

# Hanwha Corporation

## 2024 Sustainability Report

# ABOUT THIS REPORT

## Report Overview

Hanwha Corporation has been publishing an annual Sustainability Report since 2021, detailing the economic, social, and environmental outcomes created by its business activities as well as its sustainability efforts. This report incorporates a double materiality assessment that reflects stakeholder opinions, provides a detailed account of material issue, and transparently discloses sustainability activities and achievements undertaken by Hanwha Corporation in 2023 to facilitate communication with stakeholders.

## Reporting Principles

This report adheres to the Global Reporting Initiative (GRI) Standards 2021, the global benchmark for sustainability reporting. It also aligns with metrics outlined in global sustainability initiatives such as: the UN Sustainable Development Goals (SDGs), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-related Financial Disclosures (TCFD). The financial information included in this report has been prepared based on Korean International Financial Reporting Standards (K-IFRS).

## Reporting Period

This report covers financial and non-financial performance from January 1, 2023, to December 31, 2023. Some achievements from the first half of 2024 are included to ensure the timeliness and relevance of information. In addition, quantitative data is reported for the most recent four-year period (2020-2023) to enable year-on-year trend analysis.

## Reporting Scope

This report covers Hanwha Corporation's headquarters and all business sites in Korea under its three business divisions: Global, E&C, and Momentum. Although the Momentum Division is scheduled for a spin-off in July 2024, the report comprehensively covers the sustainability efforts, activities, and achievements of all three divisions up to December 31, 2023. Any data requiring specific attention to scope and boundaries has been clearly annotated for the convenience of readers.

## Assurance

Financial information extracted from the financial statements included in this report has been independently audited by Ernst & Young Han Young. Data within the ESG Factbook has been verified by the independent assurance entity, RSM Shinhan Accounting Corporation, according to the Korean Institute of Certified Public Accountants' Standards for Assurance Engagements Other than Audits or Reviews of Historical Financial Information.

## Contact Information

This report is published in Korean and English and can be viewed in either language and/or downloaded from Hanwha Corporation's website. For any inquiries or feedback regarding this report, please refer to the contact information below.

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# Overview

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# CEO Message

First and foremost, I would like to extend my heartfelt gratitude to all stakeholders who have supported Hanwha Corporation’s sustainability management over the years.

Established in 1952 with the founding philosophy of “Contributing to the nation and society,” Hanwha Corporation has been a driving force behind the global transformation for the past 70 years. Based on the mission statement “Going Further Together,” we aim to grow sustainably alongside our employees, suppliers, customers, and communities.

Hanwha Corporation is proactively addressing various global environmental risks, such as climate change and biodiversity loss. As a Great Challenger who continually innovates and takes on new challenges, we are committed to pursuing sustainable development through environmentally-conscious ESG management.

In areas such as safety and health, human rights, win-win cooperation, and social contribution activities, we identify and improve upon our goals annually to more firmly internalize our ESG management principles. We are also diligent about fulfilling our corporate social responsibilities through the creation of social value.

Furthermore, Hanwha Corporation has solidified its governance structure to enhance long-term corporate value and integrated ESG principles into all aspects of its management. The ESG Committee, which is comprised of members based on a commitment to expertise, diversity, and independence, oversees and supervises ESG-related matters. Additionally, the ESG Council, which consists of various operational modules, ensures rapid decision-making by the management and accelerates ESG management.

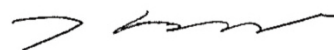
By disclosing Hanwha Corporation’s achievements and goals in each ESG area through our fourth Sustainability Report, we aim to actively communicate with all our stakeholders.

We are grateful for your continued support as Hanwha Corporation embarks on the journey to realize its ESG management vision of “Achieving Sustainable Development that Enhances the Value of Human Life.”

Thank you.

June 28, 2024

Seung Mo KIM, CEO



# Company Profile

Hanwha Corporation, the cornerstone of Hanwha Group, was established in 1952 based on the founding philosophy of “Contributing to the nation and society.” Over the past 70 years, Hanwha has driven industrial progress and fostered significant changes in the world. Building on this proud legacy, we continue to forge new roads by embracing challenges and innovating as “Great Challengers.”

## Corporate Information

Company Name	Hanwha Corporation
Representative Directors	Dong Kwan KIM, Seung Mo KIM, Ki Won YANG
Headquarters	86 Cheonggyecheon-ro, Jung-gu, Seoul, Korea
Date Founded	October 28, 1952
Number of Employees	5,115 (as of December 31, 2023)
Website (URL)	<a href="https://www.hanwhacorp.co.kr">https://www.hanwhacorp.co.kr</a>
Credit Rating (Corporate Bonds)	NICE Credit Rating: A+ for six consecutive years Korea Ratings: A+ for six consecutive years

## Business Areas

<b>Hanwha Corporation Global Division<sup>1)</sup></b>	<b>Hanwha Corporation E&amp;C Division<sup>2)</sup></b>	<b>Hanwha Corporation Momentum Division<sup>3)</sup></b>
<b>Provides chemical technology-based solutions connecting energy and the environment</b> Industrial explosives, promotions for fireworks festivals, mining services, eco-friendly energy, and petrochemical and inorganic chemical products	<b>Creatively builds global infrastructure for eco-friendly and sustainable development</b> Complex development, residential projects, renovation, architecture, infrastructure, wind power, plant construction, and overseas projects	<b>Offers Total Engineering Solutions for the advancement of society</b> Equipment for rechargeable battery manufacturing, solar energy production, display and clean logistics, cooperative robots, and factory automation (AGV, automated warehouses, logistics centers)

1) In July 2024, the plant business of Hanwha Corporation Global Division will be transferred to Hanwha Ocean. This report outlines the details of the plant business as of pre-transfer.  
 2) In July 2024, the offshore wind power business of Hanwha Corporation E&C Division will be transferred to Hanwha Ocean. This report outlines the details of the offshore wind power business as of pre-transfer.  
 3) In July 2024, the solar business of Hanwha Corporation/Momentum Division will be transferred to Hanwha Solutions, and the Momentum Division will be split off to become 'Hanwha Momentum'. In this report, all references to Hanwha Corporation Momentum Division are based on its status prior to the split-off.

## Key Affiliates of Hanwha Group

(as of the end of December 31, 2023)

<b>HanwhaSolutions</b> Business Area Solar power, chemicals, advanced materials Ownership Stake of Hanwha Corporation <b>36.31%</b>	<b>HanwhaAerospace</b> Business Area Defense, space, future mobility Ownership Stake of Hanwha Corporation <b>33.95%</b>	<b>HanwhaLife</b> Business Area Insurance, securities Ownership Stake of Hanwha Corporation <b>43.24%</b>	<b>HanwhaGalleria</b> Business Area Department stores, wholesale and retail trade Ownership Stake of Hanwha Corporation <b>36.31%</b>	<b>HanwhaHotels&amp;Resorts</b> Business Area Resorts, golf clubs, hotels Ownership Stake of Hanwha Corporation <b>49.80%</b>
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## Key Figures

(as of the end of December 31, 2023, separate financial statements)

<b>Total Assets</b> KRW <b>10.5066</b> trillion	<b>Revenue</b> KRW <b>7.1864</b> trillion	<b>Operating Profit</b> KRW <b>171.8</b> billion	<b>R&amp;D Investment</b> KRW <b>36.7</b> billion	<b>Number of Intellectual Properties*</b> Global 85 E&C 223 Total <b>451</b> Momentum 143 (*Number of intellectual properties held by Hanwha Corporation/Momentum Division excludes pending applications in Korea and overseas.)	<b>Number of Affiliates</b> Korea 103 Overseas 776 Total <b>879</b>
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# Our History

- **1952**
  - Hanwha Explosives Co., Ltd. established (currently, Hanwha Corporation)
- **1957**
  - Dynamite production successfully made 100% domestic
- **1974**
  - Designated as defense industry company
- **1982**
  - Awarded Gold Tower Order of Industrial Service Merit and \$100 Million Export Tower on Trade Day

- **1991**
  - Boeun Plant completed
- **1992**
  - Incheon Plant's nitric acid facility completed
- **1993**
  - Name changed to Hanwha Corporation
- **1998**
  - Awarded Silver Tower Order of Industrial Service Merit and \$1 Billion Export Tower on Trade Day

- **2000**
  - 1<sup>st</sup> Seoul International Fireworks Festival held
- **2008**
  - Awarded Gold Tower Order of Industrial Service Merit and \$2 Billion Export Tower on Trade Day

- **2010**
  - Merged with Micro Aero Robots
- **2014**
  - Contract signed on acquisition of Samsung Techwin and Samsung Thales
- **2018**
  - Named as official sponsor of 2018 PyeongChang Winter Olympics and Paralympics

- **2022**
  - Merger with Hanwha E&C

## Business History

## ESG History

1952

1990

2000

2010

2023

- **1991**
  - Environmental policy (ECO-2000 campaign) announced (first by a Korean company)
- **1996**
  - ISO14001 certification acquired for Boeun Plant
- **1997**
  - Boeun Plant designated as "green business" (status maintained)

- **2000**
  - Environmental Safety and Health Policy (ECO-YHES) declared
- **2003**
  - Commitment to ethical management proclaimed
- **2007**
  - Onsan Plant's "N<sub>2</sub>O reduction project" certified as Clean Development Mechanism (CDM)

- **2012**
  - Environment, Safety and Health (ESH) System computerized
- **2013**
  - Certified as family-friendly company
- **2016**
  - Yeosu Plant recognized as leading resource circulation company
- **2017**
  - Received A rating in integrated ESG evaluation from Korea Institute of Corporate Governance and Sustainability (KCGS)
- **2018**
  - Awarded top prize in Central Security Audit (citation from Ministry of National Defense)
- **2019**
  - Acquired Excellent grade in Win-Win Growth Index
  - Acquired Best rating in Fair Trade Agreement Implementation Evaluation
  - Received Seoul Mayor's Award at Seoul Social Contribution Awards
  - Received 20th Korean Volunteer Award for Enhancing Dignity for Veterans

- **2020**
  - Acquired A rating in integrated ESG evaluation from Korea Institute of Corporate Governance and Sustainability (KCGS)
  - CSO (Chief Safety & Environment Officer) system established
- **2021**
  - ESG Committee and ESG Council established
  - First sustainability report published
  - Named as Excellent ESG Management Company by Shinhan Bank
  - Designated as Excellent Disclosure Company by Korea Exchange
  - Issued KRW 150 billion in green bonds
- **2022**
  - Issued KRW 150 billion in green bonds
  - Acquired Excellent (A) ESG rating from NICE Credit Rating
- **2023**
  - Issued KRW 430 billion in green bonds
  - PF procured for Daejeon Sewage Treatment Plant
  - Received ministerial citation from Ministry of Science and ICT for plastic-to-hydrogen conversion technology
  - Received Carbon Management Honors in CDP Climate Change Response Industrial Materials sector

## Global Network

Hanwha Corporation operates 38 global bases, including headquarters, research centers, production facilities, subsidiaries, branch offices, and joint ventures.



Global Division	Name	Function	Location
Korea	Boeun Plant	Industrial explosives manufacturing	857, Hoinnaebuk-ro, Naebuk-myeon, Boeun-gun, Chungcheongbuk-do
	Onsan Plant	Nitric acid product manufacturing	32, Sannam-gil, Onsan-eup, Uiju-gun, Ulsan
	IS Development Team	Explosives and applied products research	857, Hoinnaebuk-ro, Naebuk-myeon, Boeun-gun, Chungcheongbuk-do
	EIS Development Team	Explosives and applied products research	305, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
	Material Research Center	IT and specialty materials research	76, Gajeong-ro, Yuseong-gu, Daejeon (inside Hanwha Solutions Central Research Institute)
	Busan Center	Sales of steel, bearings, and petrochemical products	17, Saebyeoksjang-ro, Sasang-gu, Busan
	Branches (5)	Sales of industrial explosives	Gyeongjin Area, Gyeongsang Area, Western Area, Chungcheong Area, Gangwon Area
Overseas	Corporation (12)	Sales of explosives products and goods	Indonesia, Australia, Chile, USA
	Branch (1)	Trading	USA (New Jersey), Germany, Japan, Hong Kong, Shanghai, Singapore, India, Peru
	Office (9)	Sales of explosives products and goods	South Africa
		Overseas sales	China (Beijing, Guangzhou), Indonesia, Philippines, Russia, Hungary, Poland, UAE, Kenya

E&C Division	Name	Function	Location
Overseas	Corporation (1)	Construction and plant projects (e.g., power, chemical)	Saudi Arabia (Al Khobar)
	Branch (3)	Overseas project procurement and development, construction (e.g., new towns, dome stadiums), plant projects (e.g., power generation)	Jordan, Philippines, Iraq
	Joint Venture (1)	Solar power generation	Jordan

Momentum Division	Name	Function	Location
Korea	Hanwha Future Technology Research Center	Industrial machinery research	305, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
	Changwon Plant	Industrial machinery production	9, Seongsanpaechong-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do
	Asan Plant	Industrial machinery production	312, Asanvalley-ro, Dunpo-myeon, Asan-si, Chungcheongnam-do

# Going Further Together

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# ESG Management of Hanwha Corporation

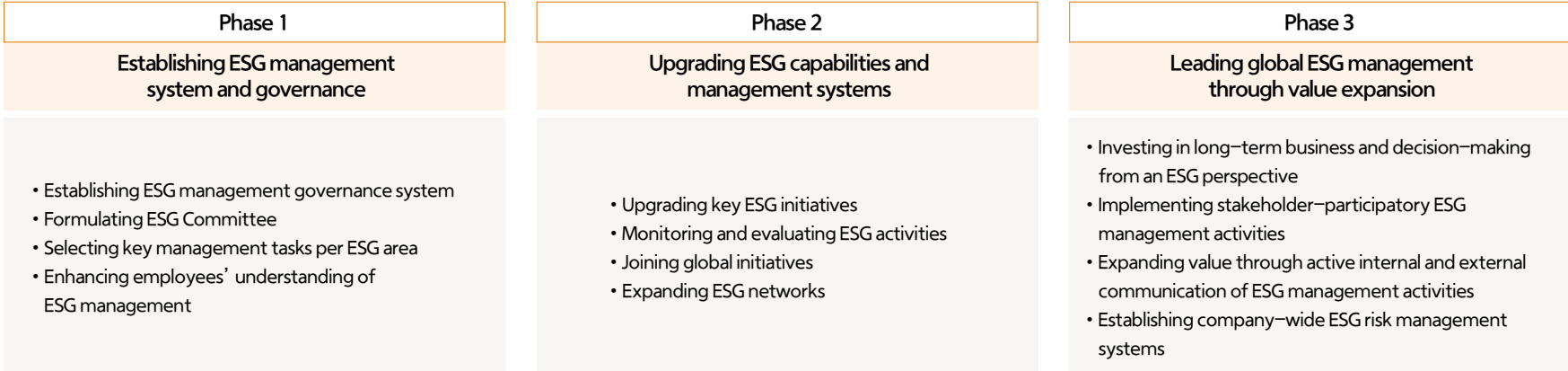
## ESG Management Implementation Strategy and Governance

### ESG Management Implementation Strategy

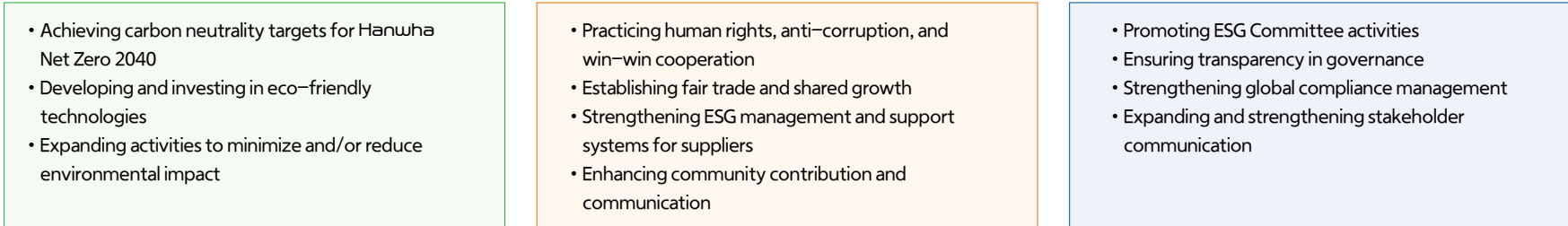
ESG Vision

Realizing Sustainable Development that Enhances the Value of Human Life

ESG Strategy



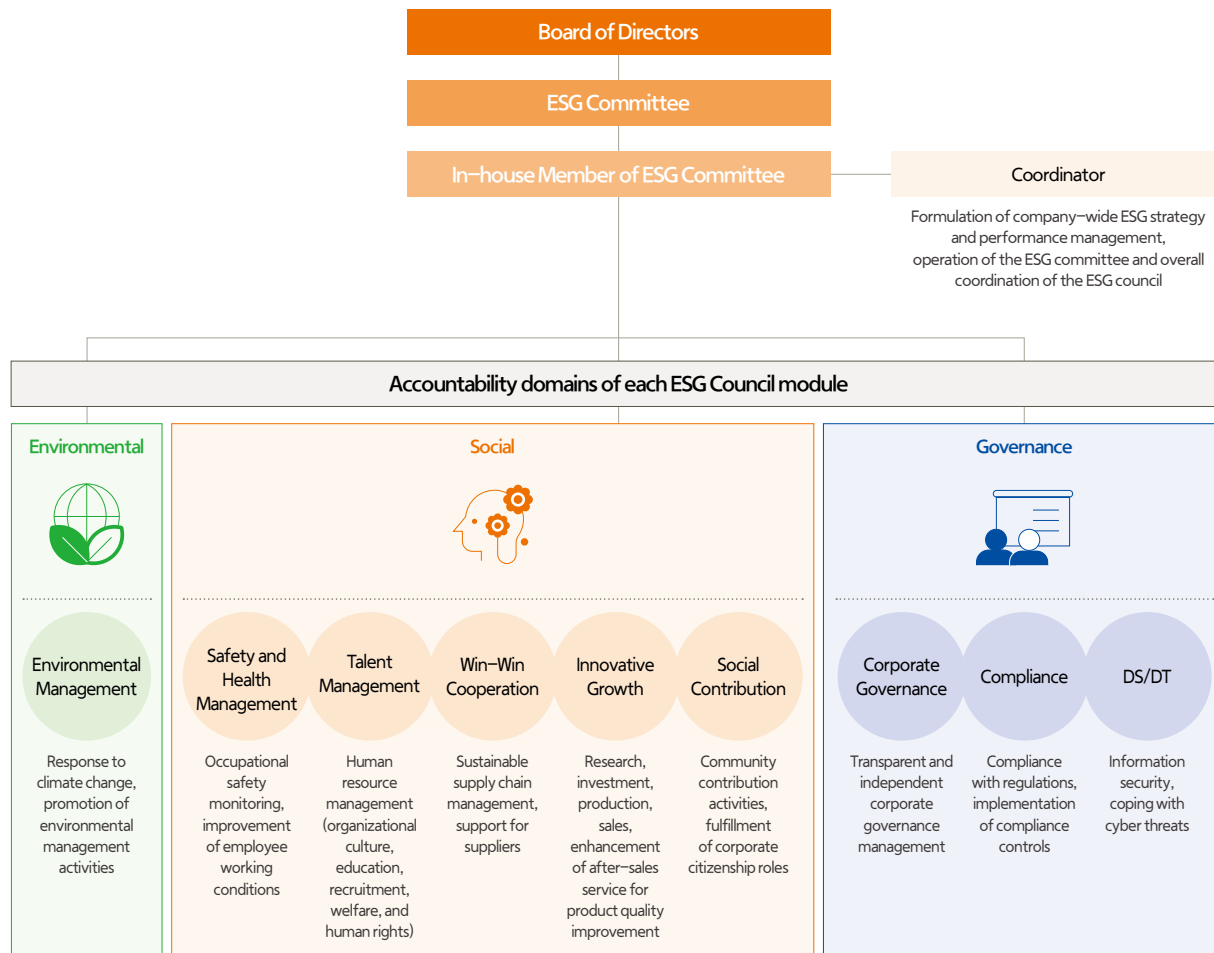
Key ESG Performance Metrics



## ESG Governance

Hanwha Corporation operates a governance system to promote its ESG management activities. In 2023, the ESG Committee (under the Board of Directors) convened a total of seven meetings that resolved issues related to environmental management, safety and health, compliance, social contribution, and human rights management performance. The ESG Council, the organization responsible for day-to-day applications of company-wide ESG management, maintains an organic ESG management system by sharing quarterly goals and performance through regular meetings and resolving company-wide ESG improvement tasks.

