCIAL

Empowering sustainable societies: HDKSOE and its shipbuilding subsidiaries' commitment to corporate social responsibility

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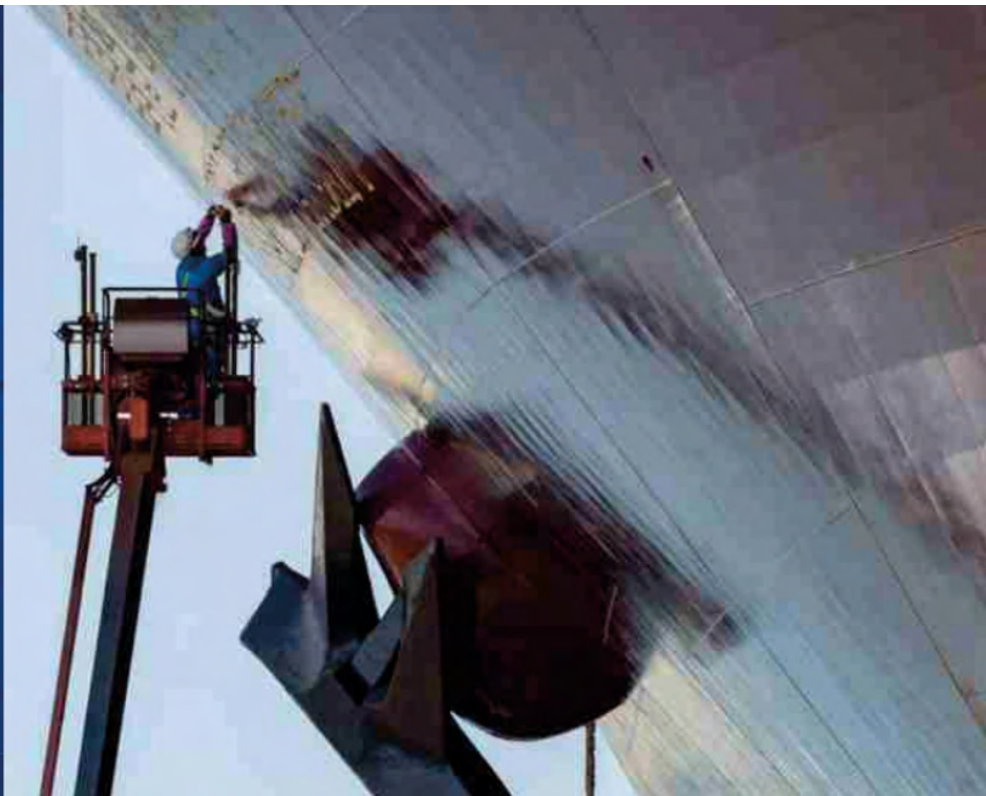
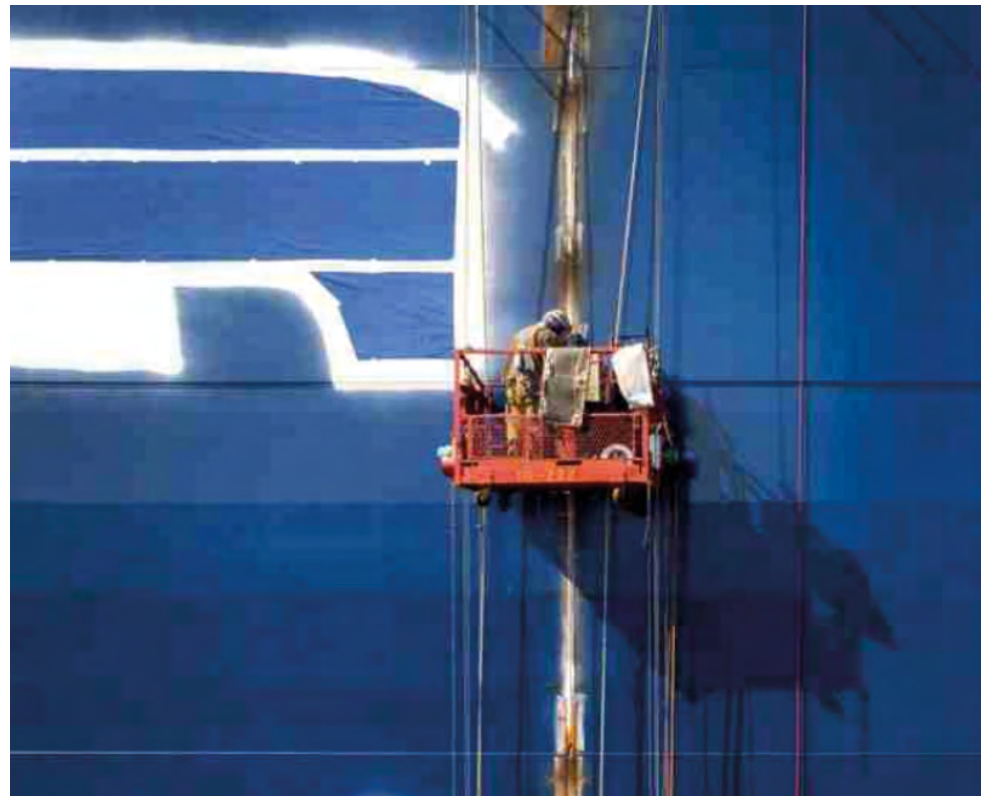
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**Safety for us and all**

HDKSOE and its shipbuilding subsidiaries make efforts to establish the highest level of safety standards, in accordance with our core value of 'Safety for us and all'. In this regard, we are dedicated to promoting safety for customers, society, and humanity through provision of safe products and services. We are committed to proactively removing the root cause of incidents and continuously make a safe working environment without serious incidents.

Financial Impact ●●●●● Social & Environmental Impact ●●●●●



**RISK**

- Process delay due to safety accidents
- Executive management vacancy owing to Serious Accident Punishment Act
- Expanding the scope of management responsibility due to strengthened laws and regulations

**OPPORTUNITY**

- Establishment of a self-discipline prevention system according to the announcement of the roadmap for reducing serious accidents
- Participation of workers in risk assessment at all work stages
- Improving safety mindset across the entire value chain

**KEY PERFORMANCE**

**Development of the industry's first safety big data platform**

**Expansion of occupational safety education for foreign workers**

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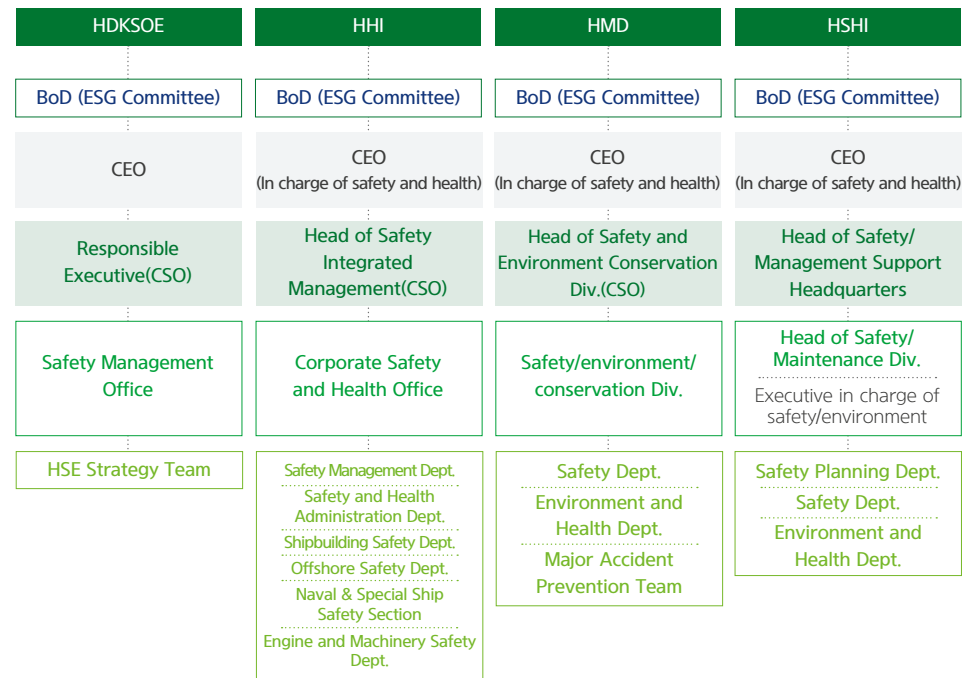
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### GOVERNANCE

#### Safety & Health Management System

With the guiding principle of 'safety first', HDKSOE and its shipbuilding subsidiaries prioritize the establishment of a robust safety and health management system directly overseen by the CEO. Under this system, the organizations closely monitor various workplace safety risks, proactively preventing industrial accidents, and striving to cultivate a safe working environment where employees can perform their duties with peace of mind. Moreover, a safety and health management system based on ISO 45001 is implemented to promote a continuous spread of a safety culture. Quarterly the Occupational Safety and Health Committee is convened to foster a collaborative approach in establishing a self-governing safety management system, fostering a partnership between labor and management.



Occupational Health and Safety Management Systems: ISO 45001 Certification

Business Site Coverage: 100%

#### Occupational Safety and Health Committee

The shipbuilding subsidiaries hold regular meetings of the Occupational Safety and Health Committee on a quarterly basis, and as needed, to collaboratively foster a pleasant and safe working environment. The committee consists of an equal number of representatives from both labor and management, who deliberate on relevant topics and ensure transparency in the decision-making process by openly sharing the outcomes with executives and employees.

Category	HHI	HMD	HSHI
Committee composition	10 people each from labor and management	8 people each from labor and management	6 people each from labor and management
Cycle	Quarterly meeting		
Agenda	<ul style="list-style-type: none"> <li>Organization and operation of departmental risk assessment committee</li> <li>Carrying out special crane safety inspections and correcting problems</li> <li>Conduct and take action for joint safety inspection by industrial safety and health committee members and supervisors for 1 hour/day</li> </ul>	<ul style="list-style-type: none"> <li>Safety Campaign Improvement Measures: When a special alert is issued, the existing safety campaign is abolished and on-site safety and health inspections are conducted while wearing shoulder belts.</li> <li>Safety inspection of in-house ground and facilities: After a typhoon, damages are sequentially restored after a thorough inspection of the in-house ground and facilities</li> <li>Measures to improve safety education for foreign workers: Measures to actively support foreign workers to smoothly understand the contents of safety education and meetings, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of affiliated clinic operation service</li> <li>The use of a filter with a full face mask</li> <li>Selection of examination institutions and work environment measurement institutions</li> </ul>



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**STRATEGY**

**2022 Safety Management Goal & Achievement**

HDKSOE and its shipbuilding subsidiaries have implemented advanced safety management systems, utilizing DT (Digital Transformation) technology, aligning with the overarching principle of 'safety first.' We have also introduced a site-oriented risk assessment system, aiming to proactively identify and mitigate potential hazards. Recognizing that the success of our industry hinges on maintaining a culture of safety, we remain dedicated to this cause. With a genuine commitment, we will continue to devise strategies and exert efforts to achieve a zero-accident record in our workplaces.

	Goal	Major Tasks	Achievement
<b>HDKSOE</b>	Establishment of a comprehensive/systematic safety, health and environment management system	<b>1. System establishment/ implementation</b> <ul style="list-style-type: none"> <li>International standard certification</li> <li>Comply with related local laws and regulations</li> </ul> <b>2. Proactive Accident Prevention</b> <ul style="list-style-type: none"> <li>Incident ZERO</li> <li>Advanced risk assessment</li> <li>Autonomous safety management</li> </ul> <b>3. Healthy work environment</b> <ul style="list-style-type: none"> <li>Reinforcing laboratory chemical management</li> <li>Employee health care</li> </ul>	<ul style="list-style-type: none"> <li>Acquisition of ISO 45001 certification</li> <li>Achievement of LTI free (zero-incident)</li> <li>Completed establishment of research/test risk assessment system</li> <li>Safety training completion: 100%</li> </ul>
<b>HHI</b>	Establishment of safety, health and environment system centered on operability	<b>'Achieving ZERO of serious accidents and an accident rate of 0.195 or less'</b> <ul style="list-style-type: none"> <li>Intensive management of major risk factors and establishment of fundamental safety improvement activities</li> <li>Reinforcing the risk assessment system based on work standards</li> <li>Reinforcement of experience/practice-oriented educational contents and expansion of safety education</li> <li>Advanced accident prevention system using DT technology</li> </ul>	<ul style="list-style-type: none"> <li>Accident rate: 0.187</li> <li>Number of people who completed safety training: 24,526</li> <li>Safety and health management costs KRW 816.5 billion (104.5% of the plan)</li> </ul> <p style="text-align: right;">HHI HSE Report </p>
<b>HMD</b>	Prevention of serious accidents by establishing a preventive safety culture  Improving unsafe behavior through active safety intervention	<b>'Achieving ZERO of serious accidents and Target Accident Rate'</b> <ul style="list-style-type: none"> <li>Accident rate less than 0.12</li> <li>Full response to the Serious Accidents Punishment Act</li> <li>Reinforcing on-site safety execution</li> <li>Development and operation of smart HSE management system</li> </ul>	<ul style="list-style-type: none"> <li>Accident rate 0.14</li> <li>Major disaster: 0 cases achieved</li> <li>Number of on-site safety corrections: 7,622</li> <li>Smart HSE system investment cost: about KRW 23 billion</li> </ul>
<b>HSHI</b>	Sustainable safety management through preemptive response	<b>'Safety and health come first in everything'</b> <ul style="list-style-type: none"> <li>Accident rate less than 0.165</li> <li>Maintain ZERO of serious accidents through preemptive safety management</li> <li>Management of external risks (Serious Accident, COVID-19, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Accident rate: 0.168</li> <li>Number of on-site safety corrections: 414</li> <li>Conducted safety activity evaluation of in-house partners</li> </ul> <p style="text-align: right;">HSHI HSE Report </p>

**METRICS AND TARGETS**

**2023 Safety Goal**

<b>HDKSOE</b>	
<b>Zero Fatality</b> <ul style="list-style-type: none"> <li>Development of HSE management system</li> <li>Proactive prevention activities such as risk assessment</li> </ul>	<b>No-disease</b> <ul style="list-style-type: none"> <li>Improvement of chemical management and health care for prevention of occupational disease</li> </ul>
<b>HHI</b>	
<b>ZERO Serious Accident</b> <ul style="list-style-type: none"> <li>Making field-oriented risk assessment from time to time</li> <li>Reinforcement of safety competency through customized safety education</li> </ul>	<b>Accident Rate 0.175 ↓ Achieved</b> <ul style="list-style-type: none"> <li>Eliminate risk factors in advance by improving safety-based design and construction methods</li> <li>Reinforcing safety and health support for suppliers for shared growth</li> </ul>
<b>HMD</b>	
<b>ZERO Serious Accident</b> <p>1. Safe workplace for all</p> <ul style="list-style-type: none"> <li>Establishment of a safety-first culture in all sectors</li> <li>Establishment of production-led responsibility and autonomous safety management system</li> <li>DT-based smart safety work environment establishment</li> </ul>	<b>Accident Rate 0.133 ↓ Achieved</b> <p>2. Pleasant and healthy Worksite</p> <ul style="list-style-type: none"> <li>Establishment of prevention-oriented health management system operation</li> </ul>
<b>HSHI</b>	
<b>ZERO Serious Accident</b> <ul style="list-style-type: none"> <li>Prevention-oriented safety operation such as reinforcing safety and health management through system inspection and internalization of risk assessment</li> </ul>	<b>No-disease Worksite</b> <ul style="list-style-type: none"> <li>Improving the chemical management system and preventing diseases through employee health promotion activities</li> </ul>



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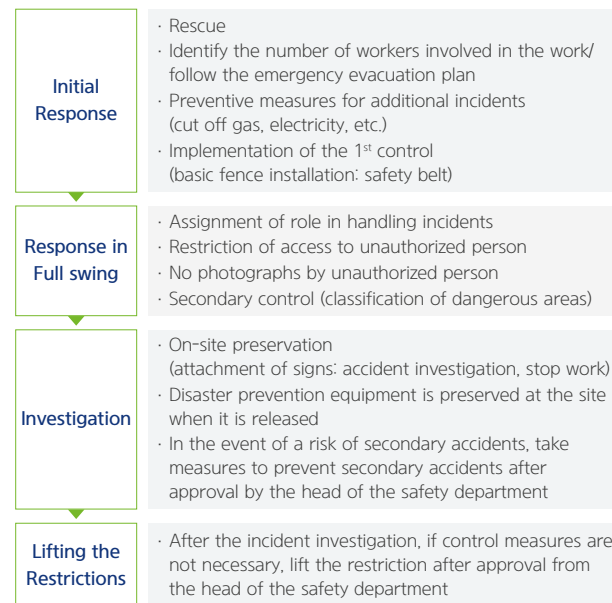
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## RISK MANAGEMENT

### Safety & Health Risk Identification/Improvement

HDKSOE and its shipbuilding subsidiaries are actively implementing an on-site risk observation system to identify and address potential risks within the workplace. This system focuses on capturing near-miss accidents, unsafe behaviors, and hazardous conditions, enabling the establishment of an autonomous safety management system across field departments. The company's emergency crisis management manual includes provisions that empower employees to suspend work and evacuate in the face of imminent danger. Procedures related to these actions have been communicated via the company's intranet and prominently displayed within the workplace. Furthermore, the safety and health department serves as a dedicated point of contact for receiving and managing information during work suspensions, ensuring compliance with relevant procedures and preventing retaliatory actions.

### Response System for Risk Reduction in the Event of Fatality



### Risk Assessment

HDKSOE and its shipbuilding subsidiaries conduct regular and ad-hoc risk assessments in accordance with the nature of work and specific circumstances, utilizing the work standard system. Based on the evaluation outcomes, special measures are formulated to mitigate high-risk factors, and the results of these improvement initiatives are recorded and managed.

### Risk Assessment Cycle<sup>1</sup>

HDKSOE	HHI	HMD	HSHI
Twice a year	Twice a year	Once a year	Twice a year

1. Ad-hoc evaluations are conducted for non-routine work and accidents.

### Hi-STANDARD System

In October 2021, HHI established and currently operates Hi-STANDARD, its in-house risk assessment system (work standards/risk assessment platform). The work standards have been redefined to align with production plants and field operations, providing a granular breakdown into unit work and work behaviors to identify risk factors effectively. In 2022, the system underwent an upgrade to enhance the usability of establishing/revision of work standards and the management of risk assessment results. Moreover, the risk assessment system was further strengthened to ensure individualized field-focused risk assessments, contributing to the establishment of a self-discipline prevention system.

### Ship System Safety Assessment

HMD conducts safety evaluations of ship systems by proactively identifying fundamental risk factors related to the safety and health of newly invested facilities (such as structures and machinery) and effectively manages data to mitigate potential risk factors stemming from the introduction of new systems and technological advancements. Starting from the design stage, key specifications are thoroughly checked, followed by the assessment of operational procedures and identification of risk factors during the installation and commissioning stages. This information is then shared with the field department, ensuring a comprehensive approach to safety management. HMD actively applies this process to site safety management, effectively addressing potential harmful and risk factors that may arise in blind spots.

### Operation of Safety Council

Shipbuilding subsidiaries regularly hold safety "Safety council" to share best practices in safety accident prevention and improve safety risk response know-how.

### Safety Big Data Platform

The shipbuilding subsidiary became the first in the industry to develop a safety accident prediction model based on big data and provide visualized safety information. Over the past decade, we have diligently collected, analyzed, and standardized safety accident data from the shipbuilding process. This valuable data serves as the foundation for establishing an integrated data operating environment, enabling proactive management of safety risks. To enhance clarity and understanding, safety indicators are presented in a visual format, facilitating intuitive comprehension. Detailed safety information can be accessed, allowing for a comprehensive understanding of accident status across group companies, as well as a breakdown of safety incidents specific to each individual company.

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## PERFORMANCE

### Occupational Safety and Health Training

To cultivate a safety-first culture, HDKSOE and its shipbuilding subsidiaries offer tailored safety training programs aimed at ensuring employees have a clear understanding of their safety roles and responsibilities, as well as the competence to fulfill those roles effectively.

Newly recruited employees, who may not be familiar with workplace safety and health standards, undergo training on internal safety regulations and method of safety inspections prior to commencing work. The training incorporates hands-on experiences to facilitate a swift adaptation to the workplace while prioritizing safety practices.

Furthermore, HMD places great emphasis on fostering safety awareness and minimizing risks through customized training initiatives. This includes conducting specialized safety and health training for older and female workers, acknowledging their unique needs and ensuring their well-being in the workplace.

### Safety & Health Training Management System

HHI and HMD have implemented a QR code attendance management system for all safety training sessions, aiming to enhance the efficiency of training administration. This system significantly reduces unnecessary administrative tasks, ensuring improved efficiency and accuracy in managing training records. Furthermore, efforts are underway to develop a user-friendly system that enables easy and swift management of safety training data in the future.

## > CASE STUDY

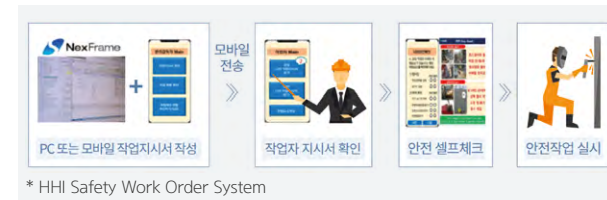
### Education for Foreign Workers

HDKSOE and its shipbuilding subsidiaries are implementing safety and health training programs that are tailored to foreign workers, who may be more susceptible to accidents due to language barriers. Recognizing the importance of raising safety awareness among this group, HHI has developed safety guidebooks translated into eight languages, including English, Vietnamese, Thai, Uzbek, Sri Lankan, Russian, Indonesian, and Mongolian. Dedicated interpreters and wireless transceivers are also provided during new employee training and specialized training sessions for current employees to ensure effective communication and understanding.

### Reinforcing DT-based Safety Management

#### Mobile Safety Work Order System

HHI is enhancing on-site risk management by implementing a mobile safety work order system. Supervisors can send work instructions and safety information to workers through their PCs or mobile devices, allowing workers to conveniently access and review the provided details on their personal mobile phones. Moreover, the system includes a self-safety check feature, which prompts workers to assess the condition of their safety equipment and ensure a tidy working environment prior to commencing their tasks.



\* HHI Safety Work Order System

#### Subcontracting Safety Management System

HSHI has developed and implemented a contractor safety management system in compliance with the enhanced Industrial Safety and Health Act. This system allows for the centralized management of contractor safety training and contractor safety incidents, establishing a unified framework for contractor management and clarifying the responsibilities and management scope of designated personnel in charge.

### Employee Health Management

#### Provision of Occupational Health and Medical Services for Employees

HDKSOE and its shipbuilding subsidiaries prioritize the health and safety of our employees by providing occupational health and medical services, aiming to eliminate factors that pose risks to employee health. The companies operate an in-house clinic, ambulance services, and a health promotion center to ensure quick responses to emergencies and reinforce preventive activities. HDKSOE conducts regular health check-ups to monitor employees' health status, and specialized examinations for noise, harmful radiation, metals, and organic compounds are carried out. Customized preventive management is implemented for each job category.

HHI offers accessible health and medical services through its in-house health promotion center, regional infirmary, and oriental medicine clinic. Employees receive tailored follow-up services, including health management education, professional medical consultations, and work hour adjustments. Participatory health promotion programs, such as smoking cessation clinics and obesity management initiatives, are also provided.

HMD provides occupational health and medical services through its affiliated in-house clinic and physical therapy room, ensuring proximity for employees. The company has a mutual contract with Dongeui University Oriental Medicine Hospital to operate an in-house oriental medicine clinic, focusing on preventing musculoskeletal disorders and promoting employee welfare.

To enhance employee medical welfare, HSHI established an in-house clinic in 2022 and operates it along with an oriental medicine treatment, physical therapy, rehabilitation center, and brain imaging room. Employee health activities, including mental health support, mobile healthcare, dietary habit improvement, brain heart disease prevention, and Nordic walking, are conducted through expanded health promotion programs in collaboration with local public health centers.



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## PERFORMANCE

### Health & Safety Management for Contractor

HDKSOE and its shipbuilding subsidiaries extend our safety and health policies to contractor, promoting independent safety management by supporting various safety & health activities. The shipbuilding subsidiaries evaluate the safety and health levels of potential contractor when selecting them, aiming to nurture professional contractor with strong production and safety capabilities. We provide support for safety activities and offer various assistance to enhance the safety management capabilities of contractor. Regular evaluations of contractor safety and health activities are conducted to ensure ongoing improvement.

### Contractor Safety and Health Management Process



### Support for Safety and Health Management Systems

HDKSOE and its shipbuilding subsidiaries provide support for the implementation of safety and health management systems among our contractors, aiming to ensure safe work environments and prevent incidents. We offer technical guidance on safety management to enhance the safety management capabilities of our contractors. Furthermore, the shipbuilding subsidiaries are committed to establishing a safe value chain by extending their support for safety and health management to not only internal contractor but also external contractor.

**HHI** conducts biannual inspections and provides guidance on safety and health management systems and on-site safety management for external contractor who have signed agreements for safety management technical support. The company plans to gradually expand the number of contractor included in these inspections. Additionally, HHI has established a system to provide administrative service support and safety-related information to major external contractor in the event of a major disaster.

**HMD** supports the establishment of safety and health management systems for major external contractor in preparation for relevant regulations, and provides on-site guidance, including compliance with high-risk work standards. In the future, HMD plans to provide periodic support such as assistance with safety data sheets, support for foreign education, sharing safety and health information, and organizing conferences.

**HSHI** offers on-site safety guidance and assistance with regulatory compliance for major external contractor. The company also conducts meetings with safety personnel to provide safety training, gather feedback on challenges, and provide support for safety inspections.

### Support for Contractor Safety Training and Strengthen Communication

HDKSOE and its shipbuilding subsidiaries offer special safety lectures for representatives of contractor and provide training for supervisors of contractor to enhance safety awareness and reinforce on-site safety management practices. Furthermore, we support safety training for workers from contractor to help them understand the work environment and identify potential risks, enabling them to work safely. Additionally, HDKSOE and its shipbuilding subsidiaries strengthen communication with our contractor through meetings and safety and health councils, where the attendees share safety promotion strategies, review important matters concerning contractor safety management, and discuss challenges and potential solutions.

### Health Management Support

HDKSOE and its shipbuilding subsidiaries collaborate with health management agencies to provide support for the health management of contractor. Through regular meetings with health management agencies, we monitor the health management status of the contractor, identify areas for improvement, and track the number of contractor workers requiring health management. Such measures assist the contractor in establishing and implementing health management system.

### Major Rewards Related to Safety and Health of Contractor

Our shipbuilding subsidiaries are enhancing the safety standards of our contractor by recognizing and rewarding safety managers and contractor who demonstrate exceptional safety capabilities and outstanding safety management practices.

Company	Awards
<b>HHI</b>	1. Semi-annual reward for excellent contractor safety managers KRW 500,000/person paid 2. Quarterly safety and reward for excellent contractor - KRW 10 million/company
<b>HMD</b>	1. Semi-annual reward for excellent contractor safety managers - KRW 500,000/person paid 2. Semi-annual reward for the best contractor in each department (KRW 30,000 for each contractor worker) 3. Incentives based on monthly safety check (KRW 50,000 for each contractor worker)
<b>HSHI</b>	Quarterly safety reward for excellent contractor - KRW 10 million/company

# Material Topic 4. Supply Chain ESG Management



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### Efforts to Spread ESG throughout the Value Chain

HDKSOE and its shipbuilding subsidiaries recognize the impact of sustainability issues in the supply chain on corporate reputation and management practices, and are enhancing the ESG risk management system for suppliers. In 2022, HHI implemented a system to assess suppliers' ESG risks and conducted in-depth evaluations based on 61 ESG indicators jointly developed with Korea Commission for Corporate Partnership. Building on this, HDKSOE and its shipbuilding subsidiaries will establish a supply chain ESG management system and incorporate information disclosure as a shared KPI from 2023. Additionally, We will provide ESG consulting to a total of 80 suppliers to promote ESG management throughout the value chain.

Financial Impact ●●●●○ Social & Environmental Impact ●●●●○

### RISK

- Legal risks arising from strengthened laws such as the Fair Trade Act and the Supply Chain Due Diligence Act
- Occurrence of negative issues in the supply chain during the shipbuilding processes, such as rising prices of raw materials for steel

### OPPORTUNITY

- Preemptive response to supply chain risks by establishing a supplier ESG risk diagnosis system
- Strengthen market competitiveness by proactively responding to global regulations such as the Supply Chain Due Diligence Act

### KEY PERFORMANCE

**Conducted ESG consulting for a total of 35 companies**

(HHI)

**Rewarded 68 suppliers through evaluation**

HHI 42 companies  
HMD 11 companies  
HSHI 15 companies



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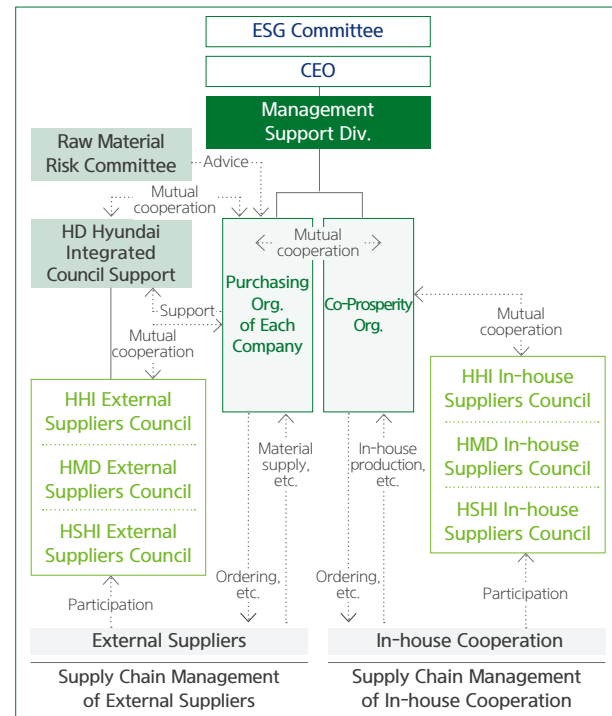
## GOVERNANCE

### Sustainable Supply Chain Management System

HDKSOE and its shipbuilding subsidiaries are actively fostering cooperative partnerships with suppliers to ensure sustainable competitiveness and contribute to a fair society. In order to promote the growth and development of these suppliers, we strive to establish a healthy business ecosystem that fosters mutual growth. This is achieved through various supports such as financial support, training support, employment support, technical support, and management support, all aimed at enhancing the competitiveness of our suppliers.

### Supply Chain Management Organizational System

Due to the diverse nature of the shipbuilding industry, the value chain of HDKSOE and its shipbuilding subsidiaries comprises various internal and external suppliers. To ensure responsible supply chain management, a dedicated organization oversees supply chain management, taking into account the unique characteristics of each suppliers. Through a group-wide integrated council, mutual cooperation and development are promoted.



### Supply Chain Operating Philosophy

HDKSOE and its shipbuilding subsidiaries adhere to the supply chain management principles of transparency, legality, and fairness, as well as the four guidelines set by the Fair Trade Commission. This commitment is aimed at establishing transparent and equitable trade practices and contributing to the establishment of a fair subcontracting system within the supply chain operations. Regular audits of the supply chain and continuous communication with suppliers provide opportunities to enhance and improve procurement policies, as we strive to operate a sustainable supply chain in collaboration with our suppliers.

<b>Vision</b>	Establishment of Sustainable SCM(Supply Chain Management) through innovation and co-prosperity		
<b>Goal</b>	Encourage growth and development of suppliers, support for strengthening competitiveness		
<b>Key Policy</b>	<u>Continuous System Improvement</u> · Expand participation of SMEs · Establishment of institutional support system, etc.	<u>Establishment of Fair Trade Practices</u> · Introduced and complied with the 4 major practices of the Fair Trade Commission · Establishment of reasonable trade practices · Expansion of communication with suppliers	<u>Strengthening the Competitiveness of Suppliers</u> · Expansion of supplier sales · Education/recruitment/technical/ financial support
<b>Support Org.</b>	<u>Group Co-Prosperity Committee</u> Policy and activity planning, promotion and consultation to promote consistent co-prosperity at the group level	<u>Co-Prosperity Council</u> Development of co-prosperity and cooperation plan for tier 1 and tier 2 supplier companies	<u>Co-Prosperity Support Org.</u> Practical execution of shared growth policies and activities, management of performance, and provision of feedback

### Registration Process for Potential Suppliers

HDKSOE and its shipbuilding subsidiaries thoroughly review the potential suppliers' qualifications based on our standards, including management and quality factors. When considering new registrations, ESG factors, including environmental and social standards, are incorporated into the evaluation process. This ensures a comprehensive review that encompasses sustainability aspects in addition to other criteria.

Provisional Registration			Official Registration			
<b>Fill out and save provisional registration application form</b> · Select department (team) for re-transaction · Enter basic company information	<b>Receipt of purchase planning Dept.</b> · Classification of requests from the Purchasing Planning Department (designated purchasing department (team)) · Review the possibility of trading in the designated purchase order (team)	<b>Result informing</b> · Email notification of reasons for approval/ non-approval (In case of approval, integrated login ID will be notified) · The person in charge of purchase will contact you separately to guide you through the next steps	Official registration after review by purchasing team	<b>Install HiPRO<sup>1</sup> program</b>	<b>Enter suppliers info</b>	<b>Quality/ onsite visit &amp; inspection</b>
				<b>Submit required document (including credit assessment)</b>	<b>Request official registration</b>	

1. HiPRO: Hyundai Integrated Procurement System

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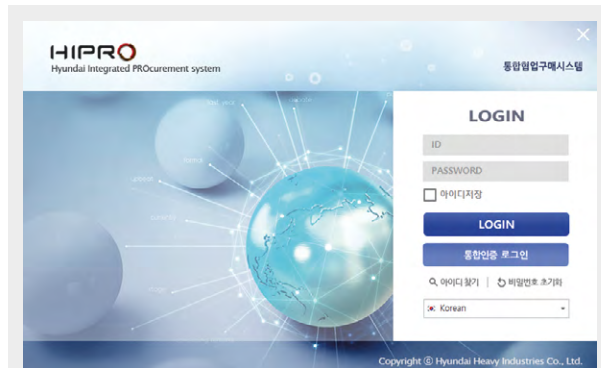
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## STRATEGY

### Integrated Purchasing System Operation

HDKSOE and its shipbuilding subsidiaries have implemented an integrated procurement system called G-HiPRO to promote transparency and fairness in the procurement process. The system includes an electronic bidding system that enables transparent supplier selection and improves efficiency in the entire contract process, from contracting to delivery, transaction statement issuance, and payment. In particular, to promote compliance and ethical management, we sign material trading basic contracts based on the standard subcontracting agreement in the shipbuilding industry. We also require supplier companies to submit a commitment to ethical management and a declaration of relevant interests, creating a desirable purchasing environment. Additionally, regular/additional credit ratings, quality assessments, delivery/cooperation evaluations, and ESG management activity assessments are conducted to assess the sustainability of suppliers. Outstanding suppliers receive commendations for excellent cooperation and incentives through financial support system. We support underperforming suppliers by providing guidance and measures to improve our performance.



G-HiPRO screen image

### Supplier Code of Conduct

HDKSOE and its shipbuilding subsidiaries have revised the corporate social responsibility pledge to a code of conduct for suppliers, aiming to foster a healthy industrial ecosystem and achieve co-prosperity with suppliers. Through the electronic signature process, all suppliers are required to agree and adhere to this code of conduct, which covers areas such as human rights, safety and health, environmental management, ethics, and business management. In line with the principles of transparent and fair supply chain management, HDKSOE and its shipbuilding subsidiaries are committed to conducting inspections and due diligence to ensure suppliers' compliance with legal requirements.

<b>Human Rights</b>	<ul style="list-style-type: none"> <li>Prohibition of Discrimination and Harassment in Employment</li> <li>Promote workers' rights and interests</li> </ul>
<b>Safety and Health</b>	<ul style="list-style-type: none"> <li>Establishment of management-led safety and health management system</li> <li>Industrial accident prevention and safety and health management</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>Establishment of environmental management system for environmental protection</li> <li>Manage pollutants and greenhouse gas emissions</li> </ul>
<b>Ethics</b>	<ul style="list-style-type: none"> <li>Establishment of ethical management policy</li> <li>Securing transaction transparency</li> </ul>
<b>Business Management</b>	<ul style="list-style-type: none"> <li>Establishment of an autonomous decision making</li> <li>Responsible supply chain management</li> </ul>

### ESG Capacity Building for Suppliers

To establish a sustainable supply chain, HHI actively participated in the ESG support project for suppliers under the supervision of Korea Commission for Corporate Partnership, aiming to enhance their ESG capabilities. Following the "Small and Medium Business ESG Standard Guidelines" provided by the Committee, HHI developed 61 ESG indicators specifically tailored to the shipbuilding industry. We conducted ESG training for 394 suppliers and provided ESG capacity building consulting for 35 small and mid-sized suppliers. As a result, 30 out of 31 small and medium-sized enterprises (SMEs) obtained the "ESG Outstanding Small and Medium Business Confirmation" certification from Korea Commission for Corporate Partnership. Furthermore, to further enhance supplier ESG performance, they plan to introduce an ESG evaluation component within the existing supplier rating evaluation process. They will also incorporate ESG factors in the assessment criteria when registering new suppliers. These measures are intended to incentivize and encourage suppliers to prioritize and improve their ESG practices.

### Results of ESG Support Project (Consulting)

Company	Project Start	Final Compliance Rate	Improving Result	Improvement Effect <sup>1</sup> (KRW million)
SMEs (31 companies)	62.3%	93.1%	30.9%	7,670
Mid-standing (4 companies)	66.3%	92.1%	25.8%	885
Total (average)	62.7%	93.0%	30.3%	8,555

1. Effect of improvement: Total fines and penalties that may be imposed on suppliers if they have not been improved through ESG support projects

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## RISK MANAGEMENT

### Supply Chain Risk Management Plan Supply Chain Management Process

HDKSOE and its shipbuilding subsidiaries have established and are implementing a supply chain ESG management process to foster a healthy and sustainable supply chain. All suppliers engaged in transactions with the company are required to adhere to the suppliers code of conduct, and ESG evaluations are conducted using an ESG diagnosis checklist. The findings from the ESG evaluation are not limited to simple recommendations for improvement; the company provides ESG consulting at its own expense to facilitate the prompt adoption of ESG management practices by small and medium-sized companies and to mitigate ESG risks within the company's supply chain. Furthermore, through a dedicated ESG training program, continuous support is provided to suppliers to enhance their understanding of ESG management and develop their expertise in the field. This initiative aims to promote awareness and knowledge of ESG principles among suppliers and encourage their active engagement in ESG-related practices.

<b>1. Supplier Code of Conduct Pledge</b> <ul style="list-style-type: none"> <li>· For all trading suppliers</li> <li>· Pledge of compliance through electronic signature</li> </ul>	<b>2. Inform ESG Guidelines</b> <ul style="list-style-type: none"> <li>· Utilize government recommended guidelines</li> <li>· Consider shipbuilding industry characteristics</li> </ul>	<b>3. Conduct ESG Training</b> <ul style="list-style-type: none"> <li>· ESG awareness improvement training</li> <li>· ESG specialized education</li> </ul>
<b>4. Conduct ESG Assessment</b> <ul style="list-style-type: none"> <li>· Self-diagnosis based on the ESG checklist</li> <li>· On-site evaluation through a third party organization</li> </ul>	<b>5. Recommend for Improving ESG Deficiencies</b> <ul style="list-style-type: none"> <li>· Consider urgency, feasibility, etc.</li> </ul>	<b>6. ESG Consulting Support</b> <ul style="list-style-type: none"> <li>· Select and support suppliers by year</li> <li>· Improvement support through consulting by specialized institutions</li> <li>· Improvement consulting items: preparation of improvement plans for incomplete items, support for compliance with legal requirements, system establishment, and support for benchmark indicators</li> </ul>

### Supplier ESG Evaluation Items

E	}	Establishment of environmental goals, environmental management governance system, acquisition of environmental permits, violations of environmental laws and regulations, waste treatment, air pollutant management, measurement of greenhouse gas emissions, water and wastewater management, noise and vibration management, resource recycling activities, energy conservation, energy usage management
S	}	Occurrence of human rights issues, subscription to 4 major insurances, implementation of statutory compulsory education, operation of maternity protection system, management of underage employment, operation of grievance handling system, preparation of employment contract, dismissal and retirement policy, health examination of employees, employment rules, human rights management, freedom of association, safety policy, safety prevention activities, safety inspection, fire training and education, information protection system
G	}	ESG policy, ESG risk management, social responsibility activities, service years and turnover rate, anti-corruption program operation, stakeholder communication, ethics reporting channel operation, corruption-related law violations, fair trade law violations

### Supporting the Spread of ESG Management for Small and Medium-sized Suppliers

HDKSOE and its shipbuilding subsidiaries apply differentiated requirements based on supplier classification to facilitate systematic ESG management in the supply chain, allowing for gradual expansion of ESG practices. This approach enables proactive response to domestic and international developments, as well as enhanced regulations. HDKSOE and its shipbuilding subsidiaries are dedicated to establishing a robust and comprehensive ESG management system throughout the entire supply chain.