### ESG Implementation Governance Structure

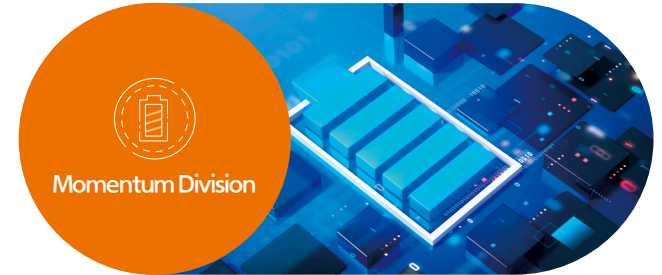


### ESG Committee Activities

Members	Meeting	Date	Agenda
Suk Jae LEE Ik Hwan KWON Hye Ryung BYON Ki Won YANG	1 <sup>st</sup>	Feb. 14, 2023	<ul style="list-style-type: none"> <li>Establishment of Hanwha Corporation 2023 Safety and Health Plan</li> <li>Briefing on 2022 Compliance Performance and 2023 Compliance Plan</li> <li>Briefing on 2022 Q4 ESG Management Performance and 2023 Q1 Plan</li> </ul>
	2 <sup>nd</sup>	Mar. 29, 2023	<ul style="list-style-type: none"> <li>Appointment of ESG Committee Chairperson</li> </ul>
	3 <sup>rd</sup>	Apr. 21, 2023	<ul style="list-style-type: none"> <li>Establishment of Hanwha Corporation Supplier Code of Conduct</li> <li>Briefing on 2023 Supplier Evaluation and Registration Plan</li> <li>Briefing on the 239-2nd Unsecured Public Bonds (ESG Bonds)</li> <li>Briefing on 2023 Q1 ESG Management Performance and 2023 Q2 Plan</li> </ul>
	4 <sup>th</sup>	Jun. 23, 2023	<ul style="list-style-type: none"> <li>Declaration of Hanwha Corporation Human Rights Management</li> <li>Briefing on 2023 Q2 ESG Management Performance and 2023 Q3 Plan</li> </ul>
	5 <sup>th</sup>	Jun. 28, 2023	<ul style="list-style-type: none"> <li>Declaration of Hanwha Corporation Human Rights Management</li> </ul>
	6 <sup>th</sup>	Oct. 4, 2023	<ul style="list-style-type: none"> <li>Briefing on Hanwha Corporation 2023 Social Contribution Activities</li> <li>Briefing on 2023 Q3 ESG Management Performance and 2023 Q4 Plan</li> </ul>
	7 <sup>th</sup>	Dec. 14, 2023	<ul style="list-style-type: none"> <li>Establishment of Hanwha 2040 Net Zero Target</li> <li>Joining of Hanwha Corporation in K-RE100</li> <li>Briefing on 2023 ESG Management Performance and 2024 Plan</li> </ul>

# Hanwha, the Great Challenger

## Hanwha Corporation's ESG Business Portfolio



### Net-Zero Solution

Hanwha Corporation, with over 30 years of experience in the ammonia business, is expanding the supply of clean ammonia, a rising eco-friendly energy source, both domestically and internationally. This effort positions the company as a leader in the global eco-friendly energy industry. In particular, through global business cooperation in North America, the company is establishing competitive blue ammonia production facilities and forming various partnerships across the entire Carbon Capture & Storage (CCS) value chain to develop economically viable CO<sub>2</sub> capture technologies. Additionally, leveraging its top-tier business portfolio and human network built in the domestic trading industry, the company is creating new business opportunities in areas such as recycled materials and specialty chemicals.

### Sustainable Materials

Hanwha Corporation is focusing on developing key materials in the bio, semiconductor, and battery sectors to create customer value and achieve sustainable growth. Firstly, the company aims to commercialize high-value-added bio/pharmaceutical materials through its own technology development and expand its portfolio to include active pharmaceutical ingredients. Additionally, the company is striving to develop high-performance materials that meet market demands, such as semiconductor miniaturization and integration, as well as eco-friendly Low GWP (Global Warming Potential) gases for carbon neutrality, to contribute to a sustainable future. In the rapidly expanding battery sector, driven by applications in electric vehicles and robotics, the company is working to secure core platform technologies to develop high-performance materials that overcome the functional limitations of existing materials. By consolidating the group's capabilities in battery component technologies (equipment, module development), the company is positioning itself to become a global leader in the IT materials sector.

### Water Treatment

Hanwha Corporation has built a unique competitive edge in the water treatment business by acquiring various environmental and patented technologies. In addition to successfully completing the Daesan Hydrogen Fuel Cell Power Plant in 2020 with utilization of by-product hydrogen, the company possesses extensive experience in the hydrogen energy sector. In 2023, following successful PF procurement for the Daejeon Sewage Treatment Plant modernization project, the company signed an implementation agreement for the modernization of the Pyeongtaek Tongbok Public Sewage Treatment Plant as a private investment project, positioning itself as a Green Infrastructure Developer providing comprehensive solutions beyond mere construction.

### Wind Power

Hanwha Corporation successfully completed the 76MW Yeongyang Wind Power Complex (22 units; 3.45MW per unit) and the 25MW Jeju Sumang Wind Power Complex (7 units; 3.6MW per unit) in 2020. In December 2022, the company signed a construction contract for the 90MW Yangyang Suri Wind Power Complex, currently under construction. Moreover, the company is leading the development of the 400MW Shinan Ui Offshore Wind Power Project, Korea's largest offshore wind power infrastructure, expanding its business scope from onshore to offshore wind power.

### Rechargeable Battery Manufacturing Equipment

Leveraging years of accumulated experience and proactive technology development capabilities, Hanwha Corporation supplies equipment to battery companies in Korea and internationally, earning their trust. The company has participated in major international battery industry exhibitions, such as The International Battery Seminar & Exhibit 2023, The Battery Show North America in the United States, and The Battery Show Europe in Germany, showcasing its battery brand and technology to the global market and focusing on global market marketing. Moving forward, Hanwha Corporation will be positioning itself as a key partner by providing verified product solutions, from materials to electrodes and assembly and formation processes, through consistent R&D investment.

### Solar Manufacturing Equipment

Hanwha Corporation manufactures specialized equipment for the solar cell and module sector based on its core vacuum deposition technology for solar cell processing. This gives the company capabilities to execute turnkey projects for high-quality, high-efficiency cell and module manufacturing equipment and contributes to revenue growth by expanding solar manufacturing equipment orders.

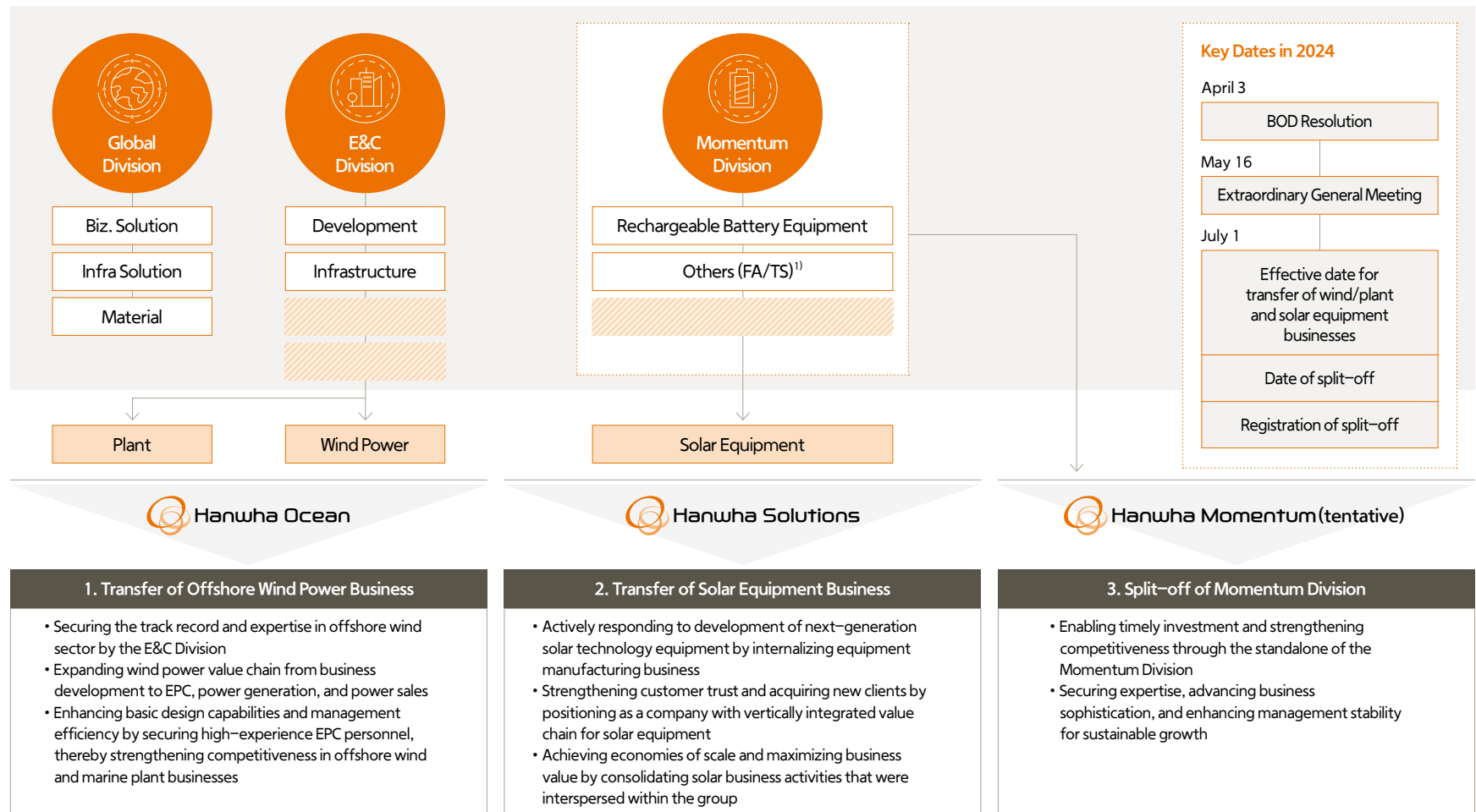
## Hanwha Group, ESG Total Solution Provider

### Specialization in ESG Business for Driving Green Growth

To ensure sustainable innovative growth, Hanwha Group is restructuring its business framework by consolidating and specializing its eco-friendly business sectors, thereby enhancing shareholder value. To make its businesses more competitive, the Momentum Division was split off from Hanwha Corporation. As part of this restructuring, the solar equipment business was transferred to Hanwha Solutions, a subsidiary, thereby completing Hanwha Group's solar value chain. In addition, the wind and plant businesses from the E&C Division were transferred to Hanwha Ocean, establishing it as a comprehensive solution provider for offshore wind power projects. Hanwha Group will continue to efficiently manage its unified eco-friendly business strategy, risk monitoring, and performance management through comprehensive value chain management.

Hanwha Corporation

Key Affiliates



1) FA: Factory Automation / TS: Thermo System

# ESG Highlights

Hanwha Corporation transparently discloses its key activities and achievements in the Environmental, Social, and Governance (ESG) areas for the years 2023–2024(H1), aiming to actively communicate with stakeholders.

## Environmental



### CARBON NEUTRALITY

- Conducted quantitative financial impact analysis based on climate risk scenarios
- Clean Development Mechanism (CDM)-related emission reduction: approximately 245,000 tCO<sub>2</sub>-eq (based on the year of KOC implementation)
- Performed Life Cycle Assessment (LCA) for key products (electronic detonators)

### CLEAN ENERGY

- Joined K-RE100
- Developed renewable energy and energy innovation technologies, including wind power, rechargeable batteries, and solar energy, etc.
- Expanded eco-friendly business across all divisions of Hanwha Corporation

### GREEN INVESTMENT

- Provided 8,047 hours of environmental education for all employees
- Invested in nitric acid and ammonia production
- Spent KRW 22.7 billion on environmental investments and expenditures

### RESOURCE CIRCULARITY

- Received ministerial citation for technology converting waste plastic to hydrogen in the E&C Division

### NATURAL CAPITAL

- Conducted "One Company, One Forest" natural environment cleanup campaign
- Performed ecological surveys of areas outside Boeun Plant
- Conducted an environmental impact assessment when opening a construction site for the E&C division

## Social



### SAFETY & HEALTH

- Trained 39,189 employees in occupational safety and health
- Achieved S rating (or higher) in Process Safety Management across all sites
- Maintained a zero Occupational Illness Frequency Rate (OIFR) at business sites in Korea for six years (Global and Momentum Divisions)

### HUMAN RIGHTS

- Spent KRW 78.68 billion in total welfare expenses
- Proclaimed the Human Rights Management Charter
- Maintained Family-Friendly Certification for 12 years

### SUPPLY CHAIN

- Trained 1,135 employees from suppliers
- Enhanced supply chain management through establishment of the Supplier Code of Conduct guidelines
- Provided ESG management consulting for 50 suppliers

### QUALITY MANAGEMENT

- Operated the Quality Information System (QIS)
- Identified 152 quality improvement tasks for suppliers.
- Obtained and maintained ISO 9001 certification for quality management systems across all business sites
- Recorded zero product recalls

### SOCIAL VALUE

- Established a Win-Win Fund of KRW 58.2 billion
- Engaged employees in 649 total volunteer hours
- Engaged 160 employees in volunteer activities
- Donated a total of KRW 5.392 billion
- Hosted the 2023 Seoul International Fireworks Festival with Hanwha

## Governance



### BOARD DIVERSITY

- Established Compensation Committee
- Female independent director in office
- Foreign independent director in office

### ESG GOVERNANCE

- Conducted ESG education for independent directors
- Reorganized ESG Council for more efficient role allocation through module segmentation

### COMPLIANCE

- Achieved a 100% rectification rate for internal reports related to compliance violations
- Emphasized compliance and ethical management by sending letters from the CEO to 2,636 suppliers
- Signed fair trade agreements with 310 suppliers

### RISK MANAGEMENT

- "Effective design and operation" ICFR (Internal Control over Financial Reporting) evaluation
- Established risk management regulations
- Enhanced the management of financial and non-financial risks

### CYBERSECURITY

- Announced Information Protection Declaration
- Recorded zero incidents of information security violations and personal data breaches

# Social Value Measurement (Long-term Value)

## Social Value Measurement

Hanwha Corporation recognizes the importance of intangible values that are neither measured nor discussed. In 2023, to evaluate the value delivered by Hanwha Corporation’s business activities to its stakeholders, the company attempted to measure and convert such activities into financial value using the EY Long-term Value Framework. The value of a company includes not only the value described by financial statements but also diverse formats and perspectives of value. These values should be measured and managed according to the company’s strategic priorities. The EY Long-term Value Framework aims to address the limitations of current market value measurement approaches by explaining a company’s long-term value through the measurement of intangible and non-financial values.

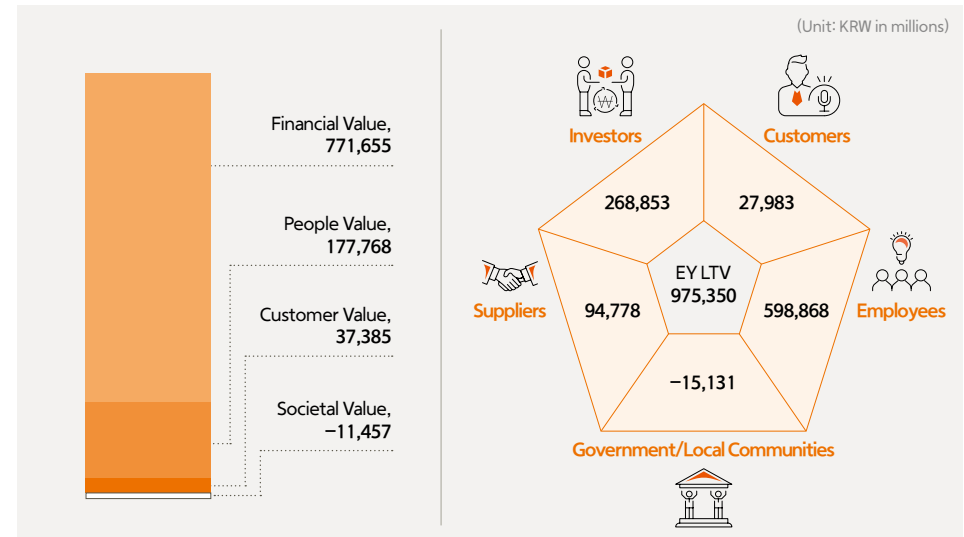
Hanwha Corporation categorized the value delivered to stakeholders through its business activities in 2023 from the perspective of long-term growth into four value categories of the EY Long-term Value Framework and measured them. This report discloses the results of such measurements.

## EY Long-term Value Measurement Framework

Value Category	Value Recognition Criteria	Key Measurement Metrics
Customer Value	The value provided by designing, developing, and providing products and services that meet customer needs from the perspectives of innovation, trust, and brand	<ul style="list-style-type: none"> <li>• Product R&amp;D</li> <li>• Communication with customers</li> <li>• Post-management of product service</li> <li>• Supplier technology development</li> </ul>
People Value	The value provided to enhance long-term quality of life in terms of culture, engagement, D&I, leadership, and safety	<ul style="list-style-type: none"> <li>• Support for supplier employee work environment improvement</li> <li>• Employee training/education</li> <li>• Safety accidents</li> <li>• Maternity protection and pursuit of diversity</li> <li>• Welfare expenses</li> </ul>
Societal Value	The value provided by a company from environmental, supply chain, regulatory, community, and economic perspectives	<ul style="list-style-type: none"> <li>• Greenhouse gas emissions</li> <li>• Air pollutant emissions</li> <li>• Waste discharge</li> <li>• Water pollutant emissions</li> <li>• Use of renewable energy</li> <li>• Local community contributions</li> </ul>
Financial Value	The value provided to enhance stakeholders’ financial value in a long-term and sustainable manner through revenue generation, cost optimization, and economic distribution	<ul style="list-style-type: none"> <li>• Dividends and interest expenses</li> <li>• Taxes</li> <li>• Wages</li> </ul>

## Hanwha Corporation Long-term Value Measurement Results

The long-term value measured for Hanwha Corporation amounts to KRW 975.3 billion. This figure represents the estimated size of Hanwha Corporation’s long-term intangible and non-financial values provided to stakeholders through its business activities, which have not been previously measured or discussed. Hanwha Corporation will continue its efforts to deliver long-term value to stakeholders through ongoing business activities.



The measurement was conducted with national statistics and research findings based on data managed by the company. The monetary values used for the measurement may vary depending on updated research outcomes. Since the completeness of measurement results cannot be verified, they should not be considered as part of the financial disclosures.

\* Measurement period: January 1, 2023 – December 31, 2023  
 \* Accounting standard: Separate basis  
 \* Business site criteria: All data related to support for suppliers, employee training, maternal protection, safety accidents, and societal value are calculated based on domestic business sites in Korea.

# ESG Impact

Double Materiality Assessment	17
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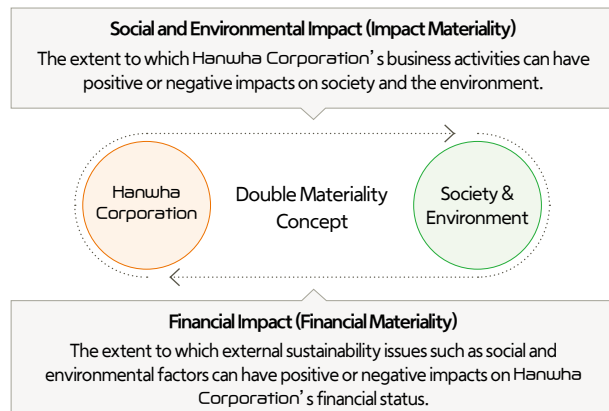
# Double Materiality Assessment

## Double Materiality Assessment Process

### Overview of Double Materiality Assessment

Hanwha Corporation conducts a double materiality assessment which comprehensively considers both social and environmental impacts and financial impacts from internal and external perspectives. This year, Hanwha Corporation implemented the principles of materiality judgment based on GRI 2021 standards and the guidelines on materiality assessment of the European Union’s Corporate Sustainability Reporting Directive (CSRD). Through this assessment, we identified material issues that impact both the company and its stakeholders and disclosed such issues in the sustainability report with complete transparency. Furthermore, such issues are integrated into the company’s management strategies and decision-making processes to create long-term value.

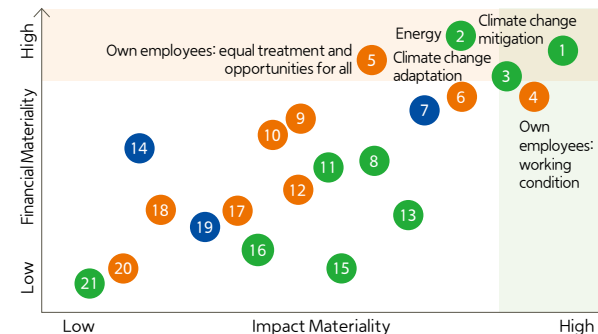
### Double Materiality Concept



### Double Materiality Assessment Process

<b>1 Identifying Issues and Developing a Pool</b>	<ul style="list-style-type: none"> <li>• Reflect issues listed in the European Sustainability Reporting Standards (ESRS)</li> <li>• Analyze international standards and ESG rating agencies’ requirements</li> <li>• Review global industry trends and issues within similar industries</li> <li>• Analyze internal management data and media reports → Develop a pool of 38 issues and then integrate similar/duplicate issues to select 21 issues to be reported on</li> <li>• Analyze the impact of the 21 issues across the value chain</li> </ul>
<b>2 Conducting Materiality Assessment</b>	<p><b>Impact Materiality Assessment</b></p> <ul style="list-style-type: none"> <li>• Analyze requirements of international standards such as GRI Standards, SASB, ESRS, and WEF-IBC Metrics</li> <li>• Review a total of 4,037 news articles from major media outlets in 2023</li> <li>• Benchmark global leaders and similar industries</li> <li>• Conduct perception surveys of a total of 77 internal and external stakeholders, including employees, customers, shareholders, investors, suppliers, local communities, and non-profit organizations</li> </ul> <p><b>Financial Materiality Assessment</b></p> <ul style="list-style-type: none"> <li>• Analyze international standards related to ESG finance and requirements of ESG rating agencies such as ESRS, ISSB, MSCI, DJSI, Sustainalytics, ISS-ESG, and KCGS</li> <li>• Conduct perception surveys of internal and external stakeholders</li> </ul>
<b>3 Designating and Reporting Issues</b>	<ul style="list-style-type: none"> <li>• Review and feedback from Hanwha Corporation’s ESG Council and management</li> <li>• Prioritize the 21 reporting issues and provide detailed reports on five most important material issues</li> </ul>

### Double Materiality Assessment Results



ENVIRONMENTAL	SOCIAL	GOVERNANCE
1 Climate change mitigation	8 Pollution of air	15 Resource outflows related to products and services
2 Energy	9 Communities’ economic, social and cultural rights	16 Water
3 Climate change adaptation	10 Personal safety of consumers and/or end-users	17 Own employees’ other work-related rights
4 Own employees’ working condition	11 Waste	18 Workers in the value chain’ other work-related rights
5 Own employees’ equal treatment and opportunities for all	12 Workers in the value chain’ equal treatment and opportunities for all	19 Protection of whistle-blowers
6 Workers in the value chain’ working conditions	13 Resource inflows, including resource use	20 Information-related impacts for consumers and/or end-users
7 Corruption and bribery	14 Business conduct	21 Direct impact drivers of biodiversity loss

## Issue Impact

In 2023, Hanwha Corporation conducted a double materiality assessment that comprehensively considers social and environmental impacts alongside financial ones. This assessment also distinguishes between the positive and negative impacts of each issue to identify both risks and opportunities. The issues identified as having the highest social and environmental impacts were “Energy”, “Climate change mitigation”, and “Own employees: equal treatment and opportunities for all”. Regarding financial impact, “Climate change mitigation”, along with “Climate change adaptation” and “Own employees: working conditions”, were found to have significant impact. Hanwha Corporation is committed to maintaining transparent communication with our stakeholders. To this end, the company provides detailed reports on the major activities and achievements related to these five key material issues in our sustainability report.






(■■■■: High / ■■■: Moderate / ■■: Low)

Rank	Reporting Issue	Impact Materiality		Financial Materiality		Value Chain Impact			ESRS Index	Report Section
		Positive	Negative	Positive	Negative	Upstream	Own Operation	Downstream		
1	Climate change mitigation	■■■■	■■■■	■■■■	■■■■	Moderate	High	Low	ESRS E1	p. 12–15, 19, 26–34, 37, 95
2	Energy	■■■■	■■■■	■■■■	■■■■	Moderate	High	Moderate	ESRS E1	p. 12–15, 20, 26–34, 37, 95
3	Climate change adaptation	■■■■	■■■■	■■■■	■■■■	Low	High	High	ESRS E1	p. 12–15, 19, 35–46, 95
4	Own employees: working condition	■■■■	■■■■	■■■■	■■■■	Low	Very High	Low	ESRS S1	p. 14–15, 20–21, 48–60, 98–104
5	Own employees: equal treatment and opportunities for all	■■	■■	■■	■■■■	Low	High	Low	ESRS S1	p. 14–15, 20–21, 54–60, 100–104
6	Workers in the value chain: working conditions	■■■■	■■■■	■■■■	■■■■	High	Moderate	Very High	ESRS S2	p. 14–15, 21, 51, 61–64, 69, 98–99, 104–105
7	Corruption and bribery	■■■■	■■	■■	■■	Low	High	Low	ESRS G1	p. 14–15, 81–85, 108
8	Pollution of air	■■	■■	■■	■■	Low	Moderate	High	ESRS E2	p. 14–15, 35–36, 39, 41, 96
9	Communities’ economic, social and cultural rights	■■	■■	■■	■■	Low	High	High	ESRS S3	p. 14–15, 21, 45, 71–74, 105
10	Personal safety of consumers and/or end-users	■■	■■	■■	■■	High	High	High	ESRS S4	p. 14–15, 21, 65–70, 105
11	Waste	■■	■■	■■	■■	Moderate	High	Moderate	ESRS E5	p. 14–15, 35–37, 39, 43–44, 97
12	Workers in the value chain: equal treatment and opportunities for all	■■	■■	■■	■■	High	Moderate	Very High	ESRS S2	p. 14–15, 21, 61–64, 69, 104–105
13	Resource inflows, including resource use	■■	■■■■	■■■■	■■	High	Moderate	Low	ESRS E5	p. 14–15, 35–37, 39, 43–44, 97
14	Business conduct	■	■	■	■■	Low	High	Low	ESRS G1	p. 14–15, 76, 81–85, 108
15	Resource outflows related to products and services	■■	■■	■■	■	Moderate	Moderate	High	ESRS E5	p. 14–15, 35–37, 39, 43–44, 97
16	Water	■	■	■	■	Low	High	High	ESRS E3	p. 14–15, 35–37, 39, 41–42, 95
17	Own employees: other work-related rights	■	■	■	■	Low	High	Low	ESRS S1	p. 14–15, 20–21, 59–60, 103, 108
18	Workers in the value chain: other work-related rights	■	■	■	■	High	Moderate	Very High	ESRS S2	p. 14–15, 21, 51, 61–64, 98–99, 104–105
19	Protection of whistle-blowers	■	■	■	■	Low	High	Low	ESRS G1	p. 14, 21, 60, 84–85, 108
20	Information-related impacts for consumers and/or end-users	■	■	■	■	Low	High	Low	ESRS S4	p. 14–15, 21, 67–70, 89–91, 105, 109
21	Direct impact drivers of biodiversity loss	■	■	■	■	Low	High	High	ESRS E4	p. 14–15, 39, 41–42, 45–46, 98

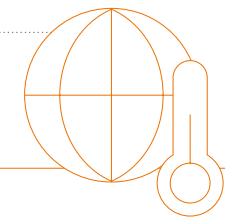
# Material Issue Management

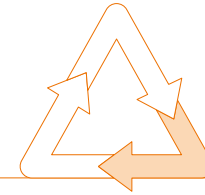
## Issue 1 Climate Change Response (Related Issues: Climate change mitigation, Climate change adaptation)



 <b>Issue Importance</b>	<p>With the enforcement of the Paris Climate Agreement and the efforts of carbon-neutral declaration countries, including Korea, the demand to cope with climate change is increasing. Mandatory disclosure of climate change impacts and related regulations such as the European Carbon Border Adjustment Mechanism (CBAM) can increase transition risks for companies. In addition, physical risks from extreme weather events can adversely affect business operations, including product production and supply, market accessibility, and resource prices, in various ways. Therefore, companies must engage in greenhouse gas reduction activities, minimize management risks arising from climate change, and create new business opportunities.</p>
 <b>Business Strategy</b>	<p>Hanwha Corporation has declared its commitment to achieving carbon neutrality through the goal "Hanwha 2040 Net Zero" and is actively implementing reduction activities to achieve it. To reduce greenhouse gases, it is participating in emissions trading schemes and CDM projects, enhancing energy management efficiency, and identifying new greenhouse gas reduction initiatives to create new business opportunities. Furthermore, through disclosures related to climate change such as CDP and TCFD, the company transparently communicates its risk management activities and performance in achieving climate change response goals to stakeholders.</p>
 <b>Targets and Metrics</b>	<ul style="list-style-type: none"> <li>• [Target] Reduce greenhouse gas emissions by 65% by 2030 compared to 2019 levels (Scope 1 and 2)</li> <li>• [Target] Achieve carbon neutrality by 2040 (Scope 1 and 2)</li> <li>• [Metric] Greenhouse gas emissions, greenhouse gas emissions intensity, greenhouse gas reductions</li> </ul>
 <b>Performance in 2023</b>	<ul style="list-style-type: none"> <li>• Greenhouse gas emissions: 68,748 tCO<sub>2</sub>-eq</li> <li>• Greenhouse gas emissions intensity: 0.98 tCO<sub>2</sub>-eq/KRW 100 million</li> <li>• Greenhouse gas reductions: 246,290 tCO<sub>2</sub>-eq</li> </ul>
 <b>Executive KPI</b>	<ul style="list-style-type: none"> <li>• Incorporate CDP ratings and greenhouse gas reduction performance into the KPI of the Chief Safety &amp; Environment Officer (CSO)</li> <li>• Manage climate change goals and performance achievements in connection with the performance of executives and managers</li> </ul>

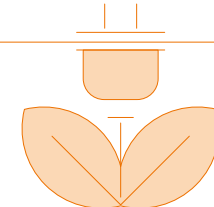
# Net Zero





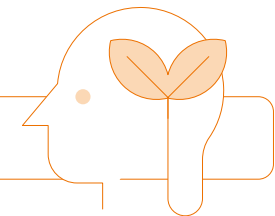
**Issue2** Energy Transition and Efficiency (Related Issue: Energy)

<b>Issue Importance</b>	<p>The global proliferation of the importance of greenhouse gas reduction is leading to similar emphasis on the significance of energy transition and energy efficiency. To achieve carbon neutrality goals, reducing greenhouse gas emissions through renewable energy transition and reducing usage through energy efficiency are especially recognized as essential tasks for the purpose of responding to rapidly-changing policies and markets. To this end, companies must invest in expanding renewable energy transition, adopting low-carbon technologies, and promoting energy efficiency. Such investments will help expand eco-friendly businesses, build sustainable business structures, and enhance competitiveness.</p>
<b>Business Strategy</b>	<p>Hanwha Corporation joined K-RE100 in January 2024 and is implementing detailed achievement strategies to transition all electricity used in its operations to renewable energy by 2040. In accordance with this commitment, Hanwha Group is expanding R&amp;D investments in rechargeable batteries and solar cells/modules to promote renewable energy transition, thereby broadening its eco-friendly, low-carbon energy business areas. Moreover, it is making continuous efforts to prevent environmental pollution through renewable energy generation projects, such as onshore and offshore wind farms.</p>
<b>Targets and Metrics</b>	<ul style="list-style-type: none"> <li>• [Target] Reduce energy consumption intensity by 3% compared to previous year</li> <li>• [Metric] Energy consumption intensity</li> </ul>
<b>Performance in 2023</b>	<ul style="list-style-type: none"> <li>• Energy consumption intensity: 0.0146 TJ/KRW 100 million</li> </ul>
<b>Executive KPI</b>	<ul style="list-style-type: none"> <li>• Incorporate greenhouse gas reduction performance from renewable energy use into the KPI of the Chief Safety &amp; Environment Officer (CSO)</li> </ul>









**Issue3** Human Resource Management (Related Issues: Own employees' working condition, Own employees' equal treatment and opportunities for all)

<b>Issue Importance</b>	<p>Human resources are the driving force of a company's competitiveness, ability to create values, and sustainable growth. Companies must provide working conditions and fair treatment and opportunities that comply with international labor and human rights standards. To attract and develop top talent, companies need to offer an engaging environment in which individuals can grow alongside the company and support skill development through consistent management. Furthermore, companies should create an environment that respects the rights of workers within the supply chain and community members to fulfill their social responsibility of ensuring the rights of all workers and contributing to community development.</p>																			
<b>Business Strategy</b>	<p>Hanwha Corporation is committed to creating a healthy and safe work environment to enhance employee satisfaction and engagement. It implements flexible working hours to support work-life balance and has established a psychological counseling center, Rapporena, to provide individual and group counseling sessions with trained counselors. Additionally, annual risk assessments are conducted for each division to manage potential direct and indirect hazards in the workplace. To prevent risks associated with the transport and storage of hazardous materials and ensure safety, the company operates a smart integrated control center. From the perspective of talent acquisition and capacity building, Hanwha Corporation focuses on the early identification of outstanding talent in key business areas, operates a qualification certification system based on job competencies, and actively supports self-directed growth through external training programs. For organizational and individual performance, the company has established a compensation system that fairly and transparently reflects both organizational and individual performance. It also manages unique goals (KPIs) for each job function. In addition, to enhance motivation, various reward schemes are implemented, including project incentives, spot and retention bonuses, awards for outstanding papers, and patent awards.</p>																			
<b>Targets and Metrics</b>	<ul style="list-style-type: none"> <li>• [Target] Recruitment of new talents (cases)</li> <li>• [Target] Education cost per person (KRW)</li> <li>• [Metric] Recruitment of new talents (cases)</li> <li>• [Metric] Education cost per person (KRW)</li> </ul>	<table border="1"> <thead> <tr> <th>Category</th> <th>Strategy</th> <th>Global</th> <th>E&amp;C</th> <th>Momentum</th> </tr> </thead> <tbody> <tr> <td>2024 recruitment targets</td> <td>14 cases</td> <td>63 cases</td> <td>20 cases</td> <td>47 cases</td> </tr> <tr> <td>2024 education cost per person targets</td> <td>KRW 670,000</td> <td>-</td> <td>-</td> <td>KRW 690,000</td> </tr> </tbody> </table>	Category	Strategy	Global	E&C	Momentum	2024 recruitment targets	14 cases	63 cases	20 cases	47 cases	2024 education cost per person targets	KRW 670,000	-	-	KRW 690,000			
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2024 recruitment targets	14 cases	63 cases	20 cases	47 cases																
2024 education cost per person targets	KRW 670,000	-	-	KRW 690,000																
<b>Performance in 2023</b>	<ul style="list-style-type: none"> <li>• Number of new hires in 2023: 149</li> </ul>																			



# Stakeholder Engagement

Hanwha Corporation defines key stakeholders as customers, employees, suppliers, shareholders and investors, government, and communities that are directly or indirectly influenced by its business activities. Based on the Hanwha philosophy of “Going Further Together,” the company operates various communication channels to listen to stakeholders’ interests and requirements, incorporating them into strategic planning and management activities to foster shared growth and build trust-based relationships.

Category	 <b>Customers</b>	 <b>Employees</b>	 <b>Suppliers</b>	 <b>Shareholders &amp; Investors</b>	 <b>Government</b>	 <b>Local communities</b>
<b>Definition</b>	Individuals and groups currently using or who may potentially use Hanwha Corporation’s products or services	Domestic and international employees of Hanwha Corporation	Companies scheduled or currently in manufacturing, construction, and service outsourcing transactions with Hanwha Corporation	Individuals and groups holding Hanwha Corporation’s issued shares	Policy and legislative organizations in countries and regions where Hanwha Corporation’s business sites are located and business activities are conducted	Communities and members affected by Hanwha Corporation’s business activities
<b>Key Concerns</b>	<ul style="list-style-type: none"> <li>Ensuring product and service quality and safety</li> <li>Expanding production of sustainable, eco-friendly products</li> <li>Managing reputation and enhancing customer satisfaction</li> <li>Preventing customer data leakage</li> </ul>	<ul style="list-style-type: none"> <li>Developing employee capabilities</li> <li>Ensuring fair performance evaluation and compensation</li> <li>Maintaining work-life balance</li> <li>Respecting employee human rights and diversity</li> <li>Strengthening employee health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Building cooperative relationships</li> <li>Practicing fair trade</li> <li>Enhancing communication and capabilities of suppliers</li> <li>Managing and supporting ESG risks</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing corporate value and creating economic performance</li> <li>Ensuring sound corporate governance</li> <li>Strengthening shareholder-friendly management</li> <li>Managing and responding to internal and external risks</li> <li>Disclosing information transparently</li> </ul>	<ul style="list-style-type: none"> <li>Complying with laws and regulations</li> <li>Strengthening public-private partnerships</li> <li>Disclosing information transparently</li> </ul>	<ul style="list-style-type: none"> <li>Contributing to community development and creating social value</li> <li>Protecting the local environment and preserving ecosystems</li> <li>Strengthening communication with local residents near facilities</li> </ul>
<b>Major Communication Channels</b>	<ul style="list-style-type: none"> <li>VOC channels</li> <li>Customer satisfaction surveys</li> <li>Seminars and forums</li> <li>Global exhibitions</li> <li>Official website and social media channels</li> </ul>	<ul style="list-style-type: none"> <li>Employee meetings, management briefings, and workshops</li> <li>Internal intranet and grievance handling channels</li> <li>Labor-management councils</li> <li>Organizational culture diagnostic surveys</li> </ul>	<ul style="list-style-type: none"> <li>Win-win cooperation meetings and shared growth councils</li> <li>Ethics Hotline and dispute resolution channels</li> <li>Various online and offline shared growth programs</li> <li>Education and consulting for suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Regular general meetings</li> <li>NDRs and conference calls in Korea and abroad</li> <li>Seminars and forums</li> <li>Disclosure materials (e.g., business reports, corporate governance reports, sustainability reports)</li> </ul>	<ul style="list-style-type: none"> <li>Government department and public institution cooperation programs</li> <li>Association memberships and activities</li> <li>Policy briefings and seminars</li> </ul>	<ul style="list-style-type: none"> <li>Hanwha Volunteer Corps</li> <li>Site-specific networks</li> <li>Various social contribution activities</li> <li>NGOs and related organizations</li> </ul>
<b>Response Activities</b>	<ul style="list-style-type: none"> <li>Acquiring global product quality and safety certifications by business division</li> <li>Developing new technologies and services reflecting customer needs</li> <li>Conducting customer satisfaction surveys and operating dedicated communication channels</li> <li>Establishing an integrated information security management system</li> </ul>	<ul style="list-style-type: none"> <li>Operating programs to attract outstanding talent and enhance employee capabilities</li> <li>Establishing objective and fair performance evaluations and reasonable compensation systems</li> <li>Improving working conditions and introducing various welfare systems</li> <li>Promoting a culture of respect for human rights, diversity, and inclusion</li> <li>Implementing data-based safety and health systems for proactive risk management</li> </ul>	<ul style="list-style-type: none"> <li>Establishing and adhering to four guidelines for shared growth</li> <li>Formulating and sharing supplier codes of conduct</li> <li>Operating various education and support programs for suppliers</li> <li>Supporting ESG management consulting for suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Formulating and adhering to the corporate governance charter</li> <li>Communicating with shareholders and investors through IR meetings and sharing management performance</li> <li>Generating profits through market expansion and product development</li> <li>Disclosing key IR materials in Korean and English</li> <li>Publishing business reports, corporate governance reports, sustainability reports, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Operating internal control systems and audit organizations</li> <li>Implementing cooperative projects with government and public institutions and participating in national projects</li> <li>Developing sustainable new technologies</li> <li>Paying taxes responsibly</li> </ul>	<ul style="list-style-type: none"> <li>Fundraising for the Bright World Fund</li> <li>Operating various social contribution programs focused on talent development, environmental protection, culture and the arts, and volunteer activities</li> <li>Promoting employee volunteer activities through paid volunteer work system during working hours</li> </ul>

# Commitment to UN SDGs

Hanwha Corporation is actively implementing various activities in accordance with the United Nations Sustainable Development Goals (UN SDGs), which comprise 17 common goals for the current and future peace and prosperity of humanity and the environment.