Item	Target	Measures
Requirements	Group I / II Small and medium-sized suppliers	<ul style="list-style-type: none"> <li>· Implementing organization recommendations</li> <li>· CEO or board of directors</li> <li>· ESG Data Management</li> <li>· Governance: BoD operation status, violation of laws/regulations, etc.</li> <li>· Greenhouse gas: current status of energy use, greenhouse gas emissions, etc.</li> <li>· Safety/Human Rights: Current status of industrial accidents, current status of education, etc.</li> </ul>
	Group I / II mid-sized suppliers	<ul style="list-style-type: none"> <li>· ESG Information Disclosure Recommendation</li> <li>· Sustainability report publication (third party certification)</li> </ul>
Supports	Support entire suppliers	<ul style="list-style-type: none"> <li>· ESG strategy establishment support</li> <li>· Share analysis of external environment/law system trends</li> </ul>

### Suggestions for Improving Suppliers' Inadequacy

HDKSOE and its shipbuilding subsidiaries analyzed suppliers' overall awareness and readiness for ESG management through self-assessments and consultations. The analysis revealed insufficient awareness and readiness in certain areas. As a result, we identified key deficiencies in each ESG category and implemented improvement measures to establish a sustainable supply chain.

Category	Indicators	Improvements	Measures
E	Waste management	· Designation of treatment plan and storage location by waste type	Promoting improvement of the ESG level of suppliers accompanied by support and evaluation
	Creation and revision of employment rules	· Reflection of essential matters within employment rules based on the Labor Standards Act	
S	Consideration for foreign workers	<ul style="list-style-type: none"> <li>· Provision of required documents for labor contracts in a language and method that foreign workers can fully understand</li> <li>* Plan to provide 6 major national labor contracts from 2023</li> </ul>	<ul style="list-style-type: none"> <li>· Provide customized materials and guidelines for each supplier shortage index</li> <li>· Utilization of new registration and regular evaluation through the development of ESG indicators specialized for the shipbuilding industry</li> </ul>
	Emergency response program	<ul style="list-style-type: none"> <li>· Create First Aid Process</li> <li>· Emergency supplies, First Aid kits, and appointment of health managers</li> </ul>	
	Expansion of convenience facilities for workers	· Installation of resting facilities in workplaces that meet the standards of the Industrial Safety and Health Act	
G	Ethics management program	· Operating a reporting channel for unethical and anti-corruption acts and a program to protect the identity of whistleblowers	

# Supply Chain ESG Management

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## PERFORMANCE

### Supply Chain Welfare Program

HDKSOE and its shipbuilding subsidiaries offer a range of welfare benefits to suppliers, including school loans for children, incentives for skilled mechanics, and incentives for longevity among the youth. In 2022, HHI enhanced the system and increased school loan support for children to 100%, while also promoting welfare initiatives such as housing loan interest support.

### Supply Chain Support System

#### Co-prosperity Fund

HDKSOE and its shipbuilding subsidiaries have established a Co-Prosperity fund to assist in covering the interest costs of loans for suppliers. We also participate in co-prosperity production finance, providing guarantees for working capital loans for suppliers. Since 2011, HDKSOE and its subsidiaries have implemented a policy of making 100% cash payments for materials, aimed at helping suppliers improve their liquidity. Furthermore, through the 'Nice Wink' system, which monitors cash payments between first and second-tier suppliers, we proactively prevent potential issues when dealing with second-tier suppliers.

#### Operating Fund Support

HDKSOE and its shipbuilding subsidiaries ensure liquidity for small and medium-sized enterprises and protected mid-sized enterprises by making 100% cash payments for materials twice a month. We also advance the delivery payment date prior to holidays such as New Year's Day, Chuseok, and summer vacation to provide early payment for materials to suppliers.

HHI, in particular, made advance payments totaling KRW 910.2 billion to 1,551 suppliers ahead of the 2022 holiday season. Additionally, they grant secondary suppliers the right to use the Co-Prosperity Fund, and enable second and third-tier suppliers to conduct their own management diagnosis through the payment monitoring system.

HMD supports suppliers in their management activities and assists them in overcoming financial difficulties through the establishment of Co-Prosperity Fund, amounting to approximately KRW 5 billion.

Additionally, as part of a joint labor welfare fund, a total of KRW 4.2 billion was raised and operated, with KRW 1 billion contributed by HMD, KRW 1.1 billion from suppliers, and KRW 2.1 billion from the government.

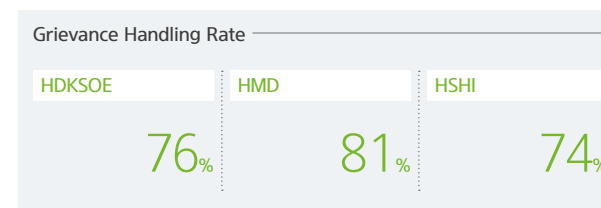
HSHI made advance payments of KRW 217 billion to 1,406 suppliers ahead of the 2022 holiday season. Furthermore, they provide proactive payments to regional base suppliers and grant secondary suppliers the right to use the Co-Prosperity Fund.

#### Reward for Excellent Suppliers

<b>HHI</b>	· A total of 42 companies selected annually (30 companies for quality, 9 companies for innovation, 3 companies for merit)
<b>HMD</b>	· A total of 11 companies selected annually (8 companies for quality, 2 companies for innovation, 1 company for merit)
<b>HSHI</b>	· A total of 15 companies selected annually (12 companies for quality, 2 companies for innovation, 1 company for merit)

#### Handling Supply Chain Grievances

HDKSOE and its shipbuilding subsidiaries have established communication channels with suppliers, including regular consultative bodies, to address grievances that may arise within the supply chain. The grievance handling ratio through these channels is as follows.



## METRICS AND TARGETS

### Supply Chain Management Goals for 2023

As part of the key ESG strategies for 2023, HDKSOE and its shipbuilding subsidiaries are in the process of establishing a supply chain ESG management system. This system aims to support the growth of a sustainable supply chain and promote the integration of ESG practices throughout the entire value chain. Additionally, HDKSOE and its shipbuilding subsidiaries have implemented a common key performance indicator (KPI) for supply chain ESG management and information disclosure.

#### Establishment of Supply Chain ESG Management System and Information Disclosure

- Advance supply chain ESG policy
- Establish the supply chain's sustainability risk management system
- Establish ESG evaluation system for the suppliers
- Conduct ESG evaluation on the suppliers
- Establish ESG improvement and due diligence system for suppliers

HHI is currently providing ESG consulting services for suppliers, and in 2022, consultations were conducted with a total of 35 suppliers. In 2023, our goal is to further enhance supply chain management by extending ESG consulting to all suppliers within our shipbuilding subsidiaries.

Company	Consulting Service in 2022	2023 Goal
HHI	35	40
HMD	none	20
HSHI	none	20

#### 2022 Supply Chain Support Performance

<b>HDKSOE</b> · Supplier ESG Risk Management Performance · Achieved ESG management improvement support for <b>30 companies</b>	<b>HHI</b> · <b>70.2%</b> cash payment rate to 2 <sup>nd</sup> -tier suppliers · Co-Prosperity Fund Operation Performance <b>KRW 236.1 billion</b>
<b>HMD</b> · Joint Labor Welfare Fund <b>KRW 4.2 billion</b>	<b>HSHI</b> · Co-Prosperity Fund Support Performance <b>KRW 77 billion</b> · Neighboring company reward <b>KRW 1.26 billion</b> · Common welfare fund <b>KRW 1 billion</b>



# Material Topic 5. Labor-management Relations



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## Reinforcement of Corporate Competitiveness through the Establishment of Cooperative Labor-management Relations

HDKSOE and its shipbuilding subsidiaries recognize the significance of cooperative labor-management relations as a crucial driver for corporate growth. We consider all executives and employees as valuable assets for future competitiveness, aiming to establish a harmonious labor-management relationship based on a corporate culture of mutual respect and trust. In 2022, each company conducted labor-management council meetings four times a year, fostering a culture where labor and management collaborate as a united team by sharing the company's vision with executives and employees. As a result, labor-management discussions were conducted without disputes, and the companies will continue to move forward energetically, striving to become a century-old company by fostering unity among all executives and employees.

Financial Impact ●●●●○ Social & Environmental Impact ●●●●○

### RISK

- Reduced productivity due to disputes
- Loss of trust in ship owners due to labor-management risk

### OPPORTUNITY

- Productivity improvement by strengthening mutual cooperation
- Workers' understanding of overall management and improvement of management by expanding opportunities to participate in decision-making
- Improvement of ability to jointly respond to changes in the corporate environment

### KEY PERFORMANCE

Each company's labor-management council is held four times a year

Quarterly management status briefing

(Shipbuilding subsidiary)



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## GOVERNANCE

### Labor-Management Council

HDKSOE holds quarterly labor-management council meetings in compliance with the Act on the Promotion of Employees' Participation and Cooperation. Similarly, the shipbuilding subsidiaries and their labor unions engage in collective bargaining and reach Collective Agreements in accordance with labor laws. Active negotiations take place on matters where reaching an agreement between labor and management is challenging. In cases where an agreement cannot be reached, the mediation system is actively utilized to minimize disputes.

### Labor Policy

#### Collective Agreement

HDKSOE currently does not have a labor union, thus there is no collective agreement in place. However, in the case of shipbuilding subsidiaries and their labor unions, the right of the labor union to engage in collective bargaining and reach agreements is recognized in order to improve the working conditions of executives and employees, in accordance with the fundamental principles of the Constitution and labor-related laws (Article 1 of the Collective Agreement). Additionally, as per the Union Shop regulations (Article 6 of the Collective Agreement), new employees become union members upon joining the company. Furthermore, the collective agreement explicitly guarantees the freedom of union activities for union members, and specifies that no adverse actions are permitted for lawful union activities (Article 11 of the Collective Agreement).

#### Labor Policy

Based on the 'Violence and Harassment Convention (No. 190) and Recommendation (No. 206) of ILO, the company is implementing measures to prevent and address workplace harassment. In accordance with Article 76-2 of the Labor Standards Act, the company has added provisions related to the prohibition and prevention of workplace harassment, as well as measures to be taken in case of harassment, to the collective agreement and employment rules. These provisions aim to foster a workplace culture that respects human rights. The company provides guidance and training to all employees to promote awareness and understanding of these measures.

Company	No. of Meetings	Number of Items to be Discussed/ Items to be Solved	Agenda
HDKSOE	4	17/17	<ul style="list-style-type: none"> <li>· Q1 (3 cases): ① Operation of rental vacation facilities for employees in 2022, ② Preparation for the election of Labor Com-mittee members, ③ Discussion of agenda related to performance-based pay</li> <li>· Q2 (4 cases): ① Method and process of selecting Labor Committee members, ② Scope of operaion of selective work system, ③ Operation of summer resort facilities, ④ Performance-based pay</li> <li>· Q3 (2 cases): ① Appointment of Assistant Administrator and Grievance Handling Committee and procedures, ② Division of the in-house labor welfare fund</li> <li>· Q4 (9 cases): ① Performance-based pay for 2022 and basic pay for 2023, ② Whether Collective Agreements were applied to affiliates, ③ Some of the agreements in 3Q, ④ Employee housnig support system, ⑤ Retirement pension system, ⑥ Summer vacation period adjustment, ⑦ Wage compensation for those subject to maternity protection, ⑧ Selective work system, ⑨ Computerization of annual salary contracts, etc.</li> </ul>
HHI	4	76/51	<ul style="list-style-type: none"> <li>· Q1 (19 cases): ① Consultation on confirmation of calculation details related to ordinary wages, ② Split use of long-term service leave in 2025, ③ Execution after reviewing the expansion and flexible operation of commuting buses, ④ Conversion of branch facility vouchers into welfare points and expansion of partnerships</li> <li>· Q2 (26 cases): ① Additional summer and winter content to promote welfare benefits for employees' children, ② Establishment of a system to check the payment details of outpatient medical expenses paid by the company, ③ Resolving the shortage of welfare convenience facilities and expanding facilities due to the increase in the number of people in the special ship division, ④ Continuously adding new portable toilets and improving sanitation conditions</li> <li>· Q3 (15 cases): ① Replacement of office height-adjustable monitors and gradual replacement of old monitors, ② Increase the discount rate at the Hyundai Arts Center, ③ Review the improvement of the payment standard for gouging work</li> <li>· Q4 (16 cases): ① Expansion of the operation of psychological treatment rooms, ② Installation of information boards for prior notice of the launch schedule</li> </ul>
HMD	4	25/22	<ul style="list-style-type: none"> <li>· Q1 (6 cases): ① replacement of on-site old mobile toilets, ② installation of additional drinking fountains at on-site docks, ③ replacement of washing machines and obsolete equipment, ④ installation of electric car charging parking lots, ⑤ change of use period for congratulations and condolences holidays, ⑥ Request for condolence wreaths</li> <li>· Q2 (8 cases): ① Restaurant dualization, ② Provision of functional T-shirts, ③ Operation of baths in shower area/opening of outdoor sports facilities, ④ Installation of container for break room at Yongyeon Plant, ⑤ Installation of electronic door locks in the field team office, ⑥ Provision of vertical mice for office workers, ⑦ Split use of long-term service leave, ⑧ Telecommuting for pregnant women and use of in-house parking lot</li> <li>· Q3, Q4 (11 cases): ① Remodeling of public welfare facilities and replacement of fixtures, ② Replacement of blinds in dormitory, ③ Re-operation of Hanwoori swimming pool (to be discussed later), ④ Addition of options for refresh vacation (not agreed upon), ⑤ Change of settlement criteria of severance pay (not agreed upon), ⑥ Dualization of restaurants and price increase, ⑦ Free breakfast and dinner, ⑧ Ski camp for children, ⑨ Demand for increase in the discount rate at Hyundai Arts Center and Hanmaeum Center, ⑩ Confirmation of summer vacation dates for 2023, ⑪ Performance-based pay for 2022</li> </ul>
HSHI	4	12/10	<ul style="list-style-type: none"> <li>· Q1 (4 cases): ① Labor-management joint site inspection, ② Public bath remodeling, ③ Restroom remodeling, ④ Restaurant issue improvement</li> <li>· Q2 (5 cases): ① Improvement of bus problems, ② Improvement of vending machine operation, ③ Flexibility of sick leave, ④ Improvement of on-site rest area, ⑤ Installation of ATM</li> <li>· Q3 (2 cases): ① Improvement of the shower room for the 3<sup>rd</sup> Field Work, ② Restaurant remodeling</li> <li>· Q4 (1 case): ① Canopy installation for the 2<sup>nd</sup> Field Work</li> </ul>

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**STRATEGY**

**HDKSOE** ceased to have a labor union as the last union member withdrew from the union in October 2022. Currently, we do not have a labor union. However, the company ensures the freedom of association and collective bargaining for its employees. Regular labor-management council meetings are held to address employee grievances and improve working conditions.

**HHI** engages in annual collective bargaining with the labor union, concluding wage agreements every year and collective agreement every two years. Chapter 12 of the Collective Agreement and the following eight articles (Articles 119 to 126) outline the operating principles and procedures. Chapter 14 of the Collective Agreement, along with Article 138 of the supplementary provision, specifies the effective period and notification of the Collective Agreement.

Managers and lower-level production and office workers automatically become union members in accordance with the Union Shop regulations and are subject to the Collective Agreement. However, when a production worker is promoted to a Production Manager or an office worker is promoted to a Senior Manager, they lose their union membership. As per Article 6 of the Collective Agreement, separate employment rules are applied to employees at or above the Senior Manager level who are not eligible for union membership, as well as employees who are excluded from the general binding force (Article 35 of the Trade Union and Labor Relations Adjustment Act).

For non-union members who are not directly covered by the Collective Agreement, efforts are made to provide existing welfare benefits and improve working conditions through labor-management discussions and employee consent. HHI actively engages in activities that promote mutual cooperation, such as the participation of the head of the labor union branch in the business signing ceremony, joint blood donation by labor and management representatives, and special meetings between labor and management representatives.

**HMD** guarantees freedom of association through the Collective Agreement. In accordance with the 2022 Collective Agreement, based on trust between labor and management and the fundamental principles of labor-related laws and the Constitution, the company aims to maintain and improve the working conditions of union members, promote welfare, and enhance the political, economic, social, and cultural status of individuals. The collective agreement has been concluded to ensure industrial peace and the continuous development of the company and the union, and both parties are committed to its faithful implementation. For executives and employees not covered by the Collective Agreement, separate company policies and labor-management agreements are applied, and the Collective Agreements of other organizations are not applicable.

**HSHI** acknowledges the legitimacy of labor union activities in accordance with the Constitution and labor-related laws. As a result, the company conducts annual collective bargaining (wage negotiations) with the labor union, adhering to the provisions outlined in Article 101 of the Collective Agreement. According to Chapter 13 (Supplementary Provisions), the bargaining cycle for wages is one year, and the Collective Agreement is renegotiated every two years. Pursuant to Article 5 of the Collective Agreement, production workers become union members upon joining the company, while managerial employees (including Production Asst. Managers) at or above Senior Manager level, as well as positions in planning, computing, labor, human resources, accounting, sales, and contract management, lose their union membership. Furthermore, in accordance with Article 35 of the Trade Union and Labor Relations Adjustment Act, separate employment rules, similar to the Collective Agreement, are applied to employees who are not eligible for union membership.

**>> CASE STUDY**

**Dispute-free Wage and Collective Agreement Negotiations in 9 Years**

In December 2022, **HHI** successfully concluded negotiations without any disputes for the first time in nine years since 2013. In commemoration of the company's 50<sup>th</sup> anniversary in 2022, labor and management worked collaboratively to address outstanding issues in a thoughtful manner, aiming to achieve negotiations without disputes.



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## RISK MANAGEMENT

### Labor Risk Management

#### Labor-Management Relations Training

HDKSOE and its shipbuilding subsidiaries are conducting labor-management relations training by implementing various training programs to enhance employees' awareness of the importance of establishing labor-management relations and to strengthen our communication skills. Through in-house labor-management training and participation in external labor-management training, we are fostering a cooperative labor-management culture.

#### Management Status Briefing

HHI and HMD are obligated to provide advance notification to the labor union regarding major management changes as stipulated in the Collective Agreement. The labor-management council also regularly shares the company's management status. Since 2020, a separate management briefing session led by the CEO has been held during quarterly performance announcements, utilizing the in-house CATV channel to communicate the company's management status and address various pending issues.

## METRICS AND TARGETS

### Labor-management Communication Activities

Company	Target
HDKSOE	Establishment of labor-management culture for common development and co-existence based on trust and respect between labor and management
HHI	Building trust between labor and management through active communication and mutual development through cooperation
HMD	Realization of active communication, establishment of trust between labor and management, and the goal of reaching a dispute-free wage bargaining agreement in 2023
HSHI	Expanding communication and maintaining trust for the establishment of cooperative labor-management culture

## PERFORMANCE

### Conversation with Management

Management of HDKSOE and its shipbuilding subsidiaries conduct regular meetings with employees to foster a cooperative labor-management culture and ensure smooth communication within the organization. The CEO is committed to promoting open and sincere communication within the company, including engaging in discussions with new employees from the MZ generation to understand their perspectives. Meetings with team leaders are held to share company policies and discuss business conditions, while also providing an opportunity for executives and employees to voice their suggestions and address any challenges they may be facing. Through these initiatives, consensus on corporate policies is built, and the working environment is improved by addressing the concerns of employees in the field.

### 2022 Labor-management Cooperation Performance

#### HDKSOE

Labor-management Council: Quarterly

#### HHI

Labor-management Council: Quarterly

Labor-management relations training: Training for substantial management practice

Management status briefing: CEO Management Status Briefing, etc.

#### HMD

Labor-management Council: Discussion of 25 agendas in 4 quarters (agreement and reflection on 22 agendas)

Labor-management relations training: Conducted

Management status briefing: Conducted

#### HSHI

Labor-management Council: Quarterly

Labor-management relations training: Training for substantial management practice, Technical Manager Workshop

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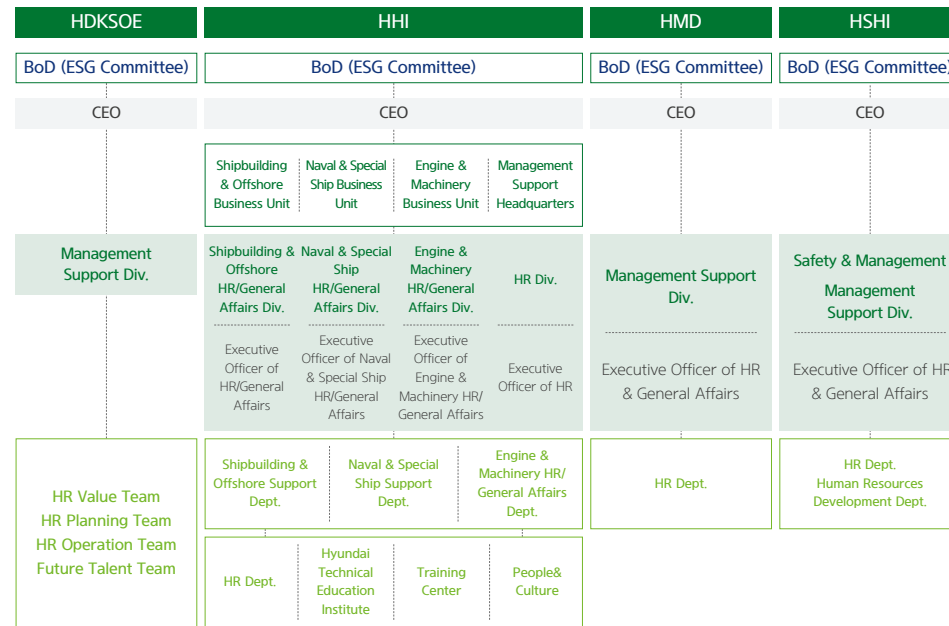
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## GOVERNANCE

### Establishment of Talent Development System in Shipbuilding and Offshore Engineering

HDKSOE and its shipbuilding subsidiaries implement talent management strategies based on four objectives: developing future leaders who will guide the group, fostering job experts who contribute to performance enhancement, nurturing global talents to lead international operations, and cultivating character traits that promote a positive corporate culture. Competency development training for employees is carried out under the guidance of the responsible executives, while executive training is structured and overseen by division heads. Annual training plans and medium- to long-term plans are reported to the CEO for review and approval.

### Talent Management Organization System



### » CASE STUDY

In 2022, HHI conducted a comprehensive certification evaluation for 61 core technologies, including 18 cases of group companies, achieving an overall certification rate of 96.7% (59 cases). Furthermore, additional video manuals were produced for 25 core production technologies, bringing the total to 212, to support the enhancement of technical capabilities among executives and employees. To facilitate self-transfer activities, a dedicated manager for transfer management was appointed in each department, establishing a management system for support. In the general technology transfer system, which aims to prevent the loss of production technology due to factors such as increasing number of retiree, a total of 246 general technology transfer activities were completed in 2022.

### Education System

We are implementing a variety of talent development programs aimed at enhancing the leadership skills and job competencies of executives and employees. We ensure equal training opportunities for both regular and non-regular workers, offering a range of educational welfare benefits to all staff members. As of 2022, the following training programs are being provided.

Program	Target	Description
Multidisciplinary Talent Development	a) Manager - Senior Manager b) New hires - Associate Manager	a) Teach electric engineering to mechanical engineers and vice versa (cross-learning) b) Provide management/economics education to STEM majors and science/engineering education to non-STEM majors
Position-Specific Training	a) Executives b) Senior Manager c) Associate Manager d) New Hires e) New Hires (Production Worker)	a) Training for newly appointed executives b) Competency improvement training c) Training for second-years and Mentoring program d) Introductory course for entry-level and experienced new recruits e) Pre-employment technical training aiming for professional technician
Digital Transformation (DT) Training	a) Executives b) Manager - Senior Manager	a) DT Leadership Training to gain insight for business trend b) DT Expertise Training to internalize creativity, work efficiency and competence into the corporate culture
Global Talent Development Program	Expatriate Candidate	· Establishment of fostering system through language education · Support for fostering global talent through short-term study abroad
Technical Competency Development Program	All Production Workers	· Basic competency training, job competency training
Technology Transfer Program	All Production Workers	· Transfer of core technology (essential for production process and requires small manpower with high-skill); and general technology (commonly used skills covering all technology standards except the core technology)

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## STRATEGY

### Fair Performance Compensation

HDKSOE and its shipbuilding subsidiaries have established and are operating a transparent and equitable performance evaluation and compensation system, continuously improving the personnel management system. To enhance fairness and employee acceptance, we are implementing data-driven personnel evaluations and expanding our scope. We aim to create a work environment where employees can self-motivate and experience a sense of accomplishment through various reward systems.

### Advancement of Data-based Personnel Evaluation

We strive to enhance fairness and acceptance by implementing different evaluation systems for each position and job. Moving away from the one-sided evaluation method solely based on feedback from superiors, we utilize various evaluation methods in parallel and expand the scope of data-driven personnel evaluation.

### Performance Evaluation by Position

Employees of HDKSOE and its shipbuilding subsidiaries strive for fair evaluation and compensation based on performance by implementing different evaluation criteria according to their positions and responsibilities.

Position	Evaluation
Executives	MBO <sup>1</sup> evaluation and multidimensional leadership evaluation <sup>2</sup>
Dept. head & team leader	MBO evaluation and multidimensional leadership evaluation
	Job performance appraisal <ul style="list-style-type: none"> <li>· Professional qualification holders (lawyer/patent attorney/accountant): self-evaluation, multidimensional evaluation (work-related person), and department head evaluation</li> </ul>
Section leaders and non-managerial workers	<ul style="list-style-type: none"> <li>· Research and office worker: Performance and competency evaluation</li> <li>· Designer: Evaluation based on design data</li> <li>· Production workers: Comprehensive evaluation of performance, ability, attitude (For HMD, MBO evaluation applies to section leaders and non-managerial workers)</li> </ul>

1. MBO: Management by Objectives  
 2. Conduct multidimensional leadership assessment once a year for section leaders or higher

### Business Management System

HDKSOE and its shipbuilding subsidiaries manage individual work performance systematically through the employee task management system. This ensures fairness and objectivity in personnel evaluation and enables fair compensation by excluding evaluations or influences from external factors unrelated to work performance. The work management system of HDKSOE and its shipbuilding subsidiaries is based on a wage system that provides reasonable compensation based on individual performance. Differentiated wages, ability-based wages, performance-based pay, and other forms of compensation are provided to employees under the annual salary system according to their individual performance levels. Additionally, a separate incentive system is in place, considering the unique characteristics of each job group and the complexity of the business processes. This includes design incentives, research incentives, sales incentives, production incentives, excellent production team incentives, and safety incentives, among others. Through the operation of this incentive system, which reflects the specific characteristics of each affiliate, the evaluation and compensation are appropriately recognized for the individual performance of executives and employees, acknowledging their contributions to the business. Our goal is to create a work culture that is rewarding and fulfilling.

### Reward System

HDKSOE and its shipbuilding subsidiaries are operating a reward system for each company (immediate reward for practicing core values, excellence, etc.). In accordance with the principle of 'where there is performance, there is reward', we have prepared various reward systems to express appreciation for the efforts of executives and employees and to create a culture of harmony and encouragement in the organization. We are also implementing a research performance reward system. In addition, for a healthy and considerate organizational culture among executives and employees, we are implementing encouragement and collaboration point rewards through thank-you cards. In addition, we compensate our workers with safety accident-free rewards, long-term service rewards, job invention rewards, and special achievement awards from outside companies, so that they can feel rewarded for their efforts.

Category	Target	Description
Performance-based pay	All employees	· A certain percentage of the basic salary is paid as incentives according to business performance
Incentive system for research positions	Excellent research performance award	· In order to motivate researchers, individual incentives are paid according to semiannual performance
	Technology innovation contest	· Incentives are paid on a project-by-project basis when the research project produces specific results, regardless of the individual researcher's achievements. · The effectiveness of the incentive system for research positions has been recognized by HDKSOE, and therefore the system will be expanded to all job categories.
All employee incentive system	Appreciation card	· Appreciation cards that are converted into welfare mall points are given to employees who demonstrate high work-related performance
	collaboration point	· One can praise an employee by sending collaboration points that can be used at welfare mall

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## PERFORMANCE

### Employee Competency Improvement

HDKSOE and its shipbuilding subsidiaries are committed to establishing a smart work environment that fosters optimal conditions for employees to focus on their work. We are actively developing strategies to enhance the leadership skills of executives and managerial workers who serve as role models within the organization. This includes designing learning systems and infrastructure tailored to the needs and capabilities of our members. Furthermore, we are currently reviewing the implementation of step-by-step workshops to promote leadership role modeling, the design of an education system based on core values, and the development and implementation of competency training courses that align with our core values for the next 50 years.

#### Hi Class

HDKSOE and its shipbuilding subsidiaries are utilizing an online learning platform called 'Hi Class' to enhance the job skills of employees. Additionally, at the end of each year, job-specific courses are offered based on a collective training demand survey. These training programs are available to all employees, working for HDKSOE and its shipbuilding subsidiaries, with the aim of fostering the development of capabilities for all employees.

#### Retirement Planning Support Training

We provide a retirement planning support and education program to assist employees in maintaining a healthy and stable life after retirement. Following retirement, we offer support in preparing for a second phase of life by sharing information on asset management, health management, re-employment, and entrepreneurship. In particular, we conduct pre-surveys to identify specific career aspirations of prospective retirees and tailor training programs accordingly. We also organize job fairs in collaboration with in-house contractors to facilitate re-employment opportunities. For those interested in re-employment, we provide practical assistance such as guidance on completing job application documents, interview coaching, and personalized employment information. Furthermore, we actively support retirees who are interested in starting a business, pursuing new employment, returning to farming, or reestablishing connections in their communities. We regularly provide information on related systems, educational resources, government support policies, and firsthand experiences to promote a healthy and stable life after retirement.

#### Degree Acquisition Support

HDKSOE and its shipbuilding subsidiaries support executives and employees in pursuing master's and doctoral degrees through study programs at prestigious universities in Korea. We provide financial assistance by covering 60% of the admission and tuition fees (up to KRW 20 million) to alleviate the financial burden on employees. Additionally, we offer benefits such as a maximum of two days per week of exemption from full-time work, allowing employees to balance their studies and work commitments.

#### Language Test Application Fee Support System & Expatriate Employee Training Support

We implement a language test fee support system to enhance employees' language proficiency. This system creates an environment where employees can voluntarily enhance their language skills without incurring financial burdens. In 2022, over 1,000 employees received support for language test expenses through this program. Additionally, to cultivate global talents, we cover the costs of learning and taking local language tests for expatriate candidates.

#### Support for Self-directed Learning

To support employees in their self-directed learning, we offer various resources such as online courses for self-development, audiobooks, and e-books. In particular, we provide courses related to the latest trends, such as digital transformation (DT), to enhance work productivity. We also encourage employees to pursue their hobbies and engage in lifelong learning beyond their work-related knowledge.

#### Expansion of Self-development Leave System and Health Support

HDKSOE and its shipbuilding subsidiaries have implemented a self-improvement leave system to encourage employees to take time off for personal development, which contributes to continuous business performance and employee engagement. Additionally, we provide a cancer treatment subsidy system for employees, offering a subsidy of KRW 30 million in the event that an employee or their dependent develops one of the top ten major cancers, aiming to support the employee's recovery and well-being.

### » CASE STUDY

#### Signed an MOU to Nurture Future Talent

HDKSOE and its shipbuilding subsidiaries, in collaboration with leading universities in Korea through Memoranda of Understanding (MOUs), develop training programs aimed at cultivating talents specifically for future new business fields. We actively engage in partnerships with industry, academia, and research institutes to offer diverse initiatives such as industrial field practice and industry training. In March 2023, we signed an MOU with Korea University for Industry-University Cooperation to Foster Future Talents, with the objective of nurturing next-generation core talents who will lead the future ocean mobility sector. Furthermore, the Advanced Research Center of HDKSOE and its shipbuilding subsidiaries identify key collaborative research areas in the fields of future sustainability and digital transformation. Through industry-university research cooperation, we provide future talents with extensive opportunities and a solid foundation for their growth.



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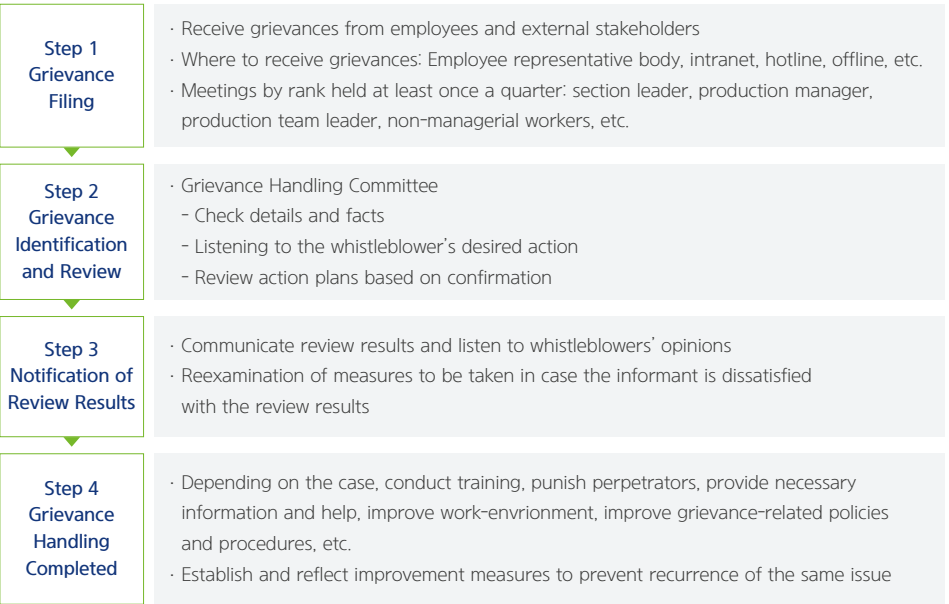
## RISK MANAGEMENT

### Protection of Human Rights of Employees and Stakeholders

HDKSOE and its shipbuilding subsidiaries embrace the diversity of our employees, regardless of race, gender, age, or religion, and strive to create a society where all stakeholders are respected. To achieve this goal, we actively establish and implement policies that protect employee human rights, promote diversity, and prohibit discrimination. We are committed to safeguarding the human rights not only of our internal employees but also of our supply chain, customers, and local communities. This includes implementing initiatives such as a supply chain human rights protection policy and conflict minerals non-use policy to protect the human rights of various stakeholders associated with the company.

### Employee Grievance Handling System

HDKSOE and its shipbuilding subsidiaries are committed to operating a grievance handling system that ensures the rights of employees are protected in a transparent and fair manner. Each subsidiary appoints two or more members who are responsible for addressing grievances across various areas. These designated members thoroughly examine the details and facts of each grievance and provide necessary information and assistance based on the outcomes of the review process. This system aims to address grievances effectively and support employees in a comprehensive manner.



### Efforts to Protect Supply Chain/Community Human Rights

#### Fulfilling the Supply Chain Role of Solidarity and Cooperation

HDKSOE and its shipbuilding subsidiaries are dedicated to fulfilling our role as a community with a shared future, assuming responsibility not only for the company but also for all stakeholders, including suppliers in the value chain. We prioritize human rights management and ESG management throughout the supply chain, emphasizing respect for human rights, the creation of a safe working environment, environmental protection, and ethical management. Suppliers are required to adhere to these standards, and recommendations and support are provided to sub-suppliers to help raise their standards and level of responsibility. The goal is to promote continuous improvement and alignment across the entire supply chain.

#### Protection System for the Human Rights of Local Residents

HDKSOE and its shipbuilding subsidiaries are dedicated to fulfilling our social responsibilities with genuine care and concern for the human rights of local residents who have been part of our geographical and business environment for a significant period of time. We strive to minimize any adverse impact on the local community resulting from our business operations, and whenever issues arise, we actively engage in communication with local residents to foster mutual growth and development. We are committed to fulfilling our social responsibilities by providing ongoing care and support to underprivileged and vulnerable individuals in the region, including low-income families and households headed by children. Furthermore, we are actively working to minimize the environmental impact caused by shipbuilding activities in the local communities near Ulsan, Yeongam, and Gunsan, where HDKSOE and its shipbuilding subsidiaries are located. We employ innovative technologies and continuously enhance our environmental protection capabilities to mitigate any negative effects. Our commitment remains steadfast in promoting human rights and ensuring the safety and well-being of local residents.



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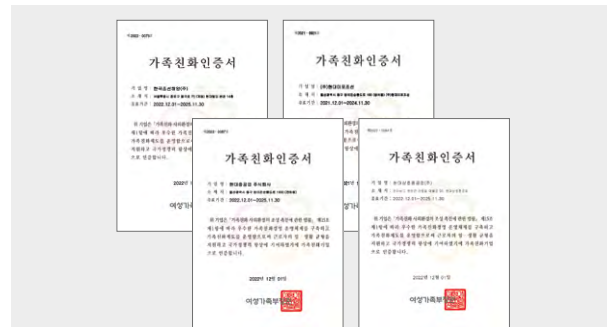
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## PERFORMANCE

### Human Rights Protection Activities for Employees Actions to Become a Great Company to Work for

HDKSOE and its shipbuilding subsidiaries are actively preparing to address human rights issues to protect the rights of executives and employees. We approach this with a strong commitment to improvement, actively managing and implementing measures to correct and enhance our practices in the future. We consider the equal rights guaranteed by the Constitution of the Republic of Korea and the UN Universal Declaration of Human Rights as fundamental principles in safeguarding the rights of executives and employees. We refrain from any actions that impede the organization and dedication of our members to their work. We strive to maintain transparency in recruitment, evaluation, and promotion processes, ensuring equal treatment regardless of gender, providing supportive working conditions for pregnancy, childbirth, and child-rearing, and offering a comprehensive welfare benefits system. In line with these efforts, in 2022, we obtained Family-friendly Corporation Certification from Ministry of Gender Equality and Family. This certification recognizes our commitment to creating a family-friendly workplace, assessing factors such as leadership's dedication to family-friendly practices, implementation of family-friendly systems, and satisfaction with our family-friendly management. Through continuous self-assessment and environmental improvements, we are dedicated to becoming an even better company to work for.



Ministry of Gender Equality and Family Issued Family-friendly Corporation Certificate

### Work & Life Balance

HDKSOE and its shipbuilding subsidiaries are carefully examining matters related to the well-being of all employees. We place a strong emphasis on supporting work-life balance, particularly by ensuring the availability and promotion of parental leave. When employees apply for parental leave, the leave period is considered as part of their length of service, and any form of disadvantageous treatment such as wage reduction or hindered career progression due to parental leave is strictly prohibited. Parental leave benefits are provided in accordance with the law, and these matters are transparently managed under the supervision of an honorary employment equality supervisor. To further support work-life balance, HDKSOE and its shipbuilding subsidiaries have implemented optional work and PC-OFF systems as part of our plan. Through these systems, employees have the flexibility to manage their working hours and comply with statutory working hour requirements. Furthermore, we have established various support systems that are practical and relevant to daily life. These include support for celebrations and condolences, the operation of an on-site daycare center, assistance with educational expenses for children, support for loan interest, and housing support for single individuals. These initiatives are designed to help employees achieve a well-balanced and fulfilling lifestyle.

### » CASE STUDY

#### Workplace Daycare Center 'Dream Boat'

HDKSOE and its shipbuilding subsidiaries operate a workplace daycare center called 'Dream Boat' as part of our commitment to creating a family-friendly corporate culture. Additionally, at the group level, we strive to alleviate the burden of childcare by providing subsidies for kindergarten education expenses for employees' children. This subsidy amounts to KRW 6 million per child per year, for a duration of three years before they enter elementary school, with a maximum subsidy of KRW 18 million.



### Revision of Rules of Employment

HDKSOE and its shipbuilding subsidiaries are proactively reviewing and revise the Rules of Employment to respond to domestic laws and domestic and international human rights trends. In 2022, we made efforts to create an optimal environment for the human rights of executives and employees by completing revisions to various provisions in the Rules of Employment, taking into account the feedback and opinions of all employees.

### Company-wide Human Rights Training

HDKSOE and its shipbuilding subsidiaries have been conducting annual sexual harassment prevention education and education to promote disability awareness for all employees, as required by law. Additionally, starting from 2022, we have introduced workplace bullying prevention training and human rights violation prevention training to encourage employees' voluntary participation in human rights management, raise awareness, and promote compliance with laws and regulations.

Education Title	Target	Frequency
Sexual harassment prevention education	All employees	Annual
Education to promote disability awareness	All employees	Annual
Workplace bullying prevention education	Office workers	Annual
Human rights violation prevention education	Office workers	Annual

### Compliance with Child Labor and Forced Labor Prohibition Norms

HDKSOE and its shipbuilding subsidiaries strictly prohibit any form of child labor and forced labor in accordance with our commitment to upholding the principles of the Universal Declaration of Human Rights. As responsible members of society and the local community, we are committed to complying with social values, domestic and international laws, and internationally recognized regulations.

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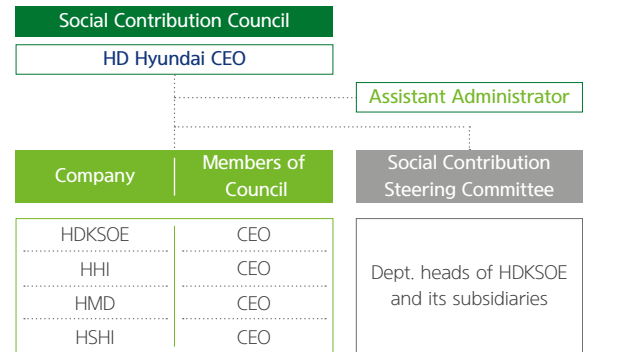
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## GOVERNANCE

### Establishment of a Cooperative System with Local Communities

HDKSOE and its shipbuilding subsidiaries are actively engaging in various social contribution activities with the aim to become a company that is cherished by all, in line with our management philosophy of contributing to the development of the country and local communities.

#### Social Contribution Council System



## STRATEGY

HDKSOE and its shipbuilding subsidiaries actively engage in participatory contribution activities, involving all executives and employees, with the vision of creating "A Better World, A Brighter Future." We are committed to sustainable contribution activities, working together with the company, and demonstrating responsibility and sincerity through compassionate contributions to underprivileged individuals and the community as a whole. Furthermore, we are dedicated to enhancing the quality of life for local residents by promoting various social contribution initiatives in line with our management philosophy of contributing to the development of the country and local communities.

By designating areas such as supporting the underprivileged, fostering co-prosperity with local communities, and promoting the self-reliance of future generations, we actively engage in cooperative activities with the local community. This includes caring for the underprivileged in our surroundings and supporting the dreams and aspirations of children. Additionally, we cultivate a culture of sharing through longstanding social contribution activities that have been part of our foundation. We always demonstrate attentive care and show affection towards the local community, aiming to bring warmth to those in need of support, in alignment with the UN SDGs (Sustainable Development Goals).

#### Social Contribution Council

The Social Contribution Council and Steering Committee are responsible for making decisions regarding group-wide social contribution activities and establishing fundamental directions and policies for group social contribution. Council meetings are held at least once a quarter or half a year, with the CEOs of HDKSOE and shipbuilding subsidiaries in attendance to review social contribution projects to be implemented throughout the group and set goals and plans.

#### Social Contribution Steering Committee

Employees of HDKSOE and its shipbuilding subsidiaries voluntarily donate 1% of their wages to support local communities and the underprivileged. The Social Contribution Steering Committee, consisting of department heads from each company's social contribution department, including the HDKSOE Social Contribution Planning Team, holds discussions on the group's overall social contribution activities and oversees the operation of the HD Hyundai 1% Nanum Foundation.

#### Operation of Local Social Security Consultative Body

Since 2006, HDKSOE and its shipbuilding subsidiaries have been conducting biannual Community Security Council meetings. Through these meetings, we actively engage in activities such as monitoring local social security surveys and indicators, participating in the development of plans for related initiatives, and reviewing plans to enhance the quality of related services and promote collaborative partnerships.

#### » CASE STUDY

**HD Hyundai 1% Nanum Foundation**  
 Employees of HDKSOE and its shipbuilding subsidiaries voluntarily donate 1% of their wages to support local communities and those in need.

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## RISK MANAGEMENT

### Preemptive Response to Risk Expansion

In the past, risks related to social contribution and coexistence with local communities were primarily associated with vulnerable groups or the extent of social development. However, in recent times, the scope and nature of risks have become more diverse and complex, including challenges such as natural disasters and fine dust problems resulting from climate change, as well as environmental impact issues arising from business operations. In 2022, the regions where HDKSOE and its shipbuilding subsidiaries operate experienced flood damage and drought.

To address these evolving risks, HDKSOE and its shipbuilding subsidiaries have proactively expanded the range of vulnerabilities and support measures at the group level. This ensures that they are well-prepared to respond flexibly to emergencies and to anticipate and mitigate various risks caused by these changes. We are committed to continuously striving for comprehensive risk management.

### HDKSOE and Shipbuilding Subsidiaries' Environmental Risk Response Activities

In 2019  
5 excavators in Gangwon-do wildfire-stricken areas, donated KRW 100 million

In 2020  
Donated KRW 1 billion to minimize COVID-19

In 2022  
Donation of KRW 1 billion to areas affected by forest fires on the East Coast

## METRICS AND TARGETS

### Goals and Achievements

HDKSOE and its shipbuilding subsidiaries set ambitious goals for employees' volunteer activities and group social contribution projects to fulfill our corporate social responsibility, and make dedicated efforts to achieve them.

Company	Goal for 2022	Achievement for 2022	Goal for 2023
HDKSOE	Volunteer work 2,751 hours	Volunteer work 172 hours	Volunteer work 840 hours
	Social contribution project expenses KRW 160 million	Social contribution project expenses KRW 259 million	Social contribution project expenses KRW 180 million
HHI	Volunteer work 7,800 hours	Volunteer work 8,805 hours	Volunteer work 15,916 hours
	Social contribution project expenses KRW 473 million	Social contribution project expenses KRW 554 million	Social contribution project expenses KRW 517 million
HMD	Volunteer work 2,880 hours	Volunteer work 7,763 hours	Volunteer work 2,880 hours
	Social contribution project expenses KRW 100 million	Social contribution project expenses KRW 81 million	Social contribution project expenses KRW 100 million
HSHI	Volunteer work 6,000 hours	Volunteer work 5,241 hours	Volunteer work 6,000 hours
	Social contribution project expenses KRW 100 million	Social contribution project expenses KRW 161 million	Social contribution project expenses KRW 100 million

## PERFORMANCE

### HDKSOE Social Contribution Activities

HDKSOE consistently evaluates the scope of vulnerable groups that require support from the company and develops social contribution projects to address their needs. These initiatives serve as a basis for fostering coexistence with the local community and nurturing a sense of belonging among our members.

### Poorly-fed Children Support Project

In 2022, HDKSOE donated KRW 30 million to World Vision to support a program for poorly-fed children. Through the 'Breakfast Meal' project, we provided breakfast and care services to 20 poorly-fed children from two schools in Seongnam. Additionally, through the 'Lunch Box of Love' project, we provided evening meals to 30 poorly-fed children. HDKSOE will continue its commitment to sharing and supporting underprivileged children who are facing challenges in accessing meals due to the prolonged impact of COVID-19 and the economic recession. We are dedicated to fulfilling our role as a company in safeguarding the basic rights of children.

### Activities to Improve the Living Environment for the Elderly

HDKSOE donated KRW 20 million to the Social Welfare Council of Seongnam City to enhance the living environment of elderly individuals living alone. We were recommended financially challenged 19 households who live in houses of poor condition. We made improvements to the flooring, windows, sinks and toilets. Recognizing that the issue of elderly individuals living alone is expected to grow in the future, we are committed to remaining attentive and providing support to address the welfare needs of this vulnerable group.

### » CASE STUDY

#### GRC Construction - Community Risk Management

During the GRC construction period, there were certain negative factors that affected the local community, such as traffic and dust. However, a professional management organization was established to proactively address the concerns and complaints raised by the local community in collaboration with the construction company. Additionally, child-friendly facilities are being developed in close proximity to the GRC, and public sidewalks and crosswalks are being installed towards Jeongja Station to address public grievances. We are committed to responding to these concerns diligently and taking necessary precautions.

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### HHI Social Contribution Activities

HHI is dedicated to making meaningful contributions to the local residents and communities who have been part of the company's history. We strive to provide tangible assistance to those in need and actively engage in valuable social contributions through the voluntary participation and service of our employees.



#### Support for Living Expenses and Scholarships for Low-income Families

HHI donated a total of KRW 51.8 million to the ChildFund Korea. This donation is aimed at providing scholarships to 34 students from families receiving basic livelihood support in Dong-gu, Ulsan, including single-parent households, and offering living expenses to individuals in the community facing challenges due to accidents or illnesses. We are committed to bringing courage and hope to our neighbors through these initiatives.

#### Emotional Support for Vulnerable Children and Grandparents Family

HHI invests KRW 20 million in a reading program for 15 children from vulnerable families and a healing travel project for 10 grandparents families. These initiatives aim to create a nurturing environment that allows children to dream of a broader world and strengthen their mental well-being.



#### Culture and Art Sharing Activities

HHI rewards the hard work of workers in community welfare facilities and provides opportunities for them to recharge. We also aim to alleviate psychological depression among the underprivileged elderly in the community who have difficulty enjoying culture and arts. To achieve this, we support theater and movie viewings, promoting healthy social activities for the elderly. In the future, we will continue our sharing activities to ensure that everyone in the community can enjoy culture and arts without being left behind.

#### Support for the Visually Impaired in Local Community

HHI invested KRW 13 million to support the replacement of old PCs and monitors at the braille library in Ulsan. This initiative aims to address the social and cultural information needs of the visually impaired individuals in the region, who have limited access to media. The new equipment will be utilized to produce Braille books and public information, enhancing the social engagement of the visually impaired and improving their right to access information.

» CASE STUDY

#### Building Social Infrastructure

HHI has been actively contributing to the local community by establishing social infrastructure to improve the quality of life and enhance convenience for residents. This includes the development of Hyundai Art Park, Jeonha-dong Children's Park, Myeongdeok Lake Park, Keunmaeul Reservoir Forest Park, and Dongbu Library. Additionally, the University of Ulsan Hospital has been designated as a top-tier medical facility, serving as a central hub for public healthcare in Ulsan, where there are no national or public hospitals. These initiatives aim to provide comprehensive support and benefit the local community.

#### Green Umbrella Santa Expedition Team

HHI executives and staff members transformed into Santa Claus to visit children from low-income families at the end of the year. We prepared gift packages worth KRW 15 million, including bags and school supplies for the new semester, for 120 children in the region. We visited six welfare facilities, including the Dong-gu Social Welfare Center, to deliver these gifts. This meaningful activity involves employee participation in the entire service process, from gift wrapping to delivery, making them active contributors to society. We will continue organizing events for children from low-income families to bring joy and support to their lives.



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**HMD Social Contribution Activities**

HMD actively promotes a culture of sharing within the local community through longstanding social contribution activities, bringing warmth to neighbors in need. We believe in creating a better future by embodying the spirit of sharing through direct participation from our employees, rather than solely relying on donations.

Community Care

**Sharing Holiday Warmth**

HMD distributed holiday gift sets, including fruits, dried persimmons, and traditional Korean snacks, to 13 senior citizens in the local area through the Administrative Welfare Center in Bangeo-dong, Dong-gu, Ulsan. Moving forward, HMD will continue to express gratitude and show respect to the elderly generation who have made significant contributions to the national and regional economic development.



**A Delicious Table Gift for the Underprivileged**

In collaboration with the HD Hyundai 1% Nanum Foundation and Choronghoe, an in-house volunteer group, HMD organized a side dish sponsorship event for the underprivileged in the local area. Through a donation of KRW 6 million and the volunteer efforts of Choronghoe members, we prepared and delivered various types of kimchi four times a year to elderly individuals living alone, disabled individuals, child heads of households, and single-parent families near our business site. Sponsoring side dishes that provide strength and bring simple happiness to the daily lives of vulnerable families is a meaningful contribution project that reflects the sincerity of our executives and employees.



**Donate Scholarships to Nearby Schools in Vietnam**

Hyundai Vietnam Shipbuilding, an overseas subsidiary of HMD, provided \$11,614 in scholarships to a total of 14 nearby elementary, secondary schools, and kindergartens in 2022. Additionally, we donated \$1,870 worth of goods to provide equal educational opportunities for children growing up in disadvantaged families in the region. Through these social contribution activities, we aim to support the local community and provide assistance to those in need.



**HSHI Social Contribution Activities**

Based on the management philosophy of contributing to the development of the country and the community, HSHI is actively working towards creating a harmonious environment with the local community. We are particularly focused on promoting participatory contribution activities, encouraging executives and employees to actively participate in sharing activities and empathy-driven initiatives that emphasize social responsibility and sincerity. Our goal is to foster a community where we can all coexist and thrive together.

Eco-friendly Social Contribution

**Marine Environment Cleanup Activities**

HSHI's Diving Club, along with all employees of the Ship Commissioning Department, actively engaged in marine environment cleanup activities in collaboration with the Environment and Health Department, regional Office of Oceans and Fisheries, and regional Coast Guard. Participating employees equipped themselves with safety gear and dived into the waters near the business site to collect marine debris, clean the beach, and remove hazardous materials. Environment and Health department and other relevant departments are putting a lot of efforts to conserve the aquatic ecosystem and enhance water quality.



**Namak Central Park and Daejukdo Environmental Cleanup Activities**

In March 2023, the HSHI Gijikjang Council and the Namak Love Forum organized environmental cleanup activities with approximately 50 members at Namak Central Park and Daejuk-island. The group visited Namak Central Park, Daejuk-island, and nearby shopping areas to collect household waste, provide guidance on proper waste disposal, and promote environmentally-friendly practices in daily life.



**Wolchulsan Mountain Carbon Neutral Volunteer Activities**

Approximately 200 employees of HSHI participated in volunteer activities from March to July 2022, which included sowing native plant seeds to establish carbon sinks in Wolchulsan National Park. The initiative aimed to create the 'Hyundai Samho Forest' in Wolchulsan Mountain by removing ecosystem-disrupting organisms and planting native plants cultivated by the volunteers. This eco-friendly social contribution project takes a proactive role in achieving carbon neutrality, and we plan to engage in various collaborative activities to prepare for climate change in the future.



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**GOVERNANCE**

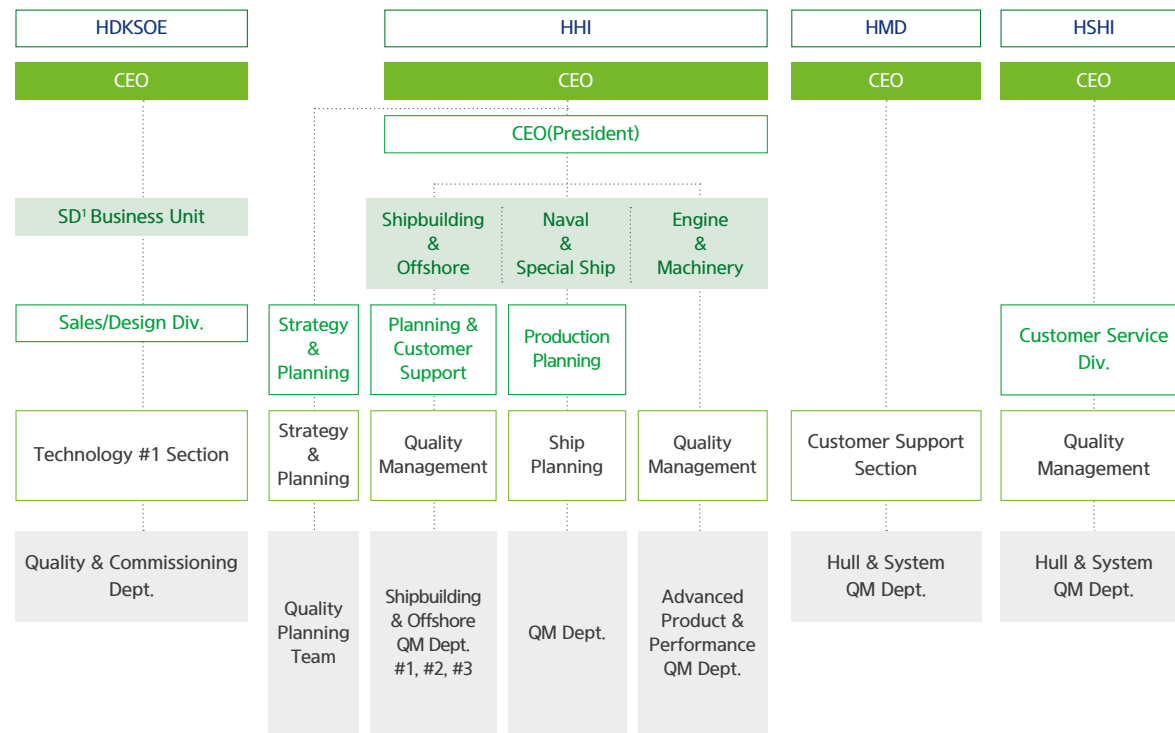
**Quality Management System**

HDKSOE and its shipbuilding subsidiaries are dedicated to delivering world-class products and services with a strong emphasis on quality, recognizing that customer satisfaction and trust are derived from it. To achieve this, we have obtained ISO 9001 certification, an internationally recognized standard for quality management systems, and are implementing its practices. This enables us to enhance our competitiveness by focusing on overall product and service quality and delivering reliable products and services that customers can trust. Considering that the products and services of our group companies directly impact the safety, convenience, and efficiency of customers, we have strengthened our quality organization to ensure that fundamental quality principles are applied throughout the entire product lifecycle, from design and development to manufacturing and after-sales service. With the objective of enhancing customer satisfaction and confidence within this quality management system, all employees and internal/external suppliers practise customer-oriented quality management through rigorous quality control processes.

**Quality Management Certificate**



**Quality Management Organization**



**Strengthen Quality Organization**

**HDKSOE**

- Establishment of SD Business Unit and Quality/Commissioning Department

**HHI**

- Establishment of Shipbuilding & Offshore QM Dept. #3 (Exclusive management of offshore project)

**HMD/HSHI**

- Separation of hull and system quality management department (strengthening expertise)

**Accountability and Responsibility of Customer Safety**

1. We shall consistently meet our stakeholders' expectations for our community and society to keep safe and sustainable by developing and providing safe high-quality products and services.
2. We shall actively engage in workplace safety to protect our colleagues and to prevent potential accidents.
3. We shall conduct pre-delivery verification and validation to guarantee safety in use

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## STRATEGY

### Quality Policy

HDKSOE and its shipbuilding subsidiaries have mapped out quality policies aimed at minimizing quality failure costs, enhancing self-reliance quality system, and stabilizing suppliers' quality and competencies. These policies are taken to ensure the delivery of excellent products and services to our customers while further strengthening the quality advantage that we have upheld for over 50 years. We are actively engaged in strategic initiatives to achieve these objectives.

HDKSOE	<ul style="list-style-type: none"> <li>· Minimizing the quality failure cost</li> <li>· Strengthening value chain capabilities</li> <li>· Achieve customer value with quality competitiveness</li> </ul>
HHI	<ul style="list-style-type: none"> <li>· Minimizing the quality failure cost</li> <li>· Enlarging the delegated inspection by enhancement of self-reliance quality system</li> <li>· Improving quality competitiveness by smart quality innovation</li> <li>· Stabilizing value chain quality</li> </ul>
HMD	<ul style="list-style-type: none"> <li>· Minimizing the quality risk by preemptive action</li> <li>· Improving customer trust by transparency in the quality</li> <li>· Digital transformation of the quality management</li> <li>· Transferring core production technology of the entire company</li> <li>· Maximizing the quality completeness of externally purchased products</li> </ul>
HSHI	<ul style="list-style-type: none"> <li>· Minimization of quality failure through proactive quality management</li> <li>· Expansion of self-inspection through innovation of digital-based inspection</li> <li>· Stabilization of supply by minimizing quality risk from contractors</li> <li>· Securing quality competitiveness through improvement of workmanship</li> </ul>

### Stabilizing Supply Chain Quality

HDKSOE and its shipbuilding subsidiaries engage in support activities aimed at stabilizing the quality and enhancing the competitiveness of supplier companies.

We expand regular quality monitoring and provide technical guidance, offering manufacturing know-how and technology free of charge. We also support suppliers in developing their own internal quality control capabilities. Additionally, we foster a sense of camaraderie by providing training and sharing quality issues and best practices during production phase. Through these various approaches, we aim to lead suppliers in improving their independent quality control capabilities.

### Supply Chain Quality Cooperative Activities

Activity	Description
Visiting feedback by Quality Management Executive/Dept. head	<ul style="list-style-type: none"> <li>· Consultation on improvement measures for major iteration/quality issues</li> <li>· Listening to our suppliers' requests for improvement and difficulties</li> </ul>
Yard invitation meeting for Supplier quality personnel	<ul style="list-style-type: none"> <li>· Understanding delivery material installation and operation process</li> <li>· Vitalization of communication through VOC listening and meetings</li> </ul>
Supplier Quality audits	<ul style="list-style-type: none"> <li>· Improvement to prevent recurrence of excessive A/S claims by suppliers</li> </ul>

### Minimizing Quality Failure Cost

Since HHI introduced quality failure costs<sup>1</sup> for the first time in the industry in 2016, HDM and HSHI also have introduced quality failure costs in 2019. The cost of quality failure is divided into 10 specific categories related to major value chains such as design, procurement, production, and after-sales service. Each year, challenging goals are set for each category, and efforts are made to deliver high-quality ships to customers on time. In order to mitigate the risks associated with quality failure costs resulting from changes in the internal and external business environment, they are committed to adhering to basic quality principles such as process compliance, quality stabilization, and supply chain management. Additionally, they actively engage in joint improvement activities to proactively prevent such costs from occurring.

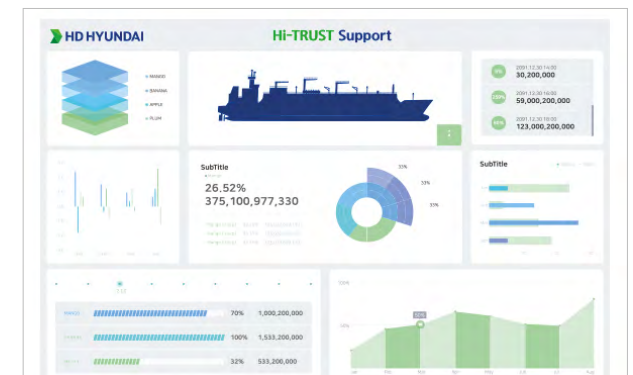
1. Quality Failure Costs: Costs caused by quality-related problems before and after delivery of products and services to customers

### Reinforcing Initial Equipment/Technical Risk Management

HDKSOE and its shipbuilding subsidiaries are making significant efforts to manage quality risks that may arise during the development process of initial equipment and technologies required for new and eco-friendly ships. Specifically, to ensure product and technology stability, we have established the 'Initial Equipment Application Risk Management Task Force' system. We conduct performance checks across all stages, including design, manufacturing, and commissioning, and continue monitoring performance even after delivery to actively reduce risks.

### Enhancing Self-reliance Quality System

Our shipbuilding subsidiaries have built a solid reputation and quality system through decades of experience in shipbuilding, establishing a foundation of trust with our customers. In line with this, our group companies have launched the 'Hi-TRUST' program, a ship quality assurance initiative based on deeper mutual trust, and we are making efforts across all stages, from ship design to construction and post-delivery, to expand customer inspection delegation. Additionally, we are committed to strengthening our independent quality control measures and implementing policies to establish and enhance our independent quality management system. This includes the adoption of smart quality inspection technologies and providing transparent quality information.



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## PERFORMANCE

### Selected as the World's Best Ship

A total of 12 ships<sup>1</sup> constructed by our shipbuilding subsidiaries have been selected as the "Significant Ships of 2022" by "The Royal Institution of Naval Architects", marking 40 consecutive years of delivering world-class ships since 1983. A total of 186 vessels within the group have been acknowledged for our exceptional shipbuilding technology and quality. Our shipbuilding subsidiaries will continue to strive for customer satisfaction by consistently conducting research and development to enhance the quality and performance of our ships.

1. 5 ships from HHI (1 CNTR, 1 LPGC, 1 Tanker, 2 VLCCs)
- 4 ships from HMD (1 LPGC, 1 LNGC, 1 Tanker, 1 Electric Smart Passenger ship)
- 3 ships from HSHI (1 LNGC, 1 LPGC, 1 VLCC)

### Operation of Customer Satisfaction Survey Platform

HDKSOE and its shipbuilding subsidiaries conduct surveys by subdividing the shipbuilding process step by step to analyze customer satisfaction. Through these surveys, quality control measures are implemented to identify areas for improvement and develop plans to enhance shipbuilding and delivery processes. In 2022, we made efforts to advance the level of customer satisfaction management by establishing a customized response strategy by establishing an online survey and response data analysis platform. Additionally, through in-depth interviews with customers, we aim to provide customized quality management for each customer.

### Customer Satisfaction Survey Area

Shipbuilding Stage	Manufacturing Process	Project Management
	<ul style="list-style-type: none"> <li>· Design</li> <li>· Construction</li> <li>- Hull structure, outfitting, painting</li> <li>- Commissioning</li> </ul>	<ul style="list-style-type: none"> <li>· Quality</li> <li>· Contract/Administration</li> </ul>
After Delivery	Ship Quality	Service Quality
	<ul style="list-style-type: none"> <li>· Hull</li> <li>· Outfitting</li> <li>· Accommodation</li> </ul>	<ul style="list-style-type: none"> <li>· After-sales Service</li> <li>- Handling procedure/ Results</li> <li>- Service agent</li> </ul>

### Creation of Quality Synergy with Shipbuilding Subsidiaries Expansion of Quality Exchange Meetings

HDKSOE and its shipbuilding subsidiaries have been regularly conducting quality exchange meetings with shipbuilding affiliates since 2020. Starting from 2022, quality practice exchange meetings for each section of working level have been introduced to further enhance the group's quality synergy. These meetings serve to review the direction of quality management in the shipbuilding subsidiaries, share and discuss individual subsidiary's quality issues, address prevention measures for after-sales (A/S) claims, and identify collaborative tasks for improvement among group companies. By expanding and promoting the strengthening of quality management at work sites, we aim to enhance overall quality performance.



### Quality Equalization/Homogenization Activities

HDKSOE and its shipbuilding subsidiaries are actively implementing quality homogenization as a means to establish a foundation for collaboration and synergy in quality tasks. By dividing quality tasks into inspection, preventive actions, and project management, we aim to achieve homogenization in the "standard", "procedure", and "system" components, thereby enhancing work efficiency and ensuring a consistent level of quality across the shipbuilding subsidiaries. We are committed to realizing high product quality through these efforts.

### Establishment of Quality Information Sharing Platform

HDKSOE and its shipbuilding subsidiaries have established a "quality information sharing platform" to facilitate the exchange of quality data among the companies. The aim is to improve ship quality by efficiently sharing necessary information between shipbuilders, promptly sharing instances of good and poor quality, and applying them to real-time quality control practices within each company. This initiative is intended to enhance the delivery of superior ships to our customers.

## METRICS AND TARGETS

### Quality Management Performance in 2022 and Plan for 2023

#### Key Achievements in Quality Management in 2022

<p><b>HHI</b> (May) <b>Global Quality Management Award</b> (CEO Han Young-seuk)</p> <p>(September) <b>Awarded the 3<sup>rd</sup> Genius Awards</b> (CEO Han Young-seuk)</p> <p><b>1 Gold Award, 4 Bronze Awards</b> The 48<sup>th</sup> National Quality Management Convention Quality Circle</p>	<p><b>HMD</b> <b>1 Gold Award, Selected as an excellent company for quality competitiveness</b> National Quality Circle Contest</p> <p><b>HSHI</b> <b>Selected as a private company representative</b> for a forum hosted by Korean Standards Association and Korean Society for Quality Management (Again Korea by K-Quality)</p>
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#### Plan for 2023

<b>HHI</b>
<ul style="list-style-type: none"> <li>· (Shipbuilding &amp; Offshore) Advancement of mobile inspection and establishment of real-time quality management status system</li> <li>· (Naval &amp; Special Ship) Incorporating amendments to the defense quality management system</li> <li>· (Engine &amp; Machinery) Operation of QLI (Quality Leading Indicator) to improve reliability of quality data</li> </ul>
<b>HMD</b>
<ul style="list-style-type: none"> <li>· Establishment and promotion of specialized quality control strategies for each ship type</li> <li>· Reinforcement of PRA-L/S/D activities for each milestone (Pre-Remedy Action - Launching, Sea-trial, Delivery)</li> </ul>
<b>HSHI</b>
<ul style="list-style-type: none"> <li>· Establishment of Smart Survey Center (SSC)</li> <li>· Securing quality experts tailored to foreign workers and cultivating Line QC</li> </ul>



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# GOVERNANCE

Building trust through fair and transparent management:  
 HDKSOE and its shipbuilding subsidiaries strive for stakeholder  
 confidence

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# Material Topic 6. Corporate Governance



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**Enhancing Sustainability: Transparent Disclosure of Governance Operations**

HDKSOE and its shipbuilding subsidiaries acknowledge the significance of transparent governance management disclosure as a vital driver for corporate sustainability by conducting regular shareholders' meetings, we aim to enhance shareholder value. Furthermore, we utilize transparent disclosure channels to provide accurate and timely financial as well as non-financial information. Moving forward, HDKSOE and its shipbuilding subsidiaries remain committed to establishing an advanced governance structure, ensuring compliance with governance-related laws and regulations to minimize the risk of damage to corporate value arising from conflicts of interest.

**OPPORTUNITY**

- As corporate social responsibility is emphasized, discover business opportunities that can be applied to shipbuilding and offshore businesses based on transparent investment decisions.
- Increase in corporate value through shareholder-friendly policies

**KEY PERFORMANCE**

- Operation of the Compliance Officer System**
- Appointment of Female Directors**
- Practical Operation of the ESG Committee Reflecting Non-financial Risks in Management**

Financial Impact ●●●○○ Social & Environmental Impact ●●○○○



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## Establishment of an Advanced Governance Structure

HDKSOE and its shipbuilding subsidiaries are implementing various measures to establish an advanced governance structure. These efforts aim to minimize the risk of damage to corporate value resulting from conflicts of interest, by strictly adhering to internal transaction-related regulations and cross-shareholding regulations. The governance structure is designed to realize the management philosophy of the company. Additionally, the independence and diversity of the Board of Directors (BoD) have been strengthened to facilitate effective BoD operation and enhance shareholder value. Although HDKSOE and its shipbuilding subsidiaries currently do not separate the roles of the CEO and BoD Chairman, independent decision-making is ensured through the significant presence of outside directors on the BoD. Moreover, the CEO serves as the Chairman of the BoD, enabling efficient application of BoD decisions to management and the ability to respond effectively to rapid changes in the business environment.

## HDKSOE BoD Composition

HDKSOE's Board of Directors (BoD) is composed of two internal directors, Ka Sam-hyeon (CEO) and Chung Ki-sun(CEO), and three outside directors, Lim Suk-sig, Choe Hyuk, and Jo Young-hee. Currently, the BoD has established and operates four committees: the Outside Director Recommendation Committee, Audit Committee, Related Party Transactions Committee, and ESG Committee. The ESG Committee, established in 2021, aims to strengthen ESG-centered management by setting the direction of the company's ESG strategy based on its unique characteristics. It reviews departments and plans and provides necessary support for the development and internalization of ESG competencies. Through the composition of an independent and professional BoD, HDKSOE strives for stable corporate management and effective risk management.

(As of March 31, 2023)

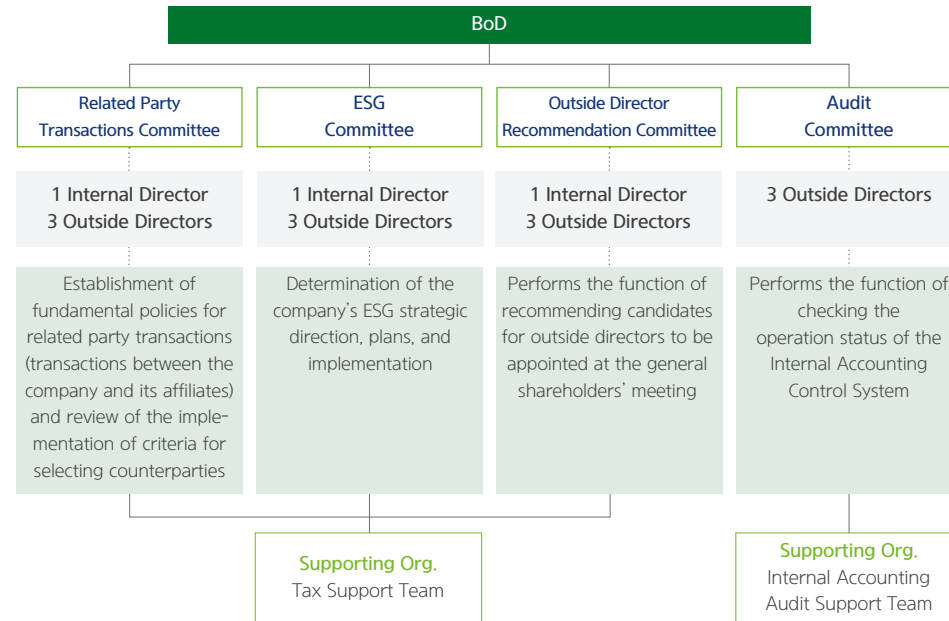
Type	Internal Director		Outside Director			
<b>Name [Gender]</b>	Ka Sam-hyun, BoD Chair [Male]	Chung Ki-sun [Male]	Lim Suk-sig, Audit Committee Chair [Male]	Choe Hyuk, Outside Director Recommendation Committee Chair [Male]	Jo Young-hee, Related Party Transactions Committee Chair [Female]	Kim Hong-gi, ESG Committee Chair [Male]
<b>Position</b>	CEO (executive)	CEO (executive)	Independent director (non-executive)	Independent director (non-executive)	Independent director (non-executive)	Independent director (non-executive)
<b>Appointment Date</b>	March 2020	March 2022	December 2018	March 2017	March 2022	March 2023
<b>Term (years)</b>	2	3	2	3 (term expires on March 28, 2023)	3	Newly appointed in 2023
<b>Attendance Rate in 2022</b>	100%	100%	100%	100%	100%	N/A
<b>Major Career</b>	<ul style="list-style-type: none"> <li>· Graduated from Yonsei Univ.</li> <li>· HD Hyundai Shipbuilding/Offshore Engineering Former Head of Sales Headquarters Business &amp; President</li> <li>· Former HHI CEO/President</li> <li>· HDKSOE CEO/Vice Chair</li> </ul>	<ul style="list-style-type: none"> <li>· Graduated from Stanford University (MD)</li> <li>· Former President of Hyundai Global Service</li> <li>· HHI Shipbuilding/Offshore engineering Former President of Sales</li> <li>· HDKSOE CEO/President</li> <li>· HD Hyundai CEO/President</li> </ul>	<ul style="list-style-type: none"> <li>· Graduated from the University of Minnesota (Ph.D)</li> <li>· Former President of Korea Accounting Standards Board</li> <li>· Professor, Department of Business Administration, University of Seoul</li> <li>· Honorary Professor, University of Seoul</li> <li>· CPA</li> </ul>	<ul style="list-style-type: none"> <li>· Graduated from Seoul National Univ. (MD)</li> <li>· Graduated from Chicago Univ. (Ph.D)</li> <li>· Former non-executive member, the Securities and Futures Commission</li> <li>· Professor, Department of Business Administration, Seoul National University</li> <li>· Honorary Professor, Seoul National University</li> <li>· CPA</li> </ul>	<ul style="list-style-type: none"> <li>· Graduated from Harvard Univ. (MD)</li> <li>· Ministry of Justice International Legal Advisor</li> <li>· Director of International Relations, Korean Bar Association</li> <li>· Former Attorney, Sejong law firm</li> <li>· Partner Attorney, LAB Partners</li> <li>· Attorney</li> <li>· Lawyer</li> </ul>	<ul style="list-style-type: none"> <li>· Graduated from Dongguk Univ. (Ph.D)</li> <li>· Vice President of Korean Accounting Association</li> <li>· CEO of Samil PWC Accountings</li> <li>· Specially Appointed Professor, Yonsei University Business School</li> <li>· CPA</li> </ul>
<b>Specialized in</b>	Sales	Business administration	Accounting & Finance	Accounting & Finance	Corporate law	Accounting & Finance
<b>Liability Insurance Status</b>	Insured	Insured	Insured	Insured	Insured	Insured
<b>Approval Rate</b>	100%	100%	100%	100%	100%	N/A
<b>Holding Stock</b>	4,255	544	-	-	-	-

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## HDKSOE BoD Sub Committee



## Independence of HDKSOE BoD

HDKSOE ensures the independence of its Board of Directors (BoD) by organizing a majority of outside directors (at least three) to function independently from management and controlling shareholders. The criteria for appointing outside directors are stipulated in the Corporate Governance Charter. Director candidates elected at the general shareholders' meeting are selected by both the BoD (Internal Directors) and the Outside Director Recommendation Committee (Outside Directors). When announcing a general meeting of shareholders, the personal information of the director candidates, as well as their relationship with the recommender and the largest shareholder, are disclosed to ensure the independence of the directors.

## Operation of HDKSOE BoD

During the 5<sup>th</sup> BoD meeting, HDKSOE transparently appointed the CEO, BoD Chairman, members of the Outside Director Recommendation Committee, Related Party Transactions Committee, and ESG Committee. In the 8<sup>th</sup> session, a report was provided on the establishment of the SD (System Engineering & Digital/Decarbonization Solution) business unit, which operates directly under the Vice Chairman. This division aims to advance eco-friendliness and digital ship technology in the marine mobility market.

Date	Agenda	Deliberation Result
2022.01.06	· Approval of share transfer in Hyundai Engine Co., Ltd. · Approval of HHI Co., Ltd. Qatar NFPS Compression Project parent company warranty provision	Pass Pass
2022.01.19	· HSHI Co., Ltd. IPO progress report	Report
2022.02.07	· Approval of the 48 <sup>th</sup> financial statement/business report · 2021 Internal Accounting Control System operation status report	Pass Report
2022.02.21	· Approval of the convocation of the 48 <sup>th</sup> regular general meeting of shareholders and the purpose of the meeting · 2021 Internal Accounting Control System operation status evaluation, 2021 H1 Fair Trade Self-compliance operation status inspection report	Pass Report
2022.03.22	· Appointment of the CEO, appointment of Outside Director Recommendation Committee Members/Related Party Transactions Committee Members/ESG Committee Members · Appointment of the BoD Chairman and decision on the order of acting duties · Cancellation of related contracts such as investment in kind and investment contracts	Pass Pass Report
2022.04.28	· Approval of director concurrent position · Approval of closing of Hyundai Seobu Kindergarten · 2022 Q1 Business performance report · COMAS Co., Ltd. liquidation report	Pass Pass Report Report
2022.05.16	· Approval of partial sale of shares in HHI Co., Ltd.	Pass
2022.07.29	· 2022 H2 Business performance report · SD Business Unit establishment report	Report Report
2022.10.27	· 2022 Q3 Business performance report · 2022 Compliance Control Standard operation status report · ISO 37001 Anti-bribery Management System Certification report	Report Report Report
2022.12.09	· Setting the reference date for exercising rights at the 49 <sup>th</sup> regular general meeting of shareholders · Approval of transaction limits between directors and the company · Approval of transaction limits with related parties · 2022 Q3 Business performance report · 2022 Compliance Control Standard operation status report	Pass Pass Pass Report Report
2023.01.03	· Approval of signing an agreement with a financial investor	Pass
2023.02.07	· Approval of appointment of change of Compliance Officer · Approval of appointment of change in Fair Trade Self-compliance Manager · 2022 Internal Accounting Control System operation status report (CEO)	Pass Pass Report
2023.02.24	· Approval of the convocation of the 49 <sup>th</sup> regular general meeting of shareholders and the purpose of the meeting · 2022 Internal Accounting Control System operation status evaluation report (Audit Committee) · 2022 H2 Fair trade Self-compliance status inspection report	Pass Report Report
2023.03.28	· Appointment of the BoD Chairman, appointment of ESG Committee Members/Outside Director Recommendation Committee Members/Related Party Transactions Committee Members	Pass

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## Committee Activities within the HDKSOE BoD

Committee	Date	Agenda	Deliberation Result
Related Party Transactions Committee	2022.02.21	· Approval of change of related party transaction manager · 2021 Counterparty selection criteria and related party transaction operation status review report	Pass Report
	2022.03.22	· Appointment of Related Party Transactions Committee Chairman	Pass
Outside Director Recommendation Committee	2023.02.24	· Approval of change of related party transaction manager · 2022 Counterparty selection criteria and related party transaction operation status review report	Pass Report
	2022.02.21	· Approval of Recommendation of Outside Director Candidates	Pass
Audit Committee	2022.03.22	· Appointment of Outside Director Recommendation Committee Chairman and decision on the order of acting duties	Pass
	2023.02.24	· Approval of Recommendation of Outside Director Candidates	Pass
Audit Committee	2023.03.28	· Appointment of Outside Director Recommendation Committee Chairman and decision on the order of acting duties	Pass
	2022.02.07	· 2021 External Auditor's audit results, Internal Accounting Control System evaluation and operation status report · Internal audit report	Report Report
Audit Committee	2022.02.21	· Approval of 2021 Internal Accounting Control System operation status evaluation result · Submission of the 48 <sup>th</sup> audit report and deliberation of the purpose of the regular general meeting of shareholders	Pass Pass
	2022.03.22	· Appointment of Audit Committee Chairman · Approval of 2021 External Auditors' audit activity evaluation results · 2022 Audit Committee's activity plan report	Pass Pass Report
Audit Committee	2022.04.28	· Approval of 2022 external audit plan · 2022 Internal Accounting Control System operation status inspection plan and Internal Accounting Control Regulation amendments · 2022 Q1 Review results · Communication between the governing body and External Auditors	Pass Report Report Report
	2022.07.29	· Communication between the governing body and External Auditors	Report
Audit Committee	2022.10.27	· Approval of prior documentation related to the appointment of a new External Auditor in 2023 · Internal audit report · 2022 Q3 Results of review and H1 Internal Accounting Control System operation status, Audit Committee independent evaluation report · Communication between the governing body and External Auditors	Pass Report Report Pass
	2022.12.09	· Appointment of an External Auditor	Pass
Audit Committee	2023.02.07	· 2022 External Auditor's audit results, Internal Accounting Control System operation status report · Internal audit work report	Report Report
	2023.02.24	· Approval of 2022 Internal Accounting Control System operation status evaluation report · Deliberation of the purpose of the 49 <sup>th</sup> regular general meeting of shareholders · Consolidated Internal Accounting Control System establishment status report	Pass Pass Report

\* HDKSOE's ESG Committee activities are separately indicated on p.40.