UN SDGs Goals and Targets		Key Activities	Key Achievements
 <b>1 NO POVERTY</b>	<b>End Poverty</b> Target 1.5: Build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters	<ul style="list-style-type: none"> <li>Supporting underprivileged neighbors and social welfare facilities through the Bright World Fund raised by employees and the company</li> <li>Offering special recruitment and additional points for individuals with disabilities and veterans</li> <li>Running special recruitment for families of Cheonan Sinking victims</li> </ul>	Total donations in 2023: KRW 5.392 billion
 <b>3 GOOD HEALTH AND WELL-BEING</b>	<b>Good Health and Well-being</b> Target 3.4: Reduce premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being Target 3.9: Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination	<ul style="list-style-type: none"> <li>Operating data-based health and safety systems to monitor safety management status</li> <li>Improving facilities and managing emissions to minimize environmental pollutants in processes</li> <li>Reducing hazardous chemical usage</li> <li>Operating various programs for physical and mental health management of employees</li> </ul>	Zero Occupational Illness Frequency Rate (OIFR) at domestic business sites for six years (Global and Momentum Divisions)
 <b>4 QUALITY EDUCATION</b>	<b>Quality Education</b> Target 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 Target 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	<ul style="list-style-type: none"> <li>Supporting living expenses, certification fees, and housing improvements for teen orphans who have aged out of orphanages or foster care</li> <li>Discovering future scientific talents through Hanwha Science Challenge</li> <li>Conducting career mentoring for underprivileged youth through Dream School</li> <li>Creating Forena Library by renovating idle spaces in social welfare facilities</li> </ul>	103 <sup>rd</sup> Forena Library established (2023)
 <b>5 GENDER EQUALITY</b>	<b>Gender Equality</b> Target 5.1: End all forms of discrimination against all women and girls everywhere Target 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life	<ul style="list-style-type: none"> <li>Ensuring board diversity by appointing female independent directors</li> <li>Operating various welfare systems for a female-friendly workplace</li> </ul>	Maintained Family-Friendly Certification for 12 years
 <b>6 CLEAN WATER AND SANITATION</b>	<b>Clean Water and Sanitation</b> Target 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. Target 6.4: Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity Target 6.6: Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes Target 6.7: Support and strengthen the participation of local communities in improving water and sanitation management	<ul style="list-style-type: none"> <li>Relocating and modernizing aged large-scale sewage treatment plants to reduce odor and improve water quality                             <ul style="list-style-type: none"> <li>Daejeon Sewage Treatment Plant modernization project: KRW 1.24 trillion procured for PF</li> <li>Pyeongtaek Tongbok Public Sewage Treatment Plant modernization project: Private investment agreement signed</li> </ul> </li> <li>Conducting regular water stress analysis for manufacturing sites</li> </ul>	Water intensity in 2023: 12.97 tons/krw (23% reduction from 2023 target)
 <b>7 AFFORDABLE AND CLEAN ENERGY</b>	<b>Affordable and Clean Energy</b> Target 7.1: Ensure universal access to affordable, reliable, and modern energy services Target 7.3: Double the global rate of improvement in energy efficiency.	<ul style="list-style-type: none"> <li>Issuing KRW 430 billion in green bonds for rechargeable battery facilities and solar power investments</li> <li>Increasing use of renewable energy by expanding solar power generation at facilities</li> <li>Expanding renewable energy technology development and plant construction</li> <li>Building infrastructure for clean ammonia distribution</li> </ul>	KRW 430 billion in green bonds issued
 <b>8 DECENT WORK AND ECONOMIC GROWTH</b>	<b>Decent Work and Economic Growth</b> Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading, and innovation, including through a focus on high-value added and labor-intensive sectors Target 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. Target 8.8: Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	<ul style="list-style-type: none"> <li>Supporting finance, management, technology education, and manpower centered on four shared growth strategies</li> <li>Implementing a "management doctor system" for suppliers to share management know-how</li> <li>Supporting and evaluating supplier safety management at facilities</li> </ul>	Earned 'Best' for the Win-Win Growth Index

UN SDGs Goals and Targets		Key Activities	Key Achievements
	<p>Industry, Innovation, and Infrastructure</p> <p>Target 9.4: Upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes</p> <p>Target 9.5: Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, particularly developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.</p>	<ul style="list-style-type: none"> <li>Acquiring specialized international standard certifications and patents for each product</li> <li>Strengthening technical and business cooperation through agreements with public and private enterprises</li> <li>Developing technologies for construction of global hydrogen ecosystem</li> <li>Ensuring zero information security breaches, zero cyber security incidents, and no privacy data leaks in 2023</li> </ul>	<p>575 domestic and international patents and trademarks registered</p>
	<p>Reduced Inequality</p> <p>Target 10.2: Empower and promote the social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or other status</p> <p>Target 10.4: Adopt policies, especially fiscal, wage, and social protection policies, and progressively achieve greater equality</p>	<ul style="list-style-type: none"> <li>Preventing and mitigating negative human rights impacts through safety management and gender equality assurance</li> <li>Cooperating and providing/receiving consultation through labor-management harmony</li> </ul>	<p>Established the 2023 Human Rights Management Charter</p>
	<p>Responsible Consumption and Production</p> <p>Target 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 to minimize their adverse impacts on human health and the environment</p> <p>Target 12.5: Substantially reduce waste generation through prevention, reduction, recycling, and reuse</p> <p>Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>	<ul style="list-style-type: none"> <li>Implementing an integrated environmental management system for air, water, and waste pollutants</li> <li>Introducing a real-name waste discharge system and computerized waste management system to minimize waste generation</li> <li>Recycling waste plastics through pyrolysis technology</li> <li>Publishing annual sustainability reports on Hanwha Corporation's sustainable management activities and performance</li> </ul>	<p>Environmental investment and expenditure: KRW 22.7 billion</p>
	<p>Climate Action</p> <p>Target 13.2: Integrate climate change measures into national policies, strategies, and planning</p> <p>Target 13.3: Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning</p>	<ul style="list-style-type: none"> <li>Developing CCS/CCUS-related carbon capture technology for carbon emission reduction</li> <li>Enhancing company-wide environmental goals and strategies following the declaration of Hanwha Net Zero 2040</li> <li>Managing greenhouse gas reduction emissions and advancing the Scope 3 estimation system</li> <li>Participating in global initiatives such as CDP and TCFD</li> </ul>	<p>Joined K-RE100</p>
	<p>Life on Land</p> <p>Target 15.1: Ensure the conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains, and drylands</p> <p>Target 15.4: Ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development</p>	<ul style="list-style-type: none"> <li>Managing water stress, reducing water usage and wastewater generation</li> <li>Conducting environmental protection activities such as One Company One Forest movement on Environment Day</li> <li>Analyzing ecosystem impacts at the planning stage through environmental impact assessments in construction projects (E&amp;C Division)</li> <li>Conducting ecological surveys near corporate facilities and monitoring ecosystem changes</li> <li>Conducting environmental impact assessments in construction projects to preserve protected and invasive disturbance species</li> </ul>	<p>Conducted the ecological survey of biodiversity in the off-site vicinity (Global Division)</p>
	<p>Peace, Justice, and Strong Institutions</p> <p>Target 16.5: Substantially reduce corruption and bribery in all their forms</p> <p>Target 16.6: Develop effective, accountable, and transparent institutions at all levels</p> <p>Target 16.7: Ensure responsive, inclusive, participatory, and representative decision-making at all levels</p>	<ul style="list-style-type: none"> <li>Strengthening the Board of Directors' soundness, transparency, and independence</li> <li>Enhancing ethics and compliance capabilities through comprehensive compliance education for all employees</li> <li>Operating online and offline reporting channels for human rights grievances, compliance issues, and unfair trade practices</li> <li>Establishing company-wide risk management regulations and enhancing risk management systems</li> </ul>	<p>Company-wide risk management regulations established</p>
	<p>Partnerships for the Goals</p> <p>Target 17.14: Enhance policy coherence for sustainable development.</p> <p>Target 17.17: Encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships.</p>	<ul style="list-style-type: none"> <li>Sophisticating ESG implementation systems and governance</li> <li>Complying with and supporting global initiatives for sustainable management</li> <li>Supporting ESG management consulting and risk management activities for suppliers</li> </ul>	<p>Expanded and reorganized the ESG Council into 10 modules</p>

# ESG Performance

<b>Environmental</b>	<b>25</b>	<b>Social</b>	<b>47</b>	<b>Governance</b>	<b>75</b>
Climate Change Response	26	Safety and Health Management	48	Corporate Governance	76
Environmental Management	35	Talent Management	54	Compliance	81
		Win-Win Cooperation	61	Risk Management	86
		Innovative Growth	65	Information Security	89
		Social Contribution	71		

# ENVIRONMENTAL

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Climate Change Response	26
Environmental Management	35

ENVIRONMENTAL

# Climate Change Response

## Contributing to Global Net Zero through the expansion of eco-friendly businesses for carbon reduction

Hanwha Corporation has joined K-RE100 as part of its carbon reduction plan for achieving Hanwha Net Zero 2040 and is participating in the global trend toward renewable energy. It is actively investing in businesses that are low-carbon and eco-friendly, including clean ammonia and hydrogen, to find ways to reduce the environmental impact of corporate activity.

### Achievements in 2023

January 2024



Joined K-RE100

Climate Risk Scenario



Conducted quantitative financial impact analysis

2023 CDP Climate Change



Achieved A-

### Going Forward

Hanwha Corporation will be consistently enhancing measurement systems for Scope 1, 2, and 3 emissions and monitoring performance to establish an effective climate change response system. Additionally, building on its joining of K-RE100, the company plans to increase renewable energy usage across divisions and workplaces, enhance energy efficiency activities, and explore low-carbon options (e.g., clean ammonia, hydrogen distribution) to create eco-friendly business opportunities.

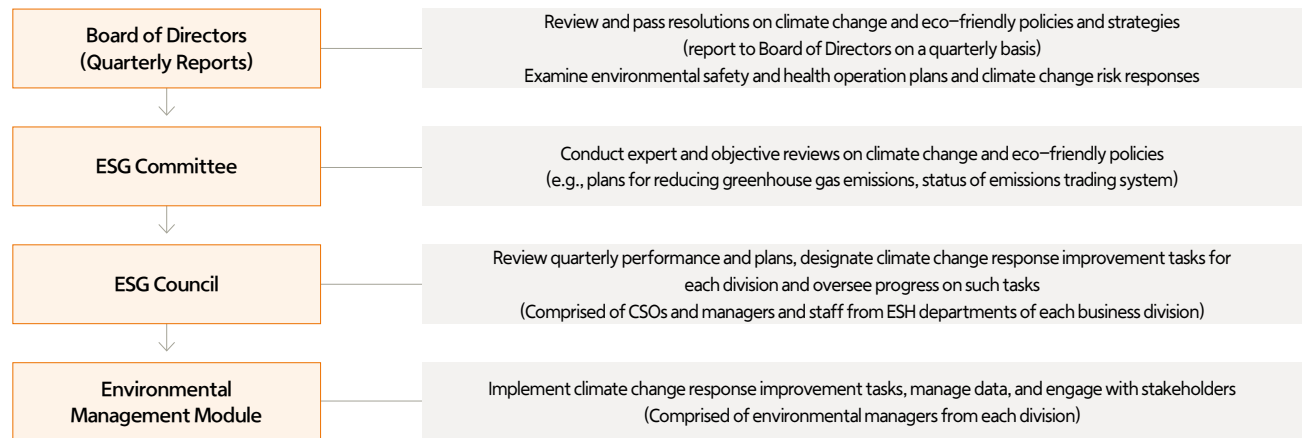
### SDGs Alignment



## Climate Change Response Governance

### Climate Change Response System

Hanwha Corporation has established a board-centric governance system to ensure informed and objective decision-making for its climate change policies and strategies. The Board of Directors is presented on a quarterly basis with detailed reports on environmental safety and health operation plans and climate change risk responses and reviews and makes decisions on resolutions regarding climate change response strategies and eco-friendly policies. Furthermore, since March 2021, the ESG Committee is operated as a directly affiliated committee of the Board of Directors where reviews and approves eco-friendly policy goals and activities for response to climate change risks and reduction of hazardous substance emissions. At the operational level, there is an ESG Council comprised of Chief Safety & Environment Officers (CSOs) and managers and staff from each business division's environmental safety and health departments, which monitors and manages climate change response issues and tasks per division and site based on companywide ESG management directives. In 2023, the company strengthened its practical organizational framework for climate change response by separating the Environmental Management Module from the Environmental Safety Management Module within the ESG Council. In 2023, Hanwha upgraded its strategies for Hanwha Net Zero 2040 and established a strategy for achieving K-RE100. In the fourth quarter of 2023, the ESG Committee resolved to join K-RE100, resulting in the company officially joining K-RE100 in January 2024. Today, Hanwha Corporation actively promotes climate change correspondence activities, including securing renewable energy power and identifying tasks on reducing carbon emissions.



## Board of Directors: Roles and Responsibilities in Climate Change Response

Hanwha Corporation’s ESG Committee, directly under the BOD, is central in establishing strategic directions for climate change response and making final resolutions on critical issues for transitioning to a low-carbon economy. In 2023, the Board of Directors convened four meetings to address issues related to climate change, environment, and safety. Topics discussed included green bond issuance, eco-friendly investments, and ESG management performance.

### 2023 Key Agenda on Climate Change and Environment by Board of Directors and ESG Committee

Type	Meeting No	Date	Agenda
Board of Directors	2 <sup>nd</sup>	Feb. 14, 2023	[Resolution] Establishment of Hanwha Corporation’s 2023 Safety and Health Plan
	7 <sup>th</sup>	May 12, 2023	[Report] Issuance of 246th Unsecured Public Bonds (Korean Green Bonds)
	10 <sup>th</sup>	Sep. 26, 2023	[Report] Issuance of 247th Unsecured Public Bonds (Korean Green Bonds)
	12 <sup>th</sup>	Dec. 20, 2023	[Report] 2023 ESG Management Performance and 2024 Plan
ESG Committee <sup>1)</sup>	1 <sup>st</sup>	Feb. 14, 2023	[Report] 2022 Q4 ESG Management Performance and 2023 Q1 Plan
	3 <sup>rd</sup>	Apr. 21, 2023	[Report] Issuance of 239th (second) Unsecured Public Bonds (ESG Bonds)
			[Report] 2023 Q1 ESG Management Performance and 2023 Q2 Plan
	4 <sup>th</sup>	Jun. 23, 2023	[Report] 2023 Q2 ESG Management Performance and 2023 Q3 Plan
	6 <sup>th</sup>	Oct. 4, 2023	[Report] 2023 Q3 ESG Management Performance and 2023 Q4 Plan
	7 <sup>th</sup>	Dec. 14, 2023	[Resolution] Establishment of Hanwha Corporation’s 2040 Net Zero Target
			[Resolution] Joining K-RE100

1) Agenda items that overlap with those deliberated on by the Board of Directors were excluded.

## Management Roles and Responsibilities in Climate Change Response

Hanwha Corporation addresses climate change through efforts led by its Chief Safety & Environment Officer (CSO), who oversees climate change issues across various business divisions. The CSO is assigned quantitative KPIs such as internal greenhouse gas reduction amounts, external ESG and CDP evaluation results, and qualitative KPIs for establishing and operating climate change response systems. In 2023, KPIs included greenhouse gas reduction amounts for each division and the establishment of Scope 3 greenhouse gas measurement systems. Furthermore, a monetary compensation system based on such KPIs ensures that climate change response goals and achievements are systematically managed in conjunction with the performance of management and managers.

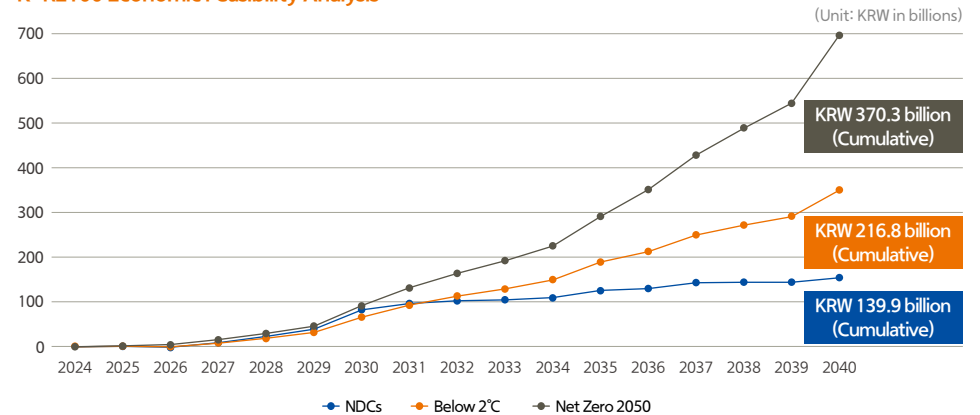
## Climate Change Response Strategy and Key Activities

### Climate Change Scenario Analysis

Hanwha Corporation conducted climate scenario analyses using the IEA NZE 2050, NGFS (Net Zero 2050, Below 2°C, NDCs), and SSP (5-8.5/3-7.0/2-4.5/1-2.6) scenarios to set Net Zero reduction targets and manage climate change risks in accordance with global initiatives.

The NGFS scenarios (Net Zero 2050, Below 2°C, NDCs) were utilized to analyze the economic feasibility of implementing K-RE100. The results were reported to the ESG Committee in the first quarter of 2024, solidifying the rationale for implementing K-RE100.

### K-RE100 Economic Feasibility Analysis



\* Analysis of cost-benefit for K-RE100 implementation/non-implementation

\* Analysis outcomes for three NGFS scenarios show that the cost-benefit of K-RE100 implementation is between KRW 139.9 billion and KRW 370.3 billion.

## Risks and Opportunities of Climate Change

Hanwha Corporation utilized the S&P Global Climamomics program to analyze the impact of climate change on five manufacturing plants in the Global Division and two in the Momentum Division. This analysis employed the Shared Socioeconomic Pathway (SSP 5-8.5 / 3-7.0 / 2-4.5 / 1-2.6) scenarios. Through this analysis, eight physical risks and five transition risks were identified per each plant, with the quantitative financial impact assessed per each risk. The E&C Division also conducted an analysis categorizing climate change-related risks into physical and transition risks and developed corresponding strategies per each related issue.