## Audit Committee Independence

HDKSOE's Audit Committee is composed of three directors, all of whom are outside directors. An outside director with ample experience and knowledge as a financial expert is appointed as the chairman of the Audit Committee to ensure its independence and professionalism.

## Current Status of Training for Outside Directors

In accordance with the Internal Accounting Control Regulations, we provide training for outside directors at least once a year to enhance the expertise of Audit Committee members.

Date	Content of Training
2022.04.28	· Shipbuilding market conditions and prospects
2022.09.14	· General matters of Audit Committee and role of Audit Committee related to recent irregularities · Global macroeconomic changes and HD Hyundai Group's response strategy
2023.04.27	· Features of order-based accounting processing

## Remuneration for BoD of HDKSOE and Shipbuilding Subsidiaries

HDKSOE and its shipbuilding subsidiaries pay remuneration within the approved limits set by the shareholders' meeting. The remuneration includes a basic annual salary based on executive remuneration standards, as well as performance-based compensation that combines quantitative indicators (such as sales, orders, operating profit) and non-quantitative indicators (such as leadership, expertise, responsibility). The payment of remuneration is subject to approval by the BoD. Detailed calculation standards and methods are disclosed through business reports.

(Unit: KRW million)

Company	No. of directors	Amount Approved by the General Meeting of Shareholders	Total Remuneration <sup>1</sup>	Average Remuneration per Person <sup>2</sup>
HDKSOE	5	3,000	2,041	245
HHI	8	4,000	2,613	
HMD	5	1,700	758	
HSHI	7	2,500	717	

1. Total remuneration refers to the income received by Registered Directors, Outside Directors, and Audit Committee members, in accordance with Article 159 of the Capital Market and Financial Investment Business Act and Article 168 of its Enforcement Decree. This income includes amounts received while in office or after retirement during the business year, as registered executives.

2. The average remuneration per person is calculated as follows: Average remuneration per person = (total remuneration) ÷ (number of Board members as of December 31, 2022)

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## Board of Directors

The HHI Board of Directors upholds its independence in accordance with the Commercial Act and the Articles of Incorporation. The procedures and authority of the board are clearly defined through separate board regulations. During deliberations, the board has the option to invite relevant executives, employees, and external parties to provide explanations or opinions, and if necessary, receive reports on matters concerning the execution of critical business operations.

The HHI Board of Directors adheres to fair and transparent board practices, establishing robust governance in accordance with the Corporate Governance Charter. It includes outside directors who possess the ability to act independently from management and controlling shareholders. Directors who have been found responsible for compromising corporate values or shareholders' interests are excluded from the board.

## BoD Operating Principles

As a rule, regular BoD meetings are held at least once a quarter, and the BoD adheres to the BoD regulations, which specifically outline the authority, responsibility, and operating procedures of the BoD. Detailed minutes are prepared when there are agenda items for discussion, and these minutes are recorded and preserved. Furthermore, it is a principle to transparently disclose the details of activities, including whether individual directors have differing opinions on agendas subject to disclosure. The BoD conducts a fair evaluation of management activities and appropriately reflects them in director remuneration. The remuneration of directors is determined by the BoD within the scope approved at the general shareholders' meeting.

## Outside Director Training

HHI provides training for outside directors to enhance their professionalism. Training sessions were conducted twice in 2022, and the attendance rate for outside directors was 100%.

Date	Content of Training
2022.04.27	Market conditions and prospects, etc.
2022.09.14	Implications related to recent trends and irregularities, etc.
2023.04.26	Improving understanding of the Consolidated Internal Accounting Control System

## Current Status of HHI BoD

(As of March 31, 2023)

Category	Internal Director		Outside Director		
Name[Gender]	Han Young-seuk, BoD Chair [Male]	Lee Sang-kyun [Male]	Cho Jae-ho, Outside Director Recommendation Committee, ESG Committee Chair [Male]	Chae Joon, Audit Committee Chair [Male]	Park Hyun-jung, Related Party Transactions Committee Chair [Female]
Position	CEO (executive)	CEO (executive)	Independent director (non-executive)	Independent director (non-executive)	Independent director (non-executive)
Appointment Date	June 2019	April 2021	June 2019	March 2020	March 2022
Term (years)	2	3	3	3	3
Attendance Rate in 2022	100%	100%	100%	100%	100%
Major Career	HMD CEO	HSHI CEO	Honorary Professor, Economics, Ulsan University	Outside Director, Yuanta Securities Co., Ltd.	Former Judge, Seoul Central District Court
Specialized in	Business administration	Business administration	Accounting & Finance	Accounting & Finance	Corporate Law
Liability Insurance Status	Insured	Insured	Insured	Insured	Insured
Approval Rate	100%	100%	100%	100%	100%
Holding Stock	2,800	1,107	-	-	-

## HHI BoD Operation<sup>1</sup>

Date	Agenda	Deliberation Result
2022.01.06	Approval of share transfer of Hyundai Engine Co., Ltd.	Pass
2022.02.07	Approval of safety/health/environmental management plan, approval of Q3 period financial statement/business report, approval of introduction of electronic voting system, Internal Accounting Control System operation status report	Pass/Report
2022.02.18	2021 Internal Accounting Control System operation status evaluation report, 2021 H2 Fair Trade Self-compliance inspection report, approval of issuance of Foreign Currency-denominated Bonds, convocation of the 3 <sup>rd</sup> regular general meeting of shareholders and approval of the purpose of the meeting	Pass/Report
2022.03.22	Appointment of the BoD Chairman, appointment of ESG Committee Members/Related Party Transactions Committee Members/Outside Director Recommendation Committee Members	Pass
2022.04.27	2022 Q1 Business performance report, Internal Accounting Control Regulation revision report, approval of closing Hyundai West Kindergarten	Pass/Report
2022.07.27	2022 H1 Business performance report, Nigeria FZE corporation liquidation report	Report
2022.10.26	2022 Q3 Business performance report, 2022 H1 Fair Trade Self-compliance inspection report, ISO 37001 Anti-bribery Management System Certification report, approval of real estate lease contract	Pass/Report
2022.12.09	Approval of the transaction limit between directors and the company, approval of the setting of the reference date for exercising rights at the 4 <sup>th</sup> regular general meeting of shareholder, 2023 management plan report, and approval of the limit of corporate bond issuance, approval of the limit of issuance of short-term bonds, approval of product and service transactions	Pass/Report
2022.12.23	Approval of signing a brand use contract, approval of closing Qatar branch	Pass
2023.02.07	2022 Internal Accounting Control System operation status report, approval of the 4 <sup>th</sup> business report/financial statement, approval of 2023 safety and health management plan, 2023 environmental management report	Pass/Report
2023.02.24	2022 Internal Accounting Control System operation status evaluation report, 2022 H2 Fair Trade Self-compliance inspection report, approval of the convocation of the 4 <sup>th</sup> regular general meeting of shareholders and the purpose of the meeting	Pass/Report
2023.03.28	Approval of appointment of CEO, decision on the order of acting duties in case the Chairman is absent, appointment of the BoD Chairman, appointment of ESG Committee Members/Related Party Transactions Committee Members/Outside Director Recommendation Committee Members	Pass
2023.04.26	2023 Q1 Business performance report, approval of transfer of small and medium-sized ship propulsion package business	Pass/Report

1. HHI's ESG Committee activities are separately indicated on p.41.

# HHI

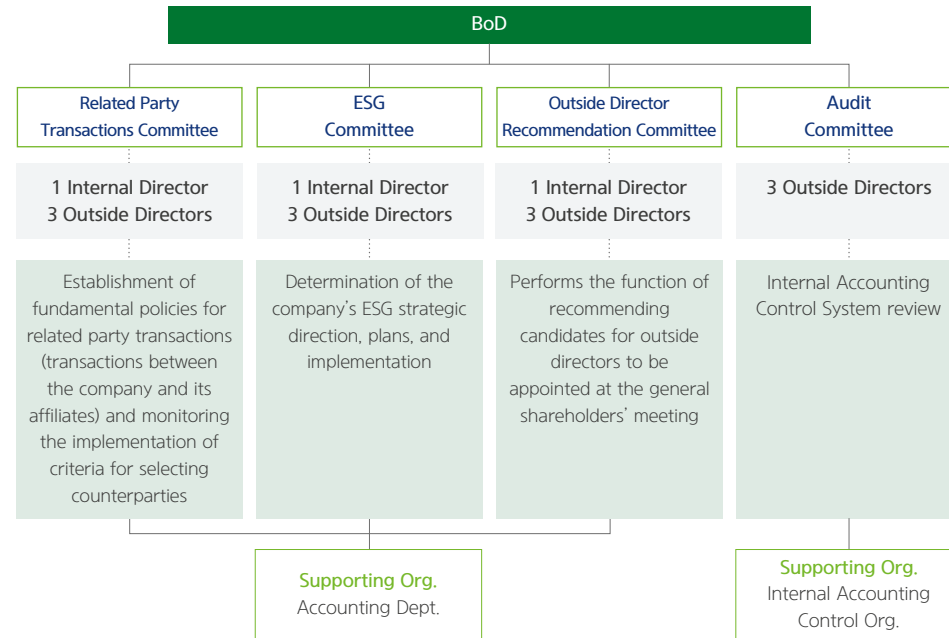
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## HHI BoD Sub-Committee



## Activities of the Related Party Transactions Committee and the Outside Director Recommendation Committee

Committee	Date	Agenda	Deliberation Result
Related Party Transactions Committee	2022.02.18	Approval of change in person in charge of related party transaction, 2021 Counterparty selection criteria operation status report	Pass/Report
	2022.03.22	Appointment of Related Party Transactions Committee Chairman and decision on the order of acting duties in case the Chairman is absent	Pass
	2023.02.24	2022 Counterparty selection criteria operation status report	Report
Outside Director Recommendation Committee	2022.02.18	Recommendation of Outside Director Candidates	Pass
	2022.03.22	Appointment of Outside Director Recommendation Committee Chairman and decision on the order of acting duties in case the Chairman is absent	Pass
	2023.02.24	Recommendation of Outside Director Candidates	Pass

## Audit Committee Independence

HHI's Audit Committee ensures its independence by adhering to all applicable laws and regulations. All committee members, including the chairman, are outside directors, and two of them possess expertise in accounting and finance.

## Audit Committee Activities<sup>1</sup>

Date	Agenda	Deliberation Result
2022.02.07	<ul style="list-style-type: none"> <li>2021 external auditor audit results report</li> <li>Communication between the Audit Committee and external auditors</li> <li>Report on the operation status of the internal Accounting Control System in 2021</li> </ul>	Report
2022.02.18	<ul style="list-style-type: none"> <li>Approval of 2021 Internal Accounting Control System operation status evaluation report</li> <li>Submission of the 3<sup>rd</sup> audit report and deliberation of the purpose of the regular general meeting of shareholders, etc.</li> <li>2021 Internal audit result and 2022 internal audit plan report</li> </ul>	Pass/Report
2022.04.27	<ul style="list-style-type: none"> <li>2022 Q1 Communication between governing bodies and External Auditors</li> <li>Education of Audit Committee Members (Industry market conditions, etc.)</li> <li>2022 Q1 External Auditor's review results report</li> <li>2021 Audit Committee activity results report</li> <li>2022 Audit Committee annual operation plan report</li> <li>2022 Internal Accounting Control System operation status inspection plan and Internal Accounting Control Regulations revision report</li> <li>2021 Ex-post facto approval of compliance with audit standards by External Auditors</li> </ul>	Pass/Report
2022.07.27	<ul style="list-style-type: none"> <li>2022 H1 External Auditor's review results report</li> <li>2022 Q2 Communication between governing bodies and External Auditors</li> <li>2022 Internal accounting design evaluation results report</li> </ul>	Report
2022.10.26	<ul style="list-style-type: none"> <li>2022 Q3 External Auditor's review results report</li> <li>2022 Q3 Communication between governing bodies and External Auditors</li> <li>2022 H1 Internal accounting operation evaluation result report</li> </ul>	Report
2023.02.07	<ul style="list-style-type: none"> <li>2022 External Auditor's audit result report</li> <li>Communication between the governing body and External Auditors</li> <li>2022 Internal Accounting Control System operation status report</li> </ul>	Report
2023.02.24	<ul style="list-style-type: none"> <li>Approval of 2022 Internal Accounting Control System operation status evaluation report</li> <li>Submission of the 4<sup>th</sup> audit report and deliberation of the purpose of the regular general meeting of shareholder</li> <li>2022 Internal audit results and 2023 internal audit plan report</li> </ul>	Pass/Report

1. Details of the 2023.03.28/2023.04.26 agenda can be checked in the business report

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## Board of Directors

The board of directors at HMD has comprehensive authority over company management and is responsible for making decisions and supervising the company's management functions. To fulfill their duties effectively, directors with diverse backgrounds and expertise are appointed, and more than half of all directors are independent outside directors, not affiliated with the management or controlling shareholders.

HMD's corporate governance aims to achieve balanced economic development by safeguarding the rights of various stakeholders, fulfilling social responsibilities, respecting workers' rights, and promoting the establishment of a fair market order. The board of directors operates Audit Committee to manage and supervise the management activities of the board of directors, and faithfully performs audit tasks such as legality and feasibility tests for the execution of directors and management.

## BoD Operating Principles

As a standard practice, the board of directors makes informed and rational decisions by investing time and effort in gathering sufficient information to ensure sustainable management. Their primary objective is to consistently pursue outcomes that serve the best interests of the company and its shareholders. Moreover, during the process of making business judgments, the board of directors' management decisions are given due respect when supported by reasonably credible data and information, subjected to thorough review, and performed in the company's best interests based on sound judgment. The company provides ample materials to assist outside directors in fulfilling their duties and, if necessary, offers support from employees or experts.

## Audit Committee Independence

The Audit Committee at HMD adheres to all applicable laws and regulations. It consists of three or more directors, with more than two-thirds of the members being outside directors. Furthermore, all three directors possess expertise in accounting or finance, and an outside director serves as the representative of the Audit Committee.

## BoD Status of HMD

(As of March 31, 2023)

Category	Internal Director		Outside Director		
<b>Name [Gender]</b>	Kim Hyung-kwan, BoD Chair [Male]	Cho Jin-ho [Male]	Joo Hyung-hwan, Outside Director Recommendation Committee ESG Committee Chair [Male]	Yoo Seung-won, Audit Committee Chair [Male]	Kim Seong-eun, Related Party Transactions Committee Chair [Female]
<b>Position</b>	CEO (executive)	Director (executive)	Independent director (non-executive)	Independent director (non-executive)	Independent director (non-executive)
<b>Appointment date</b>	March 2023	March 2022	March 2021	March 2020	March 2022
<b>Term (years)</b>	2	2	3	3	3
<b>Attendance Rate in 2022</b>	N/A	100%	100%	100%	100%
<b>Major Career</b>	HSHI CEO	Executive in charge of financial support, HD Hyundai Management Support Office	Presidential Council for Future and Vision, Economic Planning Officer	Outside Director, KB Kookmin Bank	Outside Director, Citibank Korea
<b>Specialized in</b>	Business management	Business management	Financial institutions/government/securities related institutions	Accounting and Finance	Accounting and Finance
<b>Liability Insurance Status</b>	Insured	Insured	Insured	Insured	Insured

## HMD BoD Operation Activities<sup>1</sup>

Date	Agenda	Deliberation Result
2022.02.07	Approval of the 48 <sup>th</sup> financial statement/business report, approval of the 2022 safety and health plan, Internal Accounting Control System operation status report, 2021 H2 Fair Trade Self-compliance/Compliance Control Standard operation status inspection result report	Pass/Report
2022.02.17	Approval of the convocation of the 48 <sup>th</sup> regular general meeting of shareholders and agenda for discussion, Internal Accounting Control System operation status evaluation report	Pass
2022.03.22	Appointment of the BoD Chairman, appointment of ESG Committee Members/Outside Director Recommendation Committee Members/Related Party Transactions Committee Members	Pass
2022.04.27	2022 Q1 Business performance report, Internal Accounting Control Regulation revision report	Report
2022.07.28	2022 Q2 Business performance report, 2022 H1 Fair Trade Self-compliance inspection result report	Report
2022.10.26	2022 Q3 Business performance report, ISO 37001 Anti-bribery Management System Certification result report	Report
2022.12.09	Setting the reference date for exercising voting rights at the 49 <sup>th</sup> general meeting of shareholders, approval of transaction limits between directors and the company for 2023, appointment of a Compliance Officer, 2023 management plan report	Pass
2023.02.07	Approval of the 49 <sup>th</sup> financial statement/business report, and approval of the 2023 safety and health plan, 2022 Internal Accounting Control System operation status/2022 Fair Trade Self-compliance status inspection result/2022 Compliance Control Standard operation status inspection result report	Pass/Report
2023.02.23	Approval of the convocation of the 49 <sup>th</sup> regular general meeting of shareholders and agenda for discussion, 2022 Internal Accounting Control System operation status evaluation report	Pass/Report
2023.03.27	Appointment of the CEO, appointment of the BoD Chairman and decision on the order of acting duties, appointment of Outside Director Recommendation Committee Members/ESG Committee Members/Related Party Transactions Committee Members	Pass/Report
2023.04.26	2023 Q1 Business performance report	Report

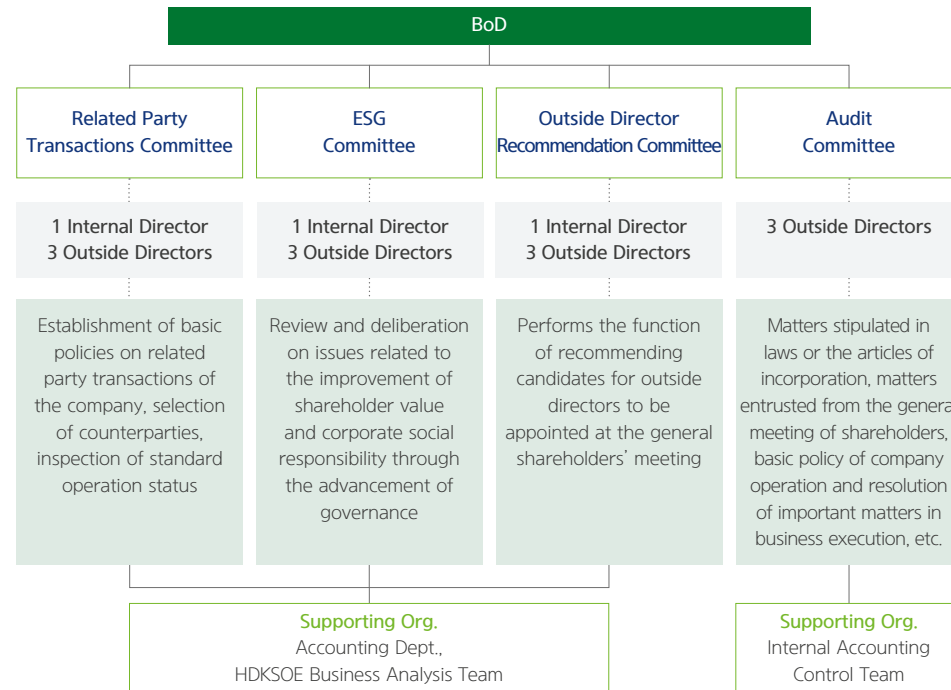
1. 2022.12.23 Details of the agenda can be confirmed in the annual report



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## HMD BoD's Sub Committee



## Activities of Related Party Transactions Committee and the Outside Director Recommendation Committee<sup>1</sup>

Committee	Date	Agenda	Deliberation Result
Related Party Transactions Committee	2022.02.17	2021 Counterparty selection criteria operation status report	-
	2022.03.22	Appointment of Related Party Transactions Committee Chairman	Pass
	2023.02.23	2022 Counterparty selection criteria operation status report	-
Outside Director Recommendation Committee	2022.02.17	Recommendation of an Outside Director Candidate (Kim Sung-eun, Outside Director Candidate)	Pass
Recommendation Committee	2023.02.23	Recommendation of Outside Director Candidates	Pass

1. HMD's ESG Committee activities are separately indicated on p.42

## Outside Director Training

HMD offers training programs to enhance the professionalism of outside directors. The attendance rate for outside directors' training in 2022 was 100%, and HMD plans to conduct training sessions at least once a year to further develop the skills and expertise of the outside directors.

Date	Content of Training
2022.04.27	<ul style="list-style-type: none"> <li>· Understanding market conditions through analysis of key economic indicators</li> <li>· Identification of order status and future prospects through market environment analysis</li> </ul>
2022.09.14	<ul style="list-style-type: none"> <li>· General matters of the Audit Committee and role of the Audit Committee regarding recent irregularities</li> <li>· Global macroeconomic changes and HD Hyundai Group's response strategy</li> </ul>

## Audit Committee Activities

Date	Agenda	Deliberation Result
2022.02.07	<ul style="list-style-type: none"> <li>· 2021 External Auditor's audit results report</li> <li>· 2021 Internal Accounting Control System operation status report</li> </ul>	Report
2022.02.17	<ul style="list-style-type: none"> <li>· 2021 Internal audit results and 2022 internal audit plan report</li> <li>· Approval of the Internal Accounting Control System operation status evaluation report</li> <li>· Submission of audit report and review and approval of agenda documents for the 48<sup>th</sup> regular general meeting of shareholders</li> </ul>	Pass/Report
2022.04.27	<ul style="list-style-type: none"> <li>· Approval of ex-post facto approval on compliance with the audit standards of the previous year by an External Auditor</li> <li>· 2022 Q1 Review results report by an external auditor</li> <li>· The previous Audit Committee's independence and activity results report</li> <li>· 2022 Audit Committee annual operation plan report</li> <li>· 2022 Internal Accounting Control System operation status inspection plan and Internal Accounting Control Regulations revision report</li> </ul>	Pass/Report
2022.07.28	<ul style="list-style-type: none"> <li>· 2022 H1 Review results report</li> <li>· 2022 Internal accounting design evaluation result report</li> </ul>	Report
2022.10.25	<ul style="list-style-type: none"> <li>· 2022 Q3 Review results report</li> <li>· 2022 H1 Internal accounting operation evaluation results report</li> <li>· Approval of documented External Auditor selection criteria</li> </ul>	Pass/Report
2022.12.09	<ul style="list-style-type: none"> <li>· Designated external audit contract and audit plan report</li> </ul>	Report
2023.02.07	<ul style="list-style-type: none"> <li>· 2022 External Auditor's audit results report</li> <li>· 2022 Internal Accounting Control System operation status report</li> </ul>	Report
2023.02.23	<ul style="list-style-type: none"> <li>· 2022 Internal audit results and 2023 internal audit plan report</li> <li>· Approval of the Internal Accounting Control System operation status evaluation report</li> <li>· Submission of audit report and review and approval of agenda documents for the 49<sup>th</sup> regular general meeting of shareholders</li> </ul>	Pass

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## Board of Directors

The board of directors at HSHI is actively fulfilling its role to build trust with all stakeholders and ensure responsible management. The board is responsible for formulating and evaluating the company's strategy and annual management plan, as well as making key decisions on ESG (Environmental, Social, and Governance) matters. The composition of the board of directors adheres to the procedures mandated by the relevant laws and articles of incorporation for director elections.

### BoD Operating Principles

The board of directors at HSHI is composed of a sufficient number of directors to facilitate effective and prudent discussions and decision-making, as well as to activate the committees established within the board. The board possesses comprehensive authority over company management and may delegate authority to the representative director or committees within the board. Directors at HSHI are required to maintain an independent relationship with stakeholders and possess professional knowledge relevant to overall management. The appointment of outside directors is conducted through the Outside Director Recommendation Committee to ensure fairness and independence in the selection process, and HSHI also promotes a future-oriented governance system by emphasizing board diversity. The board of directors operates in accordance with established rules and diligently upholds its rights, responsibilities, and operating procedures. Furthermore, the content and decisions made by the board of directors are managed and recorded transparently, with activities being disclosed when necessary.

### Directors' Independence

The appointment of directors at HSHI takes place during the general shareholders' meeting, where a majority of voting rights from the shareholders present, representing at least a quarter of the total number of issued shares, is required. Furthermore, when two or more directors are being appointed, a shareholder can exercise only one voting right for each share they own, and the cumulative voting system specified in Article 382-2 of the Commercial Act has not been implemented. The recommendation of directors is carried out by the board of directors (inside directors), while outside directors are appointed based on the recommendations provided by the Outside Director Recommendation Committee, ensuring the independence of directors.

## BoD Status of HSHI

(As of March 27, 2023)

Category	Internal Director		Outside Director			
Name[Gender]	Shin Hyeon-dae, BoD Chair [Male]	Kim Sung-joon [Male]	Jung Do-sam, Audit Committee Chair [Male]	Lee Jang-young, ESG Committee Chair [Male]	Koh Chang-hyun, Related Party Transactions Committee Chair [Male]	Shin Ho-young, Outside Director Recommendation Committee [Female]
Position	CEO (executive)	Non-executive director	Independent director (non-executive)	Independent director (non-executive)	Independent director (non-executive)	Independent director (non-executive)
Appointment Date	Mar. 2023	Mar. 2017	Mar. 2020	Mar. 2023	Mar. 2021	Mar. 2022
Term (years)	2	3	3	3	3	3
Attendance Rate in 2022	N/A	91%	100%	N/A	91%	100%
Major Career	HMD CEO	Boston Consulting Group Partner	Vice CEO of Samil PWC	Financial Supervisory Service Vice President	Member of the legislative committee of Special Act on Ceremonial Cases under Ministry of Justice	President of Korea International Economics Education Association
Specialized in	Corporate management	Shipbuilding & Offshore engineering technology	Finance	Economics	Corporate law	Business administration
Liability Insurance Status	Insured	Insured	Insured	Insured	Insured	Insured

## HSHI BoD Operation Activities<sup>1</sup>

Date	Agenda	Deliberation Result
2022.02.07	Approval of the 24 <sup>th</sup> financial statement/operating report, approval of 2022 safety and health plans, 2021 Internal Accounting Control System operation status report, 2021 H2 Fair Trade Self-compliance inspection report	Pass/Report
2022.02.18	Approval of the convocation of the 24 <sup>th</sup> regular general meeting of shareholders and the purpose of the meeting, Internal Accounting Control System operation status evaluation report	Pass/Report
2022.03.22	Appointment of the BoD chairman/CEO, appointment of committee members within the BoD	Pass/Report
2022.04.26	2022 Q1 Business performance report	Pass/Report
2022.07.28	Setting the reference date for shareholder determination, 2022 H1 business performance/Fair Trade Self-compliance status inspection report	Pass/Report
2022.10.25	2022 Q3 Business performance report, ISO 37001 (Anti-bribery Management System) acquisition report	Report
2022.12.09	Setting the reference date for regular general meeting of shareholders, approval of limits on transactions between directors and company, 2023 management plan report	Pass/Report
2023.02.07	Approval of the 25 <sup>th</sup> financial statement/operating report, approval of the 2023 safety and health plan, 2022 Internal Accounting Control System operation status report, 2022 H2 Fair Trade Self-compliance inspection report	Pass/Report
2023.02.23	Approval of the convocation of the 25 <sup>th</sup> regular general meeting of shareholders and the purpose of the meeting, 2022 Internal Accounting Control System operation status independent evaluation report	Pass/Report
2023.03.27	Appointment of the BoD Chairman/CEO, appointment of committee members within the BoD	Pass/Report

1. Details of the agenda of 2022.01.19/2022.08.31/2022.10.04/2022.12.21/2023.01.03 can be found in the annual report

# HSHI

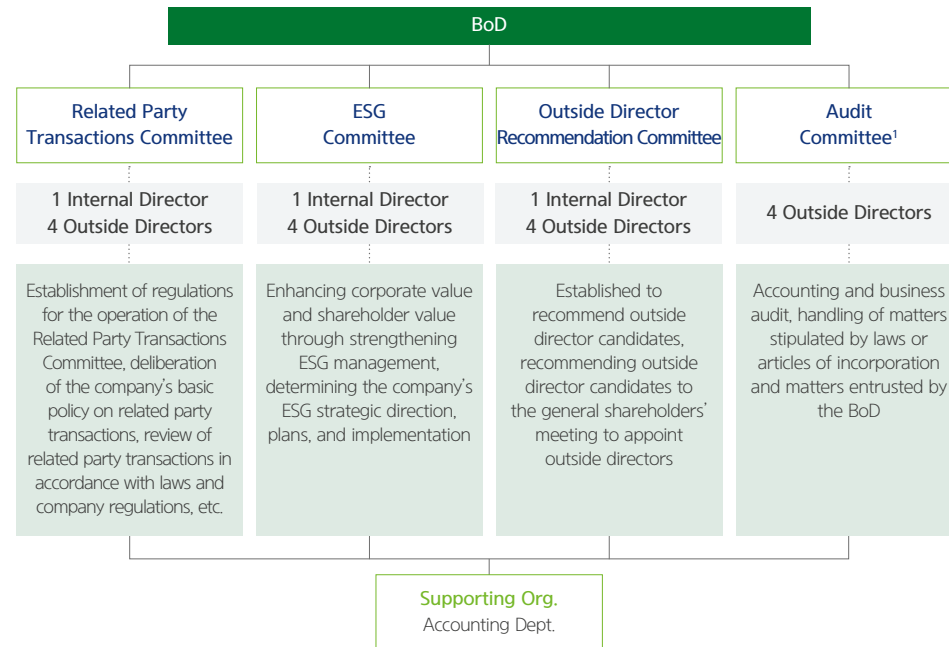
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## HSHI BoD Sub-Committee



1. HDKSOE, the parent company, operates supporting organization for the Audit Committee

## Activities of Related Party Transactions Committee and Outside Director Recommendation Committee<sup>2</sup>

Committee	Date	Agenda	Deliberation Result
Related Party Transactions Committee	2022.02.18	Counterparty selection criteria operation status report	Report
	2023.02.23	Counterparty selection criteria operation status report	Report
Outside Director Recommendation Committee	2022.02.18	Recommendation of Outside Director Candidates	Pass
	2022.03.22	Appointment of Outside Director Recommendation Committee Chairman	Pass
	2023.02.23	Recommendation of Outside Director Candidates	Pass
	2023.03.27	Appointment of Outside Director Recommendation Committee Chairman	Pass

2. HSHI's ESG Committee activities are noted separately on p.43.

## Outside Director Training

HSHI conducts annual training sessions specifically designed for Audit Committee members, as mandated by Internal Accounting Control Regulations. The purpose of these training sessions is to enhance the expertise of Audit Committee members.

Date	Content of Training
2022.04.26	· Shipbuilding market conditions and prospects, management status
2022.09.14	· Recent trends of Audit Committee, implications of Audit Committee related to fraudulent cases, Consolidated Internal Accounting Control System, key success factors according to changes in the business environment

## Activities of the Audit Committee

Date	Agenda	Deliberation Result
2022.01.19	· Approval of External Auditor designation request	Pass
2022.02.07	· 2021 External audit results/Internal Accounting Control System operation status report	Report
2022.02.18	· Approval of Internal Accounting Control System operation status evaluation report, a request for re-appointment of an External Auditor	Pass/Report
	· Approval of review of the agenda and documents of the 24 <sup>th</sup> regular general meeting of shareholders and the audit report	
2022.04.26	· 2021 Internal audit results and 2022 internal audit plan report	Pass/Report
	· Approval of ex-post facto approval on compliance with audit standards by External Auditors in 2021	
	· Q1 External Auditor's review results, audit plan and independence report	
2022.07.28	· 2021 Audit Committee independence and activity results report	Pass/Report
	· 2022 Audit Committee operation plan, Internal Accounting operation status inspection plan, and Internal Accounting Control Regulation revision report	
2022.10.25	· 2022 Audit Committee training (Industry market conditions, etc.)	Report
	· 2022 H1 External Auditor's settlement review results, internal accounting design evaluation results report	
2023.02.07	· 2022 Q3 External Auditor review results, H1 internal accounting operation evaluation results report	Report
	· Appointment of an External Auditor in 2023	
2023.2.23	· 2022 External Auditor's audit results report	Pass/Report
	· 2022 Internal Accounting Control System operation status results report	
2023.3.27	· 2022 Internal Accounting Control System operation status independent evaluation by the Audit Committee	Pass/Report
	· Submission of audit report and approval of review at the 25 <sup>th</sup> regular general meeting of shareholders	
2023.3.27	· 2022 Internal audit results and 2023 internal audit plan report	Pass
	· Appointment of Audit Committee Chairman	

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## GOVERNANCE

### Pursuing Transparent & Clean Compliance Management

Compliance management is the fundamental requirement and essential virtue among the social responsibilities expected of companies. HDKSOE and its shipbuilding subsidiaries prioritize compliance management as leading global companies. We remain committed to practicing compliance management for the betterment of humanity and our nation's development.

### Compliance Management Governance

CEO	Declaration of compliance management commitment (annual)
BoD	Compliance management plan and direction decision
<b>Compliance officer (executive level)</b>	Integrated operation of compliance management system
<b>Compliance Team/ Legal Team</b>	Implementation of compliance education and training programs Compliance-related system and law dissemination education Establishment/revision of compliance management standards and norms Compliance control inspection and consulting
<b>Compliance Officer</b>	Compliance control self-inspection Compliance-related system and law dissemination education

### Operation of Compliance Officer

In order to ensure compliance management, HDKSOE and its shipbuilding subsidiaries appoint a compliance officer for each company. These officers are responsible for conducting compliance training and organizing meetings related to the labor dispatch law for internal stakeholders.

Company	Compliance Officer	Appointment (tenure)	Career
HDKSOE <sup>1</sup>	Kim Tae-jeong	Jul 21, 2021 (Term 3 years)	<ul style="list-style-type: none"> <li>Former) Law Firm (Limited) Bae, Kim &amp; Lee/ Member Attorney</li> <li>Current) HDKSOE Managing Director/ Compliance Team Leader</li> </ul>
HHI	Kim Hae-seong	Apr 22, 2021 (Term 3 years)	<ul style="list-style-type: none"> <li>Former) HMD/in-house lawyer</li> <li>HHI Chief Attorney</li> </ul>
HMD	Bae Sang-woon	Dec 7, 2022 (Term 3 years)	<ul style="list-style-type: none"> <li>Former) Attorney at HSG Sungdong Shipbuilding</li> <li>HMD Legal Team/Leading Attorney</li> </ul>
HSHI	HSHI does not have a Compliance Officer since it is unlisted. Instead, Fair Trade Compliance Manager is in charge of compliance control.		

1. New Appointment of Kim Min-Sung as Compliance Officer (Feb. 7, 2023)

## STRATEGY

### Compliance Strategy

HDKSOE and its shipbuilding subsidiaries have implemented compliance control standards that are applied to all management activities. The aim is to enhance employees' awareness of compliance and effectively manage the risks of legal violations. To practice compliance management, we operate the Fair Trade Compliance Program (CP), which includes education and consultation on fair trade-related matters. We are also establishing an efficient compliance monitoring system and fostering a compliance management culture to meet societal expectations regarding the role of companies. Through these efforts, we are engaged in support activities to achieve sustainable growth.

### Operation & Reporting of the Fair Trade Compliance Program

HDKSOE and its shipbuilding subsidiaries inspect the performance of Fair Trade Compliance Program (CP) and employee compliance at least twice a year, in accordance with CP regulations. Based on the inspection results, work manuals are provided, and on-site training is appropriately conducted for departments with a higher risk of legal violations. The inspection and training results are reported to the board of directors twice a year.

### Posting of Ethics and Compliance Management Declaration

HDKSOE and its shipbuilding subsidiaries annually make a public declaration of the CEO's commitment and policy towards ethics and compliance management. This contributes to fostering the determination of executives and employees to practice ethics and compliance management, as well as conducting internal inspections of the compliance monitoring system.



### Acquisition of Anti-bribery Management System Certification

HDKSOE and its shipbuilding subsidiaries obtained 'ISO 37001' certification for anti-bribery management systems from LRQA, an international verification agency, in October 2022. This certification represents an international standard that proactively prevents bribery and corruption risks that may arise in corporate management activities, and establishes a management system to address them. A thorough assessment was conducted across 45 criteria in the field. As a result, we successfully met all the detailed management standards, demonstrating a high level of compliance management capabilities and fair trade efforts with suppliers. Through this certification, we will continue to foster a transparent and fair corporate culture, further enhancing our credibility and growing together with our diverse stakeholders.



ISO 37001 Certification

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## RISK MANAGEMENT

### Anti-Corruption/Economic Sanctions Act Compliance Guidelines

HDKSOE and its shipbuilding subsidiaries conduct comprehensive pre-inspections and assessments regarding anti-corruption practices, following the Anti-Corruption Act Compliance Guidelines. The aim is to establish a culture of fair and ethical management and effectively manage the risk of legal violations. Furthermore, to proactively prevent the risk of domestic and international economic sanctions, inspection activities are conducted in accordance with the Economic Sanctions Law Compliance Guidelines. Specifically, we aim to minimize the risk of illicit activities that may occur during the work of executives and employees by implementing a pre-approval system for economic benefits and transactions regarding economic sanctions. Additionally, we operate a one-on-one consultation service with experts and a legal support system to provide guidance and support, further enhancing our risk management efforts.

### Compliance Risk Assessment & Management Process

HDKSOE and its shipbuilding subsidiaries manage compliance risks according to the compliance risk identification, analysis, and evaluation process, and apply them to work procedures. First, risk identification is conducted once a year according to the questionnaire. Based on the evaluation results, the head of each department and compliance officer considers the type of risk and establishes and manages control measures for risk management such as training, management system, monitoring, and audit. In addition, after conducting training and publicity, we check the effectiveness by identifying whether there is any improvement in the relevant risk index.

## PERFORMANCE

### Implementation of Compliance Training

HDKSOE and its shipbuilding subsidiaries provide regular compliance training for new executives, department heads, team leaders, section leaders, and new employees. The compliance training covers topics such as fair trade, subcontracting, and illegal labor dispatch, and is tailored to the specific characteristics of each job and position. Furthermore, based on the results of risk assessments, we identify areas within each major compliance issue that require training, and conduct online and offline training sessions and consultations to raise awareness of compliance management among employees.

### Publication of Compliance News Letter

HDKSOE and its shipbuilding subsidiaries identify current compliance issues, such as fair trade, anti-corruption, and revisions to economic sanctions along with violation cases, and convey them via company news letter to enhance employees' awareness of compliance management.

### Compliance News Letter Postings in 2022

Issue No.	Content
No. 88	Russian Arbitration Procedure Law Key Contents and Notes
No. 89	Establishment and distribution of KFTC standard confidentiality agreement
No. 90	US announcement on additional economic sanctions against Russia
No. 91	Additional designation of SDN under economic sanctions against Russia by the United States
No. 92	Additional Economic Sanctions Against Russia Due to Ukraine Crisis
No. 93	Trends in economic sanctions against Russia following the Ukraine crisis (March)
No. 94	Trends in economic sanctions against Russia following the Ukraine crisis (April)
No. 95	Revision of review guidelines for unreasonable support acts
No. 96	Amendment and enforcement of the Enforcement Decree of the Fair Trade Act

### Operation of Cyber Counseling System for Unfair Trade Practices

HDKSOE and its shipbuilding subsidiaries are concentrating on establishing a fair subcontracting culture by operating a cyber counseling system through which suppliers can directly report and inquire about suspected unfair trade practices to the compliance management organization. We prohibit the disclosure of whistleblower's identity to protect them from any disadvantage. If the whistleblower experiences exposure, discrimination or disadvantage, Ethics Management Team provides remedial measure to prevent further damage. In 2022, three consultations were received regarding subcontracting and other matters. The reported cases were properly investigated and managed according to the procedures.

## METRICS AND TARGETS

### 2023 Compliance Promotion Plan

#### HDKSOE & Shipbuilding Subsidiaries

1. Revise Fair Trade Compliance Manual
2. Expansion of compliance management culture through expansion of compliance information and system improvement

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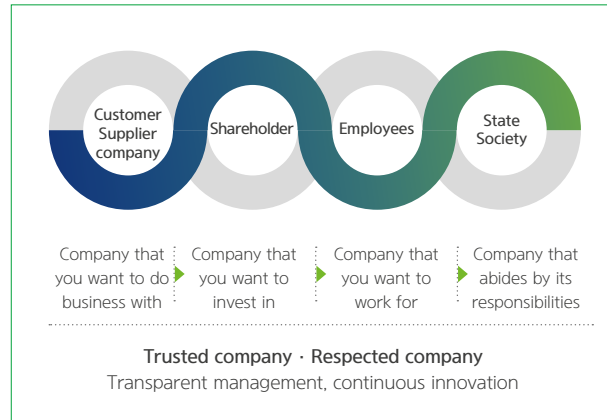
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**GOVERNANCE**

**Ethical Management Goal**

All executives and employees of HDKSOE and its shipbuilding subsidiaries consider ethics as their top priority and establish all business judgment criteria based on the Code of Ethics. Internally, we strive for transparent management and continuous innovation, aiming to strengthen our position as a trusted and respected company in a rapidly changing market environment.



**Ethical Management Operation System**

In our management system, CEO determines ethical management plan and strategy. On the other hand, the Audit Committee conducts audit, evaluation and corrective actions with independence and expertise. As for the implementation, Ethical Management Team is responsible for ethical education, programs, investigation and risk management.

**STRATEGY**

**Ethical Management Promotion Direction**

HDKSOE and its shipbuilding subsidiaries are committed to implementing value realization strategies to become a globally trusted company through ethical management practices that are aligned with the expectations of various stakeholders.

Target	Value to Pursue	Value Realization Strategy
Customer	Client satisfaction	<ul style="list-style-type: none"> <li>· Increase product responsibility</li> <li>· consumer protection</li> </ul>
Community	Corporate citizen	<ul style="list-style-type: none"> <li>· Environment-friendly management</li> <li>· Social contribution activities</li> </ul>
Employee	Dignity	<ul style="list-style-type: none"> <li>· Respect for human rights of employees</li> <li>· Work environment improvement</li> </ul>
Supplier Rival company	Fairness	<ul style="list-style-type: none"> <li>· Sound business practices</li> <li>· Protection of technology and trade secrets</li> </ul>
Government	Compliance	<ul style="list-style-type: none"> <li>· Maintain healthy relationship</li> <li>· Policy cooperation and support</li> <li>· Sincere tax payment</li> </ul>
Shareholder	Transparency	<ul style="list-style-type: none"> <li>· Corporate value enhancement</li> <li>· Provision of transparent management information</li> </ul>

**Disclosure of Ethics Charter**

HDKSOE and its shipbuilding subsidiaries have established ethical management practice items that are commonly applied and mandatory for the entire group. All executives and employees are familiar with the contents of ethical management practice activities, and in all cases, they perform their duties faithfully and responsibly under transparent standards.

[Ethical Charter of HDKSOE and Shipbuilding Subsidiaries. url](#)

**PERFORMANCE**

**Ethical Culture Internalization Activities**

HDKSOE and its shipbuilding subsidiaries conduct online and offline training every year to enhance employees' awareness of ethical management and cultivate an ethical culture within the organization. Specifically, offline ethics management training is provided to new employees who may be less familiar with the corporate culture, and self-training is encouraged at the departmental level.

<b>Hi class education</b>	· Video content education
<b>Anti-Corruption manual</b>	· Online training dealing with the prohibition of accepting gifts, money, etc. from supplier companies
<b>Self-evaluation</b>	· Investigate employees' understanding of ethical management once a year in the form of an O/X quiz using PC and mobile
<b>Collective education</b>	· Ethics management training for new employees, face-to-face or non-face-to-face

Company	Offline Education		Online Education		
	New recruits	On-site education	Hi Class	Anti-Corruption manual	Self-evaluation
HDKSOE	74	-	1	484	786
HHI	257	163	8	3,215	5,443
HMD	31	-	4	921	1,302
HSHI	310	40	-	943	1,499

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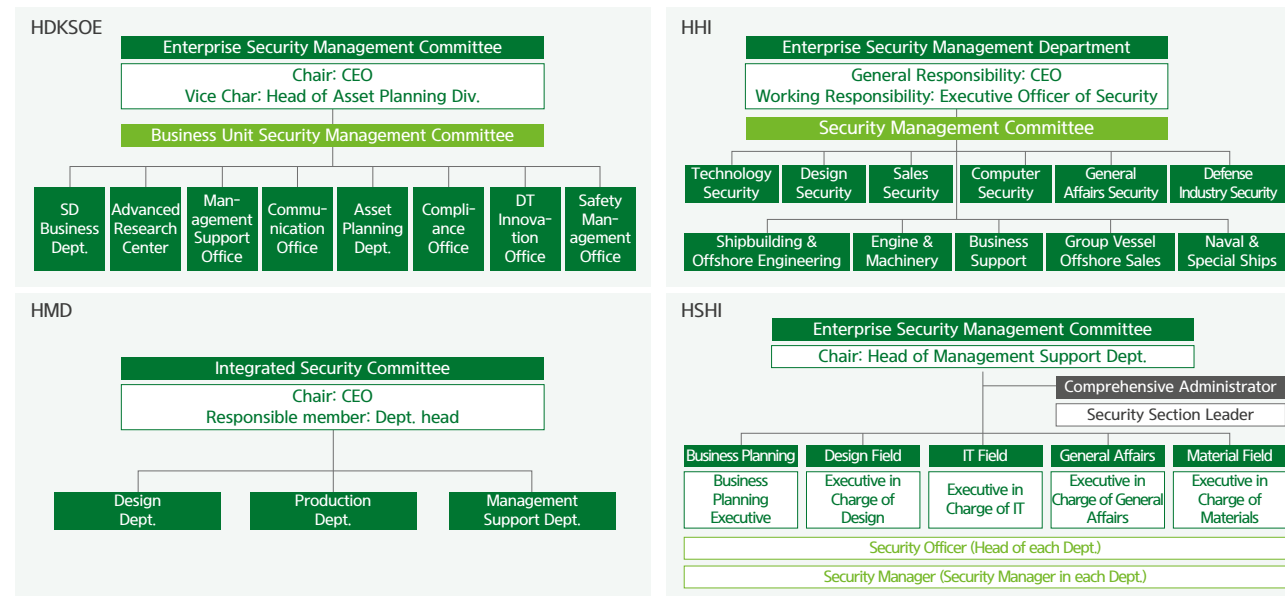
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**GOVERNANCE**

**Roles and Tasks of Security Management Committee**

The Security Management Committee is the highest-level security organization within HDKSOE and its shipbuilding subsidiaries. It serves as a deliberative and decision-making body for security policies. The committee establishes company-wide security policies, oversees investments, and develops annual security activity plans. It ensures effective and practical security management, including the establishment of a company-wide security organization and a management code of conduct for handling security incidents or government agency inspections. The committee not only monitors the security management of business units but also conducts regular and surprise security inspections to assess the security status of each unit and adjust the security level accordingly. It is responsible for managing the confidentiality level of important documents, monitoring email communications, and overseeing security-related computer systems and facilities. The committee meets twice a year, in the first and second half of the year, with active participation from management.

**Security Management Committee Organizational Chart**



**Internalization of Security Awareness**

HDKSOE and its shipbuilding subsidiaries have implemented an 'Individual Penalty Point System' to address repeated violations of minor security regulations by executives and employees. This system aims to integrate security into daily practices and foster a culture of self-compliance. Penalty points are assigned to executives and employees who violate security management tasks during regular inspections, random inspections, special inspections, and mock training, with different points allocated based on the severity of the violation. For the same offense, double penalty points are assigned for a second violation, and triple penalty points for three or more violations. If an individual accumulates more than 10 penalty points within a two-year period, the person gets referred to the Personnel Committee. The security department of each company oversees the management of penalty points, and individuals and department managers are notified of the assigned points to prevent future occurrences.

**STRATEGY**

**Information Security Strategy System**

As the development of information and communication technology accelerates, the risk of corporate and customer information leakage and cyber attacks is increasing. Information security is becoming a crucial task in the shipbuilding industry, which places a strong emphasis on the development of cutting-edge technology. We are putting forth our utmost efforts in information security to proactively respond to these challenges. HDKSOE and its shipbuilding subsidiaries operate an in-house data protection system through 24-hour security control. HDKSOE and its shipbuilding subsidiaries have attained ISO 27001 certifications, while HHI has obtained ISO 27701 certificate. With these certifications, we not only adhere to domestic regulations like the Information and Communications Network Act but also align with European standards such as the Information Protection Act. This enables us to securely manage our key computer systems and effectively protect customers' personal information from cyber threats. Every year we check and amend regulations on security management, personal information protection, computer security, and national core technology in accordance with legal standards. Also, yearly plan for security is established by Security Management Committee, the highest enterprise organization for security.



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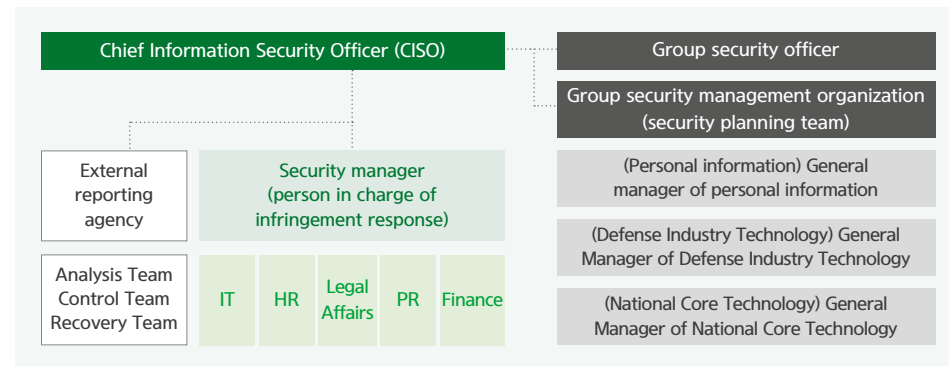
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## RISK MANAGEMENT

### Cyber Incident Response Procedure

Recognizing the severity of security incidents, HDKSOE and its shipbuilding subsidiaries are taking measures to mitigate risks by establishing a cyber incident response team. In cases of IT asset damage, unauthorized data manipulation or technology leakage, the cyber-response teams of each company calls for Cyber Incident Response Team operating for the Group, minimizing the damage with prompt actions. We strive to address such incidents effectively. In emergency situations, under the guidance of the Group Security Officer and Chief Information Protection Officer, each group promptly shares and responds to information, implements damage control measures, reports to external organizations, reviews the extent of the damage, and addresses external situations involving customers, stakeholders, and the media. Additionally, system stability is enhanced through thorough system restoration and improvement achieved by precise analysis to prevent recurrence.

#### Composition and Role of Cyber Incident Response Team



### Response Process in Case of Incident

In compliance with the Act on the Prevention and Protection of Leakage of Industrial Technology, we have established an emergency response process to prevent the leakage of internal critical technical data and national core technology. When employees become aware of a security incident, they promptly report the relevant information to the department security manager. The security incident response team, composed of experts from various fields including the department security manager, computer infrastructure manager, and security team, carries out emergency response activities according to their respective roles.



### Security Incident Response Organization

Composition	Role
Group Security Officer	General security incident response
Group Security Management Organization (Security Planning Team)	Group security incident response support, dissemination of damage situation to other affiliates
CISO	Dissemination of security accident damage situation to group security management organization
Security Manager (Infringement Response)	Convening security incident response team, accident investigation and action, establishment of measures to prevent recurrence, cooperation with external organizations
General Manager of Personal Information	In case of leakage of personal information data, report to external organization (Korea Internet & Security Agency)
General Manager of Defense Industry Technology	Report to an external organization in case of data leakage of defense industry technology (Defense Acquisition Program Administration)
General Manager of National Core Technology	In case of national core technology data leakage, report to an external agency (Ministry of Trade, Industry and Energy)
IT	Emergency response recovery training, work impact analysis, security incident investigation and action support
Legal Affairs	Judging possibility of customer litigation, preparation in case of litigation
PR	Review of media reaction, media response
Finance	Required budget (accident investigation/recovery) emergency support
HR	Disciplinary review for a person responsible for an incident
Control Team	24-hour security control and infringement identification
Analysis Team	Precise Analysis of Infringement Accidents
Recovery Team	Backup system inspection, system restoration



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## PERFORMANCE

### Conduct Information Security Training

HDKSOE and its shipbuilding subsidiaries regularly conduct security training for executives and employees with the aim of preventing security incidents. The training focuses on enhancing understanding of security regulations and relevant laws.

Title	Target	Description	HDKSOE	HHI	HMD	HSHI
Security training for new employees	New employee	<ul style="list-style-type: none"> <li>· Security-related national policies/systems</li> <li>· Cases of Domestic/Overseas Security Accidents</li> <li>· In-house security regulations (detailed)</li> </ul>	○ (upon joining)	○ (upon joining)	○ (upon joining)	○ (upon joining)
Security training for Computer system administrator	ICT Infrastructure Communication Operation Team	<ul style="list-style-type: none"> <li>· Ethical standards for information system users</li> <li>· Sending internet messages</li> <li>· User authority management</li> <li>· Principles of password management (IT infrastructure manager)</li> <li>· Principles of password creation (IT infrastructure manager)</li> </ul>	○ (once a year)			
Training for department security manager	Security manager in each department	<ul style="list-style-type: none"> <li>· In-house security regulations (detailed)</li> <li>· Utilization of security portal system                             <ul style="list-style-type: none"> <li>- Department member security pledge management</li> <li>- Department autonomous security check</li> <li>- Security review for prospective retirees</li> </ul> </li> </ul>	○ (once a year)	○ (once a year)		○ (once a year)
Personal Information Protection Education	Personal information handler	<ul style="list-style-type: none"> <li>· Major issues related to personal information</li> <li>· Understanding the Basics of Privacy Protection</li> <li>· (Occurring at work) Violation of the Personal Information Protection Act</li> <li>· Recent amendments to the Personal Information Protection Act</li> </ul>	○ (once a year)	○ (once a year)	○ (once a year)	○ (once a year)
National Core Technology Handler	Labs and departments People related to national core technology	<ul style="list-style-type: none"> <li>· Importance of National Core Technology Security Management</li> <li>· Laws related to national core technology</li> <li>· Cases of domestic/overseas national core technology leakage accidents</li> <li>· National core technology security management tips</li> </ul>	○ (once a year)	○ (once a year)		
Security change management training	Workers in GRC	<ul style="list-style-type: none"> <li>· Security awareness shift</li> <li>· Screen watermark</li> <li>· Security precautions when using the company laptop</li> <li>· How to use SASE and Q&amp;A</li> </ul>	○ (once a year)	○ (once a year)	○ (once a year)	○ (once a year)

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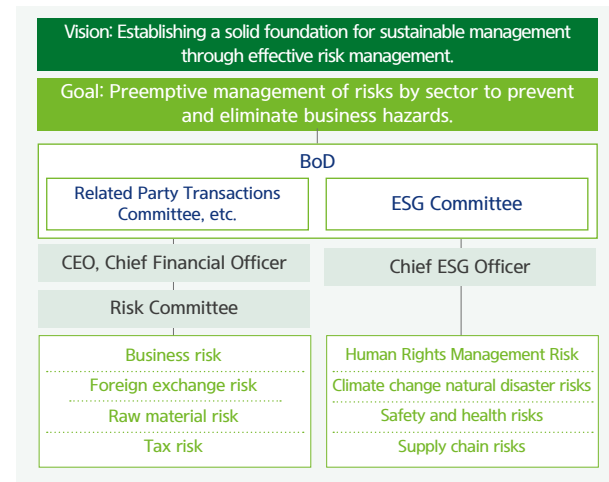
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HDKSOE and its shipbuilding subsidiaries classify risks into financial risks (such as business, foreign exchange, and raw materials) and non-financial risks (including climate change/environmental, safety/health, human rights management, supply chain, natural disasters, and accidents) that may arise internally and externally. We adopt a proactive approach to identify and effectively manage these risks.

## Risk Management System



## Financial Risk

HDKSOE and its shipbuilding subsidiaries implemented risk management regulations in 2019 to ensure efficient risk management. Additionally, Internal Accounting Control Regulations in compliance with the Act on External Audit of Corporations, its Enforcement Decree, and other relevant regulations on external audit and accounting have been established and consistently operated to enhance the reliability of financial statements and manage financial risks effectively.

## Business Risk

To ensure systematic risk management, we have established and operate the Project Risk Management (PRM) department. This department actively engages from the early stages of bidding, establishing management standards and effectively managing risks. The aim is to secure fair contracts and ensure reliable execution throughout the construction period.

## Forex Risk

The Foreign Exchange Risk Committee is actively functioning to regularly assess trends in the foreign exchange market and exchange rates. This assessment is based on the analysis of macro and micro factors that influence exchange rates. The key agenda items of the committee include estimating and monitoring foreign currency cash flows, analyzing fluctuations, and formulating hedging policies and practices.

## Raw Material Risk

Effective management of raw material risks is a crucial aspect of the company's sustainable management, given the high volatility in price, availability, and quality. Consequently, through the Raw Material Risk Committee, we regularly monitor price trends of raw materials and simultaneously analyze the potential impact of price fluctuations on performance (including estimations). This allows us to proactively manage risks associated with raw materials.

## Tax Risk

HDKSOE and HHI manage tax risks that may occur during corporate activities based on the basic principle of contributing to the development of the country and local communities. To this end, we establish and operate tax policies, and strive to comply with the laws of each country in which we operate and transparently pay taxes. In addition, we do not violate tax laws or engage in abnormal tax accounting activities for the purpose of tax avoidance. HDKSOE and its shipbuilding subsidiaries disclose details of corporate tax every year through the electronic disclosure system of Korean Financial Supervisory Service, and transparency and objectivity are secured through audits by independent auditors.



## Non-financial Risk

### Human Rights Risk

To mitigate potential human rights risks at our business sites, we have implemented a comprehensive human rights management system across all our operations. We actively identify and address human rights risks through the dedicated Human Rights Management Committee and conduct human rights impact assessments.

(Refer to p.53-54: Establishment of human rights management system)

## Climate Change and Natural Disaster Risk

To effectively address the rapidly evolving climate risks, we have established and implemented a climate change risk response process. Furthermore, we proactively identify environmental risks through ongoing on-site monitoring, including regular inspections of environmental facilities, in order to respond preemptively. Additionally, we have developed and manage emergency response manuals to prepare for risks arising from accidents such as fires, as well as natural disasters like earthquakes and typhoons. In the event of a disaster, a company-wide disaster response headquarters is activated to promptly respond and minimize risks in accordance with the severity of the emergency.

(Refer to p.176: TCFD Index)

## Safety & Health Risks

Regular and frequent risk assessments are conducted, and specific mitigation measures are established for high-risk areas. The results of improvement efforts are recorded and managed accordingly. In the event of an industrial accident, we are committed to minimizing safety and health risks through a risk reduction response system and a safety accident prediction model based on big data.

(Refer to p.89: Occupational Safety and Health-RISK MANAGEMENT)

## Supply Chain Risk

We are in the process of establishing and operating a supply chain ESG management process to foster a sustainable supply chain. Through this process, we aim to mitigate supply chain risks by providing consulting service to address any identified deficiencies in the ESG management practices of our supplier companies.

(Refer to p.95: Supply Chain Risk Management Plan)

## CASE STUDY

### Minimize Risk Impact through ISO 22301 Certification

GRC, the new headquarters of HDKSOE has established ISO 22301, a prevention/management/recovery work management system. This system enables the normalization of business operations in the event of accidents impacting corporate activities in major industries such as shipbuilding and construction machinery. By obtaining this certification, we have ensured business continuity. Through ISO 22031, we can expect social and environmental value and financial risk reduction effects such as customer satisfaction, quality management, and minimizing environmental impact by managing the company's work paralysis due to physical risks. Additionally, we aim to support sales activities by minimizing the risk of prolonged business suspensions and enhancing corporate reliability.

# Integrated Risk Management

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## Response to Emerging Risks

HDKSOE and its shipbuilding subsidiaries proactively identify and manage “emerging risks” that poses potential threat to the company and business.

### Risk 1. Decrease in Working Age Population

The shipbuilding industry is also facing challenges in labor acquisition due to a shortage of labor caused by the declining population trend in South Korea (reflected in the country’s total fertility rate of 0.78 in 2022). Specifically, the shipbuilding industry has both labor-intensive and technology-intensive characteristics, necessitating a high level of technical expertise and a suitable scale of skilled manpower due to the wide range of construction processes and complex manufacturing procedures involved. Consequently, the decrease in the working-age population may contribute to reduced productivity in the shipbuilding industry due to the labor shortage.

HDKSOE and its shipbuilding subsidiaries possess remarkable strengths in terms of high production efficiency and systematic management capabilities, thanks to our excellent design personnel. To address the risk of population decline while preserving these strengths, we have implemented measures to secure a skilled overseas workforce necessary to sustain competitiveness in the shipbuilding industry. Furthermore, efforts are being made to enhance working conditions for foreign workers, aiming to expand additional employment opportunities and improve entry procedures. Specifically, **HMD** addresses the shortage of production personnel by deploying skilled production staff from its subsidiary, Hyundai Vietnam Shipbuilding, to Korea. As part of this process, foreign workers with expertise in welding technology, a critical production capability in the shipbuilding industry, are trained and subsequently transferred to **HMD**. This not only supplements the workforce but also enhances technological capabilities. Such actions enable an effective labor procurement process essential for maintaining competitiveness in the shipbuilding industry, even in the face of future population decline, and provide a competitive advantage over other companies.

### Risk 2. Supply Chain Disruption

Numerous components and materials used in shipbuilding and offshore structure manufacturing involve the participation of various entities, from manufacturing to service. In today’s global economy, tightly interconnected global supply chains have become a vital foundation for all businesses. HDKSOE and its shipbuilding subsidiaries conduct comprehensive risk assessments for our entire supply chains to address potential disruptions. These disruptions are classified and managed according to their level of risk. Furthermore, the companies are committed to establishing a business operational strategy by securing alternative suppliers for each supply chain, while also ensuring visibility by managing the supply chain network in a flexible and transparent manner. Additionally, continuous monitoring and inspections are conducted to promptly respond to issues that may cause supply disruptions, such as natural disasters and terrorist attacks.

### Risk 3. Cyber Crime

Due to the prolonged COVID-19 pandemic, the introduction of telecommuting has led to a significant rise in cybercrimes. In recent years, these cybercrimes have become increasingly sophisticated, ranging from data breaches to manipulation. HDKSOE and its shipbuilding subsidiaries have established a cybercrime threat management system to safeguard newly developed in-house technologies and information that holds significant value for the company. We are actively identifying and protecting our most critical assets and resources. Furthermore, efforts are being made to strengthen cybersecurity measures by enhancing continuous security monitoring and implementing an initial detection process within the threat management system.

#### Response Activities of HDKSOE and Shipbuilding Subsidiaries

- Refer to p.127-129: information security GOVERNANCE, STRATEGY, RISK MANAGEMENT, PERFORMANCE

### Risk 4. Extreme Weather Events

Due to global warming, the air temperature, sea levels, and ocean temperatures are rising, leading to an escalation in the magnitude of damages caused by heatwaves, floods, typhoons, and heavy snowfall in various regions worldwide. In particular, in 2023, the El Niño phenomenon is expected to occur when the sea temperature rises 2 degrees above average. This can lead to more severe weather events, which can significantly impact the shipbuilding industry. We aim to minimize the damage from extreme weather by analyzing past data regarding weather events and lost working days.

### Risk 5. Strengthening Maritime Regulations

To preserve the marine ecosystem, international regulations such as those implemented by the International Maritime Organization (IMO) and the European Union (EU) are continuously strengthening. IMO has imposed restrictions on the sulfur oxide content in ship fuels, reducing it from 3.5% to below 0.5%. Furthermore, IMO has announced a target to reduce the total greenhouse gas emissions of the shipping industry by 50% compared to 2008 levels by 2050, in alignment with global greenhouse gas reduction goals. To achieve this, regulations such as the Energy Efficiency Design Index (EEDI), Energy Efficiency Index for existing ships (EEXI), and Carbon Intensity Index (CII) grading systems have been implemented. It is expected that these regulations will be progressively reinforced over time. The demand for high-value ships incorporating eco-friendly technology is rapidly growing in response to increasingly stringent maritime regulations. HDKSOE and its shipbuilding subsidiaries view these industry changes as opportunities for growth, driving our sales expansion. By focusing our capabilities on securing distinctive and cutting-edge technological competitiveness, we diligently address the evolving requirements of shipping companies in line with market dynamics. We plan to solidify our position in the eco-friendly ship market by introducing a range of future ship technologies and thereby committed to staying at the forefront of the industry.

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# ESG FACT BOOK

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## Summary of Consolidated Financial Statements

Unit: KRW million

Title of Account	47 <sup>th</sup> Reporting Period (As of late Dec. 2020)	48 <sup>th</sup> Reporting Period (As of late Dec. 2021)	49 <sup>th</sup> Reporting Period (As of late Dec. 2022)
<b>Current assets</b>	<b>13,001,433</b>	<b>14,562,196</b>	<b>15,775,914</b>
Cash and cash equivalents	3,703,410	4,567,468	2,697,223
Short-term financial assets	841,750	660,028	1,304,041
Trade and other receivables	1,045,149	1,067,698	1,026,706
Contract assets	4,761,935	5,502,878	6,435,957
Inventories	1,252,995	1,554,137	2,203,317
Other current assets	1,396,194	1,209,987	2,108,670
<b>Non-current assets</b>	<b>12,242,758</b>	<b>12,730,898</b>	<b>14,107,562</b>
Investments in associates and joint ventures	460,240	321,972	269,724
Long-term financial assets	128,597	194,920	201,295
Investment properties	243,193	231,499	222,374
Tangible assets	9,970,539	9,872,012	10,143,113
Intangible assets	117,284	133,536	163,697
Other non-current assets	1,322,905	1,976,959	3,107,359
<b>Total assets</b>	<b>25,244,191</b>	<b>27,293,094</b>	<b>29,883,476</b>
<b>Current liabilities</b>	<b>9,511,529</b>	<b>11,286,468</b>	<b>15,033,482</b>
<b>Non-current liabilities</b>	<b>3,311,437</b>	<b>3,592,871</b>	<b>2,537,864</b>
<b>Total liabilities</b>	<b>12,822,966</b>	<b>14,879,339</b>	<b>17,571,346</b>
Capital stock	353,866	353,866	353,866
Capital surplus	2,400,507	2,400,507	2,467,506
Capital adjustments	(8,478,316)	(8,697,363)	(8,703,262)
Accumulated other comprehensive income	1,211,159	1,332,379	1,296,442
Retained earnings	15,419,080	14,467,170	14,300,367
Non-controlling interests	1,514,929	2,557,196	2,597,211
<b>Total equity</b>	<b>12,421,225</b>	<b>12,413,755</b>	<b>12,312,130</b>

Unit: KRW million

Title of Account	47 <sup>th</sup> Reporting Period (As of late Dec. 2020)	48 <sup>th</sup> Reporting Period (As of late Dec. 2021)	49 <sup>th</sup> Reporting Period (As of late Dec. 2022)
Valuation method for the stocks of associates and joints	Equity method	Equity method	Equity method
<b>Sales</b>	<b>14,903,658</b>	<b>15,493,382</b>	<b>17,302,020</b>
<b>Operating profit (loss)</b>	<b>74,367</b>	<b>(1,384,816)</b>	<b>(355,561)</b>
<b>Profit (loss) for the year</b>	<b>(835,178)</b>	<b>(1,141,204)</b>	<b>(295,177)</b>
Owners of the parent company	(833,787)	(929,319)	(216,950)
Non-controlling interests	(1,391)	(211,885)	(78,227)
<b>Total comprehensive income (loss)</b>	<b>(553,318)</b>	<b>(1,046,938)</b>	<b>(260,212)</b>
Owners of the parent company	(577,737)	(829,592)	(202,696)
Non-controlling interests	24,419	(217,346)	(57,516)
<b>Earnings (loss) per share attributable to owners for the parent company (KRW)</b>	<b>(11,791)</b>	<b>(13,142)</b>	<b>(3,068)</b>
<b>No. of consolidated subsidiaries</b>	<b>24</b>	<b>20</b>	<b>17</b>

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## Summary of Consolidated Financial Statements

### Financial Highlights by Business

Category	Unit	HDKSOE <sup>1</sup>			HHI <sup>1</sup>			HMD <sup>1</sup>			HSHI <sup>1</sup>		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021 <sup>1</sup>	2022
Sales	KRW 100M	149,037	154,934	173,020	83,120	83,113	90,455	27,920	28,872	37,169	39,180	42,410	46,464
Operating profit (loss)	KRW 100M	744	(13,848)	(3,556)	325	(8,003)	(2,892)	367	(2173)	(1,091)	156	(3,359)	177
Profit (loss) for the year	KRW 100M	(8,352)	(11,412)	(2,952)	(4,314)	(8,142)	(3,521)	(123)	(1601)	(438)	(591)	(2,341)	29
Total assets	KRW 100M	252,442	272,931	298,835	137,997	150,787	162,894	35,990	38,783	47,482	45,814	50,565	55,883
Total liabilities	KRW 100M	128,230	148,793	175,713	84,389	94,846	110,016	12,315	16,740	25,730	26,881	33,880	39,273
Total equity	KRW 100M	124,212	124,138	123,121	53,608	55,940	52,878	23,675	22,043	21,753	18,933	16,685	16,610
Debt ratio	%	103.2	119.9	142.7	157.4	169.6	208.1	52.0	75.9	118.3	142.0	203.1	236.5
Net debt-to-equity ratio	%	14.9	- <sup>2</sup>	2.58	50.0	21.1	32.1	-	-	-	38.9	48.6	40.9
Operating margin	%	0.5	-8.9	-2.1	0.4	-9.6	-3.2	1.3	-7.5	-2.9	0.4	-7.9	0.4
Return on assets	%	-3.3	-4.2	-1.0	-3.1	-5.4	-2.2	-0.3	-4.1	-0.9	-1.3	-4.6	0.1

1. Prepared based on consolidated financial information (Financial information of HSHI for 2020 and 2022 is on separate basis.)

2. As it is a negative (-) ratio, the net debt-to-equity ratio is not calculated.

### Value Distribution to Stakeholders

Category	Unit	HDKSOE <sup>1</sup>			HHI <sup>1</sup>			HMD <sup>1</sup>			HSHI <sup>1</sup>			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Supplier company	Cost for raw material procurement <sup>2,3,4,5</sup>	KRW 100M	95,259	105,708	128,442	47,206	50,895	60,199	17,709	20,491	26,893	25,756	28,119	31,791
Employee	Personnel expenditure	KRW 100M	16,195	20,580	17,968	8,436	11,803	8,867	3,113	3,690	3,742	2,793	3,211	3,585
Shareholder & Investor	Interest expense	KRW 100M	2,089	1,777	1,658	1,556	1,256	1,061	71	35	51	378	392	469
	Dividend	KRW 100M	-	-	-	-	-	-	-	-	-	52	52	52
Government	Corporate tax (profit)	KRW 100M	2,662	(4,910)	(1,359)	(1,086)	(2,972)	(694)	(79)	(497)	(132)	(218)	(748)	(23)
	Tax and public imposts	KRW 100M	83	72	67	33	22	22	4	2	2	19	20	24
Local community	Donation	KRW 100M	88	105	97	31	25	27	29	29	29	16	20	18

1. HDKSOE prepares its financial information based on consolidated data.

2. HDKSOE's major purchasers of raw materials include: POSCO, Hyundai Steel, NSCC, Hyundai IFC, LONGi, Tongwei, etc.

3. HHI's major purchasers of raw materials include: POSCO, Hyundai Steel, Samgak M&T, Donghwa T.C.A, Dongkuk Steel, Hanyang ENG, BHI, etc.

4. HMD's main purchase cost of raw materials includes HVS data, and major purchasers are: POSCO, Hyundai Steel, FRANK MOHN AS, etc.

5. HSHI's major purchasers of raw materials includes: POSCO, Hyundai Steel, HHI, etc.

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# Environmental

## Environmental Investments

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Environmental investments	KRW 100M	0.4	0	1.4	353 <sup>1</sup>	912 <sup>1</sup>	854	38	19	116.8	159	140	180

1. Figures have been revised compared to the previous year's report due to changes in the calculation method and scope.

## Green Procurement

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Green purchase	KRW 100M	0	0	0	1,734	2,312	3,209	1,464	1,841	970	2,559	3,157	2,552
Total purchase from supplier	KRW 100M	-	-	383	44,658	66,683	89,716	17,583	20,506	29,663	23,294	34,526	45,067
Purchase percentage of green products	%	0	0	0	3.88	3.47	3.58	8.33	8.98	3.27	10.98	9.14	5.66

## Patent

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Patent application	Case	179	174	240	237	162	212	10	9	30	7	5	7
Patent application related to Eco-friendly technologies	Case	116	86	145	161	117	117	0	2	9	0	0	0
Intellectual property applications	Case	248	176	256	265	166	223	13	14	36	7	5	7

## Environmental Management Certification Coverage/Environmental Liability Insurance

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
ISO 14001 (Environmental Management System)	%	0	0	67	100	100	100	100	100	100	100	100	100
ISO 50001 (Energy Management System)	%	0	0	0	100	100	100	-	-	100	100	100	100
Environmental liability insurance	Insured	○	○	○	○	○	○	○	○	○	○	○	○

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## Environmental Trainings<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Employee	Participants	Persons	0	0	788	7,418	9,532	10,743	2,744	2,633	2,283	3,678	3,534	3,161
	Total training hours	Hours	0	0	1,576	14,836	19,604	21,486	5,560	5,332	4,783	7,356	7,068	6,322
	Training hours per employee	Hours	0	0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0
	Ratio of employees participated in trainings	%	0	0	100	100	100	100	100	100	100	100	100	100
	Environmental accident response drill	Case	0	0	0	6	5	6	2	2	2	1	1	1
Contractors	Participants	Persons	0	0	13	7,963	12,263	10,673	3,740	3,622	3,190	5,631	7,852	5,129
	Total training hours	Hours	0	0	13	15,926	24,526	21,346	7,900	7,244	6,380	5,631	7,852	5,129

1. HDKSOE: Training on hazardous chemicals (employees), education about environmental laws and regulations (contractors).

HHI & HMD: Chemical substances safety education for workplaces handling hazardous chemicals under the Chemical Substances Control Act (employees and contractors).

HSHI: Introductory environmental education for new employees (employees).

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## Scope 1 & 2<sup>1</sup>

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Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021 <sup>2</sup>	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Total emissions (Scope 1+2)<sup>3</sup></b>	tCO <sub>2</sub> eq	6,965	7,520	8,191	523,116 <sup>4</sup>	529,999 <sup>4</sup>	549,552	148,357	155,882	160,957	253,440	255,235	239,868
Direct emissions (Scope 1)	tCO <sub>2</sub> eq	3,138	3,199	3,333	218,678 <sup>4</sup>	236,741 <sup>4</sup>	244,228	48,091	50,696	55,481	101,652	105,690	102,257
Indirect emissions (Scope 2)	tCO <sub>2</sub> eq	3,827	4,321	4,858	304,446	293,262	305,331	100,266	105,186	105,476	151,788	149,545	137,613
<b>Intensity<sup>5</sup></b>	tCO <sub>2</sub> eq/ KRW billion	0.47	0.49	0.47	62.94	63.77	60.75	53.14	53.99	43.30	64.70	60.20	51.62
<b>Intensity change rate</b>	%	-6.00	4.26	-4.08	-32.63	1.32	-4.74	2.07	1.60	-19.80	-6.25	-6.96	-14.22
<b>Total reduction (Scope 1+2)</b>	tCO <sub>2</sub> eq	0	0	0	22,190 <sup>6</sup>	35,532 <sup>6</sup>	16,505 <sup>6</sup>	0	0	0	17,397 <sup>7</sup>	13,015 <sup>7</sup>	17,397 <sup>7</sup>
Direct reduction (Scope 1)	tCO <sub>2</sub> eq	0	0	0	15,284	32,151	8,127	0	0	0	9,040	6,121	9,040
Indirect reduction (Scope 2)	tCO <sub>2</sub> eq	0	0	0	6,906	3,380	8,378	0	0	0	253,440	255,235	253,440
<b>ODS emissions<sup>7</sup></b>	tCO <sub>2</sub> eq	-	-	-	-	-	-	-	-	-	-	-	-

1. Data coverage  
 HDKSOE: All business sites  
 HHI: All business sites  
 HMD: The Head Office (Main Plant), Onsan Plant, Yongyeon Plant, Seoul Office, Future Hall, Literature Hall, Technical Education Institute, and Bangeojin Sports Park  
 HSHI: The Head Office, Daebul 1 Plant
2. Not subject to the Emissions Trading Scheme from 2021, but GHG emissions are calculated after 2021 in accordance with the guidelines for reporting and verification of emissions under the Emission Trading Scheme.
3. Figures are based on the submitted GHG statement. They may be different from the sum of emission amount whose decimal part is removed.
4. Following the standard of Emission Trading Scheme, we have revised data from 2020 and 2021.
5. Calculated based on total sales for each reporting year.
6. Reduction amount is based on the GHG Assurance Statement.
7. In the shipbuilding industry there is no process that emits ozone-depleting substances (CFC-11) so the emission of ozone-depleting substances (ODS) is very little.

## Scope 1 & 2

Category	Unit	Hyundai Vietnam Shipbuilding (HVS) <sup>1</sup>			HD Hyundai Engineering & Technology (HD HENT) <sup>2</sup>		
		2020	2021	2022 <sup>3</sup>	2020	2021	2022 <sup>3</sup>
<b>Total emissions (Scope 1+2)</b>	tCO <sub>2</sub> eq	-	-	45,718	-	-	406
Direct emissions (Scope 1)	tCO <sub>2</sub> eq	-	-	12,912	-	-	12
Indirect emissions (Scope 2)	tCO <sub>2</sub> eq	-	-	32,806	-	-	394

1. HMD's overseas subsidiary in Vietnam.
2. HMD's subsidiary.
3. First disclosure of GHG emissions in 2022.

# Environmental

## Scope 3<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Scope 3 emissions<sup>2</sup></b>	tCO <sub>2</sub> eq	14,868	15,338	26,445	39,566,776	55,628,023	51,907,477	17,636,877 <sup>2</sup>	12,807,363 <sup>2</sup>	21,626,799	27,431,793	31,530,960 <sup>2</sup>	41,171,974
<b>Upstream total other emissions<sup>2</sup></b>	tCO <sub>2</sub> eq	618	603	5,960	2,237,190	2,255,896	2,736,292	834,277 <sup>2</sup>	932,127 <sup>2</sup>	1,283,510	1,838,729	1,796,288	2,250,296
Supply chain	tCO <sub>2</sub> eq	0	0	4,523 <sup>5</sup>	2,139,001	2,155,703	2,586,628	788,095	887,624	1,210,194	1,770,478	1,726,616	2,167,905
Capital goods <sup>3</sup>	tCO <sub>2</sub> eq	0	0	0	24,574	23,106	44,190	15,613	12,305	7,681	11,077	13,683	38,125
Fuel-and Energy-related not included in Scope 1 or 2	tCO <sub>2</sub> eq	573	553	703	30,474	31,793	39,905	9,390	10,352	10,945	14,211	14,255	15,359
Upstream transportation and distribution	tCO <sub>2</sub> eq	0	0	0	37,405	38,570	37,132	1,141	1,416	27,726 <sup>6</sup>	2,069	1,848	2,015
Waste generated in operations	tCO <sub>2</sub> eq	44	49	69	5,626	6,644	9,293	19,934	20,357	23,746	40,839	39,830	16,739
Business travel <sup>4</sup>	tCO <sub>2</sub> eq	1	1	383	95	65	5,193	95	65	425	52	53	310
Employees commuting <sup>4</sup>	tCO <sub>2</sub> eq	0	0	282	15	15	13,951	10	10	2,793	3	3	9,843
<b>Downstream total other emissions<sup>4</sup></b>	tCO <sub>2</sub> eq	14,141	14,660	20,486	37,329,585	53,372,127	49,171,186	16,802,600	11,875,236	20,343,289	25,593,064	29,734,671	38,921,678
Use of ships sold <sup>4</sup>	tCO <sub>2</sub> eq	0	0	0	37,326,079	53,368,013	49,166,120	16,801,147	11,873,901	20,341,722	25,589,287	29,730,490	38,918,514
End-of-life treatment of ships sold	tCO <sub>2</sub> eq	0	0	0	3,506	4,114	5,066	1,453	1,335	1,567	3,777	4,181	3,164
Investments	tCO <sub>2</sub> eq	14,141	14,660	20,486	-	-	-	-	-	-	-	-	-

1. Advancement of GHG Scope 3 Emission Calculation Methodology.

- The calculation of Scope 3 emissions for 2020 and 2021 is based on a methodology developed by HDKSOE and its shipbuilding subsidiaries, with third-party verification conducted by the Korea Management Registrar.