Major Climate Change Risks and Opportunities in the Global Division

Analysis Scenarios: RCP 8.5 / SSP 5-8.5

Category	Risk	Opportunity	Period			Quantitative Financial Impact <sup>1)2)</sup>			Qualitative Financial Impact	Detailed Response Strategies
			Short-term	Mid-term	Long-term	'20~'29	'30~'39	'40~'49		
Physical Risks	○		√	√	√	1.29%	1.81%	2.34%		
						\$0.96M	\$1.35M	\$1.75M		
Pluvial Flooding	○		√	√	√	0.24%	0.34%	0.47%	<ul style="list-style-type: none"> <li>Physical damage to manufacturing facilities due to flooding leading to restoration costs and revenue loss due to production suspension</li> <li>Financial losses due to disruption in the supply of raw materials and product delivery</li> <li>Flood restoration costs due to floated/abandoned materials and waste or revenue loss due to reputation damage</li> </ul>	<ul style="list-style-type: none"> <li>Establish emergency response systems for disasters</li> <li>Enhance and improve facilities to prevent soil erosion and other impacts of abnormal weather</li> <li>Diversify supply channels to ensure the stability of raw material procurement</li> </ul>
						\$0.18m	\$0.25m	\$0.35m		
Temperature Extremes	○		√	√	√	0.98%	1.37%	1.72%	<ul style="list-style-type: none"> <li>Increased operating costs due to decreased productivity</li> <li>Increased cooling energy costs to maintain optimal manufacturing process temperatures</li> <li>Investment costs for facilities to prevent high/low temperatures in manufacturing and storage facilities</li> </ul>	<ul style="list-style-type: none"> <li>Establish high-efficiency heating/cooling systems</li> <li>Optimize equipment operation efficiency to prevent energy overload</li> <li>Conduct regular inspections for explosives storage facilities and install temperature control system</li> </ul>
						\$0.73m	\$1.02m	\$1.29m		
Wildfire	○		√	√	√	0.05%	0.07%	0.11%	<ul style="list-style-type: none"> <li>Restoration costs and revenue loss due to physical damage to manufacturing facilities</li> <li>Increased costs for prevention and countermeasures due to the increased risk of secondary disasters (e.g. landslides) caused by forest destruction</li> </ul>	<ul style="list-style-type: none"> <li>Perform consistent monitoring of wildfire occurrences</li> <li>Establish emergency response systems for disasters</li> <li>Conduct training for the movement of explosives in the event of wildfires</li> </ul>
						\$0.04m	\$0.05m	\$0.08m		
Tropical Cyclone	○		√	√	√	0.02%	0.03%	0.04%	<ul style="list-style-type: none"> <li>Restoration costs and revenue loss due to physical damage to manufacturing facilities</li> <li>Financial losses and lost business opportunities due to damage to the supply chain</li> <li>Increased investment in disaster prevention and environmental safety equipment</li> <li>Increased costs for institutional measures to reduce risks (e.g. insurance premiums)</li> <li>Flood restoration costs due to floated/abandoned materials and waste or revenue loss due to reputation damage</li> </ul>	<ul style="list-style-type: none"> <li>Establish emergency response systems for disasters</li> <li>Enhance and improve facilities to prevent soil erosion and other impacts of abnormal weather</li> <li>Diversify supply channels to ensure stability of raw material procurement</li> </ul>
						\$0.01m	\$0.02m	\$0.03m		
Transition Risks	○	○	√	√	√	0.11%	0.14%	1.01%		
						\$0.08M	\$0.10M	\$0.75M		
Carbon Pricing	○				√	0.00%	0.00%	0.84%	<ul style="list-style-type: none"> <li>Increased costs for purchasing carbon credits and paying carbon taxes</li> <li>Increased carbon credit costs with a rise in paid allocation rates in emissions trading systems</li> <li>Increased investment costs for implementing reduction technologies within facilities</li> <li>Increased utility costs for securing renewable energy power</li> </ul>	<ul style="list-style-type: none"> <li>Establish and implement Hanwha Net Zero 2040 strategies</li> <li>Join K-RE100 and establish/implement a strategy to achieve K-RE100</li> <li>Secure carbon credits through CDM projects (transitioning to SDM)</li> <li>Identify and perform key activities to reduce greenhouse gas emissions at facilities</li> <li>Reduce energy consumption by improving energy efficiency of facilities</li> </ul>
						\$0.00m	\$0.00m	\$0.63m		
Litigation	○		√	√	√	0.01%	0.01%	0.01%	<ul style="list-style-type: none"> <li>Failure to achieve Net Zero and K-RE100 targets → litigation risks → reputation damage → revenue loss</li> </ul>	<ul style="list-style-type: none"> <li>Establish and sophisticate strategies to achieve Net Zero and K-RE100 and implement such strategies in stages</li> </ul>
						\$0.01m	\$0.01m	\$0.01m		
Reputation	○	○	√	√	√	0.03%	0.04%	0.05%	<ul style="list-style-type: none"> <li>Failure to achieve Net Zero and K-RE100 targets → lower company rating → revenue loss</li> </ul>	<ul style="list-style-type: none"> <li>Establish and sophisticate strategies to achieve Net Zero and K-RE100 and implement them in stages</li> <li>Perform continuous development and implementation of eco-friendly businesses to improve the corporate reputation</li> </ul>
						\$0.02m	\$0.03m	\$0.04m		
Technology	○	○	√	√	√	0.04%	0.06%	0.07%	<ul style="list-style-type: none"> <li>Increased demand for low-carbon products → revenue growth from the development of eco-friendly technologies</li> </ul>	<ul style="list-style-type: none"> <li>Develop low-GWP gas production technology through nitric acid manufacturing process</li> <li>Develop carbon capture technology related to CCS/CCUS</li> </ul>
						\$0.03m	\$0.04m	\$0.05m		
Market	○	○	√	√	√	0.03%	0.03%	0.04%	<ul style="list-style-type: none"> <li>Increased demand for low-carbon products → revenue growth from identifying and promoting new eco-friendly businesses</li> <li>Decreased demand for petrochemical products → reduced trading volume → revenue loss</li> </ul>	<ul style="list-style-type: none"> <li>Establish import/transport infrastructure for clean ammonia</li> <li>Participate in domestic clean ammonia supply projects for power generation</li> <li>Supply low-GWP insulating gas for substations</li> <li>Expand trading targets to include eco-friendly and recycled products</li> </ul>
						\$0.02m	\$0.02m	\$0.03m		

\* Items with financial impacts of less than USD 0.001 million, where risks and opportunities have not been identified, were omitted from the analysis.

1) Quantitative Financial Impact: Annual average predicted loss rate compared to asset value (based on book value)/loss amount

2) Exchange rate applied as of May 30, 2023, according to Seoul Foreign Exchange Brokerage (USD 1 = KRW 1,364.8)

Major Climate Change Risks and Opportunities in the E&C Division

Analysis Scenarios: RCP 8.5 / SSP 5-8.5

Category	Risk	Opportunity	Period			Qualitative Financial Impact	Detailed Response Strategies
			Short-term	Mid-term	Long-term		
Physical Risks	○		√	√	√		
Pluvial Flooding	○		√	√	√	<ul style="list-style-type: none"> <li>Restoration costs due to physical damage from flooding or erosion</li> <li>Increased construction costs and operating expenses due to construction delays during work stoppages</li> </ul>	<ul style="list-style-type: none"> <li>Develop precise construction plans considering regional characteristics</li> <li>Establish flood emergency response systems and conduct regular drills and training to respond effectively in emergency situations</li> </ul>
Temperature Extremes	○		√	√	√	<ul style="list-style-type: none"> <li>Loss of labor hours and decreased productivity due to extremes in hot and cold weather</li> <li>Indirect costs and negative social reputation due to industrial accidents caused by worker's health problems</li> <li>Increased defect frequency due to material deterioration and reduced building durability</li> </ul>	<ul style="list-style-type: none"> <li>Manage construction delay risks through precise planning and process management</li> <li>Prevent productivity decline by providing meticulous management and rest areas for physically vulnerable workers</li> <li>Enhance productivity through automation development and application</li> </ul>
Wildfire	○		√	√	√	<ul style="list-style-type: none"> <li>Restoration costs and construction delays due to physical damage</li> <li>Decreased labor hours and productivity due to deteriorated air quality and fallout</li> </ul>	<ul style="list-style-type: none"> <li>Establish emergency response systems considering regional characteristics (e.g., high-risk areas) and conduct regular drills and training to be able to respond effectively in emergency situations</li> <li>Manage construction delay risks through precise planning and process management</li> </ul>
Tropical Cyclone	○		√	√	√	<ul style="list-style-type: none"> <li>Restoration costs due to physical damage</li> <li>Increased construction costs and operating expenses due to construction delays during work stoppages</li> <li>Negative social reputation due to human accidents</li> <li>Increased defect frequency due to weakened building durability</li> <li>Increased re-construction costs due to structural issues in buildings</li> </ul>	<ul style="list-style-type: none"> <li>Establish emergency response systems and conduct regular drills and training to be able to respond effectively in emergency situations</li> <li>Equip with disaster prevention facilities and apply safety measures thoroughly</li> <li>Design facilities to reflect regional characteristics and use construction materials that can prevent damage from potential disasters</li> </ul>
Transition Risks	○	○	√	√	√		
Carbon Pricing	○				√	<ul style="list-style-type: none"> <li>Increased procurement costs due to higher emission allowances and carbon credit prices (estimated maximum cost of KRW 93.25 billion by 2050)</li> </ul>	<ul style="list-style-type: none"> <li>Implement Hanwha Net Zero 2040 through self-generation (installation of solar power) and renewable energy procurement</li> <li>Reduce greenhouse gas emissions by minimizing energy consumption and improving energy efficiency</li> </ul>
Litigation	○		√	√	√	<ul style="list-style-type: none"> <li>Greenwashing lawsuits filed by civic groups on construction of high-carbon facilities</li> </ul>	<ul style="list-style-type: none"> <li>Achieve Net Zero and K-RE100</li> <li>Develop low-carbon construction methods and products/businesses</li> </ul>
Reputation	○	○	√	√	√	<ul style="list-style-type: none"> <li>Positive or negative effects on investment or bidding environments depending on the adequacy of disclosures related to climate crisis response</li> <li>Investment withdrawal by financial institutions in the event of construction of high-carbon facilities</li> </ul>	<ul style="list-style-type: none"> <li>Ensure complete disclosures related to climate crisis response and enhance ESG management</li> <li>Achieve Net Zero and K-RE100</li> <li>Develop low-carbon construction methods and products/businesses</li> </ul>
Technology	○	○	√	√	√	<ul style="list-style-type: none"> <li>Additional construction costs due to mandatory zero-energy buildings (expected cost increase of 30-40% for non-residential buildings and 4-8% for residential complexes)</li> <li>Temporary loss of bid competitiveness due to increased construction costs from R&amp;D investments and low-carbon materials/equipment</li> </ul>	<ul style="list-style-type: none"> <li>Diversify supply chains, develop related technologies, and introduce differentiated design and construction methods to secure renewable energy facilities</li> </ul>
Market	○	○	√	√	√	<ul style="list-style-type: none"> <li>Increased construction raw material prices due to the introduction of carbon taxes on high-emission materials like steel and cement and the adoption of carbon-neutral technologies</li> <li>Expected market formation of approximately KRW 107 trillion by 2030 and KRW 180 trillion by 2050, with a market growth rate of over 3.0% annually for zero-energy buildings</li> </ul>	<ul style="list-style-type: none"> <li>Perform continuous monitoring of raw material market conditions to manage price fluctuations in real-time</li> <li>Restructure business models to secure market leadership by developing and acquiring green building technologies and utilize in-house technologies (e.g. building-integrated photovoltaics (BIPV) systems) to take advantage of contract opportunities</li> </ul>

\* Items with financial impacts of less than USD 0.001 million, where risks and opportunities have not been identified, were omitted from the analysis.

Major Climate Change Risks and Opportunities in the Momentum Division

Analysis Scenarios: RCP 8.5 / SSP 5-8.5

Category	Risk	Opportunity	Period			Quantitative Financial Impact <sup>(1)(2)</sup>			Qualitative Financial Impact	Detailed Response Strategies
			Short-term	Mid-term	Long-term	'20~'29	'30~'39	'40~'49		
Physical Risks	○		√	√	√	2.5%	3.5%	4.3%		
						\$3.0M	\$4.2M	\$5.1M		
Pluvial Flooding	○		√	√	√	0.2%	0.3%	0.4%	<ul style="list-style-type: none"> <li>Restoration costs in the event of physical damage to the facilities and revenue loss due to delayed product deliveries resulting from operational shutdown of the building that manufacturing was carried out in</li> <li>Financial losses due to disruption in the supply of raw materials and product delivery</li> </ul>	<ul style="list-style-type: none"> <li>Establish emergency response systems for disasters</li> <li>Enhance and improve facilities to prevent flooding and other disasters</li> <li>Secure additional facilities to ensure stability in logistics and transportation</li> </ul>
						\$0.2m	\$0.3m	\$0.4m		
Temperature Extremes	○		√	√	√	2.2%	3.0%	3.7%	<ul style="list-style-type: none"> <li>Increased operating costs due to decreased productivity</li> <li>Increased energy and facility investment costs for heating/cooling offices and manufacturing buildings</li> </ul>	<ul style="list-style-type: none"> <li>Establish high-efficiency heating/cooling systems</li> <li>Reduce energy consumption by conducting energy efficiency activities (e.g. optimized operation of cooling facilities)</li> </ul>
						\$2.7m	\$3.6m	\$4.4m		
Drought	○			√	√	0.0%	0.0%	0.1%	<ul style="list-style-type: none"> <li>Operational disruption of the building that manufacturing was carried out in due to the inability to operate utility facilities in the event of a water supply interruption at facilities, revenue loss, and delayed product delivery</li> </ul>	<ul style="list-style-type: none"> <li>Secure additional emergency water storage tanks</li> </ul>
						\$0.0m	\$0.1m	\$0.1m		
Wildfire	○			√	√	0.0%	0.1%	0.1%	<ul style="list-style-type: none"> <li>Restoration costs and revenue loss due to physical damage to facilities</li> </ul>	<ul style="list-style-type: none"> <li>Perform consistent monitoring of wildfire occurrences</li> <li>Establish emergency response systems for disasters</li> <li>Conduct training for the movement of explosives in the event of wildfires</li> </ul>
						\$0.0m	\$0.1m	\$0.1m		
Tropical Cyclone	○			√	√	0.0%	0.1%	0.1%	<ul style="list-style-type: none"> <li>Restoration costs and revenue loss due to physical damage to facilities</li> <li>Financial losses due to disruption in the supply of raw materials and product delivery</li> </ul>	<ul style="list-style-type: none"> <li>Establish emergency response systems for disasters</li> <li>Secure additional facilities to ensure stability in logistics and transportation</li> </ul>
						\$0.0m	\$0.1m	\$0.1m		
Transition Risks	○		√	√	√	0.1%	0.1%	0.2%		
						\$0.1M	\$0.2M	\$0.3M		
Carbon Pricing	○				√	0.0%	0.0%	0.1%	<ul style="list-style-type: none"> <li>Increased costs for purchasing carbon credits and paying carbon taxes</li> <li>Increased carbon credit costs with a rise in paid allocation rates in the emissions trading system</li> <li>Increased investment costs for applying reduction technologies within facilities</li> <li>Increased utility costs for securing renewable energy power</li> </ul>	<ul style="list-style-type: none"> <li>Establish and implement the Hanwha Net Zero 2040 strategy</li> <li>Join K-RE100 and establish/implement a strategy to achieve K-RE100 in stages</li> <li>Identify and perform key activities to reduce greenhouse gas emissions at facilities</li> <li>Reduce energy consumption by improving energy efficiency of facilities</li> </ul>
						\$0.0m	\$0.0m	\$0.1m		
Reputation	○				√	0.0%	0.0%	0.1%	<ul style="list-style-type: none"> <li>Failure to achieve Net Zero and K-RE100 targets → lower company rating → revenue loss</li> </ul>	<ul style="list-style-type: none"> <li>Establish and sophisticate strategies to achieve Net Zero and K-RE100 and implement them in stages</li> <li>Perform continuous development and implementation of eco-friendly businesses to improve the company's reputation</li> </ul>
						\$0.0m	\$0.0m	\$0.1m		
Technology	○	○	√	√	√	0.0%	0.1%	0.1%	<ul style="list-style-type: none"> <li>Increased demand for low-carbon products → revenue growth from developing and promoting new eco-friendly businesses</li> </ul>	<ul style="list-style-type: none"> <li>Conduct research and development to enhance the efficiency of rechargeable battery manufacturing facilities</li> <li>Develop and commercialize recycling technologies for plastic waste</li> </ul>
						\$0.1m	\$0.1m	\$0.1m		

\* Items with financial impacts of less than USD 0.001 million, where risks and opportunities have not been identified, were omitted from the analysis.

1) Quantitative Financial Impact: Annual average predicted loss rate compared to asset value (based on book value)/loss amount

2) Exchange rate applied as of May 30, 2023, according to Seoul Foreign Exchange Brokerage (USD 1 = KRW 1,364.8)

## Internal Carbon Pricing

Hanwha Corporation operates an internal carbon pricing system to measure and manage greenhouse gas emissions, carbon credit shortages or surpluses, and associated costs resulting from business activities. The internal carbon price is based on the average transaction price of KAU (Korean Allowance Unit) for the entire planning period or the cumulative average transaction price of KAU during the same period. In 2023, Hanwha Corporation used this internal carbon pricing to calculate the cost of achieving Hanwha Net Zero 2040. Results were utilized as a basis for key decision-making, including fourth-quarter ESG Committee resolutions on Net Zero target establishment.

### Annual Internal Carbon Price

Category	3 <sup>rd</sup> Planning Period				4 <sup>th</sup> Planning Period
	2022	2023	2024	2025	2026
Internal Carbon Price <sup>1)</sup> (Unit: KRW/tCO <sub>2</sub> -eq)	24,902	19,743	TBD	TBD	TBD
Basis for Calculation	Cumulative Average Transaction Price for 3 <sup>rd</sup> Planning Year (KAU21)	Cumulative Average Transaction Price for 3 <sup>rd</sup> Planning Year (KAU21-22)	Cumulative Average Transaction Price for 3 <sup>rd</sup> Planning Year (KAU21-23)	Cumulative Average Transaction Price for 3 <sup>rd</sup> Planning Year (KAU21-24)	Average Transaction Price for 3 <sup>rd</sup> Planning Year
Reference for Decision Making	NGFS (Net Zero 2050, Below 2° C, NDCs) Scenario: Carbon Price				

1) Calculation period for average transaction price: within one year from the submission date of emission allowances

## Emissions Trading System Implementation

Since being designated as a target company in June 2012 under the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis, Corporation has meticulously managed greenhouse gas emissions from all its business sites. Starting from the first planning period (2015-2017), the Onsan plant was designated as an allocated facility and participated in the emissions trading system. In the third planning period (2021-2025), this scope was expanded to include all business sites. In 2023, Corporation optimized carbon credit purchases through regular market analysis and price monitoring conducted by a dedicated team. The company established and operated an emissions trading strategy through competitive trading, carry-over, borrowing, buying, and selling of carbon credits.

## CDM Project Certification

Since 2007, the Onsan plant has been operating the N<sub>2</sub>O Reduction Project, which was certified as a Clean Development Mechanism (CDM) project. This project removes N<sub>2</sub>O, a greenhouse gas, from the nitric acid manufacturing process, thereby reducing approximately 250,000 tCO<sub>2</sub>-eq annually and securing corresponding carbon credits. In 2023, in alignment with the Paris Agreement, Hanwha Corporation began transitioning the CDM project to the Sustainable Development Mechanism (SDM) project. The Global Division is planning to voluntarily install N<sub>2</sub>O reduction facilities for the new nitric acid process under construction in Yeosu to redouble its commitment to greenhouse gas reduction.

## Expansion of Eco-friendly Business

Hanwha Corporation is increasing investments in sustainable businesses as part of its efforts to achieve Net Zero 2040. The Global Division aims to upgrade the stable ammonia distribution business to transition to eco-friendly businesses, such as clean ammonia and hydrogen distribution. Additionally, it is focusing on developing and distributing low-GWP1) substances and CCUS (Carbon Capture, Utilization, and Storage) technologies to secure differentiated solutions.

The E&C Division signed an MOU with PANASIA, a company specializing in eco-friendly facilities, to develop hydrogen production technology from biogas and plan pilot projects. Biogas, which is produced during the decomposition of organic waste (e.g., sewage sludge, food waste, livestock manure), is gaining attention as a renewable energy source that can be converted into city gas or hydrogen through a series of treatment processes.

1) GWP: Global Warming Potential

### Operation of Low-Carbon Business

Global Division	E&C Division	Momentum Division
<b>Clean Ammonia Distribution</b> - Establishment of infrastructure for the import and transportation of clean ammonia - Participation in the domestic supply of clean ammonia for power generation <b>Low-GWP Gas Supply</b> - Development of Low-GWP (NO) manufacturing technology using the nitric acid production process - Supply of Low-GWP insulating gas for substations <b>Carbon Emission Reduction Technology Development</b> - Development of carbon capture technologies related to CCS/CCUS	<b>Renewable Energy (Wind Power) Development</b> - Construction of Yeongyang Wind Power Complex and Jeju Sumang Wind Power Complex - Ongoing construction of Yangyang Suri Onshore Wind Power (approximately 94MW) - Selected as a fixed-price contract competitive bidding operator for wind power (Shinan Ui Offshore Wind Power 390MW, Yeongcheon Gogyeong Onshore Wind Power 37.2MW) <b>Clean Hydrogen Production Technology Development</b> - Development of hydrogen production technology using biogas	<b>Renewable Energy Plant Construction and Operation</b> - Construction of the Wonju Refuse-Derived Fuel (RDF) Plant - Construction and operation of biomass energy plants (e.g., wood pellet manufacturing lines) <b>Specialized Equipment Supply for Full Process of Rechargeable Batteries</b> - Materials, electrodes, assembly, formation, solar cells, module pack processes <b>Research Projects on Waste Recycling</b> - Facilities for the production of pyrolysis oil from waste plastics

## Energy Efficiency Improvement Activities

Hanwha Corporation's Global Division pursues Operation Excellence (OE) activities across all business departments to improve energy efficiency and increase productivity. As part of the OE initiatives, the company identifies and manages items related to energy efficiency and greenhouse gas reduction and analyzes the effects of their implementation. In 2023, through OE activities at the Boeun and Onsan plants, 11 items were identified to improve energy efficiency and reduce power and fuel consumption, such as the installation of inverters and changes in operating methods. At the Onsan plant, waste heat energy from the nitric acid manufacturing process was converted into steam energy and used in the production process, resulting in a significant saving of energy. Using steam produced from waste heat, which has zero greenhouse gas emissions, has greatly contributed to reducing net greenhouse gas emissions at the Onsan plant. In 2023, selling of 135 TJ of residual steam energy also generated economic benefits. Furthermore, energy loss was prevented by controlling the operating temperature of heating and cooling systems, eliminating steam waste factors, and replacing lighting with high-efficiency LED lights to consistently improve energy efficiency within the plant.