- For the calculation of Scope 3 emissions in 2022, a methodology is being established (as of May 2023) in collaboration with domestic and foreign classification societies, and domestic shipbuilders. Additionally, third-party verification is conducted by the Korea Foundation for Quality. However, it is important to note that some methodologies and the scope of application may vary depending on the circumstances of each company. Furthermore, additional changes may occur as the standardization of Scope 3 emission calculation methodologies and the preparation of global guidelines are still in progress.

2. Due to rounding up emissions by category to whole numbers and summing them, there may be differences of ±1tCO<sub>2</sub>eq.

3. As the capital goods emission is calculated based on the investment amount reported in the Annual Report for major facilities, yearly deviations may occur depending on changes in the investment amount during the year.

4. It is important to consider that significant differences in emissions between 2020 and 2021 may arise due to changes in the calculation methodology as the Scope 3 emissions calculation methodology advances.

5. As the SD Business Unit was newly established in 2022, emissions associated with the products and services purchased in the supply chain are included.

6. Reflects missing coverage from emissions calculations in 2021, 2022.

# Environmental

## Energy<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Total energy consumption<sup>2</sup></b>	TJ	140	153	167	8,986	9,186	9,643	2,691	2,865	2,903	4,347	4,395	4,096
Direct energy (Scope 1)	TJ	61	63	102	2,724	3,063	3,268	626	667	699	1,222	1,270	1,221
Indirect energy (Scope 2)	TJ	79	90	65	6,268	6,128	6,380	2,065	2,198	2,204	3,125	3,125	2,875
<b>Intensity<sup>4</sup></b>	TJ/KRW billion	0.01	0.01	0.01	1.08	1.11	1.07	0.96	0.99	0.78	1.11	1.04	0.88
<b>Intensity change rate</b>	%	-7.39	5.13	-2.84	-32.92	2.78	-3.60	1.05	3.13	-27.05	-4.65	-6.3	-15.38
<b>Non-renewable energy generation</b>													
Electricity	MWh	0	0	0	0	0	0	0	0	0	0	0	0
Steam	TJ	0	0	0	426	417	427	0	0	0	0	0	0
<b>Renewable energy generation</b>													
Solar power	MWh	0	0	0	169	167	161	0	0	0	0	0	0
Wind power	MWh	0	0	0	1,500	1,674	393	0	0	0	0	0	0
<b>Energy sales</b>													
Electricity	MWh	0	0	0	1,500	1,674	393	0	0	0	0	0	0
Steam <sup>3</sup>	TJ	0	0	0	203	199	184	0	0	0	0	0	0
<b>Total cost of energy consumption</b>	KRW million	- <sup>5</sup>	- <sup>5</sup>	401	91,600 <sup>6</sup>	94,840 <sup>6</sup>	119,666 <sup>6</sup>	37,415	43,728	58,204	52,595	55,544	64,518
<b>Percentage of non-polluting vehicles</b>	Vehicles(%)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	3(1.60)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)

1. Data coverage

HDKSOE: Gye-dong Seoul office, Munhwa Ilbo office building, Seamarq Hotel, Ulsan office, Hyundai Arts Center

HHI: All business sites

HMD: All business sites

HSHI: The Head Office, Daebul 1 Plant, Daebul Plant (Gipam), Bowon 2 Plant

2. Figures are based on the submitted GHG statement. They may be different from the sum of consumption amount whose decimal part is removed.

3. In case some of the produced steam is sold.

4. Based on total sales for each reporting year.

5. HDKSOE: unmanaged in 2020, 2021, managed in Ulsan office in 2022.

6. Based on Main and Offshore Plant (sum of electricity, city gas, CO<sub>2</sub>, ethylene, oxygen or argon).

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## Environmental

### Water Withdrawal by Domestic Water Source<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Water withdrawals</b>	ton	31,963	29,487	24,037	3,172,639	3,145,145	3,107,558	1,016,309	1,249,565	1,330,212	2,702,422	3,057,535	3,357,871
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 the third parties (service water, industrial water, etc.)	ton	31,963	29,487	24,037	3,172,639	3,145,145	3,107,558	1,016,309	1,249,565	1,330,212	2,702,422	3,057,535	3,357,871
<b>Water intensity<sup>2</sup></b>	ton/KRW billion	2.145	1,903	1.389	381.694	378.418	343.547	364.006	432.794	357.882	689.745	720.947	722.682
<b>Water reused</b>	ton(%)	0(0)	0(0)	0(0)	- <sup>3</sup>	- <sup>3</sup>	- <sup>3</sup>	- <sup>3</sup>	- <sup>3</sup>	- <sup>3</sup>	179,740(6.7)	261,026(8.5)	234,681(7)

1. Data coverage

HDKSOE: Ulsan Research Building

HHI: The Head Office (Main Plant), Offshore Plant, Naengcheon Piping Plant, Naengcheon 3 Piping Plant, Munsan Plant, Training Center

HMD: The Head Office (Main Plant), Onsan Plant, Mohwa Plant, Yongyeon Plant

HSHI: The Head Office, Daebul 1 Plant

2. Calculated based on total sales for each reporting year.

3. Unmanaged category.

### Water Withdrawal by Overseas Water Source

Category	Unit	HVS <sup>1</sup>		
		2020	2021	2022
<b>Water withdrawals</b>	ton	553,740	585,400	682,600
Surface water	ton	553,740	585,400	682,600
Underground water	ton	0	0	0
Seawater	ton	0	0	0
Produced water	ton	0	0	0
Water provided by the third parties (service water, industrial water, etc.)	ton	0	0	0

1. HMD's overseas subsidiary in Vietnam.

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# Environmental

## Air Pollutants<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
NOx	Emissions <sup>2</sup>	ton	-	0.061	0.09688	40.016	59.744	48.712	9.834	8.172	5.931	16.410	12.337	17.464 <sup>3</sup>
	Intensity <sup>4</sup>	ton/KRW billion	-	0.00000394	0.000006	0.00481	0.00719	0.00539	0.00352	0.00283	0.00160	0.00419	0.00290	0.00376
SOx	Emissions <sup>2</sup>	ton	-	-	-	0	0.616	4.461	-	0.137	0.184	-	0.69266	0.26809
	Intensity <sup>4</sup>	ton/KRW billion	-	-	-	0	0.00007	0.00049	-	0.00005	0.00005	-	0.000167	0.000058
Dust	Emissions <sup>2</sup>	ton	-	0.069	0.018	38.974	31.820	18.279	7.200	7.100	4.100	14.245	15.716	17.852 <sup>3</sup>
	Intensity <sup>4</sup>	ton/KRW billion	-	0.00000445	0.000001	0.005	0.004	0.002	0.00257	0.00246	0.00110	0.00364	0.00370	0.00384

1. Data coverage

KSOE: Ulsan Research Building

HHI: The Head Office (Main Plant)

HMD: The Head Office (Main Plant)

HSHI: The Head Office (Main Plant)

2. When calculating NOx, it was calculated using fuel consumption, emission factor, and efficiency of prevention facilities. When calculating SOx and dust, they were calculated by considering pollutant concentration measurement results, exhaust gas flow rate, and facility operation time.

3. HSHI experienced increased NOx and dust emissions in 2021 due to higher production resulting from increased orders. However, the ratio of emissions to production decreased.

4. Calculated based on total sales for each reporting year.

## Water Pollutants<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Effluents discharge	ton	21.54	18.28	18.4	20,403	3,400	3,940	1,028	1,007	1,195	1,096	841	660	
Total Organic Carbon (TOC) <sup>2</sup>	Emissions	kg	0	0	0	74.6	17.1	21.0	10.5	9.6	11.8	4.9	2.8	4.2
	Intensity <sup>3</sup>	kg/KRW billion	0	0	0	0.0090	0.0021	0.0023	0.0038	0.0033	0.0032	0.0013	0.0006	0.0009
Biochemical Oxygen Demand (BOD)	Emissions	kg	0	0	0	49.3	5.9	5.5	4	2.2	3.1	4.4	1.8	1.3
	Intensity <sup>3</sup>	kg/KRW billion	0	0	0	0.0059	0.0007	0.0006	0.0014	0.0008	0.0008	0.0011	0.0004	0.0003
Suspended Solids (SS)	Emissions	kg	0	0	0	19.7	6	6.4	4.1	3	2.1	1.1	1.5	0.7
	Intensity <sup>3</sup>	kg/KRW billion	0	0	0	0.0024	0.0007	0.0007	0.0015	0.0010	0.0006	0.0003	0.0004	0.0002

1. Data coverage

HDKSOE: Ulsan Research Building (All wastewater is being consigned, so there is no TOC, BOD, or SS emission)

HHI: The Head Office (Main Plant)

HMD: The Head Office (Main Plant)

HSHI: The Head Office (Main Plant)

2. Starting from 2022, the Ministry of Environment has converted the organic matter measurement index from COD (Chemical Oxygen Demand) to TOC (Total Organic Carbon). For 2020 and 2021, COD emissions are reported, while TOC emissions are reported for 2022.

3. Calculated based on total sales for each reporting year.

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# Environmental

## Waste<sup>1,2,3</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI				
		2020	2021	2022	2020 <sup>5</sup>	2021 <sup>5</sup>	2022	2020	2021	2022	2020	2021	2022		
<b>Total waste disposed</b>	ton	212	229	158	210,326	250,800	228,539	30,915	29,785	33,281	76,900	75,326	73,292		
<b>Intensity<sup>7</sup></b>	ton/KRW billion	0.01 <sup>6</sup>	0.01 <sup>6</sup>	0.01 <sup>6</sup>	25.30	30.18	25.27	11.07	10.32	8.95	19.63	17.76	15.77		
<b>Non-hazardous</b>	<b>Waste disposed</b>	ton	202	221	153	171,992	167,507	162,956	25,330	24,939	27,405	72,880	71,328	69,598	
	<b>Landfilled</b>	<b>Internal treatment</b>	ton	0	0	0	0	0	0	0	0	0	0	0	
		<b>External treatment</b>	ton	0	0	0	44	308	5,294 <sup>4</sup>	621	445	457	6,509	7,399	4,968
	<b>Incinerated with energy recovery</b>	<b>Internal treatment</b>	ton	0	0	0	31,784	27,767	29,648	0	0	0	0	0	
		<b>External treatment</b>	ton	20	26	34	0	0	478	9,089	9,183	10,649	0	0	
	<b>Recycled</b>	<b>Internal treatment</b>	ton	0	0	0	0	0	0	0	0	0	0	0	
		<b>External treatment</b>	ton	182	195	118	140,164	139,432	127,536	14,517	14,184	15,116	55,673	53,633	53,309
	<b>Incinerated without energy recovery</b>	<b>External treatment</b>	ton	0	0	0	0	0	0	1,103	1,127	1,183	10,698	10,296	11,321
	<b>Hazardous</b>	<b>Waste disposed</b>	ton	10	8	5	8,264	7,456	6,860	1,732	2,049	2,041	4,020	3,998	3,695
		<b>Landfilled</b>	<b>Internal treatment</b>	ton	0	0	0	0	0	0	0	0	0	0	0
<b>External treatment</b>			ton	0	0	0	1,447	1,440	848	0	0	54	0.49	0.26	0
<b>Incinerated with energy recovery</b>		<b>Internal treatment</b>	ton	0	0	0	53	0	65	0	0	0	0	0	
		<b>External treatment</b>	ton	8	6	3.4	2,157	1,994	1,824	0	0	0	0	0	
<b>Recycled</b>		<b>Internal treatment</b>	ton	0	0	0	0	0	0	0	0	0	0	0	
		<b>External treatment</b>	ton	2	2	2	4,607	4,021	4,122	1,185	1,339	1,343	2,413	2,299	2,154
<b>Incinerated without energy recovery</b>		<b>External treatment</b>	ton	0	0	0	0	0	0	547	710	644	1,607	1,699	1,541
<b>Neutralized</b>		<b>External treatment</b>	ton	0	0	0	0	2	0	0	0	0	0	0	0
<b>Construction</b>		<b>Waste disposed</b>	ton	0	0	0	30,070	75,837	58,724	3,853	2,797	3,835	0	0	0
	<b>Recycled</b>	<b>External treatment</b>	ton	0	0	0	30,070	75,837	58,724	3,853	2,797	3,835	0 <sup>5</sup>	0 <sup>5</sup>	0 <sup>5</sup>

1. Data coverage

HDKSOE: Ulsan Research Building  
 HHI: The Head Office (Main Plant), Offshore Plant, Naengcheon Plant, Naengcheon Piping Plant, Naengcheon 3 Piping Plant, Munsan Plant, Hyundai Incineration Equipment, Gunsan Shipyard  
 HMD: The Head Office (Main Plant) and Outside Plants (Yongyeon, Onsan, Mohwa)  
 HSHI: The Head Office (Main Plant), Daebul 1 Plant, Daebul Plant (Gipam), Bowon 2 Plant

2. The entire volume of waste disposal through recycling and landfill is consigned to an external operator.

3. 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.

4. Some of the existing recyclable waste is landfilled due to the recycling company's circumstances, which results in increased consignment landfill amount.

5. Change in figures compared to the previous year's report (reason: data change due to unification of calculation standards by year).

6. Change in figures compared to the previous year's report (reason: calculation method error).

7. Calculated based on total sales for each reporting year.

# Social

## Labor-management Relations

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022 <sup>3</sup>	2020	2021	2022	2020	2021	2022	2020	2021	2022
Union membership rate <sup>1</sup>	%	8.2	4	0 <sup>4</sup>	96.3	96.5	95.7	100	100	100	87.9	88.1	88.8
No. of strikes	Cases	0	0	0	8	14	0	0	0	0	5	8	2
Strike force	Persons	0	0	0	5,860	8,149	0	0	0	0	799	1,079	382
No. of labor-management council meetings convened	Times	3	3	4	4	4	4	4	4	4	4	4	4
Ratio of employees covered by collective agreements	%	100	100	0	100	100	100	100	100	100	100	100	100
Percentage of employees associated with independent labor unions	%	8.2	4	0	64	61	58	65	62	60	63	63	56
Minimum notice period for changes in management <sup>2</sup>	Months	2	2	-	1.3	1.3	1.3	3	3	3	3	3	3

1. Calculation: Number of union members ÷ Number of employees eligible for the membership.

2. Article 9 of the Collective Agreement: HDKSOE and its shipbuilding subsidiaries notify important changes that affect union members such as company name, articles of incorporation, employment rules, personnel, organizational restructuring, labor welfare, company education, in-house contractors and other personnel-related matters.

3. HDKSOE replaced the collective agreement with labor-management council, since we ceased the association with pre-existing union. Minimum notice period for changes in management is yet to be established.

4. HDKSOE's last union member withdrew from the association in October 2022.

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## Social

### Workforce<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Total number of employees</b>	Persons	655	649	890	13,423	12,811	12,765	3,066	3,024	3,103	3,636	3,432	3,778
Male	Persons	526	516	727	12,832	12,231	12,179	2,975	2,940	3,016	3,553	3,506	3,667
Female	Persons	129	133	163	591	580	586	91	84	87	83	74	111
Under 30	Persons	114	102	102	1,100	961	976	204	216	265	123	140	219
30-49	Persons	516	514	681	8,733	8,410	8,309	2,118	2,020	2,096	2,120	1,922	1,990
50 or above	Persons	25	33	107	3,590	3,440	3,480	744	788	742	1,388	1,439	1,569
<b>Regular</b>	Persons	624	625	866	13,097	12,537	12,287	2,996	2,974	3,037	3,496	3,424	3,596
Male	Persons	517	501	716	12,695	12,079	11,819	2,905	2,890	2,981	3,461	3,380	3,532
Female	Persons	107	124	150	402	458	468	91	84	56	35	44	64
<b>Non-regular</b>	Persons	31	24	24	326	274	478	70	50	66	135	77	182
Male	Persons	9	15	11	137	152	360	25	16	35	93	53	135
Female	Persons	22	9	13	189	122	118	45	34	31	42	24	47
<b>Senior official<sup>2</sup></b>	Persons	34 <sup>6</sup>	31 <sup>6</sup>	40	68	73	114	23	24	29	24	24	35
C-suite executives <sup>3</sup>	Persons	14 <sup>6</sup>	15 <sup>6</sup>	18	30	33	34	7	7	6	6	7	9
<b>External workers<sup>4</sup></b>	Persons	7	14	16	-	52	100	5,075	5,177 <sup>5</sup>	5,541 <sup>5</sup>	47	33	37

1. Number of employees as of December 31, 2022 (annual report).  
 2. Vice President or higher ranks.  
 3. Head of division or higher ranks.  
 4. Reference: "Dispatched workers" in the annual report.  
 5. Data calculation reference: Ministry of Employment and Labor-Employment type disclosure system.  
 6. Figure change compared to the previous year's report (reason: standard change).

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## Social

### Workforce Breakdown

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Women in total workforce <sup>1</sup>	Persons(%)	129(19.7)	133(20.5)	163(19.7)	591(4.4)	580(4.5) <sup>4</sup>	586(4.6)	91	84	87	83(2.3)	74(2.1)	111(2.9)
Women among new recruits <sup>2</sup>	Persons(%)	5(7.8) <sup>4</sup>	9(20.5) <sup>4</sup>	39(22.8)	51(25.4)	116(48.5)	74(11.7)	14	20	26	2(6.3)	5(5.1)	21(8.4)
Women in managerial positions <sup>3</sup>	Persons(%)	2(2.1) <sup>4</sup>	5(4.8) <sup>4</sup>	8(7.01)	6(0.8) <sup>4</sup>	6(0.7) <sup>4</sup>	6(0.68)	0(0) <sup>4</sup>	0(0) <sup>4</sup>	2(0.69)	0(0)	0(0)	1(0.34)
Female executives	Persons(%)	0(0)	0(0)	2(5.0)	0(0)	0(0)	2(1.8)	0(0)	0(0)	1(3.4)	0(0)	0(0)	1(2.86)
Women in revenue-generating departments	Persons(%)	1(2.9)	4(8.2)	5(7.8)	1(0.16)	3(0.44)	3(0.42)	0(0)	0(0)	1(0.4)	0(0)	0(0)	0(0)
Women in STEM-related dept (Science, Technology, Engineering and Mathematics)	Persons(%)	47(11.8)	48(12.7)	43(12.0)	194(9.0) <sup>4</sup>	184(8.9) <sup>4</sup>	189(8.9)	50(1.8)	50(1.9)	36(6.82)	17(4.3)	18(4.7)	40(7.75)
People with disability	Persons(%)	2(0.31)	1(0.15)	1(0.1)	285(2.1)	256(2.0)	234(1.8)	61(2.0)	55(1.8)	55(1.77)	114(3.2)	107(3.2)	123(3.26)
The national merits	Persons(%)	6(0.9)	5(0.8)	7(0.8)	653(4.8)	627(4.9)	622(4.9)	123(4.0)	120(4.0)	111(3.58)	81(2.2)	80(2.2)	75(1.99)
No. of foreign workers	Persons(%)	4(0.61)	4(0.62)	2(0.2)	3(0.02)	4(0.03)	16(0.1)	0(0)	0(0)	0(0)	0(0)	1(0.03)	1(0.03)
US	Persons	1	1	1	0	0	0	0	0	0	0	0	0
UK	Persons	1	1	0	0	0	1	0	0	0	0	0	0
Australia	Persons	1	1	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	3	4	11	0	0	0	0	1	1
Myanmar	Persons	0	0	0	0	0	1	0	0	0	0	0	0
Philippines	Persons	0	0	0	0	0	1	0	0	0	0	0	0
Thailand	Persons	0	0	0	0	0	1	0	0	0	0	0	0
Malaysia	Persons	0	0	0	0	0	1	0	0	0	0	0	0

1. Calculated based on the total number of female employees including executives.  
 2. Number of new entry-level employees and experienced employees recruited in the year.  
 3. Female employees who are section leaders or higher.  
 4. Change in figures compared to the previous year's report (reason: calculation method error).

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### Recruitment and Retention

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Total number of new recruits</b>	Persons	64	44	171	201	239	630	59	104	109	32	99	217
Entry-level employee	Persons	15	31	88	183	211	326	57	69	74	31	54	71
Experienced employee	Persons	49	13	83	18	28	304	2	35	35	1	45	146
Under 30	Persons	16	24	83	168	179	262	4	28	67	31	54	62
30-49	Persons	48	20	86	29	58	360	45	70	36	1	45	155
50 or above	Persons	0	0	2	4	2	8	10	6	6	0	0	0
Male	Persons	59	35	132	150	123	556	45	84	83	30	94	196
Female	Persons	5	9	39	51	116	74	14	20	26	2	5	21
<b>Average hiring cost</b>	KRW 1,000	927	1,097	1,333	245 <sup>2</sup>	290 <sup>2</sup>	230	928	908	1,202	1,702	901	747
<b>Total turnover</b>	Persons(%)	35(5.3) <sup>2</sup>	55(8.5) <sup>2</sup>	64(7.2)	1,089(8.1) <sup>2</sup>	452(3.5) <sup>2</sup>	1,010(7.9)	116(3.8) <sup>2</sup>	124(4.1) <sup>2</sup>	182(5.9)	41(1.1) <sup>1</sup>	65(1.9) <sup>1</sup>	75(2.0) <sup>1</sup>
Under 30	Persons	4	10	15	15	30	50	11	37	62	2	26	30
30-49	Persons	31	45	45	35	55	57	20	21	42	21	26	34
50 or above	Persons	0	0	4	3	0	2	85	66	78	18	13	11
Male	Persons	32	47	50	53	82	98	98	92	153	39	59	69
Female	Persons	3	8	14	0	3	11	18	32	29	2	6	6
<b>Voluntary turnover</b>	Persons(%)	25(3.8) <sup>2</sup>	43(6.6) <sup>2</sup>	61(6.9)	162(1.2) <sup>2</sup>	162(1.3) <sup>2</sup>	125(1.0)	28(0.9) <sup>2</sup>	36(1.2) <sup>2</sup>	90(2.9)	33(0.9)	58(1.7) <sup>2</sup>	64(1.7)
<b>Average years of service</b>	Years	5.9	6.0	4.9	17.5	17.7	16.9	17.6	17.9	17.6	18.9	19.5	18.6
Male	Years	5.9	6.0	4.8	17.7	17.8	17.2	17.9	18.2	17.8	19.2	19.7	19
Female	Years	5.9	5.8	4.9	13.7	14.5	11.8	7.1	7.8	6.5	7.5	7.7	5.3
<b>Percentage of senior officials<sup>4</sup> in major business sites<sup>3</sup></b>	%	100	100	100	100	100	100	100	100	100	100	100	100

1. Figure change from the previous year's report.

2. Figure change compared to the previous year's report (reason: calculation method change).

3. The scope of major business sites is limited to Korea. Overseas business sites are excluded.

4. Vice President or higher ranks.

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### Performance Evaluation

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Ratio of MBO application <sup>1,2</sup>	%	16.3	17.3	19.6	2.1	2.4	2.5	6.2	7.3	8.2	5.9	6.5	7.4
Ratio of employees receiving regular performance appraisal <sup>4</sup>	%	83.8	85.7	83.4	91.6	91.6	92.6	95.2	94.2	90.6	90.4	89.9	84.7
Male	%	- <sup>3</sup>	- <sup>3</sup>	81.8	- <sup>3</sup>	- <sup>3</sup>	92.6	95.3	94.1	90.9	91.2	90.3	85.4
Female	%	- <sup>3</sup>	- <sup>3</sup>	73.6	- <sup>3</sup>	- <sup>3</sup>	94	91.5	100	73.2	34.3	43.9	39.6

1. Management by Objectives (MBO) for team leaders, department heads and higher senior officials.
2. The ratio of MBO applications uses the same data as the ratio of operation of the performance-creating evaluation system. The two formulas used to calculate the data are as follows.
  - ① Establish actual goals and evaluate according to achievement (MBO) ÷ All employees.
  - ② Personnel subject to multidimensional evaluation (executives, managerial workers, holders of professional qualifications are the main target, excluding duplicates) ÷ all employees.
3. Collecting relevant data from 2022.
4. Including competency development evaluation for managerial positions, and regular performance appraisal for employees.

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Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Statutory minimum wage (annual) <sup>1</sup>	KRW 1,000	21,544	21,870	22,973	21,544	21,870	22,973	21,544	21,870	22,973	21,544	21,870	22,973
Average salary	KRW 1,000	63,457	63,631	82,096	67,912	70,562	84,721	69,457	77,263	86,243	78,535	75,491	84,452
Male	KRW 1,000	67,474	67,767	87,701	68,757	71,522	85,863	70,307	78,167	87,321	79,303	76,365	85,711
Female	KRW 1,000	47,077	47,585	57,099	49,567	50,325	60,995	41,737	45,652	48,869	45,658	34,936	42,853
Average salary of new male employees <sup>3</sup> at major workplaces <sup>2</sup>	KRW 1,000	50,631	49,884	68,139	47,843	47,542	54,112	50,526	46,558	53,079	50,558	51,170	56,196
Average salary of new female employees <sup>3</sup> at major workplaces <sup>2</sup>	KRW 1,000	47,731	47,732	64,419	47,331	47,636	53,141	47,975	44,118	50,358	49,604	50,459	58,287
Average salary for non-managerial employees (male) <sup>4</sup>	KRW 1,000	61,911	67,186	70,144	66,316	68,503	81,214	67,245	75,423	82,832	75,896	81,467	84,332
Average salary for non-managerial employees (female) <sup>4</sup>	KRW 1,000	43,745	47,205	54,582	49,121	51,081	61,754	41,737	45,652	48,197	38,949	40,920	40,653
Average salary for managerial employees (male) (section leader or higher)	KRW 1,000	100,029	100,812	94,889	90,593	94,086	112,008	89,509	96,782	114,997	86,567	99,077	102,879
Average salary for managerial employees (female) (section leader or higher)	KRW 1,000	79,820	84,830	117,565	93,004	97,152	108,562	-	-	- <sup>5</sup>	-	-	-
Average salary for executives (base salary)	KRW 1,000	109,159	127,198	162,329	120,184	131,491	177,717	228,197	194,696	203,401	94,722	115,707	105,948
Male	KRW 1,000	109,159	127,198	162,329	120,184	131,491	177,717	228,197	194,696	203,401	94,722	115,707	105,948
Female	KRW 1,000	-	-	-	- <sup>5</sup>	- <sup>5</sup>	- <sup>5</sup>	-	-	-	-	-	-
Average salary for executives (base salary+other cash incentives)	KRW 1,000	268,424	278,443	366,060	268,675	273,312	379,658	286,926	245,501	306,821	225,519	250,964	241,766
Male	KRW 1,000	268,424	278,443	366,060	268,675	273,312	379,658	286,926	245,501	306,821	225,519	250,964	241,766
Female	KRW 1,000	- <sup>5</sup>	- <sup>5</sup>	- <sup>5</sup>	- <sup>5</sup>	- <sup>5</sup>	- <sup>5</sup>	-	-	-	-	-	-
Difference in average pay by gender (base salary)	%	21.2	15.2	19.7	15.3	14.5	10.3	61.1	60.1	58.0	33.4	34.9	38.9
Difference in median pay by gender (base salary)	%	21.1	15.3	45.0	5.0	3.4	1.8	47.0	58.9	47.3	37.7	39.0	40.0

1. Statutory minimum wage × 209 hours (contracted working hours per month) × 12 months.  
 2. Business sites located in South Korea are included in the scope, and overseas business sites are excluded.  
 3. For new employees, salary for the year is annualized pay in December.  
 HMD: Based on the starting salary for office workers for men and the starting salary for office workers for women.  
 4. This data scope includes small-unit leader positions (part leader, chief foreman, senior foreman, etc.).  
 5. Undisclosed in accordance with Article 3 of the Personal Information Protection Act (Principle of Personal Information Protection).

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### Defined Benefit Pension Plan

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Defined benefit obligation <sup>1</sup>	KRW million	1,182,432	1,326,318	1,233,692	771,213	813,842	722,401	193,556	226,563	220,097	214,166	232,588	232,808
Percentage of assets contributed by the employer to the defined benefit plan <sup>2</sup>	%	98	100	129	91	99	129	93	98	130	104	107	137

1. The sum of the present value of defined benefit obligations and other long-term employee benefits.
2. Amount of assets contributed by the employer to a defined benefit plan ÷ amount of defined benefit obligations.

### Employee Benefits

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Employee benefit expenses	KRW 1,000	55,499,000	59,633,000	55,722,000	37,254,000	38,789,000	35,978,000	6,525,000	8,740,000	26,817,164	59,161,181	56,746,642	63,070,351
Ratio of employee benefits expenses to revenues	%	0.37	0.38	0.32	0.45	0.47	0.40	0.23	0.30	0.72	1.51	1.34	1.36
Usage rate of flexible working options <sup>2</sup>	%	65.95	81.05	84.02	25.01	28.77	26.9	0	0	3.93	0	0	21
Employees eligible for parental leave <sup>1</sup>	Persons	213	290	380	4,057	4,112	3,471	835	786	693	1,013	858	830
Employees who used parental leave (male)	Persons	7	5	7	244	227	227	46	46	21	47	49	34
Employees who used parental leave (female)	Persons	9	7	9	20	23	24	5	3	4	2	6	3
Employees who returned to work after parental leave (male)	Persons(%)	4(100)	5(71)	8(100)	243(100)	223(91)	288(62)	27(100)	33(72)	17(80)	52(80)	40(85)	28(82)
Employees who returned to work after parental leave (female)	Persons(%)	7(100)	8(89)	8(89)	21(100)	22(100)	28(59.5)	5(100)	3(100)	4(100)	3(75)	4(100)	2(100)
Employees who worked for a year or more after parental leave (male)	Persons	0	3	4	231	205	30	14	28	30	64	48	35
Employees who worked for a year or more after parental leave (female)	Persons	4	5	6	23	8	2	3	5	3	2	2	4
Maternity leave (male)	Persons	34	24	31	405	351	278	58	31	0	54	41	0
Maternity leave (female)	Persons	7	6	9	25	24	23	2	5	3	2	4	1

1. The number of individuals eligible for parental leave is calculated by considering the operating method that allows all eligible people to take parental leave if they meet the requirements under the (Equal Employment Opportunity Act). However, leave of absence may not be allowed for workers who have been employed for less than 6 months after joining the company, depending on their adaptation to the work environment or the operational situation of the company/affiliated department.
2. Flexible working options include working-from-home arrangements, selectable working hour system, flexible commute hour system, etc.

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### Training & Development

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Inputs	Training hours per employee	Hours	20	49	80.1	16	56	29.9	20	17	36 <sup>1</sup>	19	16	30
	Training expenditure per employee	KRW 1,000	207	300	604	149	354	185.8	88	80	453	160	159	268
	Ratio of employees completing the training	%	89.5	100	98.5	53.8	99.4	99.7	96.1	99.4	100	45.9	73.8	100.0
By employment type	Regular employee	Hours	-	48.9	83.1	-	23.4	30.6	-	17.2	36	-	-	31.5
	Non-regular employee (contract workers, part-time)	Hours	-	12.4	15.0	-	18.7	14.8	-	7.1	35.6	-	-	5.6
By gender	Male	Hours	-	39.1	69.1	-	23.0	30.2	20	16.9	36	-	-	30.5
	Female	Hours	-	46.2	82.6	-	27.3	23.8	13	17.2	41	-	-	25.1
By management level	Management (Executives)	Hours	-	13	9.9	-	14.2	20.5	-	11.5	18	-	-	25.2
	Senior managers or above (office job)	Hours	-	47.9	72.2	-	35.6	25.2	-	27.0	38	-	-	49.8
	Managers or below (office job)	Hours	-	32.8	104.1	-	29.3	21.9	-	34.1	69	-	-	74
	Entire production workers	Hours	-	-	-	-	16.7	34	-	9.7	28	-	-	19
By age	Under 30	Hours	-	46.6	110.7	-	22.5	55.2	-	47.6	76	-	-	77.3
	30-49	Hours	-	46.6	80.3	-	23.8	31.4	-	16.1	34	-	-	34
	50 or above	Hours	-	26.2	17.8	-	22.1	17.7	-	10.8	27	-	-	17

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### Grievance Handling

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>No. of reported cases</b>	Cases	82	60	0	1,080	955	1,184	35	28	27	31	28	21
Representative organization of employees <sup>1</sup>	Cases	5	0	10	46	48	70	14	10	25	29	16	12
Intranet <sup>2</sup>	Cases	77	60	0	1,027	900	1,109	21	16	1	0	0	1
Hotline <sup>3</sup>	Cases	0	0	0	7	7	5	0	1	1	2	4	6
Offline <sup>4</sup>	Cases	0	0	0	0	0	0	0	0	0	- <sup>5</sup>	8	2
<b>No. of reported human rights cases</b>	Cases	0	0	0	5	3	5	0	1	1	31	28	21
No. of reports handled	Cases	0	0	0	5	3	5	0	1	1	31	28	1
<b>Number of incidents of discrimination</b>	Cases	0	0	0	0	0	0	0	0	0	0	0	0

1. Cases reported via the employee representative body, including issues related to wages/welfare benefits, work systems, organizational culture, working hours, infrastructure, safety environment, etc.

2. Cases reported on the intranet "Hi-Square", including issues related to personnel/compensation/education, general affairs/welfare, work, safety and health, computer system, etc.

3. Cases reported via the hotline of Grievance Handling Committee, including issues as workplace harassment, etc.

4. Cases reported offline via other personnel and audits, including various grievance issues.

5. There were a few reported cases via departmental meetings or individual consultations, but the number was not recorded. The reported issues were immediately handled or conveyed to proper organization for resolution.

### Efforts for Better Human Rights Culture

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Human rights education	Hours per employee	2	2	4 (office worker) 2 (production worker)	2	2	4 (office worker) 2 (production worker)	2	2	4	0	0	0
Sexual harassment education	Hours per employee	1	1	1	1	1	1	1	1	1	1	1	1
Education to promote disability awareness	Hours per employee	1	1	1	1	1	1	1	1	1	1	1	1
Workplace bullying prevention education	Hours per employee	-	-	1 (office worker) <sup>1</sup>	-	-	1 (office worker) <sup>1</sup>	1	1	1	0	0	0
Human rights violation prevention education	Hours per employee	-	-	1 (office worker) <sup>1</sup>	-	-	1 (office worker) <sup>1</sup>	1	1	1	0	0	0
Workplace with human rights violation mitigation plans (coverage)	%	- <sup>2</sup>	- <sup>2</sup>	100	100	100	100	- <sup>2</sup>	- <sup>2</sup>	100	- <sup>2</sup>	- <sup>2</sup>	100

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. Data not managed in the given year.

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### Occupational Health and Safety Certification

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Category	Unit	HDKSOE <sup>1</sup>			HHI <sup>2</sup>			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
ISO 45001 (Occupational health and safety certification)	%	-	-	100	100	100	100	100	100	100	100	100	100
Workers subject to occupational health and safety system	Persons(%)	-	-	939(100)	26,462(100)	25,912(100)	26,733(100)	8,156(100)	8,258(100)	8,898(100)	13,791(100)	14,026(100)	14,245(100)

1. HDKSOE has received ISO 45001 certification since 2022, data for 2020 and 2021 are marked with hyphens for transparent disclosure.

2. Include stakeholders such as employees and suppliers.

### Health and Safety Management Indicators - Employees

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Fatalities due to work-related injury <sup>1,2</sup>	Cases(%)	0(0)	0(0)	0(0)	2(0.014)	1(0.007)	1(0.007)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
Serious work-related injuries other than fatal accidents <sup>3,4</sup>	Cases(%)	0(0)	0(0)	0(0)	1(0.007)	1(0.007)	4(0.029)	0(0)	2(0.069)	1(0.034)	0(0)	0(0)	0(0)
Work-related injury accidents with record/preservation obligations <sup>5</sup>	Cases(%)	1(0.14)	0(0)	1(0.11)	45(0.31)	44(0.32)	41(0.30)	20(0.68)	21(0.72)	15(0.50)	22(0.61)	8(0.23)	15(0.43)
Total working hours	Hours	1,332,928	1,351,808	1,772,832	28,578,972	27,448,600	27,253,692	5,886,720	5,806,080	5,957,760	6,864,768	6,535,184	6,550,096
Employee Lost Time Incident (LTI)	Cases	1	0	0	45	44	41	6 <sup>8</sup>	6 <sup>8</sup>	9	22	8	15
Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	0.15	0	0	0.315	0.321	0.301	0.204 <sup>8</sup>	0.207 <sup>8</sup>	0.302	0.64	0.24	0.46
Occupational Illness (OI) <sup>6</sup>	Cases	0	0	0	307	349	374	34	30	26	84	98	121
Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0	0	0	2.15	2.54	3.11	1.155	1.033	0.873	2.45	2.94	3.69
Accident rate <sup>7</sup>	%	0.14	0	0	0.331	0.342	0.323	0.201	0.204	0.261	0.605	0.228	0.427

1. Work-related injury: Death or injury caused by work or other work related to construction, equipment, raw materials, gas, steam, dust, etc.

2. The rate is calculated according to (Number of fatalities ÷ Total working hours) × 200,000 hours.

3. Accidents with a high probability of leading to serious accidents.

4. The ratio is calculated according to (Number of work-related injuries excluding fatal accidents ÷ Total working hours) × 200,000 hours.

5. The ratio is calculated according to (Number of work-related injuries with record and preservation obligations ÷ Total working hours) × 200,000 hours.

6. Major disease types: Lumbar herniated intervertebral disc, rotator cuff tear, arthritis, tennis elbow, etc.

7. Accident rate: (Number of injured people ÷ Number of wage workers) × 100.

8. Change in figures compared to the previous year's report (reason: calculation method error).

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### Health & Safety Management Indicators - Suppliers

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Fatalities due to work-related injury <sup>1,2</sup>	Cases(%)	0(0)	0(0)	0(0)	2(0.015)	2(0.015)	1(0.007)	0(0)	0(0)	0(0)	0(0)	0(0)	1(0.009)
Serious work-related injuries other than fatal accidents <sup>3,4</sup>	Cases(%)	0(0)	0(0)	0(0)	2(0.015)	0(0)	4(0.027)	4(0.082)	0(0)	1(0.018)	0(0)	0(0)	0(0)
Work-related injury accidents with record/preservation obligations <sup>5</sup>	Cases(%)	0(0)	0(0)	0(0)	12(0.09)	14(0.10)	9(0.06)	6(0.122)	9(0.178)	7(0.127)	9(0.089)	10(0.095)	9(0.084)
Total working hours	Hours	66,743	68,829	62,572	27,158,840	26,752,100	29,366,364	9,809,280	10,099,200	10,849,920	19,148,096	19,650,288	20,004,448
<b>Suppliers</b> Lost Time Incident (LTI)	Cases	0	0	0	12	14	9	5 <sup>8</sup>	5 <sup>8</sup>	3	9	10	9
Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	0	0	0	0.09	0.10	0.061	0.102 <sup>8</sup>	0.099 <sup>8</sup>	0.054	0.09	0.10 <sup>8</sup>	0.09
Occupational Illness (OI) <sup>6</sup>	Cases	0	0	0	0	0	0	19	25	21	21	40	N/A
Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0	0	0	0	0	0	0.387	0.495	0.381	0.22	0.3	N/A
Accident rate <sup>7</sup>	%	0	0	0	0.093	0.107	0.064	0.116	0.092	0.071	0.089	0.095	0.084

1. Work-related injury: Workers' health problems arising from exposure to hazardous chemical, biological, physical, work-related and psychological factors.
2. The rate is calculated according to (Number of fatalities ÷ Total working hours) × 200,000 hours.
3. Accidents with a high probability of leading to serious accidents.
4. The ratio is calculated according to (Number of work-related injuries excluding fatal accidents ÷ Total working hours) × 200,000 hours.
5. The ratio is calculated according to (Number of work-related injuries with record and preservation obligations ÷ Total working hours) × 200,000 hours.
6. Major disease types: Lumbar herniated intervertebral disc, rotator cuff tear, arthritis, tennis elbow, etc.
7. Accident rate: (Number of injured people ÷ Number of wage workers) × 100.
8. Change in figures compared to the previous year's report (reason: calculation method error).

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### Health & Safety Management Indicators - HVS, HD HENT

Category	Unit	HVS			HD HENT			
		2020	2021	2022	2020	2021	2022	
Employee	Serious work-related injuries other than fatal accidents <sup>1,2</sup>	Cases(%)	0(0)	0(0)	0(0)	2(0.21)	0(0)	4(0.34)
	Work-related injury accidents with record/preservation obligations <sup>3</sup>	Cases(%)	3(0.09)	2(0.08)	2(0.06)	2(0.21)	0(0)	4(0.34)
	Total working hours	Hours	6,458,402	4,971,140	6,843,984	1,918,080	2,073,600	2,338,560
	Lost Time Incident (LTI)	Cases	174	179	406	2	0	4
	Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	5.39	7.20	11.86	0.21	0	0.34
	Occupational Illness (OI) <sup>4</sup>	Cases	21	21	24	0	0	1
	Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0.65	0.84	0.70	0	0	0.09
	Serious work-related injuries other than fatal accidents	Cases(%)	0(0)	0(0)	0(0)	-	-	-
	Work-related injury accidents with record/preservation obligations	Cases(%)	0(0)	0(0)	0(0)	-	-	-
	Total working hours	Hours	1,495,902	971,227	2,175,994	-	-	-
Suppliers	Lost Time Incident (LTI)	Cases	12	0	18	-	-	-
	Lost Time Injury Frequency Rate (LTIFR)	Occurrence per 200,000 hours	1.6	0	1.65	-	-	-
	Occupational Illness (OI) <sup>4</sup>	Cases	0	0	0	-	-	-
	Occupational Illness Frequency Rate (OIFR)	Occurrence per 200,000 hours	0	0	0	-	-	-

1. Accidents with a high probability of leading to serious accidents.  
 2. The ratio is calculated according to (Number of work-related injuries excluding fatal accidents ÷ Total working hours) × 200,000 hours.  
 3. The ratio is calculated according to (Number of work-related injuries with record and preservation obligations ÷ Total working hours) × 200,000 hours.  
 4. Major disease types: Lumbar herniated intervertebral disc, rotator cuff tear, arthritis, tennis elbow, etc.

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### Health & Safety Related Grievance Handling

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022 <sup>1</sup>	2020	2021	2022 <sup>1</sup>	2020	2021	2022
No. of health and safety-related grievances received from supplier companies	Cases	95	100	116	-	-	951	-	-	56	0	0	385
No. of health and safety-related grievances received from supplier companies that were resolved	Cases	95	100	116	-	-	951	-	-	56	0	0	292
Percentage of cases resolved among health and safety-related grievances received from supplier companies	%	100	100	100	-	-	100	-	-	100	100	100	82

1. Data collection from 2022.

### Health and Safety Related Grievance Handling - Hyundai Vietnam Shipbuilding (HVS)

Category	Unit	HVS		
		2020	2021	2022
No. of health and safety-related grievances received from supplier companies	Cases	1	0	0
No. of health and safety-related grievances received from supplier companies that were resolved	Cases	1	0	0
Percentage of cases resolved among health and safety-related grievances received from supplier companies	%	100	0	0

### Violation of Health and Safety Related Laws

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Serious accident <sup>1</sup>	Cases	0	0	0	4	3	2	0	0	0	0	0	1
Rate of serious accident <sup>2</sup>	Occurrence per 200,000 hours	0	0	0	0.014	0.011	0.007	0	0	0	0	0	0.008
Violation of laws	Cases	0	0	0	1	1	2	0	0	0	16	8	35

1. By applying the definition of the Occupational Safety and Health Act, a serious accident refers to an accident in which one or more people died, an accident in which two or more people were injured at the same time requiring three months or more of medical care, and an accident in which more than ten people were injured or suffered occupational diseases at the same time.

2. (Number of serious accidents ÷ Total working hours) × 200,000 hours.

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### Health & Safety Education

Category	Unit	HDKSOE			HHI <sup>1</sup>			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Employee	No. of participants	Persons	647	648	700	12,573	11,945	11,459	2,991	2,940	3,017	3,520	3,377	3,317
	Education hours	Hours	7,764	7,776	8,400	341,310	326,824	340,102	64,680	66,012	66,512	76,208	69,536	92,777
	Education hours per employee	Hours	12	12	12	27	27	30	22	23	22	22	21	28
	Ratio of participants	%	100	100	100	100	100	100	100	100	100	100	100	100
Supplier Company	Health and safety training for staff of supplier company on site	Implemented	○	○	○	○	○	○	○	○	○	○	○	○
	No. of participants	Persons	32	33	30	11,220	12,354	13,067	3,891	5,069	5,356	8,306	8,605	8,592
	Education hours	Hours	768	792	720	493,152	453,110	488,292	108,948	141,932	149,968	278,846	303,794	312,287
	Education hours per employee	Hours	24	24	24	44	37	37	28	28	28	34	35	36
	Ratio of participants	%	100	100	100	100	100	100	100	100	100	100	100	100

1. Throughout the fiscal year, we have achieved a 100% completion rate for mandatory training. However, certain figures are excluded, such as new employees and individuals who have resigned during the fiscal year.

### Customer Health & Safety<sup>1</sup>

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Violation of regulations relating to health and safety impacts of products and services	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0
Violation of laws and voluntary regulations on product and service information and labels	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0
Violation of laws and voluntary regulations on marketing communications	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0

1. No violations pertaining to customer health & safety have been reported.

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### Supply Chain

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Category	Unit	HDKSOE <sup>1</sup>			HHI <sup>2</sup>			HMD <sup>1</sup>			HSHI <sup>1</sup>		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Total number of suppliers</b>	ea	-	-	3,716	3,018	3,135	3,716	1,898	1,870	1,936	1,159	1,178	1,257
<b>Number of Tier-1 supplier companies</b>	ea	-	-	3,716	3,018	3,135	3,716	1,898	1,870	1,936	1,159	1,178	1,257
<b>Number of non Tier-1 supplier companies<sup>3</sup></b>	ea	-	-	-	-	-	-	-	-	-	-	-	-
<b>Number of significant suppliers<sup>4</sup></b>	ea(%)	-	-	315	217(7.2)	313(10.0)	315(8.5)	243	253	268	146	151	162
<b>Total spend on significant suppliers</b>	%	-	-	21	35	57	62	-	-	-	52.8	47.7	41.2
Number of suppliers assessed with negative impacts	ea	-	-	-	-	-	35	-	-	-	-	-	-
Number of suppliers assessed with negative environmental impacts	ea	-	-	-	-	-	32	-	-	-	-	-	-
Number of suppliers assessed with negative social impacts	ea	-	-	-	-	-	35	-	-	-	-	-	-
Number of suppliers with negative impacts with agreed corrective action/improvement plan	ea(%)	-	-	-	-	-	35(100)	-	-	-	-	-	-
Number of suppliers whose contracts were terminated due to negative impacts	ea(%)	-	-	-	-	-	0(0)	-	-	-	-	-	-
Number of suppliers supported in corrective action plan implementation	ea(%)	-	-	-	-	-	35(100)	-	-	-	-	-	-
Number of suppliers that received ESG evaluation among significant suppliers	ea(%)	-	-	-	-	-	33(10.48)	-	-	-	-	-	-

1. HDKSOE has no relevant supply chain data in 2020 and 2021 as we have launched SD Business unit in 2022.

HMD and HSHI did not conduct ESG evaluations of supply chains in 2020, 2021, and 2022, but based on the 2023 materiality test, we have recognized the importance of ESG management of supply chains and are planning to establish and evaluate supply chain-related policies from 2023.

2. HHI did not conduct an ESG assessment of its supply chain in 2020 and 2021.

3. In accordance with relevant laws and internal standards, we do not manage suppliers beyond Tier-1, since we do not have direct transactions.

4. Significant suppliers are Tier-1 companies that have significant influence on business, classified by internal standards.

For example, HMD's significant suppliers provide specialized key items that are crucial to the manufacturing process.

## Social

### Social Contribution

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Volunteering hours per employee	Hours	0.8	0.6	0.2	0.9	0.6	0.7	1.3	0.7	0.6	0.8	1.8	1.5
Ratio of business sites engaged in community activities <sup>1</sup>	%	100	100	100	100	100	100	100	100	100	0	0	0
Amount of social investments <sup>2</sup>	KRW million	74	140	259	593	634	781	68	81	81	78	72	161
Amount of cash contributions <sup>3</sup>	KRW million	74	140	259	373	404	554	68	81	81	78	72	161
Converted amount of employee volunteering hours during working hours <sup>4</sup>	KRW million	19	13	7	435	287	401	0	0	0	-	-	-
In-kind donation amount <sup>5</sup>	KRW million	0	0	0	220	230	227	0	0	0	0	0	0
Management overheads <sup>6,7</sup>	KRW million	-	-	31	-	-	48	-	-	0	-	-	0
Evaluation of social contribution program operation	Conducted	○	○	○	○	○	○	○	○	○	○	○	○

1. Percentage of engagement in community activities is based on domestic workplaces.

2. Social investments is the sum of in-kind giving, cash contributions and other amounts (including social program operation costs and funds for local communities).

3. Amount donated in cash as part of social contribution activities.

4.  $[\text{Total annual salary} \div (\text{Total number of employees} \times \text{Number of working days per year} \times 8 \text{ hours})] \times (\text{volunteering hours})$ .

5. Criteria for calculation of in-kind donation amount: based on Donation Receipt.

6. Travel expenses (travel expenses related to social contribution work) + team budget (team budget related to social contribution work).

7. Data from 2022.

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### Quality Evaluation

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Quality evaluation of supplier companies	Cases	5	4	0	319	241	332	503	517	536	276	267	277

### Quality Training

Category	Unit	HDKSOE <sup>1</sup>			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Completion of quality trainings (overlap of employees of the Quality Management Dept. allowed)	Persons	179	3,015	1,315	93	992	112	341	345	655	165	690	880

1. Calculate data for the entire people.

### Quality Certification

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
ISO 9001 (Quality management system)	%	100	100	100	100	100	100	100	100	100	100	100	100
ISO 3834 (Quality requirements for fusion welding) <sup>1</sup>	%	-	-	-	50	50	50	100	100	100	100	100	100

1. In case of HHI, the scope of its business site includes the entire Shipbuilding area and some part of Offshore Plant and Naval & Special Ship areas.

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### Information Security Certification

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
ISO 27001 (Information security management system)	%	100	100	100	100	100	100	100	100	100	100	100	100
ISO 22301 (Business continuity management system) <sup>1</sup>	%	-	-	33.3	-	-	-	-	-	-	-	-	-
ISO 27701 (Personal information protection management system)	%	-	-	-	-	-	100	-	-	-	-	-	-

1. HDKSOE has obtained ISO 22301 certification in 2022.

### Information Security Training

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Information security training	Conducted	○	○	○	○	○	○	○	○	○	○	○	○
Personal information protection training	Conducted	○	○	○	○	○	○	○	○	○	○	○	○
Information security training duration	Hours	6	6	8	6	6	6	13	13	18	5	5	7

### Information Security Investment

Category	Unit	HDKSOE			HHI <sup>1</sup>			HMD <sup>1</sup>			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Ratio of information security-related investment to total IT budget	%	0	0	49.6	45.7	34.4	6.3	3.8	5.4	4.5	4.2	3.9	10.3
Total IT budget	KRW million	0	0	6,268	371,134	105,814	30,299	3,981	3,728	4,688	3,100	12,400	4,688
Investment amount related to information security	KRW million	0	0	3,108	169,547	36,374	1,910	149	202	210	130	480	210

1. The latest two years of data are calculated in accordance with the Information Security Disclosure System standards.

### Personal Information Protection

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Number of complaints filed by external parties and substantiated internally by the organization about violations of customer privacy laws and standards	Cases	0	0	0	0	0	0	0	0	0	0	0	0
Number of complaints filed by regulators regarding violations of customer privacy laws and standards	Cases	0	0	0	0	0	0	0	0	0	0	0	0
Number of proven customer data breaches, theft, or loss	Cases	0	0	0	0	0	0	0	0	0	0	0	0

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# Governance

## Board of Directors

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
<b>Board Composition</b>	No. of members	Persons	6	5	5	7	7	5	5	5	5	6	6	7
	No. of outside directors	Persons	3	3	3	4	4	3	3	3	3	3	3	4
	No. of internal directors	Persons	3	2	2	3	3	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	2
<b>Board Operation</b>	No. of meetings held	Times	11	9	10	11	10	9	7	8	8	10	8	11
	No. of agenda reported	Cases	10	10	14	6	8	11	9	9	11	9	9	10
	No. of against or amendment by outside directors	Cases	1	0	0	0	0	0	0	0	0	0	0	0
	Average attendance rate	%	96.25	87.17	85.71	94	100	98	100	100	95	92	100	91
<b>Board Expertise</b>	No. of outside directors with four or fewer external positions	Persons	3	3	3	2	2	3	3	3	3	3	3	4
	No. of other mandates allowed	Number	1	1	1	1	1	1	1	1	1	1	1	1
	Average tenure	Year	2.7	2.6	2.6	3	3	3	2.6	2.6	2.6	4.1	4.1	3.3
	No. of outside directors with industry experiences	Persons	2	2	2	3	3	1	2	2	1	1	1	1
<b>Board Diversity</b>	Female	Persons	0	0	1	0	0	1	0	0	1	0	0	1
	Male	Persons	6	5	4	7	7	4	5	5	4	6	6	6
	Under 30	Persons	0	0	0	0	0	0	0	0	0	0	0	0
	30-49	Persons	0	0	1	0	0	1	1	1	1	0	0	0
	50 or above	Persons	6	5	4	7	7	4	4	4	4	6	6	7
	No. of female directors who are neither the controlling shareholders nor relatives of registered directors	Persons	0	0	1	0	0	1	0	0	1	0	0	1

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### Board of Directors

Category	Unit	HDKSOE			HHI			HMD			HSHI				
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022		
Outside Director Recommendation Committee	No. of members	Persons	4	4	4	6	5	4	4	4	4	4	4	5	
	No. of outside directors (ratio)	Persons(%)	3(75)	3(75)	3(75)	4(67)	4(80)	3(75)	3(75)	3(75)	3(75)	3(75)	3(75)	4(80)	
	Attendance rate	%	75	100	87.5	80	- <sup>1</sup>	89	100	100	100	100	100	100	
	No. of meetings held	Times	1	1	2	2	0	2	2	2	2	2	3	1	2
	No. of agenda approved	Cases	1	1	2	2	- <sup>1</sup>	2	1	1	1	1	3	2	2
	No. of agenda reported	Cases	0	0	0	0	- <sup>1</sup>	0	1	0	0	0	0	0	0
Audit Committee	No. of members	Persons	3	3	3	4	4	3	3	3	3	3	3	4	
	No. of outside directors (ratio)	Persons(%)	3(100)	3(100)	3(100)	4(100)	4(100)	3(100)	3(100)	3(100)	3(100)	3(100)	3(100)	4(100)	
	Attendance rate	%	100	100	100	100	100	100	100	100	100	96	100	95	
	No. of meetings held	Times	5	5	7	6	7	5	7	6	6	7	6	6	
	Remuneration for audit services paid to external auditors	KRW 1,000	988,000	605,000	730,000	909,000	1,705,000	1,160,000	555,000	570,000	590,000	359,000	400,000	636,000	
	Remuneration for non-audit services paid to external auditors	KRW 1,000	-	-	150,000	12,000	0	324,000	0	10,000	110,000	0	90,000	120,000	
	Members of the Audit Committee who meet the statutory requirements for accounting or financial experts	Persons	3	3	2	3	3	2	1	2	3	2	1	2	
	No. of agenda approved	Cases	3	5	7	2	11	3	7	5	4	6	7	6	
No. of agenda reported	Cases	19	19	16	5	15	16	13	15	16	10	13	16		
No. of against or amendment	Cases	0	0	0	0	0	0	0	0	0	0	0	0		

1. In 2021, the Outside Director Recommendation Committee was not held, so the attendance rate, the no. of agenda approved, the no. of agenda reported are marked with '-<sup>1</sup>'.

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### Board of Directors

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Related Party Transactions Committee	No. of members	Persons	4	4	4	5	5	4	4	4	4	3	3	4
	No. of outside directors (ratio)	Persons(%)	3(75)	3(75)	3(75)	4(80)	4(80)	3(75)	3(75)	3(75)	3(75)	3(100)	3(100)	4(100)
	Attendance rate	%	92	100	100	100	100	100	100	100	100	100	100	100
	No. of meetings held	Times	3	1	2	1	1	2	1	2	2	2	2	1
	No. of agenda approved	Cases	2	0	2	0	0	2	0	1	1	1	1	0
ESG Committee <sup>1</sup>	No. of agenda reported	Cases	1	1	1	1	1	1	1	1	2	1	1	1
	No. of members	Persons	-	4	4	-	5	4	-	4	4	-	4	5
	No. of outside directors (ratio)	Persons(%)	-	3(75)	3(75)	-	4(80)	3(75)	-	3(75)	3(75)	-	3(75)	4(75)
	Attendance rate	%	-	88	100	-	100	100	-	100	100	-	100	80
	No. of meetings held	Times	-	2	1	-	2	2	-	3	6	-	2	1
ESG Committee <sup>1</sup>	No. of agenda approved	Cases	-	1	0	-	1	1	-	1	1	-	1	0
	No. of agenda reported	Cases	-	2	1	-	2	1	-	3	6	-	2	1

1. ESG Committee establishment dates:  
 - HDKSOE: April 28, 2021  
 - HHI: April 22, 2021  
 - HMD & HSHI: April 27, 2021

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## Evaluation & Remuneration

Category	Unit	HDKSOE			HHI			HMD			HSHI			
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	
Pay ratio of CEO to employee median	Times	11.6	11.9	15.9	13.1	12.0	14.0	14.4	10.2	<b>9</b>	7.5	6.7	5.4	
Pay ratio of CEO to employee average	Times	11.8	12.6	14.9	12.4	11.4	13.6	10.2	7.8	6.7	7.6	6.8	5.7	
Total annual pay of CEO	KRW 1,000	749,006	800,988	1,220,700	844,600	800,988	1,149,100	708,000	591,000	572,565	576,631	561,058	486,725	
Annual increase rate of CEO's pay	%	-	6.9	52.4	- <sup>2</sup>	-5.16	43.46	-11.1	-16.5	-3.1	-27.2	-2.7	-13.2	
Annual increase rate of CEO's pay compared to that of employees' pay <sup>1</sup>	Times	-	25.3	1.8	7.6	8.4	7.2	0.9	-1.8	-0.2	31.1	-0.3	-1.1	
Median value of total annual pay of all employees <sup>1</sup>	KRW 1,000	64,555	67,044	76,621	64,378	66,900	82,311	49,213	57,719	63,464	76,798	84,018	90,001	
Average value of total annual pay of all employees <sup>1</sup>	KRW 1,000	63,457	63,631	82,096	67,912	70,562	84,721	69,497	75,775	86,114	76,295	82,443	85,553	
Ratio of Short-Term Bonuses Deferred to the CEO	%	0	0	0	0	0	0	0	0	0	0	0	0	
CEO Compensation - Long-Term Performance Alignment	Year	1	1	1	1	1	1	-	-	-	1	1	1	
<b>NPS Ownership</b>	Total ratio of shares owned by individual government entities with more than 5% voting rights	%	10.3	5.9	5.5	0	5.5	6.5	11.1	8.2	8.8	0	0	0
<b>Founding Family and CEO Stock</b>	Ratio of Total Shares Owned by founding family	%	0	0	0	0	0	0	0.4	0.4	0.4	0	0	0
	CEO stock ownership as a ratio of annual base salary	Times	0.5	0.6	0.3	0	0	0.367	-	-	-	0	0	0
	Share ownership requirements compared to CEO's annual base salary	Times	0	0	0	0	0	0	-	-	-	0	0	0

1. The highest paid person is excluded when calculating median, average and total employee remuneration increase rates.

2. No public data due to business split with HDKSOE in 2019.

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### Strengthening Shareholder Rights

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Total no. of issued shares	share	70,773,116	70,773,116	70,773,116	70,773,116	88,773,116	88,773,116	39,942,149	39,942,149	39,942,149	30,627,771	30,627,771	30,627,771
No. of common shares	share	70,773,116	70,773,116	70,773,116	70,773,116	88,773,116	88,773,116	39,942,149	39,942,149	39,942,149	30,627,771	30,627,771	30,627,771
No. of non-voting shares	share	0	0	0	0	0	0	57,851	57,851	57,851	0	0	0
Additional issuance of shares	share	0	0	0	0	0	0	0	0	0	0	0	0
<b>Strengthening Shareholder Rights</b> Voting power	-	70,773,116	70,773,116	70,773,116	70,773,116	88,773,116	88,773,116	39,712,298	39,712,298	39,712,298	30,627,771	30,627,771	30,627,771
Prior notice of location of regular shareholders' meeting and agenda	Days before	29	30	28	20	18	29	28	28	28	24	24	24
Electronic voting system	Conducted	-	-	○	-	-	○	-	-	○	-	-	-
Solicitation of proxy exercise of voting rights for all shareholders	Conducted	○	○	○	-	-	○	○	○	○	-	-	-
Dividend policy	Disclosed	○	○	○	○	○	○	○	○	○	○	○	○

### Anti-corruption & Business Ethics

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
<b>Business Ethics Policy</b> Application scope of employee ethics regulations	%	100	100	100	100	100	100	100	100	100	100	100	100
Business ethics pledge	%	98.3	99.4	100	98.1	99.5	100	99.5	99.4	100	100.0	98.9	100
Office workers	%	98.1	99.4	100	97.8	99.5	100	99.4	99.5	100	100.0	98.7	100
Production workers	%	99.1	99.6	100	99.0	99.6	100	100.0	98.8	100	100.0	100.0	100
Business ethics pledge for suppliers	%	-	-	-	92.9	99.0	96.2	85.2	96.4	79.1	97.6	90.5	87.3
<b>Business Ethics Training</b> Training hours on ethics per employee	Hours	0.25	0.31	0.68	0.27	0.23	0.34	0.25	0.31	0.36	0.41	0.27	0.33
Ratio of employees completed trainings on ethics <sup>1</sup>	%	27.9	59.5	86.5	48.0	38.4	46.2	27.9	59.5	44.9	80.2	50.6	46.6
Training for supplier companies	Conducted	○	○	○	○	○	○	○	○	○	○	○	○
<b>Business Ethics Management System</b> No. of reports received via reporting channels <sup>2</sup>	Cases	0	5	4	48	29	30	5	6	14	13	12	15
No. of cases handled out of total reported cases via the reporting channel (ratio)	Cases(%)	0(0)	5(100)	4(100)	48(100)	29(100)	30(100)	5(100)	6(100)	14(100)	13(100)	12(100)	15(100)

1. Targeted to all employees.

2. No. of reports/complaints/consultations received through the Business Ethics website.

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### Compliance

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Dept. subject to compliance inspection	Dept.(%)	43(75 <sup>1</sup> )	34(59 <sup>1</sup> )	58(100)	92(38 <sup>1</sup> )	121(60 <sup>1</sup> )	216(100)	29(60 <sup>1</sup> )	17(49 <sup>1</sup> )	45(100)	43(86 <sup>1</sup> )	44(94 <sup>1</sup> )	45(100)
Risk assessment	Included	○	○	○	○	○	○	○	○	○	○	○	○
Prior consultation system	Included	○	○	○	○	○	○	○	○	○	○	○	○
Internal supervision system	Included	○	○	○	○	○	○	○	○	○	○	○	○
Compliance training sessions	Times	47	9	66	99	135	229	32	6	51	45	48	49
Compliance training participants	Persons	551	563	638	3,513	3,687	4,477	797	383	1,111	1,255	1,134	1,122
Compliance newsletter issuance	Times	13	9	9	13	9	9	13	9	9	13	9	9
Fair trade <sup>2</sup>	No. of violations	Cases	0	1	0	4	1	0	0	0	0	0	0
	Fines <sup>2,3</sup>	Cases	0	0	0	0	-	0	0	0	0	0	0
Corruption & Bribing	No. of violations	Cases	0	0	0	0	0	0	0	0	0	0	0
	Fines	Cases	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	Times	8	1	2	29	51	42	1	0	0	0	1
	No. of legal consultations on Fair Trade Act	Times	11	11	5	87	48	42	0	1	0	4	2
	Other legal advice	Times	638	946	1,296	579	537	648	386	394	372	181	365
No. of dept. assessed for corruption risk (ratio)	Dept.(%)	57(100)	15(27) <sup>4</sup>	58(100)	240(100)	48(21) <sup>4</sup>	216(100)	48(100)	9(16) <sup>4</sup>	45(100)	50(100)	10(24) <sup>4</sup>	45(100)
Measures against Unfair Trade Practices	Operation of cyber counseling system for supplier companies related to unfair trade practices	Cases	0	0	-	3	2	2	0	1	0	2	2

1. Dept. 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%.

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).

4. Dept. exposed to medium or higher compliance risks are selected, and their actual status is checked.

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### Political Contributions and Association Fees

#### Political Contribution<sup>1</sup>

Category	Unit	HDKSOE				HHI				HMD				HSHI			
		2019	2020	2021	2022	2019	2020	2021	2022	2019	2020	2021	2022	2019	2020	2021	2022
Lobbyists/Lobbying organizations	KRW million	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Political campaign/Political organization	KRW million	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	KRW million	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
Top 3 associations by contribution (2022) <sup>1</sup>	Name	Korea Chamber of Commerce & Industry (KRW 14.8 million)	Korea Offshore & Shipbuilding Association (KRW 721.03 million)	Korea Offshore & Shipbuilding Association (KRW 391.54 million)	Korea Offshore & Shipbuilding Association (KRW 492.66 million)
			Korea Defense Industry Association (KRW 369.55 million)	Korea Chamber of Commerce & Industry (KRW 90 million)	Korea Chamber of Commerce & Industry (KRW 60 million)
			Korea Enterprises Federation (KRW 185.21 million)	Korea Enterprises Federation (KRW 34.03 million)	Korea Enterprises Federation (KRW 29.61 million)

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 Expense

Category	Unit	HDKSOE			HHI			HMD			HSHI		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
R&D expense <sup>1</sup>	KRW million	85,188	92,480	125,165	80,778	77,424	103,891	8,956	11,216	17,848	28,945	33,897	42,729
Government subsidy	KRW million	423	813	1,336	-	117	189	-	-	-	-	-	-

1. Calculated based on total R&D expenditure before deducting government subsidy (a state subsidy).

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# GRI Content Index

| **Statement of Use** | KSOE and Its Shipbuilding Subsidiaries follow the GRI standards to disclose its information regarding sustainable management from January 1, 2022 through December 31, 2022.

| **GRI 1 Used** | GRI 1: Foundation 2021

| **Applicable GRI Sector Standard(s)** | Not available as of now (the standards applicable to the shipbuildings industry where we belong are not published as of the date of issuance in June 2023)

## UNIVERSAL STANDARD

Indicator	Reporting Requirement	Page	Note	
<b>GRI 2: General Disclosures</b>				
GRI 2: The organization and its reporting practices	2-1	Organizational details	14, 18, 21, 24	
	2-2	Entities included in the organization's sustainability reporting	3	
	2-3	Reporting period, frequency and contact point	3	
	2-4	Restatements of information	3	Figures have been revised compared to the previous year's report due to changes. To provide corrected data, footnotes are placed at the bottom of individual non-financial performance tables.
	2-5	External assurance	180-181	
GRI 2: Activities and workers	2-6	Activities, value chain, and other business relationships	26-37, 51	
	2-7	Employees	144	
	2-8	Workers who are not employees		Refer to 49 <sup>th</sup> Annual Report in External workers: p.319, 241, 193, 246 Under subcontracting laws, data collection does not include workers who are not directly employed or hired.
	2-9	Governance structure and composition	115-123	
	2-10	Nomination and selection of the highest governance body	116, 119, 121, 123	
	2-11	Chair of the highest governance body		Maintain the CEO's dual role as Chairman of the Board of Directors
	2-12	Role of the highest governance body in overseeing the management of impacts	39-40, 46	
	2-13	Delegation of responsibility for managing impacts	39-43	
GRI 2: Governance	2-14	Role of the highest governance body in sustainability reporting	39-43	
	2-15	Conflicts of interest	116, 119, 121-122	
	2-16	Communication of critical concerns	39-43	
	2-17	Collective knowledge of the highest governance body	117, 118, 121, 123	
	2-18	Evaluation of the performance of the highest governance body	117	
	2-19	Remuneration policies	117	
	2-20	Process to determine remuneration	117	
	2-21	Annual total compensation ratio	164	
	2-22	Statement on sustainable development strategy	13, 17, 20, 23	
	2-23	Policy commitments	49, 53, 55	
GRI 2: Strategy, policies and practices	2-24	Embedding policy commitments	49-56	
	2-25	Processes to remediate negative impacts	130-131	
	2-26	Mechanisms for seeking advice and raising concerns	53-54, 104	
	2-27	Compliance with laws and regulations	124-125, 166	
	2-28	Membership associations	183	
	2-29	Approach to stakeholder engagement	45	
	2-30	Collective bargaining agreements	98, 143	

Indicator	Reporting Requirement	Page	Note
<b>GRI 3: Material Topics</b>			
GRI 3:	3-1	Process to determine material topics	46
Disclosures on material topics	3-2	List of material topics	46-47
	3-3	Management of material topics	47

## Topic Standard

### Economic Performances

GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	134
	201-2	Financial implications and other risks and opportunities due to climate change	49, 64
	201-3	Defined benefit plan obligations and other retirement plans	149
	201-4	Financial assistance received from government	167
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	148
	202-2	Proportion of senior management hired from the local community	146
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	106-109, 158
	203-2	Significant indirect economic impacts	134
GRI 204: Procurement Practices 2016	204-1	Proportion of spending on local suppliers	134
GRI 205: Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	125, 166
	205-2	Communication and training about anti-corruption policies and procedures	165-166
	205-3	Confirmed incidents of corruption and actions taken	165-166
GRI 206: Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	166

### Environmental Performances

GRI 302: Energy 2016	302-1	Energy consumption within the organization	66, 139
	302-2	Energy consumption outside of the organization	138
	302-3	Energy intensity	139
	302-4	Reduction of energy consumption	66, 137
	302-5	Reductions in energy requirements of products and services	35-36, 67
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	68
	303-2	Management of water discharge-related impacts	68-69
	303-3	Water withdrawal	140

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Indicator	Reporting Requirement	Page	Note
GRI 304: Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	73
	304-2	Significant impacts of activities, products and services on biodiversity	73
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	73
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	49-51, 137
	305-2	Energy indirect (Scope 2) GHG emissions	49-51, 137
	305-3	Other indirect (Scope 3) GHG emissions	49-52, 138
	305-4	GHG emissions intensity	137
	305-5	Reduction of GHG emissions	64, 137
	305-6	Emissions of ozone-depleting substances (ODS)	137
	305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	70, 141
GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	71
	306-2	Management of significant waste-related impacts	71
	306-3	Waste generated	71, 142
	306-4	Waste diverted from disposal	71, 142
	306-5	Waste directed to disposal	142
GRI 308: Supplier environmental assessment 2016	308-1	New suppliers that were screened using environmental criteria	92-96
	308-2	Negative environmental impacts in the supply chain and actions taken	95-96
<b>Social Performances</b>			
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	146
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	105, 149
	401-3	Parental leave	149
GRI 402: Labor/Management relations 2016	402-1	Minimum notice periods regarding operational changes	143
	403-1	Occupational health and safety management system	87
	403-2	Hazard identification, risk assessment, and incident investigation	89
GRI 403: Occupational health and safety 2018	403-3	Occupational health services	90
	403-4	Worker participation, consultation, and communication on occupational health and safety	88
	403-5	Worker training on occupational health and safety	90, 156
	403-6	Promotion of worker health	90-91
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	91
GRI 403: Occupational health and safety 2018	403-8	Workers covered by an occupational health and safety management system	87, 152
	403-9	Work-related injuries	152-154
	403-10	Work-related ill health	152-154

Indicator	Reporting Requirement	Page	Note
GRI 404: Training and education 2016	404-1	Average hours of training per year per employee	101, 150
GRI 405: Diversity and Equal opportunity 2016	405-1	Percentage of employees receiving regular performance and career development reviews	102, 147
	405-2	Diversity of governance bodies and employees	145
GRI 406: Non-discrimination 2016	406-1	Ratio of basic salary and remuneration of women to men	148
	406-1	Incidents of discrimination and corrective actions taken	151
GRI 407: Freedom of association and Collective bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	53-54
GRI 408: Child labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	53-54
GRI 409: Forced or Compulsory labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	53-54
GRI 413: Local communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	106-107
GRI 414: Supplier social assessment 2016	414-1	New suppliers that were screened using social criteria	92-96
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Adhering to domestic and international laws, including the Ship Safety Act, and international conventions. Additionally, we diligently comply with ship design standards, conducting safety inspections to minimize the impact of our products.

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Category	SASB Code	Accounting Metrics	Unit	HDKSOE			HHI			HMD			HSHI		
				2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Energy management	RT-EE-130a.1	Total energy consumed	TJ	140	153	167	8,986	9,186	9,463	2,691	2,865	2,903	4,347	4,395	4,096
		Percentage grid electricity <sup>1</sup>	Ratio (%)	56.43	58.82	60.95	69.71	66.67	66.13	76.73	76.72	75.92	71.87	71.04	71.29
		Percentage renewable <sup>2</sup>	Ratio (%)	0	0	0	0.027	0.028	0.026	0	0	0	0	0	0
Employee health & safety	RT-IG-320a.1	Total Recordable Incident Rate (TRIR)	Ratio (%)	0.143	0	0	0.205	0.214	0.177	0.260	0.272	0.259	0.225	0.128	0.168
		Fatality rate	Ratio (%)	0	0	0	0.014	0.011	0.007	0	0	0	0	0	0.028
		Near Miss Frequency Rate (NMFR)	Ratio (%)	0	0	0	3.811	3.111	4.245	3.603	3.256	7.755	95.10	251.05	580.69
Fuel economy & Emissions in usephase	RT-IG-410a.1	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	gal/1,000 ton-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 (No <sub>x</sub> )	g/kWh	-	-	-	Marine Engine Tier II 12.8 Tier III 2.2 HIMSEN Engine Tier II 8.6 Tier III 1.9	Marine Engine Tier II 12.1 Tier III 1.9 HIMSEN Engine Tier II 8.4 Tier III 1.8	Marine Engine Tier II 12.2 Tier III 2.1 HIMSEN Engine Tier II 8.3 Tier III 1.7	-	-	-	-	-	-
		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	Reporting currency	Operation of Raw Material Risk Committee <sup>4</sup>			Operation of Raw Material Risk Committee <sup>4</sup>			Operation of Raw Material Risk Committee <sup>4</sup>			Management of impact and risks posed by the changes in raw material (iron ore, copper, nickel, crude oil) prices and exchange rate	Management of impact and risks posed by the changes in raw material (iron ore, copper, nickel, crude oil) prices and exchange rate	Management of impact and risks posed by the changes in raw material (iron ore, copper, nickel, crude oil) prices and exchange rate

1. Items marked with a - (hyphen) are either not applicable or unmanaged.  
 2. Percentage grid electricity = (Indirect energy usage ÷ Direct energy usage).  
 3. Percentage renewable = (Renewable energy usage ÷ Total energy usage).  
 4. Major raw materials such as steel have high volatility in supply and demand, price, and quality, which is essential for the sustainable management of HDKSOE and its shipbuilding subsidiaries. Accordingly, through the operation of the Raw Material Risk Committee, price trends of raw materials are periodically identified, and the impact of price changes (including estimates) is analyzed and reflected in the management strategy. Raw Material Risk Committee discusses and deliberates on risk analysis, management policies, and hedge policies linked to raw material demand plans.

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Category	SASB Code	Accounting Metrics	Unit	HDKSOE			HHI			HMD			HSHI		
				2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Remanufacturing design & Services	RT-IG-440b.1	Revenue from remanufactured products and remanufacturing services	Reporting currency	-	-	-	-	-	-	-	-	-	-	-	-
Activity metrics	RT-IG-000.A	Number of units produced by product category	Number	-	-	-	T/K 2 ships SHITTLE T/K 2 ships LNGC 7 ships LPGC 7 ships VLCC 5 ships VLOC 5 ships CNTR 5 ships LNG FSRU 1 ship TOTAL 34 ships	T/K 6 ships LNGC 10 ships LPGC 8 ships VLCC 1 ship VLOC 2 ships VLEC 3 ships CNTR 13 ships LNG FSRU 1 ship TOTAL 44 ships	T/K 2 ships CNTR 6 ships LNGC 8 ships LPGC 3 ships VLEC 2 ships SHITTLE T/K 2 ships VLCC 14 ships TOTAL 37 ships	PC 43 ships LPGC 2 ships ROPAX 1 ship CONT 20 ships B/C 4 ships TOTAL 70 ships	P/C 35 ships LPG 4 ships LNG 1 ship RO-PAX 1 ship CONT 4 ships RO-RO 1 ship TOTAL 46 ships	P/C 40 ships LPG 10 ships LNG 1 ship RO-PAX 1 ships CONT 11 ships RO-RO 1 ship B/C 2 ships TOTAL 66 ships	T/K 9 ships LNGC 6 ships COT 6 ships LNGC 9 ships VLCC 6 ships VLOC 2 ships CNTR 3 ships B/C 2 ships TOTAL 28 ships	B/C 1 ship CNTR 2 ships COT 6 ships LNGC 9 ships PC 3 ships VLCC 6 ships VLOC 3 ships TOTAL 32 ships	B/C 1 ship CNTR 5 ships COT 3 ships LNGC 7 ships LPGC 4 ships VLCC 9 ships VLOC 2 ships TOTAL 31 ships
	RT-IG-000.B	Number of employees	Number	655	649	890	13,423	12,811	12,765	3,066	3,024	3,103	3,631	3,501	3,778

1. Items marked with a - (hyphen) are either not applicable or unmanaged.

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# TCFD Index

## Governance

- a. Describe the board's oversight of climate-related risks and opportunities
- b. Describe management's role in assessing and managing climate-related risks and opportunities

## Board Oversight of Climate-related Risks and Opportunities

HDKSOE and its shipbuilding subsidiaries operate the ESG Committee under the supervision of the board of directors to manage and oversee climate change issues. The ESG Committee formulates mid- to long-term strategies for climate change response and oversees climate-related activities for sustainable growth. The Chief ESG Officer monitors climate change response efforts, reviews the implementation progress, and reports the outcomes to the board of directors.

## Management's Role in Assessing and Managing Climate Change-related Risks and Opportunities

The importance of management's role in establishing and managing climate change response strategies is becoming increasingly apparent. HDKSOE and its shipbuilding subsidiaries manage climate change response activities through management and operational organizations. The ESG consultative body, composed of ESG executives from the group and each company, takes the lead in establishing a systematic management system by ensuring the development and implementation of climate change response strategies. The ESG Working Group, under the Group ESG Council, is responsible for consulting and discussing business promotion and detailed implementation plans in the field. Additionally, the ESG working-level consultative body discusses the establishment of ESG promotion strategies and implementation plans to generate topics for reporting to the Group ESG Council. Climate change response-related matters discussed in the council are reported to the Chief ESG Officer, CEO, and ESG Committee of each company, depending on the issue and decision-making system. Also, current status and results of the issues are reported regularly.