The E&C Division is making efforts to improve energy efficiency by attaching timers to temporary distribution boxes that use temporary electricity to ensure that electricity is not used outside of working hours. The division is also enhancing insulation performance and installing LED/sensor lights in temporary offices and pathways to reduce energy consumption. In 2024, Hanwha Corporation plans to continue its energy efficiency activities and identify new energy-saving measures across its business sites.

## Participation in Global Climate Change Initiatives

Since 2021, Hanwha Corporation has actively participated in the Climate Change sector of Carbon Disclosure Project (CDP) to establish greenhouse gas reduction targets and manage climate change risks according to global standards. In 2023, Hanwha Corporation received an improved A- rating compared to the previous year. The company was also awarded the Carbon Management Sector Honors (Industrial Materials Sector) at the 2023 CDP Korea Awards, hosted by the Korea CDP Committee. Hanwha Corporation participates in global climate change initiatives, including supporting the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and discloses its activities in line with the TCFD recommendations, covering governance, strategy, risk management, and metrics and targets related to climate change. Hanwha Corporation will continue to transparently disclose its climate change response activities, actively communicate with stakeholders, and establish itself as a global leader in eco-friendly management for a better future for the Earth.



Hanwha Corporation receiving an award at CDP Korea Awards 2023

## Climate Change Risk Management

### Climate Change Risk Management Process

Hanwha Corporation has established a company-wide risk management regulation and process to effectively address climate change-related issues, including various laws and regulations, physical and environmental aspects, market changes, and stakeholder demands, and ensure a stable business environment.

The ESG Council identifies risks across all ESG areas, including climate change, at least once per year. Materiality assessments are conducted based on evaluations of identified risks on their likelihood of occurrence (short-term, mid-term, long-term) and impact (strategic importance, urgency, impact on business operations) to determine the seriousness of each risk. The responsible executive for each module submits the risk assessment results to the ESG Committee, which reviews and finalizes the ESG risks to be managed at the corporate level.

Although evaluations are generally conducted annually, ad-hoc evaluations may be performed when new tasks and services are launched, existing products are modified, or external environmental changes occur (e.g., market conditions, strategic changes). Risk levels are imbued with one of three grades (I, II or III). Based on the grade, the responsible executive formulates an action plan, including targeted improvement levels, completion timelines, responsible personnel, and required resources, to implement for risk mitigation.

### Climate Change Risk Management Process



### Procedures for Identifying and Responding to Climate Change Risks Based on Financial Impact

Criteria	Financial Impact	Financial Impact Assessment Criteria	Decision-Making Stage
Less than KRW 500 million	Insignificant financial impact	Operating costs, internal carbon price(s), greenhouse gas emissions, energy consumption, investment costs for energy efficiency improvement, etc.	Collecting opinions from the ESG Council, making the final decision by the CSO
KRW 500 million to less than KRW 5 billion	Moderate financial impact		Collecting opinions from the ESG Committee, making the final decision by the CEO
More than KRW 5 billion	Significant financial impact		Discussing agenda items in the ESG Committee, submitting to the Board of Directors for making the final decision

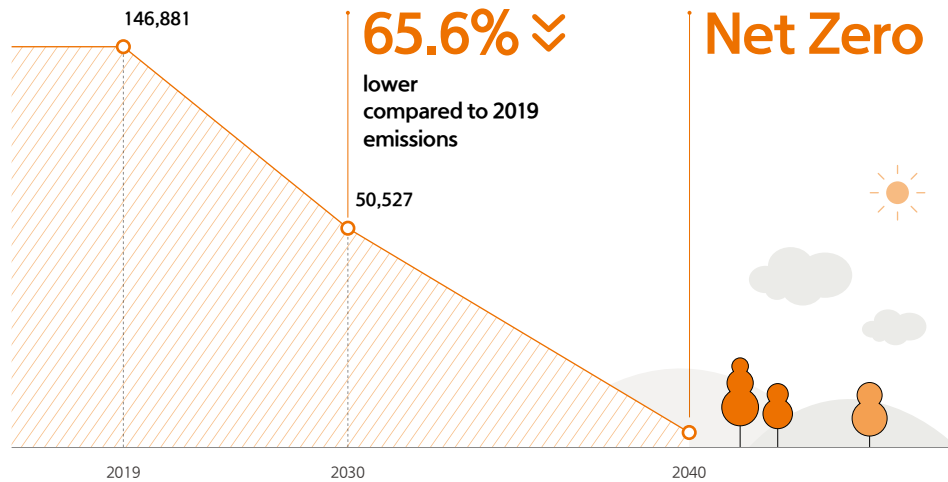
## Metrics and Reduction Targets

### Hanwha Net Zero 2040: Roadmap

In response to the global climate crisis, Hanwha Corporation declared the 'Hanwha Net Zero 2040' initiative, committing to reducing its emissions by approximately 65% by 2030 and achieving 100% reduction by 2040 compared to 2019 levels. In 2023, Hanwha sophisticated its Net Zero goals and strategies across all business divisions and established a K-RE100 implementation strategy to transition 100% of power used to renewable energy by 2040. This plan was approved by the ESG Committee in the fourth quarter of 2023, which resulted in joining K-RE100 in January 2024. To achieve Net Zero, the company plans to purchase Renewable Energy Certificates (RECs), engage in equity participation in renewable energy projects, and install solar power facilities. In particular, the E&C Division will install solar power facilities at new civil engineering sites to ensure (at least) partial self-production of required electricity. Hanwha Corporation is committed to continuously refining and implementing strategies to meet its Net Zero target within the established timeline.

#### Hanwha Net Zero 2040 Roadmap

(Unit: tCO<sub>2</sub>-eq)



### Climate Data Management Status

Hanwha Corporation has established an internal greenhouse gas inventory to manage Scope 1 and 2 emissions, monitoring energy consumption and greenhouse gas emissions from each business site on a monthly basis. The E&C Division's effort is noteworthy, particularly, its monitoring of high-energy-consuming sites, identifying causes for such high energy consumption, and brainstorming of reduction measures. Furthermore, for company-wide management of Scope 3 emissions, the company regularly revises the Scope 3 calculation system (which was established in 2023) to stabilize it for the future creation of a Scope 3 greenhouse gas inventory.

#### Scope 1+2 Greenhouse Gas Emissions Management

(Unit: tCO<sub>2</sub>-eq)

Year	2020	2021	2022	2023	Target in 2030
Emissions	60,851	64,822	64,263	68,748	50,527

#### Greenhouse Gas/Energy Performance and Targets (Intensity)<sup>1)</sup>

Key Performance	Unit	Performance in 2022	Performance in 2023	Target in 2024
Greenhouse Gas Emissions	tCO <sub>2</sub> -eq/ KRW 100 million	1.06	0.98	0.95
Energy Consumption	TJ/KRW 100 million	0.01507	0.01461	0.01417

1) Intensity calculated based on 2023 standalone sales

#### Greenhouse Gas Reductions<sup>1)</sup>

Key Performance	Unit	Performance in 2022	Performance in 2023	Target in 2024
Greenhouse Gas Reductions	tCO <sub>2</sub> -eq	247,564	246,290	250,100

1) CDM facility greenhouse gas reduction amount + workplace greenhouse gas reduction amount. The greenhouse gas reduction amount may change due to the incomplete third-party verification of the 2022-2023 CDM reduction performance monitoring report. (The verification schedule is postponed until the CDM is fully transitioned to SDM following the enforcement of the Paris Agreement in 2021, during which the certification of reduction performance is deferred.)

### Greenhouse Gas Reduction Measures

Emission Source	Reduction Rate <sup>1)</sup>	By 2030	By 2040
Electricity	68%	<ul style="list-style-type: none"> <li>Producing renewable energy through installation of in-house solar power facilities</li> <li>Securing renewable energy power through direct/third-party PPA contracts</li> <li>Signing of V.PPA contract, offsetting emissions through purchase of Renewable Energy Certificates (RECs)</li> </ul>	
Industrial Boiler	15.6%	<ul style="list-style-type: none"> <li>LNG boilers: Naturally reducing emissions due to hydrogen blending in city gas</li> <li>targeting 20% hydrogen blending as a government R&amp;D project</li> <li>Monitoring commercialization trends of eco-friendly industrial boilers</li> </ul>	<ul style="list-style-type: none"> <li>Switching to eco-friendly fuels (replacing boiler facilities if necessary)</li> <li>Lubricants, refined oil(reduced pressure), LNG → hydrogen, electricity</li> <li>Capturing emitted CO<sub>2</sub> through CCUS installation</li> </ul>
Process Emission (Nitric Acid Production)	9.8%	<ul style="list-style-type: none"> <li>Improving reduction efficiency of N<sub>2</sub>O reduction facilities in nitric acid production (2022: 90% → target: over 99%)</li> <li>Installing additional N<sub>2</sub>O reduction facilities if necessary</li> <li>*N<sub>2</sub>O reduction facilities are installed and operated as a certified CDM project for the purpose of capturing N<sub>2</sub>O emissions from nitric acid production process at the Onsan plant.</li> </ul>	
Mobile Combustion	3.5%	<ul style="list-style-type: none"> <li>Converting general vehicles* to eco-friendly fuels</li> <li>Diesel, gasoline, LPG → electricity or hydrogen</li> <li>*e.g., General vehicles: commercialized EVs or hydrogen-powered vehicles such as passenger cars, vans, trucks, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Converting special vehicles* to eco-friendly fuels</li> <li>Diesel, gasoline, LPG → electricity or hydrogen</li> <li>*e.g., Special vehicles: uncommercialized EVs or hydrogen-powered vehicles such as MPU for explosive manufacturing, construction vehicle, etc.</li> </ul>
Other Emissions Sources	3.1%	<ul style="list-style-type: none"> <li>Replacing miscellaneous fossil fuel equipment/facilities with eco-friendly fuels</li> <li>Heat blower, emergency generator, heating facility, mower, etc.</li> <li>Kerosene, LNG, LPG, lignite, etc. → electricity, hydrogen</li> </ul>	
Common Emissions		<ul style="list-style-type: none"> <li>Consistently identifying and applying items to reduce greenhouse gas emissions at business sites</li> <li>Consistently identifying and applying items to improve energy management efficiency and reduce energy consumption at business sites</li> <li>Identifying external reduction projects (to an extent that offsets internal reduction amounts)</li> </ul>	
<b>Total</b>		<b>100%</b>	

1) Reduction rate calculation criteria: Based on the 2022 emissions certification notice (notification of objection review results), emission rates are categorized by emission source.

### Scope 3 Greenhouse Gas Emissions Management

In 2023, Hanwha Corporation revised its Scope 3 calculation system to improve the accuracy, completeness, and consistency of calculated values by reviewing the calculation methodology and foundational data for each category. Moving forward, the company will continue to make efforts with suppliers to sophisticate greenhouse gas reduction and management across the entire value chain to reduce Scope 3 emissions.

### Scope 3 Greenhouse Gas Emissions

Category	Emissions (tCO <sub>2</sub> -eq)	Calculation Methodology	Description
1. Purchased Goods and Services	2,930,820	<ul style="list-style-type: none"> <li>Quantity of purchased raw and auxiliary materials for major substances x emission factor</li> <li>Input quantity per construction equipment type x per-use emission factor per equipment type</li> <li>Weight of construction waste x transport distance</li> <li>Emission factor per unit product x amount</li> </ul>	Greenhouse gas emissions throughout life cycle up to the point of delivery of purchased goods and services
2. Capital Goods	23	<ul style="list-style-type: none"> <li>Quantity of purchased capital goods per item type x emission factor per item type</li> </ul>	Greenhouse gas emissions throughout life cycle up to the point of delivery of purchased capital goods
3. Fuel and Energy-related Activities Not Included in Scope 1 and 2	6,543	<ul style="list-style-type: none"> <li>Quantity of purchased fuel per fuel type x emission factor per fuel type</li> <li>Quantity of purchased electricity x emission factor</li> </ul>	Greenhouse gas emissions from production and transportation of purchased fuel and energy
4. Upstream Transportation and Distribution	24,566	<ul style="list-style-type: none"> <li>Purchased mass per raw and auxiliary materials for major substances x average transport distance x emission factor</li> </ul>	Greenhouse gas emissions from the transportation and distribution process of purchased products and capital goods
5. Waste Generated during Operations	12,562	<ul style="list-style-type: none"> <li>Quantity of waste treated x emission factor</li> </ul>	Greenhouse gas emissions from the processing of third-party waste treatment generated at business sites
6. Business Travel	10,163	<ul style="list-style-type: none"> <li>Traveled distance per mode of transportation x emission factor per mode of transportation</li> </ul>	Greenhouse gas emissions from use of transportation during business trips
7. Employee Commuting	3,679	<ul style="list-style-type: none"> <li>Commuting distance per mode of transportation x emission factor per mode of transportation</li> </ul>	Greenhouse gas emissions from use of transportation during commute
8. Upstream-Leased Assets	-	<ul style="list-style-type: none"> <li>Excluded from calculation (Reported under Scope 1 and 2 emissions)</li> </ul>	
9. Downstream Transportation and Distribution	8,344	<ul style="list-style-type: none"> <li>Transport distance x emission factor per mode of transportation X total transported volume</li> <li>Delivery weight to customer x delivery distance x emission factor</li> </ul>	Greenhouse gas emissions from transportation and distribution of sold products
10. Processing of Sold Products	-	<ul style="list-style-type: none"> <li>Excluded from calculation Excluded due to diverse application scope and customer structure factors that make it difficult to secure reliable data</li> <li>*Source: WBCSD Guidance for Accounting &amp; Reporting Corporate GHG Emissions in the Chemical Sector Value Chain)</li> </ul>	
11. Use of Sold Products	3,309,699	<ul style="list-style-type: none"> <li>Greenhouse gas emissions per explosive product used in blasting x sales volume</li> <li>Completed area per building type x emission factor</li> <li>Electricity consumption per product x emission factor</li> </ul>	Greenhouse gas emissions from use of sold products (finished goods) by end consumers
12. End-of-life Treatment of Sold Products	60,148	<ul style="list-style-type: none"> <li>Residual mass x emission factor per treatment method</li> <li>Weight of purchased raw materials x emission factor per disposal method</li> </ul>	Greenhouse gas emissions from disposal of sold products
13. Downstream Leased Assets	19,225	<ul style="list-style-type: none"> <li>Building area of rental property (workplace) for the year per building type x emission factor per building type</li> </ul>	Greenhouse gas emissions from use of corporate assets by third-party tenants during leasing (in case corporate assets are leased to third parties)
14. Franchises	-	<ul style="list-style-type: none"> <li>Not applicable (No franchise business operations)</li> </ul>	
15. Investments	1,060,714	<ul style="list-style-type: none"> <li>Revenue of invested company x equity share (%) x emission factor per industry</li> </ul>	Investments made by company not included in Scopes 1 and 2
<b>Total</b>	<b>7,446,486</b>	<b>Total Scope 3 Emissions of Hanwha Corporation in 2023</b>	

ENVIRONMENTAL

# Environmental Management

## Preserving Earth's resources through the establishment of a resource circulation system and natural restoration activities

Hanwha Corporation enhances resource efficiency and conserves ecosystems through sustainable consumption and production. The company conducts a wide range of environmental protection activities, consistently monitoring the impact of its facilities on their natural surroundings through environmental impact assessments. It also evaluates the life cycle environmental impacts of its core product lines to identify and manage the environmental impact of its business activities.

### Achievements in 2023

Core products (Electronic Detonators)



Life Cycle Assessment (LCA)

Integrated Environmental Management Plant (Onsan)



"Excellent" Rating in Ministry of Environment's regular inspection

Environmental training



8,047 hours of training

### Going Forward

Hanwha Corporation will establish enhanced company-wide ESH (Environmental, Safety, and Health) goals each year compared to the previous year as a means of consistently improving its environmental safety and health management performance. Furthermore, efforts will be made to revamp internal management systems for environmental impacts and consistently identify resource circulation activities for process-generated waste to reduce environmental impact.

### SDGs Alignment



## ESH (Environment, Safety, Health) Management System

### ESH Management Policy

In 1991, Hanwha Corporation became the first Korean company to establish a group-wide environmental policy, ECO-2000. Since 2000, the company has integrated environmental safety and health values into its core management principles through the ECO-YHES (Hanwha-YHES: Yes! Health-Environment-Safety) policy, enabling it to proactively respond to internal and external changes and consistently improve its ESH management system. Additionally, Hanwha Corporation has developed ESH management policies tailored to the characteristics of each business division for effective management of environmental, safety, and health issues.

### ESH Management Policies by Division

	Global Division	E&C Division	Momentum Division
Policy	We are committed to establishing, implementing, and actively improving our Safety, Health, and Environment (SHE) management system to ensure the future's sustainability.	We strive to realize the values of human dignity and environmental protection and dedicate ourselves to fostering a culture that prioritizes safety, health, and the environment.	We recognize safety, health, and environment (SHE) as the foremost core values for corporate social responsibility and sustainable growth. Our employees are dedicated to establishing an advanced culture of safety regarding all tasks and activities to ensure upholding of the highest standards.
Key Stakeholders	Employees, suppliers, customers, local communities	Employees, suppliers, local communities	Employees, suppliers, customers

Division-specific ESH (Environment, Safety, Health) Management Policies [Shortcut](#)

## ESH Management System

Hanwha Corporation takes into serious consideration the environment, safety, and health needs and demands of all stakeholders, including employees, regarding corporate management on sustainability. The company has established and operates a global-level Environment, Safety, and Health (ESH) management system tailored to the characteristics of each business site. Furthermore, Hanwha Corporation consistently updates and maintains international standard certifications by comprehensively monitoring and managing the status of each business site.

### ESH Management System Certifications

Certification	Division & Business Site		
	Global	E&C	Momentum
ISO 14001	Boeun/Plant business division	Seoul (Headquarters) / Nationwide (Field)	Changwon / Asan
KOSHA 18001(MS)	Boeun	Seoul (Headquarters) / Nationwide (Field)	
ISO 45001		Seoul (Headquarters) / Nationwide (Field)	Changwon / Asan
Green Company	Boeun		

## ESH Governance

Hanwha Corporation operates an ESH (Environmental, Safety, and Health) governance system at the corporate, business division, and business site levels to systematically manage its ESH plans. The ESG Committee, under the Board of Directors and serves as the highest decision-making body for ESH matters, is responsible for reviewing and deliberating on the company’s overall ESH management policies and goals. To ensure that the Board of Directors regularly reviews company-wide ESH matters, the committee reports on ESH performance and goals during biannual activity briefings to the ESG Council. Furthermore, the ESH General Organization, led by the Chief Safety & Environment Officer (CSO), acts as the leadership and control tower for ESH and is responsible for establishing environment- and safety-related systems and plans as well as responding to issues at domestic and international sites. The ESH strategies, goals, detailed action plans, and performance indicators established by the ESH General Organization are implemented at the site level under the management of site-specific environmental and safety organizations.