### Organization of the ESG Committee and Its Role in Response to Climate Change

Committee	Composition		Subject of Right
ESG Committee	Internal Director	Ka Sam-hyun	Deliberation and resolution of the following matters ① Establishment and implementation of the company's climate change response strategy ② Matters related to the company's environmental responsibility ③ Matters necessary for support for the development and internalization of the company's climate change response capabilities ④ Other matters discussed by the committee as it was determined that deliberation was necessary in relation to climate change response
	Outside Director	Lim Suk-sig Jo Young-hee	

### Current Status of ESG Committee Meetings Related to Climate Change Response

Committee	Data	Agenda
ESG Committee	2022.02.07	<ul style="list-style-type: none"> <li>• Report on ESG performance in 2021 and plans for 2022</li> <li>- Report on the establishment of environmental management governance to respond to climate change</li> <li>- Report on key strategic tasks to respond to climate change</li> <li>- Diagnosis of climate change-related risks and reporting of plans to establish response strategies</li> <li>- Establishment of carbon-neutral goals and report on implementation roadmap establishment plan</li> </ul>
	2022.03.07	<ul style="list-style-type: none"> <li>• Approval of the carbon neutral roadmap and external declaration</li> <li>- Mid- to long-term climate change response strategy and 2050 carbon neutral implementation roadmap approved</li> <li>• Report on non-financial risk management promotion plan (climate change/environmental management)</li> <li>- GHG Scope 3 emission calculation and disclosure status report</li> <li>- Report on external initiative activities and results (CDP and TCFD, etc.)</li> <li>- Ship LCA (Life Cycle Assessment) promotion plan report</li> <li>- Report on plans to strengthen environmental management</li> </ul>

### Group ESG Council for Response to Climate Change and ESG Working Group Activities

Name	Date	Agenda
1 <sup>st</sup> Group ESG Council in 2022	2022.03.18	<ul style="list-style-type: none"> <li>• Presentation of ESG management best practices</li> <li>- Greenhouse gas emission reduction effect through steel reduction activities</li> <li>• Key initiatives for 2022</li> <li>- Establish climate change response strategy and risk management plan</li> <li>- Establishment of climate change-related information disclosure plan</li> <li>- Promote energy improvement to respond to the climate crisis</li> </ul>
1 <sup>st</sup> ESG Working Group in 2022	2022.04.06	<ul style="list-style-type: none"> <li>• Plan for disclosure of for carbon neutrality declaration and implementation roadmap</li> <li>• External communication plan such as CDP and TCFD</li> <li>• Classification of eco-friendly products according to the green taxonomy (K-Taxonomy)</li> <li>• Disclosure Response Plan for Climate Change</li> </ul>
2 <sup>nd</sup> ESG Working Group in 2022	2022.07.15	<ul style="list-style-type: none"> <li>• Plan for disclosure of carbon neutrality declaration and implementation roadmap</li> <li>• Development of KPI Category for Environmental Management and Climate Change Response Management</li> </ul>
2 <sup>nd</sup> Group ESG Council in 2022	2022.08.23	<ul style="list-style-type: none"> <li>• (Invited lecture by outside person) Necessity to respond to climate change, response strategy and public disclosure plan</li> <li>• Report on climate change response strategy and carbon neutral implementation roadmap establishment results</li> </ul>
3 <sup>rd</sup> ESG Working Group in 2022	2022.11.04	<ul style="list-style-type: none"> <li>• Renewable energy procurement plan and group affiliate RE100 pilot project progress status</li> <li>• Response to Climate Change in the Supply Chain</li> </ul>
1 <sup>st</sup> ESG Working Group in 2023	2023.01.31	<ul style="list-style-type: none"> <li>• Sharing best practices of ESG management</li> <li>- Energy Source Unit KPI setting</li> <li>- Weather management excellent company certification, scrap metal circulation and energy efficiency cases</li> <li>• Response to Climate Change Risks in the Supply Chain</li> <li>• Supply chain climate change policy and due diligence measures</li> </ul>

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## TCFD Index

### Strategy

- a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term
- b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning
- c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

### Risks & Opportunities Related to Climate Change and Their Impact on the Organization's Business, Strategy and Finances (Transition Risk)

#### Policy and Regulatory Transition Risk

Risk	Financial Impact	Affected Period	Risk and Opportunity Factors
Carbon Tax and Carbon Price Rise	●	short/medium/long term	Risk Factors - Increase in energy material procurement costs - Increased purchase cost of greenhouse gas emission credits Opportunity Factor - Reduce operating costs and improve production efficiency by converting to eco-friendly, high-efficiency facilities
Reinforcing greenhouse gas emission regulations	●	Short term	Risk Factors - Increase in technology product development costs and changes in customer requirements in accordance with global regulations such as IMO and EU Opportunity Factor - Increased orders for new eco-friendly, high-efficiency, high-value-added ships due to increased acceptance of replacing aging ships

High ● Mid ●

#### Transition Risk Response Strategy

##### Green Partnership

HDKSOE and its shipbuilding subsidiaries actively participate in climate change-related initiatives both domestically and internationally. This is done in order to comply with international regulations and contribute to the practice of net zero carbon emissions. Since 2022, we have been participating in the Carbon Disclosure Project (CDP) and providing detailed carbon emission information through disclosure. Additionally, we calculate and disclose the financial impact of climate change risks and opportunities in accordance with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). In May 2023, along with the disclosure of our net zero carbon emissions, declaration and implementation roadmap, we have set a goal that aligns with the international community's requirement of limiting the global temperature increase to 1.5°C or below, as stipulated in the Paris Climate Agreement. We have established a pathway to achieve this goal, actively participating in the global movement towards net zero carbon emissions.

### Strategies for Responding to Climate Change-related Transition Risks

HDKSOE and its shipbuilding subsidiaries identify potential risks in our business management activities by sector and conduct risk capacity evaluations. These evaluations involve scenario-based assessments to objectively analyze our ability to cope with similar situations. Additionally, we identify factors of opportunity by responding to and overcoming risk situations, actively incorporating them into our strategies to address climate change.

#### Market Transition Risk

Risk	Financial Impact	Affected Period	Risk and Opportunity Factors
Energy source change	●	short/medium term	Risk Factors - Decreased sales of fossil fuel carriers - Decreased offshore plant orders Opportunity Factor - Increase in orders for ships carrying new energy sources (hydrogen, carbon dioxide, etc.) - Expansion of new business portfolio
Rapid change in ship demand	●	short/medium term	Risk factors - Increase in the cost of developing low-carbon/non-carbon/fuel-powered ships opportunity factor - Increased orders for low-carbon and non-carbon fuel-powered ships
Pressure of eco-friendly production	●	short-term	Risk factors - Increased demand for reduction of GHG emissions caused by the use of eco-friendly raw materials and product manufacturing Opportunity factor - Increased demand for new technology and eco-friendly production technology

High ● Mid ●

#### Green Product

HDKSOE and its shipbuilding subsidiaries are actively working on the development of advanced LNG DF propulsion ships and reducing methane slip, in anticipation of the future era of carbon-free ships. We are taking gradual steps towards transitioning to carbon-free ships and focusing our efforts on developing vessels powered by eco-friendly fuels such as methanol, ammonia, electricity, and hydrogen. Through these initiatives, we aim to contribute to the reduction of greenhouse gas emissions in marine transportation, while also meeting the evolving market demand for energy sources and fulfilling various customer needs. By leading the way in the eco-friendly ship market, we strive to make a positive impact on the industry.

#### Technology Transition Risk

Risk	Financial Impact	Affected Period	Risk and Opportunity Factors
Increasing demand for technological advancement	●	Short term	Risk Factors - Increased investment amount required for technological improvement Opportunity Factors - Sales increase due to conversion to high-efficiency ships or low-GHG emission ships
Emerging the need for next-generation technology development	●	short/medium term	Risk Factors - Increase in development cost - Declining market share due to delays in new technologies Opportunity Factors - Advancing into the low-carbon market and securing a preemptive share - Expansion of new business portfolio

High ● Mid ●

#### Reputation Conversion Risk

Risk	Financial Impact	Affected Period	Risk and Opportunity Factors
Stakeholder Demand Changes	●	Short-mid term	Risk factors - Increased cost of complying with investment policy standards of investment institutions and response to global initiatives Opportunity factor - Securing competitiveness in winning orders by improving eco-friendly image

High ● Mid ●

#### Green Shipyard

HDKSOE and its shipbuilding subsidiaries are actively working towards establishing a smart shipyard by 2030 through the FOS Project<sup>1</sup>. This project aims to enhance shipbuilding productivity and work stability, while achieving targets for cost reduction and greenhouse gas emissions by minimizing the use of raw and auxiliary materials.

1. For more details about the FOS (Future Of Shipyard) project, please refer to pages 82-83 of the report

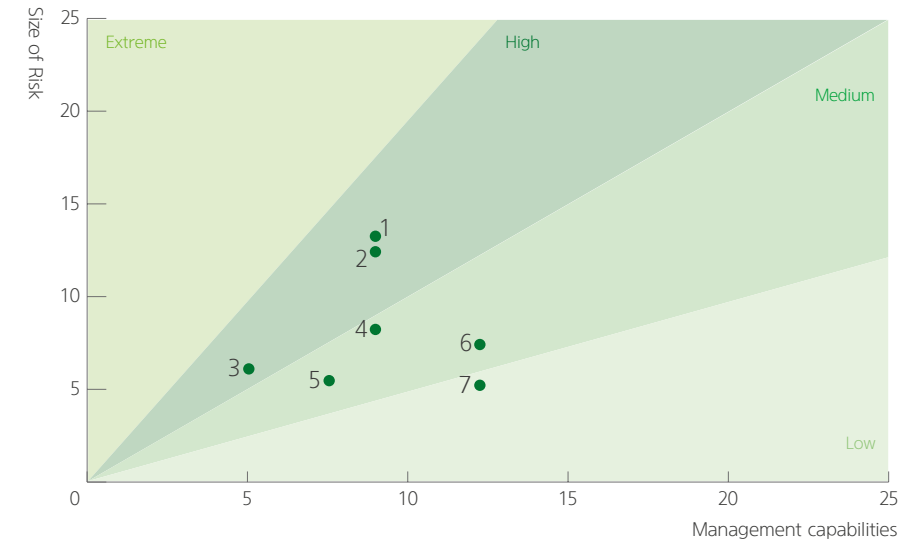
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## TCFD Index

### Physical Risks Related to Climate Change and Their Impact on Business Sites.

Extreme weather events pose significant physical risks to the operations of HDKSOE and its shipbuilding subsidiaries. The locations where HDKSOE and its subsidiaries are situated are vulnerable to risks such as typhoons, heavy rainfall, strong winds, river flooding, general flooding, and facility damage. These risks can result in primary damages, including the loss of business facilities, as well as secondary damages such as decreased productivity and project delays. In response, HDKSOE and its shipbuilding subsidiaries have identified the physical risks of climate-related disasters specific to the Ulsan region, based on research conducted by the Ulsan Research Institute. By compiling a list of climate disaster risks that could impact our business sites, we have evaluated the likelihood of occurrence, ripple effects, and our management capabilities.

As a result, high risks were identified for river flooding, general flooding, and facility damage caused by typhoons, heavy rainfall, and strong winds. These risks have the potential to cause harm to people and property, which directly impacts a company's reputation and finances. Based on the evaluation results, HDKSOE and its shipbuilding subsidiaries are planning to mitigate the likelihood of these risks and minimize losses resulting from climate change. We are also implementing proactive management practices to effectively respond to changes in the business environment.



### Physical Risk Response Strategy

No.	Climate Factor	Exposed Target	Vulnerability	Possible Event	Damage	Risk Assessment	Risk Management Measure
1	Typhoon-heavy rain	River	External water reflux	flooding	loss of life and property	Very high	Establish a company-wide typhoon situation management system <sup>1</sup> , write a typhoon response manual and conduct simulated training
2	Typhoon-heavy rain	Business site	Poor drainage	Inundation	loss of life and property	high	Establish a company-wide typhoon situation management system <sup>1</sup> , write a typhoon response manual and conduct simulated training
3	Typhoon-Strong wind	Business site	Facility loss	ship damage	Property damage, project delays	high	Establish a company-wide typhoon situation management system <sup>1</sup> , write a typhoon response manual and conduct simulated training
4	Typhoon-Strong wind	Business site	Facility loss	structure damage	Property damage, project delays	mid	Establish a company-wide typhoon situation management system <sup>1</sup> , write a typhoon response manual and conduct simulated training
5	Typhoon-Tsunami	coast	Low-lying ground	Inundation	loss of life and property	low	Establish a company-wide typhoon situation management system <sup>1</sup> , write a typhoon response manual and conduct simulated training
6	Sea-level rise	coast	Lack of response facilities	erosion, loss	loss of property	mid	Analysis of areas expected to flood through sea level rise simulator <sup>2</sup> , regular review of embankment reinforcement
7	Heavy snow, cold wave	Road transport	Vehicle traffic	Accident	loss of life	low	Introduction and operation of weather management system <sup>3</sup>

\* Source: Climate change risk assessment conducted by Ulsan Research Institute in April 2021. An expert panel conducted brainstorming sessions and qualitative research to identify a list of climate change risks that could impact Ulsan City. Subsequently, a quantitative risk assessment was performed as per the list.

1. A company-wide typhoon situation management system has been established to enable rapid response and follow-up in the event of an actual typhoon. This is achieved through systematic management of typhoon information and prevention, real-time sharing of typhoon conditions, aggregating the typhoon damage situation, and managing the recovery performance.  
 2. Simulations were conducted using the inundation simulator provided by Korea Marine Environment Management Corporation. The simulations utilized the RCP4.5 and RCP8.5 scenarios from the Representative Concentration Pathways (RCP) outlined in the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate. The simulations demonstrated the projected sea level rise and submerged areas.  
 3. HHI, HMD, and HSHI obtained certification for excellent weather management from the Korea Meteorological Administration in 2022. Utilizing a self-developed weather forecast system and other tools, we are able to predict heavy snowfall and cold waves in advance. Preemptive response measures are implemented, and action tips are provided to executives and employees

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## TCFD Index

### Risk Management

- a. Describe the organization's processes for identifying and assessing climate-related risk
- b. Describe the organization's processes for managing climate-related risks.
- c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management

### Operation of Integrated Company-wide Risk Management

To effectively address the rapidly changing type and scope of climate risks, we have implemented a systematic management process to identify, evaluate, and respond to climate change risk factors both within and outside the company. Additionally, we maintain ongoing integrated monitoring of climate change risks, and all of these processes are operated as part of a comprehensive company-wide management system.

Step	Climate Change Risk Assessment		Climate Change Related Risk identification & Assessment Process		Climate Change Related Risk Management Process		Operation
	Risk Identification	Response Capacity Evaluation	Risk Impact Assessment	Identification of Opportunities	Risk Management	Risk Acceptance (Optional)	Operation of Integrated Company-wide Risk Management
<b>Definition</b>	<ul style="list-style-type: none"> <li>• Identification of climate change-related issues by business site, region, and organization</li> <li>• Explain the impact of climate change on each business site, region, and organization</li> <li>• Description of risk factors related to climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation of climate change response and risk response capabilities of HDKSOE and its shipbuilding subsidiaries</li> <li>• Need to consider all stakeholders who may be affected by climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative impact assessment according to climate change risk type and response capacity evaluation</li> <li>• The risk impact is magnified as the magnitude and probability of the adverse impact increases.</li> <li>• Classification of stages such as High, Moderate, and Low</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying Opportunities for Strategy and Goal Achievement</li> <li>• Opportunities may exist regardless of climate risk impact assessment results</li> </ul>	<ul style="list-style-type: none"> <li>• Selection of management options based on risk impact assessment results</li> <li>• High &amp; Moderate: Need for climate change risk response strategy, plan integration and continuous monitoring</li> <li>• Low: No need to integrate into strategy, plan, but need to monitor potential risks</li> </ul>	<ul style="list-style-type: none"> <li>• When the negative impact of risk is greater, even when responding to climate change</li> <li>• When the costs outweigh the benefits</li> <li>• Risk acceptance can be considered</li> </ul>	<ul style="list-style-type: none"> <li>• Risk impact management and monitoring according to risk assessment results</li> <li>• Periodic risk impact assessment and review of response strategies based on results</li> <li>• Integrated management of overall non-financial risks, including climate change risks</li> <li>• Operate the ESG Advisory Group composed of experts in each field to support more professional and objective judgment</li> </ul>
<b>Key Questions</b>	<ul style="list-style-type: none"> <li>• What are the climate change risks faced by HDKSOE and its shipbuilding subsidiaries?</li> <li>• How will HDKSOE and its shipbuilding subsidiaries be affected when considering climate change forecasts?</li> </ul>	<ul style="list-style-type: none"> <li>• Are the human resources of HDKSOE and its shipbuilding subsidiaries secured to respond to climate change risks?</li> <li>• Is financial support available for climate change response?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the probability of occurrence of the risk?</li> <li>• What is the expected financial impact?</li> <li>• How does risk relate to business strategy?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the opportunity factors for addressing climate risks?</li> <li>• Are there opportunities due to changes in systems and regulations?</li> <li>• What are the advantages of pursuing opportunity factors?</li> </ul>	<ul style="list-style-type: none"> <li>• How much can climate risks and potential impacts be mitigated?</li> <li>• What are the investment and operating costs?</li> <li>• Can we flexibly respond to future environmental changes?</li> </ul>		
<b>Implementing Organization</b>	ESG Dept. For major risks, discussions with the ESG Working Group and the Group ESG Council • Reporting to the Chief ESG Officer				Chief ESG Officer • Group ESG Council discussion, ESG Advisory Group advisory, reporting to CEO  CEO • Reporting agenda to ESG Committee  ESG Committee • Agenda review and approval, integrated non-financial risk management	Board of Directors ESG Committee • Deliberation and management of environmental and social responsibility fulfillment and non-financial risk management strategies	



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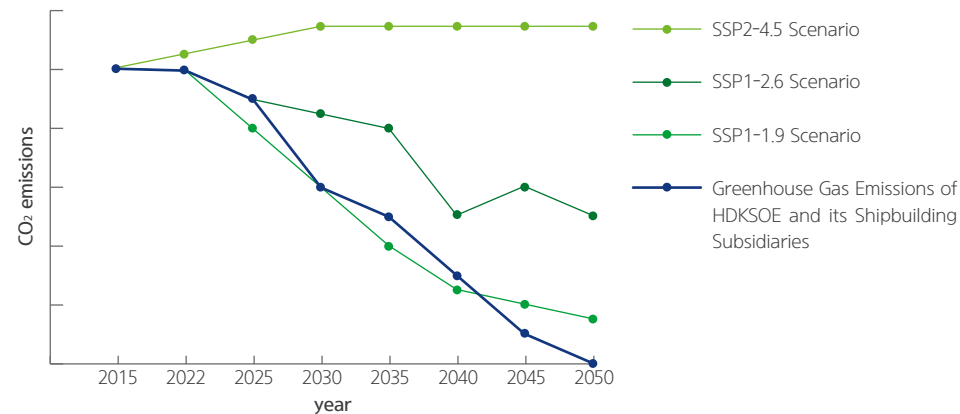
### Metrics and Targets

- a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process
- b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks
- c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets

### HDKSOE & Shipbuilding Subsidiaries Carbon Neutrality Roadmap Path for IPCC SSP Scenarios<sup>1</sup>

The carbon neutral roadmap of HDKSOE and its shipbuilding subsidiaries aligns with the commitment to reduce greenhouse gas emissions, aiming to limit the global average temperature increase to within 2°C compared to pre-industrial levels, as outlined in the Paris Climate Agreement. We also have established Pathway that conforms to the 1.5°C scenario required by the global market.

1. IPCC SSP: Intergovernmental Panel on Climate Change Shared Socio-economic Pathway Scenario in which the IPCC SSP predicted greenhouse gas emissions due to socioeconomic changes in the world by 2100



### Global Surface Temperature Changes by IPCC SSP Scenarios

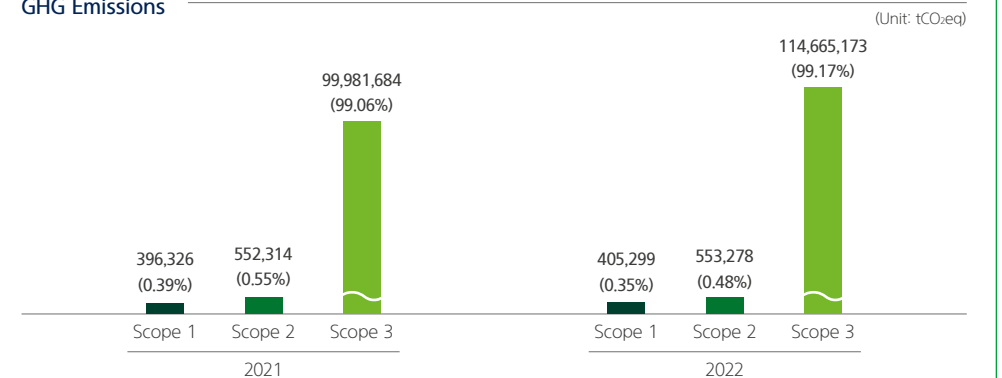
Scenario		SSP1-1.9	SSP1-2.6	SSP2-4.5
2021 - 2040	Best estimate (°C)	1.5	1.5	1.5
	Very likely range (°C)	1.2 to 1.7	1.2 to 1.8	1.2 to 1.8
2041 - 2060	Best estimate (°C)	1.6	1.7	2.0
	Very likely range (°C)	1.2 to 2.0	1.3 to 2.2	1.6 to 2.5
2061 - 2100	Best estimate (°C)	1.4	1.8	2.7
	Very likely range (°C)	1.0 to 1.8	1.3 to 2.4	2.1 to 3.5

### Climate Change Risk Management Indicators

HDKSOE and its shipbuilding subsidiaries assess and manage risks and opportunities related to climate change by monitoring indicators such as greenhouse gas and amount of waste disposed, as well as energy and renewable energy consumption. Air pollutants are monitored based on concentration and emission standards, and they are managed according to stricter standards than the legal requirements. For water pollutants, we implement self-management standards that are more stringent than the domestic legal standards, and take measures for improvement based on monitoring and evaluation.

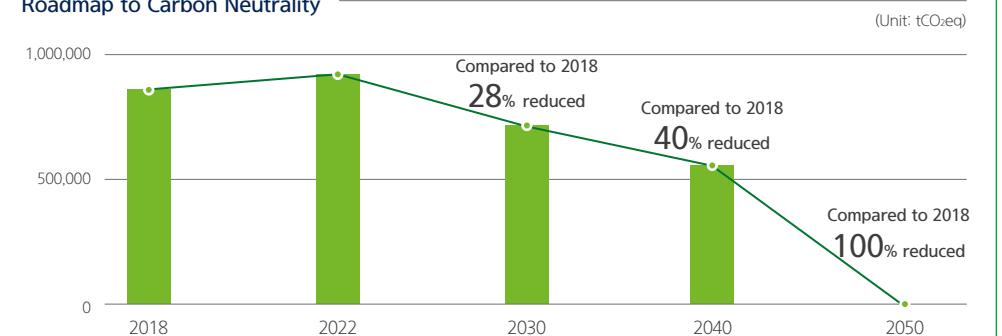
HDKSOE and its shipbuilding subsidiaries not only account for direct and indirect greenhouse gas emissions (Scope 1 and 2) generated from our operational sites, but also consider indirect emissions (Scope 3) occurring throughout the entire value chain, from raw material procurement to final consumer use and product disposal. We strive to enhance the management of greenhouse gas emissions across all value chains by calculating and disclosing them.

### GHG Emissions



### Mid- (2030, 2040) & Long-Term (2050) Goals for 2050 Carbon Neutrality

#### Roadmap to Carbon Neutrality



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## TCFD Index








### Strategies for Achieving Carbon Neutrality and Major Implementation Tasks

Carbon Neutrality Goal	Strategies to Achieve Carbon Neutrality	Major Implementation Tasks
<b>Carbon Neutrality for Scope 1, 2</b>		
<b>Mid-term Goal of GHG Reduction</b> 28.1% reduction in 2030 compared to 2018	Transition to Low-Carbon Fuels	<ul style="list-style-type: none"> <li>Securing manufacturing technology for low-carbon fuel-powered ship engines.</li> <li>Developed a low-carbon fuel-powered ship engine.</li> <li>Established a strategic alliance with a company possessing core technology for hydrogen combustion engines.</li> </ul>
<b>Long-term Goal of GHG Reduction</b> Achieving 100% reduction and carbon neutrality by 2050	Energy Efficiency and Electrification	<ul style="list-style-type: none"> <li>Install additional heat pumps when introducing new boilers and heaters</li> <li>Replacing LED lighting, inverter welding machine, dehumidifier, and pump</li> <li>Introduction of remote control technology for air compressors, introduction of leak detectors, etc.</li> </ul>
<b>Long-term Goal of Renewable Energy</b> 100% renewable energy by 2050	Introduction of New and Renewable Energy	<ul style="list-style-type: none"> <li>Installation and operation of solar and wind power generation in the factory</li> <li>Produce electricity by developing hydrogen combustion power generation</li> <li>Equity investment in solar/wind power projects</li> <li>Establishment of long-term partnership with power generation companies (PPA: Power Purchase Agreement, etc.)</li> <li>Low-cost, long-term PPA contract signed</li> </ul>
<b>Climate Change Communication</b>		
<b>Risk Management</b> Establishing and operating governance for climate change risk diagnosis and response	Establishment and Operation of Non-Financial Risk Management System	<ul style="list-style-type: none"> <li>Board of directors' ultimate responsibility for climate change issues and integrated company-wide management</li> <li>Measure the financial impact of climate change and respond to TCFD initiative</li> <li>Strengthen the BoDs' expertise in climate change</li> </ul>
<b>Response to Global Initiatives</b> Implementation of carbon reduction and climate change information disclosure required by global initiatives, such as CDP and TCFD	Scope 3 Calculation	<ul style="list-style-type: none"> <li>Response to initiatives through calculation of Scope 3 emissions</li> <li>Scope 3 emission management plan review</li> <li>Scope 3 reduction plan review and communication strategy</li> </ul>

# UN SDGs Index

HDKSOE and its shipbuilding subsidiaries are dedicated to advancing sustainable development globally by aligning with the United Nations Sustainable Development Goals (SDGs). Our focus lies in creating growth engines through innovation to drive economic development, job creation, and adopting business models that align with the SDGs. We prioritize technology development to minimize our environmental impact as a shared resource. We are striving to keep up with global trends through the SDGs, and map out mid- to long-term strategies for growth. Especially, putting our focus on 11 SDGs, including 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, and 16, along with 22 targets, we are committed to contributing to the goal achievement.

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KEY UN SDGs	Target	Page	Contribution Made by KSOE and Its Shipbuilding Subsidiaries
 Ensure healthy lives and promote well-being for all at all ages	3.4 • Reduce 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	72, 90	<ul style="list-style-type: none"> <li>Healthcare and medical expense support for the healthy lives of personnel through various programs: operation of the Health Promotion Center and Oriental Medical Center; and the provision of professional mental health promotion services such as psychological evaluation, group counseling and group psychological education</li> <li>Operation of the chemicals hazardous assessment through the chemical substance management system</li> </ul>
 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	101-103	<ul style="list-style-type: none"> <li>Identification of tech talents through the Core Skill Transfer Program, and cultivation of excellent talents through technology educational programs</li> <li>Participation in the national human resources development consortium and talent nurturing in the shipbuilding sector</li> </ul>
 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	68-69	<ul style="list-style-type: none"> <li>Effluent reduction and water quality improvement by reducing industrial water consumption and reuse</li> </ul>
 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 • energy efficiency	66-67, 82-84	<ul style="list-style-type: none"> <li>Development of green vessels and zero-carbon engines</li> <li>Preservation of an efficient energy management system through ISO 50001 certification</li> <li>Establishment of an optimal ship energy management system through developing autonomous intelligent ships</li> </ul>
 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	82-84, 92-96	<ul style="list-style-type: none"> <li>Expansion of high value-added industries, improvement of economic productivity, and job creation through establishing the DT-based smart shipyard</li> <li>Provision of education and financial services for co-prosperity with supplier companies</li> </ul>
 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.4 • Upgrade infrastructure and retrofit industries to make them sustainable, with increased resourceuse efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	82-84	<ul style="list-style-type: none"> <li>Reduce fuel costs and realize energy optimization through digital transformation of shipyards</li> </ul>
 Reduce inequality within and among countries	10.4 • Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	106-109	<ul style="list-style-type: none"> <li>Social contribution through care for the marginalized, co-existence with local communities, and support for the independence of future generations</li> </ul>
 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	68-73	<ul style="list-style-type: none"> <li>International certification for environmental management systems (ISO 14001)</li> <li>Minimization of pollutant discharge through the regular monitoring of concentration</li> <li>Install prevention facilities and train environmental personnel</li> <li>Find alternatives for hazardous chemicals and inspect facilities on a regular basis</li> <li>Data management regarding waste generation and recycling rates</li> </ul>
 Take urgent action to combat climate change and its impacts	13.2 • Integrate climate change measures into national policies, strategies and planning	49-52	<ul style="list-style-type: none"> <li>Declare carbon neutrality and build a roadmap</li> </ul>
 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 • Take measures to restore the sea for making a healthy and productive ocean	73	<ul style="list-style-type: none"> <li>Possession of marine accident prevention equipment and safety management associated with the arrival/departure of ships</li> <li>Operator training, and joint training on a continual basis</li> </ul>
 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 • 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	114-125	<ul style="list-style-type: none"> <li>Implementation of transparent and responsible management by valuing compliance and business ethics</li> <li>Realization of reasonable governance structure to maintain checks and balances</li> <li>Pursuit of inclusive management activities by engaging various stakeholders in management, including active communication with the labor union</li> </ul>

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## To: The Stakeholders of HD KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD.

### Introduction and Objectives of Work

BSI Group Korea (hereinafter “the Assurer”) was requested to verify HDKSOE Integrated Report 2022 (hereinafter “the Report”). This assurance statement applies only to the relevant information included in the scope of the assurance. HDKOSE is solely responsible for all information and assertion contained in the Report. The responsibility of the Assurer is to provide HDKOSE Management with independent assurance statement based on its expert opinions by applying the verification methodology for the specified assurance scope. It is also to provide the information to all stakeholders of HDKOSE.

### Standards and Levels

This assurance was based on the AA1000AS (Assurance Standard) v3 (2020) Assurance Standard and confirmed that the Report was prepared in accordance with the GRI Standards, the international standards guidelines of sustainability reports. In accordance with the AA1000 AS, the assurance level was Moderate Level, and conducted against Type 1 to confirm compliance with the four principles of the AA1000 AP (AccountAbility Principles) 2018 and the Type 2 assurance that verified the quality and reliability of the information disclosed in the report. Type 2 was limitedly verified against the topic standards below, based on the data and information provided by the reporting organization.

- GRI Topic Standards: 201-2, 203-1, 205-1~2, 302-1~4, 303-3, 305-1~3, 305-5, 305-7, 306-3~5, 308-1~2, 401-1~3, 403-1~10, 404-1~3, 405-2, 406-1, 413-1, 414-1~2

### Scope

- The scope of assurance applied to the Report is as follows;
- Report contents during the period from January 1<sup>st</sup> to December 31<sup>st</sup> 2022 included in the report, some data included 2023
  - Major assesstion included in the report, such as sustainability management policies and strategies, goals, projects, and performance, and the report contents related to material issues determined as a result of materiality assessment
  - Appropriateness and consistency of processes and systems for data collection, analysis and review

The following contents were not included in the scope of assurance.

- Financial information in Appendix
- Index items related to other international standards and initiatives other than the GRI
- Other related additional information such as the website, business annual report

### Methodology

As a part of its independent assurance, the Assurer has used the methodology developed for relevant evidence collection in order to comply with the verification criteria and to reduce errors in reporting. The Assurer has performed the following activities;

- Review of the system for sustainability management strategy process and implementation
- Review of materiality issue analysis process and prioritization by reviewing materiality issue analysis process and verifying the results
- Review of the evidence to support the material issues through interviews with senior managers with responsibility for them
- Verification of data generation, collection and reporting for each performance index

### Limitation

The Assurer performed limited verification for a limited period based on the data provided by the reporting organization. It implies that no significant errors were found during the verification process, and that there are limitations related to the inevitable risks that may exist. The Assurer does not provide assurance for possible future impacts that cannot be predicted or verified during the verification process and any additional aspects related thereto.

### Assurance Opinion

- On the basis of our methodology and the activities described above, it is our opinion that
- The information and data included in the Report are accurate and reliable and the Assurer cannot point out any substantial aspects of material with mistake or misstatement
  - The report is prepared in accordance with the GRI Standards. (Reporting in accordance with the GRI standards)
  - The assurance opinions on the four principles presented in the AA1000 AP (2018) are as follows

### AA1000 AP (2018)

#### Inclusivity: Stakeholder Engagement and Opinion

HDKOSE defined customers, shareholders/investors, partners, community, employees, gov/national assembly and media as key stakeholders groups, and operated communication channels for each stakeholder group for engagement. HDKOSE reflected material issues drawn through stakeholder channels in sustainability management decisions and disclosed the process in the Report.

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### Materiality: Identification and reporting of material sustainability topics

HDKOSE established the strategy related to sustainability management and established the process to derive reporting issues. HDKOSE identified financial and social/environmental impacts and derived 6 material issues based on the analysis of media research, benchmarking global advanced companies in its field, and analysis of major global initiatives related to sustainability.

### Responsiveness: Responding to material sustainability topics and related impacts

HDKOSE established the management process for material issues determined by the materiality assessment, implemented a response plan for each issue to appropriately respond to the derived material issues that reflects the expectations of stakeholders. HDKOSE disclosed the process including policy, indicator, activity and response performance on material issues in the Report.

### Impact: Impact of an organization's activities and material sustainability topics on the organization and stakeholders

HDKOSE established the process to identify and evaluate the impact on organizations and stakeholders related to material issues. HDKOSE used impacts, risk and opportunity factor analysis results for material issues to make decisions to develop response strategies for each issue, and disclosed the process in the Report.

### Key areas for ongoing development

- HDKSOE established ESG strategies and plans related to major sustainability issues in the shipbuilding industry, and accordingly, disclosed Scope 3 emissions from the establishment of a carbon neutral strategy roadmap. In addition, it may be helpful to advance sustainability management system by specifying biodiversity-related strategies and goals based on marine ecosystem protection and environmental conservation management activities carried out by HDKSOE.
- It may be helpful to advance sustainability management system by clarifying metrics and management methodologies.

### Statement of independence and competence

The Assurer is an independent professional institution that specializes in quality, health, safety, social and environmental management with almost 120 years history in providing independent assurance services. No member of the assurance team has a business relationship with HDKOSE. The Assurer has conducted this verification independently, and there has been no conflict of interest. All assurers who participated in the assurance have qualifications as an AA1000AS assurer, have a lot of assurance experience, and have in-depth understanding of the BSI Group's assurance standard methodology.

### Evaluation against GRI 'In Accordance' Criteria

The Assurer confirmed that the Report was prepared in accordance with the GRI Standards and the disclosures related to the following Universal Standards and Topic Standards Indicators based on the data provided by HDKOSE, the sector standard was not applied.

#### [Universal Standards]

2-1 to 2-5 (The organization and its reporting practices), 2-6 to 2-8 (Activities and workers), 2-9 to 2-21 (Governance), 2-22 to 2-28 (Strategy, policies and practices), 2-29 to 2-30 (Stakeholder engagement), 3-1 to 3-3 (Material Topics Disclosures)

#### [Topic Standards]

201-1~4, 202-1~2, 203-1~2, 204-1, 205-1~3, 206-1, 302-1~5, 303-1~3, 304-1~2, 304-4, 305-1~7, 306-1~5, 308-1~2, 401-1~3, 402-1, 403-1~10, 404-1, 404-3, 405-1~2, 406-1, 407-1, 408-1, 409-1, 413-1, 414-1~2, 415-1, 416-1~2, 417-1~3, 418-1



23<sup>rd</sup> June 2023

S. H. Lim/BSI Group Korea, Managing Director

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## Verification Statement on 2022 Scope 3 Greenhouse Gas Emission Report

### Verification Target

Korean Foundation for Quality (hereinafter 'KFQ') has conducted a verification of Scope 3 Greenhouse Gas Emissions (hereinafter 'GHG Inventory') of HD Korea Shipbuilding & Offshore Engineering Co., Ltd., HD Hyundai Heavy Industries Co.,Ltd., Hyundai Mipo Dockyard Co.,Ltd., Hyundai Samho Heavy Industries Co.,Ltd. for 2022.

### Verification Scope

The verification Scope covered the emission categories selected by the company and the emissions between January 1<sup>st</sup>, 2022 to December 31<sup>st</sup>,

### Verification Criteria

"WBCSD/WRI, Corporate Value Chain (Scope 3) Accounting and Reporting Standard", "Guidelines for Preparation of Environmental Performance Statements (MOE Notification 2021 65)", and "ISO 14064 3". In addition, the following criteria and coefficients used by the company were applied.

• **Criteria**

- ISO 14064 1:2019, GHG Protocol Corporate Standard

• **Coefficient**

- Emission factors presented by operators in each category to their Scope 3 GHG inventory

### Level of Assurance

The verification was performed in accordance with the procedures specified in ISO 14064 3 and the assurance level of the verification was performed to satisfy the limited assurance level.

### Verification Limitation

The accuracy and completeness of the emission data presented in the GHG inventory has inherent limitations that may arise depending on the nature of the data and the method of determining, calculating, and estimating the figures.

### Verification Opinions

Through the verification process according to the 'ISO 14064 3:2006' KFQ could obtain reasonable basis to express following conclusion on the Greenhouse Gas Emission Report.

- 1) Scope 3 emissions for 2022 of Company were properly calculated according to the verification standards.
- 2) For Scope 3 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 emissions were transparently reflected in the internal calculation process.

### Appendix A. Summary of Scope3 GHG Emission Results

**Organization:** HD Korea Shipbuilding & Offshore Engineering, HD Hyundai Heavy Industries, Hyundai Mipo Dockyard, Hyundai Samho Heavy Industries

**Emission calculation period:** The emission calculation period is from January 1<sup>st</sup> to December 31<sup>st</sup>, 2022

Unit: tCO<sub>2</sub>e<sub>q</sub>

	Category	HDKSOE	HHI	HMD	HSHI
1	Purchased goods & services	4,523	2,586,628	1,210,194	2,167,905
2	Capital goods	-	44,190	7,681	38,125
3	Fuel and Energy Related Activities Not Included in Scope 1 or Scope 2	703	39,905	10,945	15,359
4	Upstream Transportation and Distribution	-	37,132	27,726	2,015
5	Waste Generated in Operations	69	9,293	23,746	16,739
6	Business Travel	383	5,193	425	310
7	Employee Commuting	282	13,951	2,793	9,843
11	Use of Sold Products	-	49,166,120	20,341,722	38,918,514
12	End of Life Treatment of Sold Products	-	5,066	1,567	3,164
15	Investments	20,486	-	-	-
	<b>Total</b>	<b>26,445</b>	<b>51,907,477</b>	<b>21,626,799</b>	<b>41,171,974</b>

※ As total emissions are summed by rounding emissions by category to whole numbers, a difference of 1tCO<sub>2</sub>e<sub>q</sub> may occur

May 31<sup>st</sup> 2023

CEO Ji Young Song


Korean Foundation for Quality

*Ji Young Song*




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**Winner of CES 2023 Innovation Awards**


- HDKSOE
- AI and big data-based fuel supply management system
- Next-generation electric propulsion system



**CDP Carbon Management Special Award**


- HDKSOE

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**Acquired Family-friendly Corporation Certification**

- HDKSOE
- HMD
- HHI
- HSHI



**Obtained Excellent Weather Management Company Certification**

- HHI
- HMD
- HSHI

### Public Information

Disclosure Channels for Additional Management Information	Channels
HD Hyundai Website	<a href="http://www.hdhyundai.co.kr/">http://www.hdhyundai.co.kr/</a>
HD Hyundai ESG Website	<a href="https://esg.hdhyundai.co.kr/">https://esg.hdhyundai.co.kr/</a>
HDKSOE Website	<a href="http://hdksoe.co.kr">http://hdksoe.co.kr</a>
HHI Website	<a href="http://hhi.co.kr">http://hhi.co.kr</a>
HMD Website	<a href="http://www.hmd.co.kr">http://www.hmd.co.kr</a>
HSHI Website	<a href="http://www.hshi.co.kr">http://www.hshi.co.kr</a>
HD Hyundai Business Ethics Website	<a href="http://ethics.hdhyundai.co.kr/html/main.html">http://ethics.hdhyundai.co.kr/html/main.html</a>
Financial Supervisory Service (FSS) Data Analysis, Retrieval and Transfer System (DART)	<a href="http://dart.fss.or.kr/">http://dart.fss.or.kr/</a>
Company briefing	<a href="http://www.hdksoe.co.kr/ir05">http://www.hdksoe.co.kr/ir05</a>

### Membership Status

Membership Status	HDKSOE	HHI	HMD	HSHI
Korea Enterprises Federation		○	○	○
Korea International Trade Association	○	○	○	○
Korean Standards Association		○	○	○
Korea Chamber of Commerce & Industry	○	○	○	○
Korea Listed Companies Association	○	○	○	
Fair Competition Federation	○		○	
Korea Offshore & Shipbuilding Association		○	○	○
Korea Association of Machinery Industry		○		
Korea Defence Industry Association		○		
Korea Association for Space Technology Promotion		○		

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### HDKSOE

Management Support Team, Technology Management Dept., Internal Accounting Audit Support Team, Corporate Relations Team, Talent Acquisition Team, Security Planning Team, Security Operation Team, CSR Planning Team, Tax Support Team, Consolidation Accounting Team, Business Ethics Planning Team, Legal Affairs/Compliance Team, Intellectual Property Dept., PR Team, AI Solution Research Dept., ESG Team, GRC Operation Team, HR Planning Team, HR Value Team, HR Management Team, HSE Strategy Team, IR Team, SD Business Administration Dept.

### HMD

Initial Planning Dept., Co-prosperity Dept., Digital Innovation Dept., Legal Affairs Team, Project & Production Planning Dept., Coexisting Cooperation Dept., Hull Quality Management Dept., System Quality Management Dept., Facility Maintenance Dept., Safety Dept., Cost Management Dept., Material Purchasing Dept., Design Collaboration Dept., General Affairs Dept., PR Team, Environment & Health Dept., Accounting Dept., HR Dept., Hyundai Vietnam Shipbuilding, HD Hyundai Engineering & Technology

### HHI

Management Planning Team, Procurement Planning Dept., Technology Planning Dept., Green Resources Dept., Co-prosperity Planning Dept., Corporate Culture & P.R. Dept., Legal/Security Support Team, Legal Dept., Coexisting Planning Team, Facility Planning Dept., Corporate Safety Dept., Corporate Safety and Health Supporting Dept., Engine & Machinery Business Planning Dept., Engine System Sales Dept. 1, Sales Research/Planning Team, Human Resources Education Center, Property Development Dept., Shipbuilding Business Planning Dept., General Affairs Dept., Naval & Special Ship Planning Dept., IP Management Team, Quality Planning Team, Accounting Dept., Offshore Contract Management Dept., Offshore Business Planning Team, ESG Dept., FOS Team, Human Resources Dept.

### HSHI

Maintenance Dept., Co-prosperity Dept., Digital Innovation Dept., Project & Production Planning Dept., Coexisting Cooperation Dept., Hull Quality Management Dept., System Quality Management Dept., Safety Planning Dept., Safety Dept., Human Resources Development Dept., Materials Procurement Dept., General Affairs Dept., Environment & Health Dept., Accounting Dept., DT Innovation Planning Dept., HR Dept.