### ESH Governance Organizational Chart



## ESH Performance Evaluation

Hanwha Corporation conducts regular internal and external evaluations at least twice per year per division to monitor the operational status of the Environment, Safety, and Health (ESH) management system. Action is taken on issues and areas for improvement identified through these evaluations on-site to sophisticate the ESH management system. The evaluations cover a variety of factors, including compliance with legal obligations, adherence to internal management systems, and the achievement and thoroughness of environmental, safety, and health goals set by each organization. Based on the performance results of these evaluations, bonus points are added to the strategic KPI performance evaluation results for each organization, incorporating them into employee performance incentives to consistently promote efforts on sustainability.

The Global Division sets and evaluates annual trailing indicators and reduction targets to minimize environmental impacts, prevent environmental accidents, and ensure regulatory compliance. In 2023, trailing indicators included the number of greenhouse gas reduction tasks discovered, absolute reduction amounts, waste intensity and recycling rates, air and water pollutant emissions, and water usage. Achieving such reduction targets resulted in additional points being awarded in KPI performance evaluations for each organization, incentivizing more voluntary environmental improvements.

The E&C Division quantifies the effects of environmental accident prevention by establishing and operating an environmental regulation violation index. In 2023, the headquarters conducted 136 inspections across 71 fields, identifying and addressing 1,195 non-compliance cases. Furthermore, all fields conducted voluntary inspections using a mobile application, identifying and addressing approximately 43,475 non-compliance cases. The division also establishes and implements waste and greenhouse gas reduction targets to manage environmental performance indicators and includes participation and satisfaction rates in environmental education as KPIs.

To ensure compliance with environmental regulations, the Momentum Division conducts semi-annual evaluations of the environmental management status of its business sites and research centers, identifying and addressing 31 non-compliance cases in 2023. It is also committed to minimizing waste generation and increasing recycling rates by changing disposal methods and striving to reduce the environmental impact of its business activities.

## ESH Risk Management

In May 2023, Hanwha Corporation established new risk management regulations to comprehensively manage non-financial risks, including environmental, safety, and health risks, under the company-wide risk management system. New regulations enable the early identification of detailed environmental, safety, and health management risks and opportunities, and implementation of preventive measures against risk factors. In addition, each module of the ESG Council identifies risks at least once per year, establishes action plans, evaluates outcomes, and reports them to the ESG Committee and the Board of Directors.

## Green Financing

### Green Bonds Issuance and Performance

Hanwha Corporation issued green bonds worth KRW 190 billion in April 2023 and KRW 240 billion in September 2023. Notably, the Hanwha 246<sup>th</sup> Unsecured Public Bond issued in April 2023 is the first Korean Green Bond to be issued based on the Korean Green Taxonomy (K-Taxonomy) standards by a non-financial corporation. The funds raised were invested in manufacturing equipment for Hanwha Solutions' integrated solar production complex, the Solar Hub, in Georgia (USA). To prevent greenwashing and ensure compliance with Green Taxonomy, third-party verification was conducted, resulting in a "suitable" rating from NICE Credit Information Service.

#### 2023 Hanwha Corporation Green Bond Issuance Overview

Category	Area of support provided	K-Taxonomy Economic Activity Classification	Allocated Bond Amount
Renewable Energy (Solar)	Investment in solar equipment for Solar Hub	[Greenhouse Gas Reduction] Supplying equipment for manufacturing solar cells	KRW 190 billion
Renewable Energy (Rechargeable Battery)	Manufacturing rechargeable battery production facilities	[Greenhouse Gas Reduction] Electrical energy storage and conversion	KRW 240 billion

## Environmental Management Implementation System

### Enhancement of Environmental Management System

Hanwha Corporation, based on its mission "2024 GROUP Safety & Environment Leading Company", strives to enhance company-wide ESH management through various policies and activities. To this end, the company establishes annual environmental management goals and strategies and identifies and implements improvements by analyzing major environmental risks. Hanwha Corporation aims to acquire global leadership capabilities by 2026 through environmental conservation efforts in Korea and overseas and others on sustainability.

#### Environmental Management Goals and Strategies

Mission	2024 GROUP Safety & Environment Leading Company 2026 GLOBAL Safety & Environment Leading Company			
Vision	Safe and healthy life for everyone, everywhere! Sustainable benefits for our stakeholders and the environment!			
Mid to Long-term Goals	2040 Net Zero		Minimize Environmental Impact	
	Reduce greenhouse gas emissions by 65.5% by 2030 and 100% by 2040 compared to 2019 levels		Reduce waste emissions and energy and water consumption <small>*Managed by energy intensity (Global, Momentum: general, designated waste / E&amp;C: construction waste)</small>	
Strategic Directions	<b>A</b> Proactive Climate Change Response	<b>B</b> ESG Management Enhancement	<b>C</b> Management Advancement	<b>D</b> Capacity-Building
Core Strategic Tasks	1. Enhance energy use efficiency and reduction activities at business sites 2. Promote greenhouse gas emission reduction activities 3. Increase usage of renewable energy	4. Proactively respond to internal and external regulations and standards 5. Consistently participate in international environmental initiatives	6. Upgrade environmental management systems. 7. Establish and improve smart environmental systems	8. Enhance expertise in environmental facilities and regulatory inspections 9. Enhance expertise of environmental practitioners
	↓			
	Greenhouse Gas Reductions	Energy (Intensity)	Water (Intensity)	Waste (Intensity)
Environmental Goals in 2023	250,000 tCO <sub>2</sub> -eq	0.01462 TJ/ KRW 100 million	16.88 Ton/ KRW 100 million	General & Designated Waste: 0.0523 Ton/ KRW 100 million Construction Waste: 10.16 Ton/ KRW 100 million
Environmental Performance in 2023	246,290 tCO <sub>2</sub> -eq <sup>1)</sup>	0.01461 TJ/ KRW 100 million	12.97 Ton/ KRW 100 million	General & Designated Waste: 0.0511 Ton/ KRW 100 million Construction Waste: 9.50 Ton/ KRW 100 million
Environmental Goals in 2024	250,100 tCO <sub>2</sub> -eq	0.01427 TJ/ KRW 100 million	12.58 Ton/ KRW 100 million	General & Designated Waste: 0.0496 Ton/ KRW 100 million Construction Waste: 9.22 Ton/ KRW 100 million

1) CDM Facility Greenhouse Gas Reduction Amount + Workplace Greenhouse Gas Reduction Amount The greenhouse gas reduction amount may change due to the incomplete third-party verification of the 2022-2023 CDM reduction performance monitoring report. (The verification schedule is postponed until the CDM is fully transitioned to SDM following the enforcement of the Paris Agreement in 2021, during which the certification of reduction performance is deferred.)

## Eco-Friendly Management Activities

### Eco-Friendly Sales

Hanwha Corporation calculates eco-friendly sales with a focus on business activities that comply with Korean Green Taxonomy (K-Taxonomy) standards. In 2023, the E&C Division included onshore and offshore wind power construction projects as part of its eco-friendly sales. Meanwhile, the Momentum Division categorized the supply of solar cells, modules, and rechargeable battery manufacturing equipment necessary for renewable energy production as “green economic activities,” thereby including them as eco-friendly sales. Hanwha Corporation plans to continue identifying and expanding eco-friendly projects that comply with green taxonomy and actively engage in bidding activities to grow its eco-friendly business scale.

### Environmental Investment Performance and Goals

To comply with environmental regulations and prevent pollution, Hanwha Corporation consistently invests in the improvement of pollution emission and prevention facilities. In 2023, the Boeun Plant invested in the construction of a new designated waste storage facility, installation of new dust collectors, and replacement of old vehicles. The Onsan plant installed a new SCR system, improved the scrubber in the analysis lab, and made intangible asset investments for chemical registration under the Chemical Substances Control Act.

### Environmental Expenditure Performance and Goals

Hanwha Corporation plans and executes environmental expenditures on an annual basis to prevent environmental degradation and business operation-caused pollution in addition to managing the outcomes of such expenditure. Environmental expenditures are categorized as preventive costs (e.g., employee education expenses for preventing environmental accidents and pollution) and management costs (e.g., operational costs of environmental facilities and waste disposal costs). In 2023, in addition to the necessary environmental costs for site operations, the company also developed waste covers and dust suppression boxes for construction machinery.

## Environmental Impact Management

### Environmental Impact Assessment

#### Monitoring Trends in Environmental, Safety, and Health Regulations

Hanwha Corporation consistently monitors and documents trends in the enactment and revision of laws and regulations related to environmental safety and health, including legislative and administrative announcements, on a monthly basis. It records changes in regulations, implementation dates, and response plans in the Environmental Safety and Health (ESH) Regulatory Register and shares such recordings with relevant departments. Furthermore, if there are changes in regulations that directly or indirectly affect the company, environmental safety managers from headquarters and business sites attend relevant external training and briefing sessions to improve their practical skills and establish proactive response measures. Significant regulatory changes that impact the company are reflected in the establishment of environmental goals, thereby enhancing the company’s practical response capabilities across all business areas.

#### Analysis of Opportunities and Risks from Environmental Impact

Hanwha Corporation identifies and manages environmental risks throughout its activities and annual management strategies by establishing and certifying an internationally recognized environmental management system (ISO 14001), whose objective is to improve environmental performance in tangible ways. Each year, in accordance with ISO 14001, the company identifies stakeholders and internal and external environmental issues, analyzes the financial and non-financial opportunities and risks posed by environmental factors, and formulates and implements action plans for issues classified as risks. At construction sites, potential environmental impacts that may occur during the construction process are identified at the initial phase, based on which mitigation measures are developed and the implementation of such measures regularly monitored. Hanwha Corporation consistently sophisticates its environmental management system to enhance the credibility of its products, services, and systems among stakeholders, including customers and investors.

### Analysis of Opportunities and Risks According to Environmental Impacts

Field	Classification		Related Issues	Impact of Opportunity or Risk		Response
	Risk	Opportunity		Financial Impact	Non-financial Impact	
Air	○		Exceeding emission standards of air pollutant-emitting facilities	<ul style="list-style-type: none"> <li>• Costs due to administrative penalties (fines/penalties)</li> <li>• Decreased sales due to deterioration of corporate brand image and reputation</li> <li>• Decrease in sales in accordance with orders to temporarily suspend operations of emitting (production) facilities</li> <li>• Additional costs incurred to respond to environmental policies and reinforced regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Regular self-monitoring of emission concentrations at emission outlets</li> <li>• Operation and regular inspection of abatement facilities in accordance with legal requirements</li> <li>• Monitoring of management status through site inspections at all business sites</li> </ul>
	○		Leakage of fugitive dust	<ul style="list-style-type: none"> <li>• Costs due to fines</li> <li>• Decreased bidding power due to PQ (Pre-qualification) point deduction</li> </ul>	–	<ul style="list-style-type: none"> <li>• Implementation and verification of control activities</li> <li>• Participation in voluntary agreements and fugitive dust management for enhancing the image of an eco-friendly company</li> </ul>
Water Quality	○		Exceeding water quality standards for effluent from wastewater facilities	<ul style="list-style-type: none"> <li>• Costs due to administrative penalties (fines/penalties)</li> <li>• Decrease in sales in accordance with orders to temporarily suspend operations of emitting (production) facilities</li> <li>• Additional costs incurred to respond to environmental policies and reinforced regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Regular self-monitoring of effluent concentrations</li> <li>• Operation and regular inspections of abatement facilities in accordance with legal requirements</li> <li>• Monitoring of management status through site inspections at all business sites</li> </ul>
	○		Muddy water discharge	<ul style="list-style-type: none"> <li>• Costs due to administrative penalties (penalties)</li> <li>• Costs of restoring original state (cleaning sediment, compensation for fishing rights, etc.)</li> <li>• Delays in construction due to complaints from stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Operation of water pollution prevention facilities (sedimentation basins)</li> <li>• Regular inspection of effluent water quality</li> </ul>
Waste	○		Non-compliance with waste separation and storage standards	<ul style="list-style-type: none"> <li>• Costs due to administrative penalties (penalties)</li> <li>• Additional costs incurred to respond to environmental policies and reinforced regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> <li>• Increased scrutiny from the public and NGOs due to non-compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Meticulous separation and storage of waste by type</li> <li>• Application of standard covers and storage facilities</li> </ul>
	○		Non-compliance with construction waste storage standards	<ul style="list-style-type: none"> <li>• Costs due to administrative penalties (penalties)</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation due to public disclosure</li> <li>• Increased scrutiny from public and NGOs due to non-compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Meticulous separation and storage of waste</li> <li>• Application of standard covers and storage facilities</li> </ul>
	○		Illegal waste dumping	<ul style="list-style-type: none"> <li>• Costs due to fines</li> <li>• Costs of restoring original state</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Training of all employees and workers</li> <li>• Strengthened monitoring through regular inspections</li> </ul>
		○		Increased social demand for resource circulation	<ul style="list-style-type: none"> <li>• Creation of new revenue through new business ventures via recycled plastics</li> </ul>	<ul style="list-style-type: none"> <li>• Improved corporate brand image and reputation</li> </ul>
Soil Pollution	○		Leakage of soil pollutants	<ul style="list-style-type: none"> <li>• Costs due to fines for unauthorized removal</li> <li>• Costs of soil remediation</li> <li>• Delays in construction due to administrative procedures (e.g., exhaustive investigations, soil remediation)</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-testing of soil composition before removal</li> <li>• Inspection of underground facilities before construction</li> <li>• Meticulous management of underground facilities during construction</li> </ul>
Chemicals	○		On-site leakage of chemicals	<ul style="list-style-type: none"> <li>• Costs due to loss of raw materials and products</li> <li>• Costs due to administrative penalties (fines/penalties)</li> <li>• Increased environmental liability insurance premiums due to chemical accidents</li> <li>• Property damage and restoration costs due to chemical accidents</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Strict management according to relevant laws</li> <li>• Installation of leak detection sensors for hazardous chemicals handling facilities and regular inspections</li> <li>• Monitoring of management status through site inspection tour</li> </ul>
Biodiversity	○		Biodiversity loss	<ul style="list-style-type: none"> <li>• Decreased sales due to misalignment with societal trends (e.g., government regulations for biodiversity recovery, market and consumer changes), leading to the deterioration of corporate brand image and reputation</li> <li>• Restoration costs incurred due to the degradation of natural capital</li> </ul>	<ul style="list-style-type: none"> <li>• Deteriorating corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Management and monitoring of biodiversity lists through external ecological surveys at Boeun Plant's surrounding areas</li> <li>• Continued implementation of post-environmental impact assessments and establishment/execution of management measures within the Boeun Plant</li> <li>• Conduct environmental impact assessments and establish/execute management measures at the construction site opening stage.</li> <li>• Annual cleanup activities in vicinity of Boeun Plant</li> </ul>
	○		Delays in environmental impact assessment and non-compliance with consultation requirements	<ul style="list-style-type: none"> <li>• Project setbacks due to delays in environmental impact assessments</li> <li>• Construction delays due to project suspension orders in the event of non-compliance with consultation requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Regular communication with project implementers</li> </ul>
Other	○		Occurrence of noise and vibration	<ul style="list-style-type: none"> <li>• Costs due to administrative penalties (penalties)</li> <li>• Delays in construction due to complaints from stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Deterioration of corporate brand image and reputation</li> </ul>	<ul style="list-style-type: none"> <li>• Application of low-noise, low-vibration construction methods</li> <li>• Installation and operation of dust and noise prevention facilities</li> <li>• Regular measurement of noise and vibration</li> </ul>

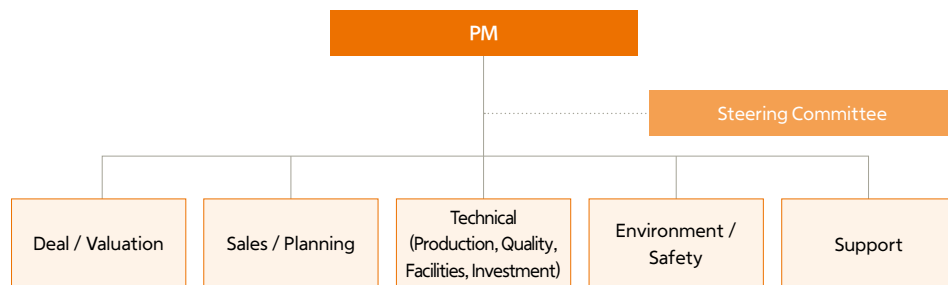
### Environmental and Safety Reviews for Investments and New Projects

The Global Division has incorporated mandatory environmental and safety reviews into its investment management guidelines for all investment proposals—an action which ensures that all legal requirements are thoroughly incorporated and strictly adhered to before, during, and after the investment process to prevent any risk of legal violations. It assesses the potential for greenhouse gas reduction, hazardous chemical management, and environmental pollutant emission reductions to identify investment risks and opportunities for environmental improvements. When forming a task force for new project reviews, dedicated environmental safety personnel are included to ensure adequate evaluation of environmental and safety opportunities and risks associated with such new projects.

The E&C Division meticulously examines potential environmental risks during the bidding or investment process for new projects, including assessing the risk of construction delays due to noise in densely-populated residential areas and identifying potential soil contamination and landfill waste generation through land history reviews. It also establishes countermeasures to mitigate such risks and prevent business disruptions.

The Momentum Division ensures compliance with all mandatory safety and environmental laws and regulations during facility investments at business sites and research centers. Preemptive measures are taken to minimize environmental impacts and prevent risks during facility operations.

#### New Business Review TF Organizational Chart



### Integrated Environmental Management System

The Global Division’s Onsan plant has established an autonomous site management system for the goal of complying with integrated environmental management standards. This system includes aligning the integrated environmental management plan with on-site conditions, constantly checking documents (e.g., emission logs), and conducting self-measurements. As a result of such efforts, Onsan Plant received an “Excellent” rating in all quantitative evaluation items during the Ministry of Environment’s regular inspection in 2023 and a subsequent extension of its inspection interval to three years. The Global Division aims to consistently enhance its autonomous management system to minimize the emission of environmental pollutants.

#### Key Legal Grounds for Environmental and Safety and Health Review

 <b>Environmental Section</b>	<ul style="list-style-type: none"> <li>• Clean Air Conservation Act</li> <li>• Chemical Substances Control Act</li> <li>• Asbestos Safety Management Act</li> <li>• Act on the Allocation and Trading of Greenhouse Gas Emission Permits</li> <li>• Water Environment Conservation Act</li> <li>• Offensive Odor Control Act</li> <li>• Noise and Vibration Control Act</li> <li>• Wastes Control Act</li> <li>• Soil Environment Conservation Act</li> <li>• Environmental Impact Assessment Act</li> <li>• Groundwater Act / Drinking Water Management Act / Water Supply and Waterworks Installation Act</li> <li>• Act on the Management of Facilities Causing Environmental Pollution</li> <li>• Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis</li> <li>• Act on the Registration and Evaluation of Chemical Substances</li> <li>• Environmental Damage Compensation and Recovery Act</li> </ul>
 <b>Safety and Health Section</b>	<ul style="list-style-type: none"> <li>• Serious Accidents Punishment Act</li> <li>• Occupational Safety and Health Act</li> <li>• Construction Technology Promotion Act</li> <li>• Construction Machinery Management Act</li> <li>• Railroad Safety Act</li> <li>• Act on the Safety Management of Guns, Swords, Explosives, etc.</li> <li>• Road Traffic Act</li> <li>• Act on Fire Prevention and Installation, Maintenance, and Safety Control of Fire-Fighting Systems</li> <li>• Hazardous Materials Safety Control Act</li> <li>• High-Pressure Gas Safety Control Act</li> <li>• Persistent Organic Pollutants Control Act</li> <li>• Regulations on Employment Restrictions for Hazardous and Dangerous Work</li> <li>• Liquefied Petroleum Gas Safety Control Act</li> </ul>

## Air Pollutants Management

Hanwha Corporation operates its air pollutant emission and abatement facilities in compliance with the Clean Air Conservation Act and the Act on the Integrated Control of Pollutant-Discharging Facilities. To minimize emissions of air pollutants such as nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter and maintain emission concentrations at less than 50% of legal standards, the company is consistently expanding and improving its abatement facilities. Major emission outlets are equipped with tele-monitoring systems (TMS) for real-time monitoring of pollutant concentrations. Furthermore, the Onsan Plant has implemented a smart environmental management system by installing an automated N<sub>2</sub>O concentration measurement system to monitor N<sub>2</sub>O reduction in real-time as a tie-in with its CDM project (N<sub>2</sub>O catalyst reduction project on nitric acid process).

The E&C Division has proactively contributed to improving air quality and reducing air pollution by signing voluntary agreements with the Ministry of Environment in 2019 and Seoul Metropolitan Government in 2022 to reduce high concentrations of fine dust. For all processes that generate fugitive dust at construction sites, the division implements suppression measures in accordance with relevant laws, restricts the use of outdated construction machinery, installs and operates detailed fine dust management IoT systems, and adjusts and/or reduces construction times during emergency fine dust reduction periods. Stricter internal management standards are also enforced, especially from February through April, when the highest concentrations of fine dust occur. Consistent development of facilities and exemplary cases (e.g., development of water spraying management systems, use of dust screens) have earned citations from the Minister of Land, Infrastructure, and Transport, and the Minister of Environment.

## Soil Resources Management

The Global Division manages soil contaminants and facilities subject to detailed soil contamination controls in compliance with the Soil Environment Conservation Act and the Act on the Integrated Control of Pollutant-Discharging Facilities. It conducts soil contamination tests in accordance with legal standards and performs regular inspections and maintenance of production and storage facilities to prevent soil contaminant leaks. Moreover, the E&C Division conducts soil contamination tests during construction before removing soil to ensure that soil contaminants do not seep out. In the event of soil contamination, the division carries out precise investigations and soil remediation in accordance with relevant laws.

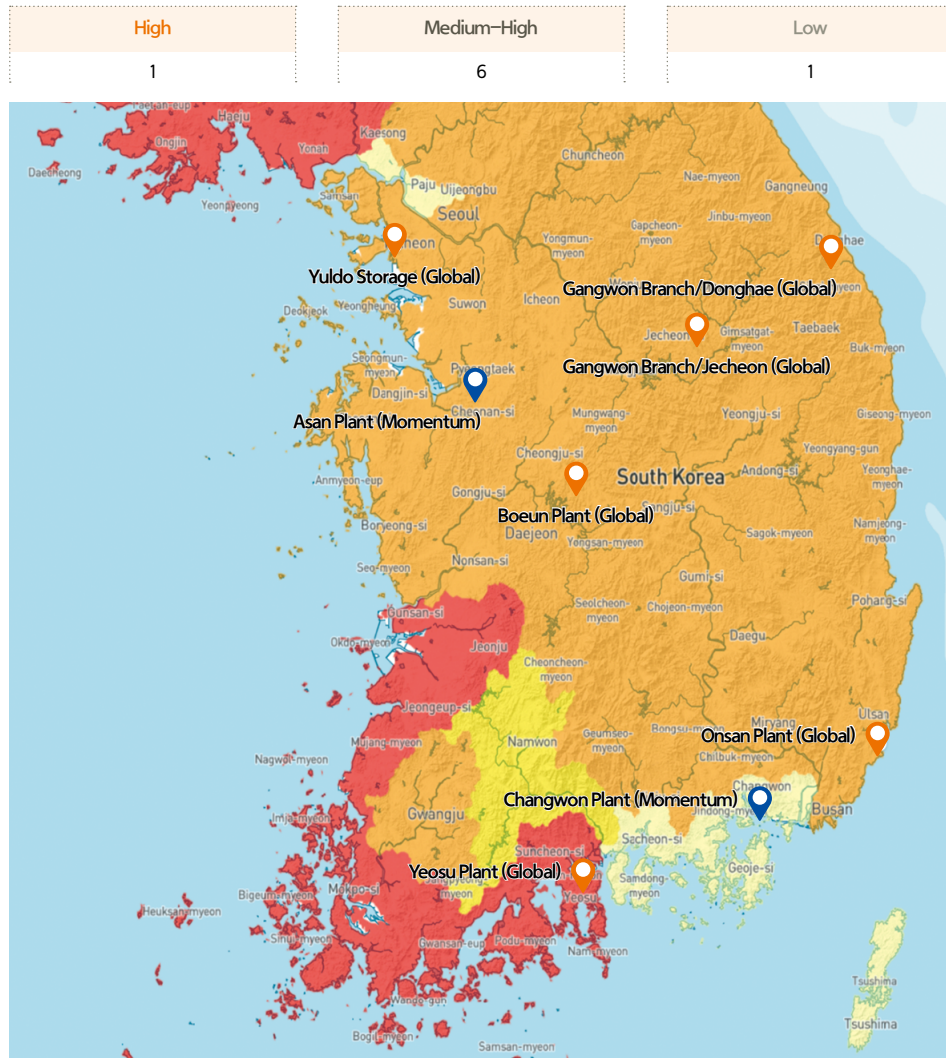
## Water Resources Management

The Global Division operates its water pollutant discharge and abatement facilities in compliance with the Water Environment Conservation Act and the Act on the Management of Facilities Causing Environmental Pollution. To manage the concentration of water pollutants (e.g., Total Organic Carbon (TOC), Biochemical Oxygen Demand (BOD), and Suspended Solids (SS)) at levels below 50% of legal standards, it rigorously monitors the efficiency of its wastewater treatment facilities. The Onsan plant has changed its water quality management method for cooling tower reuse water, reducing blowdown water quantity, thereby achieving simultaneous decreases in water usage and wastewater generation. The E&C Division establishes management guidelines per sector to minimize water pollution that may occur during the construction process and operates retention- and device-based management facilities for the treatment of wastewater, sewage, and non-point source pollutants. Furthermore, it regularly monitors potential contamination through discharge water quality inspections. Hanwha Corporation will continue striving to reduce water usage and wastewater generation through the upgrading of water resource management technologies across its divisions.

### Water Stress Analysis Results

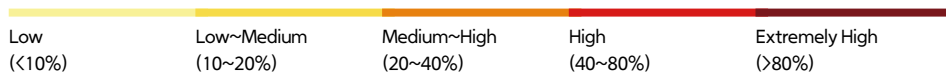
Hanwha Corporation conducts water stress analyses once or twice a year for its manufacturing sites through the World Resources Institute (WRI) Water Stress Analysis Tool. In 2022, the analysis was conducted based on short-term criteria. In 2023, the analysis period was extended to include medium and long-term projections for improved analytical quality. An analysis of six sites in the Global Division and two sites in the Momentum Division revealed that the Yeosu site (expected to be completed in 2024) is slated to have a water stress level of “high” in 2030 and 2050. The company plans to focus on such high water stress sites by conducting detailed analyses and meticulously managing water usage to prepare for potential water shortages.

	Low (<10%)	Low-medium	Medium-high	High (40-80%)
Base line	1	4	3	0
Future 30	1	0	6	1
Future 50	1	3	3	1



[Figure] Hanwha Corporation Water Stress Analysis Sites (as of Future 20)

● Global ● Momentum



### Hanwha Corporation Water Usage by Region and Source (Freshwater) in 2023

#### Global Division

Site	Source	Water Usage (tons)
Boeun Plant	Groundwater	170,083
	Third-Party Water	-
Onsan Plant	Groundwater	-
	Third-Party Water	499,120
Yuldo Storage	Groundwater	-
	Third-Party Water	3,444
Plant Construction Sites	Groundwater	-
	Third-Party Water	25,680
Others	Groundwater	480
	Third-Party Water	13,031
Total	Groundwater	170,563
	Third-Party Water	541,275

#### E&C Division

Site	Source	Water Usage (tons)
Headquarters	Groundwater	675
	Third-Party Water	8,435
Construction Sites	Groundwater	28,631
	Third-Party Water	120,882
Total	Groundwater	29,306
	Third-Party Water	129,317

#### Momentum Division

Site	Source	Water Usage (tons)
Changwon Plant	Groundwater	8,703
	Third-Party Water	5,316
Asan Plant	Groundwater	-
	Third-Party Water	21,405
Total	Groundwater	8,703
	Third-Party Water	26,721

## Hazardous Chemicals Management

### Regulatory Compliance for Hazardous Chemicals

The Global Division has implemented a pre-evaluation system for chemicals to ensure that all chemicals are reviewed for regulatory compliance before purchase, and purchases of such chemicals can only be made with final approval. This system is integrated with the procurement system to prevent purchase requests from being made if there is no pre-evaluation number. In the event of a regulation amendment, the pre-evaluation number is automatically deactivated, requiring re-evaluation for environmental safety and health. To consistently improve its pre-evaluation system, the division benchmarks internal and external best practices and continually assesses their effectiveness.

Furthermore, it monitors and reviews the handling of chemicals subject to the Act on Registration and Evaluation of Chemical Substances at least twice per year to ensure compliance. With the upcoming registration deadline of Dec. 31, 2024, for existing chemicals produced or imported in quantities of 100–1,000 tons per year, the Global Division is actively reviewing its chemical inventory and has registered eight existing chemicals (as of Q2 2024).

### Management and Reduction of Hazardous Chemical Usage

The Global Division is committed to creating a safer manufacturing environment and providing safe products by overseeing and reducing the usage of hazardous chemicals during the manufacturing process. This involves keeping and regularly inspecting hazardous chemical management logs and access logs to control the volume of hazardous chemicals handled, with adherence to safety protocols throughout ensuring a safe working environment.

## Noise and Vibration Management

The E&C Division aims to minimize the inconvenience caused to local residents by the noise and vibration during construction. It monitors real-time noise levels through an IoT-based noise measurement system and implements a pre-diagnosis system to predict and mitigate potential noise impact to minimize any adverse effects.

## Resource Circulation Activities

### Life Cycle Assessment

The Global Division conducted a Life Cycle Assessment (LCA) for its key product, the electronic detonator, to keep track of its carbon footprint and comply with global environmental regulations in accordance with ISO 14040, 14044, and 14067 standards and verified by a third party to guarantee data reliability. Based on the LCA results, it has been improving related processes to reduce carbon emissions and environmental impact throughout the product’s life cycle.

Moreover, the Global Division is committed to reducing carbon emissions not only during production but also during the use of its products. In 2023, it presented a study titled “Carbon Emission Calculation through LCA Analysis of Different Tunnel Excavation Methods” at the Fall Academic Conference of the Korean Explosives and Blasting Engineering Society (the study compared carbon emissions between the TBM (tunnel boring machine) and NATM (new Austrian tunneling method) techniques through LCA analysis). Hanwha Corporation will be expanding and enhancing LCA to strengthen its competitiveness in low-carbon products and contribute to global carbon reduction efforts.

### Green Procurement Policy

Hanwha Corporation aims to minimize negative environmental impacts by adhering to principles of eco-friendliness and safety and health in its raw material procurement and product purchasing. The E&C Division achieved a green procurement performance of KRW 49.3 billion in 2023 by purchasing 42 products with environmental labels, such as office supplies and construction materials (e.g., ready-mix concrete, insulation, gypsum board).

### Waste Management and Reduction

The Global Division strives to minimize waste from its business activities. Initiatives such as the waste emission identification system, tumbler campaign, and distribution of plants in recycled plastic pots encourage responsible waste disposal and recycling among employees. In 2023, it also contributed to reducing external waste by reusing plastic packaging for semi-finished products.

The E&C Division monitors real-time waste processing through the national waste management system “Allbaro” and implements a waste target management system at construction sites. It takes meaningful and substantive steps toward waste reduction by developing waste management indicators, establishing reduction targets for all stages of construction, and reviewing progress on a monthly basis. In cases of underperformance, reasons for the shortfall and corrective measures are identified and implemented to achieve waste reduction goals.

## Resource Use Efficiency

The Momentum Division has developed recycling technology for plastic waste from households and industrial sites based on low-temperature pyrolysis emulsification technology. It operates a pilot plant for demonstration tests and aims to complete the construction of recycled oil production facilities through investments in additional equipment that have been made since 2023. This technology is expected to contribute substantially to waste resource recovery and environmental protection.

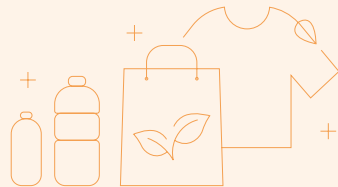


### Special Case Hanwha Corporation E&C Division: Recycling and Upcycling Initiatives

The E&C Division of Hanwha Corporation has implemented innovative recycling and upcycling practices. One major example of such upcycling is the repurposing of fly ash, a byproduct from power plants, as filler in PHC piles instead of traditional cement paste or applying it to the grouting process to conserve resources and protect the environment by preventing groundwater contamination. Additionally, upcycled work uniforms made entirely from recycled polyester derived from discarded PET bottles, coffee cups, and plastic film have been provided to over 100 construction sites as a means of promoting resource circulation and recycling.



Upcycled Work Uniforms in the E&C Division



## Dissemination of Eco-Friendly Management Culture

### Enhancing Environmental Capabilities: Employees

The Global Division continuously provides training to enhance the legal compliance capabilities and expertise of its environmental officers. In 2023, training covered topics such as the Korea Emissions Trading System (K-ETS), Scope 3 calculation methods, and the Chemical Substances Control Act, targeting environmental officers and chemical import/export practitioners. Furthermore, monthly newsletters have been distributed since July 2023 to improve environmental knowledge and awareness among employees. It plans to continue developing and implementing educational programs and materials to build environmental management capabilities and encourage participation in environmental management.

The E&C Division develops and operates diverse job/position-based educational programs to improve the environmental management capabilities of all employees. In 2023, initiatives included leadership training for site managers, specialized internal and external training for environmental officers, and the development of three themed training videos screened on a monthly basis to raise environmental awareness (the videos are uploaded to a platform to allow them to be viewed at any time).

Global Division	E&C Division	Momentum Division
<p>In June 2023, the Boeun Plant celebrated Environment Month with various activities, including an energy-saving competition, an environmental quiz, recognition of environmental contributors, and campaigns on zero food waste and tumbler use. The Boeun Plant also held a plant-sharing event using recycled plastic pots, and an outside expert was invited to provide practical training on environmental regulations for employees. From 2024, such activities will be expanded company-wide to enhance employees' environmental awareness and emphasize the importance of climate change and environmental protection.</p>	<p>The E&amp;C Division holds Environment Day events to clean the vicinity of each site. Employees work closely with local residents, providing assistance wherever necessary, to stress the importance of environmental conservation. In 2023, employees engaged in several ploggings, collecting a total of 120 kilograms of plastic waste. This waste was then used to create furniture (e.g., tables, benches, and chairs) via 3D printing, which was installed in nine locations, including Seoul Station.</p>	<p>The Momentum Division involves all employees in ecological protection activities near their respective plants. Such efforts foster a division-wide understanding of the importance of environmental protection while fulfilling corporate social responsibility.</p>
<p>Environmental Education Session</p>	<p>Furniture at Seoul Station Made from Recirculated Resources</p>	<p>Environmental Cleanup</p>

## Enhancing Environmental Capabilities: Suppliers

Hanwha Corporation is committed to supporting its suppliers in enhancing environmental management and reducing environmental impact. The E&C Division has developed and distributed video training materials on various environmental topics to improve understanding and awareness of environmental regulations and prevent accidents among suppliers (in 2023, approximately 1,568 individuals completed training conducted with these videos). The division also conducts regular on-site audits of waste disposal companies to ensure proper waste management procedures and minimize environmental damage. Hanwha Corporation will be fostering growth with its suppliers through ongoing collaboration and support for eco-friendly initiatives.

## Enhancing Environmental Capabilities: Communities

Hanwha Corporation engages in multiple shared growth activities to support environmental capability-building and pollution management for the communities and SMEs where its operations are located. As part of its eco-mentoring activities, the Boeun Plant visited small businesses in Boeun County to inspect pollution control facilities and provide education on relevant regulations. It also offered case studies on compliance violations, effluent analysis results, and shared solutions for operational challenges as well as expertise on environmental management (in 2023, eco-mentoring was conducted for two SMEs). Hanwha Corporation will continue supporting eco-friendly activities and collaborations with the local community for sustainable development.

## Biodiversity and Ecosystem Protection

### Activities to Protect the Local Environment

Hanwha Corporation actively protects the environment of local communities surrounding its business sites by organizing environmental protection activities with participation from its employees in nearby mountains, rivers, and seas. The Boeun Plant planted 50 elm trees over an area of approximately 1,300m<sup>2</sup> in 2021 as part of the “One Company, One Forest” initiative and conducted activities such as watering, pruning, and mowing in 2023. The Onsan Plant volunteered with the Onsan Regional Civil Environmental Patrol in 2023 on inspections of four local rivers from April through October to prevent pollution, focusing on odor control and environmental conditions. During peak odor times, it monitored the odor levels and riverside environments of Daejeongcheon, Dangwolcheon, Wonsancheon, and Gangyang streams to prevent river pollution. Hanwha Corporation will be continuing such activities aimed at reducing environmental pollution in local communities.

### Activities to Conserve Biodiversity

Hanwha Corporation is committed to preserving the natural environment and conserving biodiversity and ecosystems in areas where its business sites are located to minimize the impact of corporate activities on local flora and fauna.

The Boeun Plant began ecological surveys in 2022 at three locations, starting with the nearby Heukcheon Stream, to assess the impact of corporate activities on biodiversity. In 2023, these locations were monitored three times to observe seasonal changes in vegetation, terrestrial fauna, and aquatic fauna. The survey identified key native species and invasive species to form a basis for ongoing biodiversity conservation activities tailored to the local ecosystem.

The E&C Division conducts environmental impact assessments at the initial stage of projects to gain an understanding of flora and fauna. Protection plans are established for legally-protected species found during these assessments, while management measures are implemented for invasive species. It also proactively analyzes potential ecological impacts from the planning stage, applying construction methods that preserve the terrain and biodiversity, including the creation of alternative habitats, tree transplanting, and creation of ecological corridors and green spaces, to minimize negative impact on ecosystems through comprehensive preliminary investigations and proactive measures. In 2023, multiple protective measures were taken for nine bioprotective species (e.g., mountain goats, otters), including the provision of shelters, migration pathways, and food chain preservation.



### Special Case Hanwha Group's Afforestation Projects for Ecological Restoration

Hanwha Group has a long-term commitment to its “Solar Forest” campaign, which creates eco-friendly forests in Korea and overseas by growing saplings through solar energy, thereby emitting zero carbon emissions. Since the establishment of the first Solar Forest in 2011, 530,000 trees have been planted across 1,450,000 m<sup>2</sup> (as of 2023, there are ten Solar Forests). The tenth Solar Forest, established in 2023, is located in Hwacheon-ri, Bonghwa-gun, Gyeongsangbuk-do, where a massive wildfire in 2022 destroyed the original forest, and an eagle owl, a natural monument, was rescued during the firefighting efforts. In response, Hanwha Group planted approximately 6,000 hardy nectar plants over 20,000 m<sup>2</sup> and 1,000 seed balls in inaccessible areas, thereby restoring carbon sinks and rebuilding ecosystems for biodiversity conservation.

In 2023, Hanwha Group became the first Korean company to join the World Economic Forum's 1t.org initiative, an international effort that aims to plant, conserve, or restore one trillion trees by 2030 in alignment with the UN Decade on Ecosystem Restoration. Through such afforestation projects and natural restoration initiatives, Hanwha Group is actively addressing the climate and biodiversity crises.



Site of the 10<sup>th</sup> Solar Forest



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SOCIAL

# Safety and Health Management

## Achievements in 2023

No. of employees provided with Industrial Safety and Health Training



39,189

For 6 consecutive years



OIFR (Occupational Illness Frequency Rate) Zero

Average Process Safety Management Grade achieved across all business sites



Above S

## Going Forward

Hanwha Corporation is committed to improving its safety and health management system for the establishment of a healthy working environment for its own employees and those of its contractors. Through proactive communication with our members, the company strives to foster an environment that motivates employees to participate in safety and health activities.

## SDGs Alignment



## Creating a safe working environment for own employees and contractors

Through the operation of the Safety and Health Management Committee and implementation of data-driven safety and health systems, Hanwha Corporation has established a proactive framework for responding to serious accidents. It actively supports safety assessments and evaluations for employees and contractors alongside provision of education and consultations for the fortification of risk management capabilities.

## Safety and Health Management Implementation System

### Enhancing Safety and Health Management

Hanwha Corporation operates Safety and Health Management Committees for each division to prevent serious accidents and ensure industrial safety oversight. The committees convene biannual meetings to review the alignment of safety and health management plans and verify the adequacy of safety management levels, budgets, and personnel composition for each business site. Safety and health plans and performances, based on compliance with laws such as the Serious Accidents Punishment Act and the Occupational Safety and Health Act, are reported to the board of directors at the beginning of each year. The implementation of the safety and health management system is monitored and consistently improved through each division's organizations dedicated to safety and health. Furthermore, regular reviews are conducted of external policy requirements to revise and/or update safety and health management manuals and workplace guidelines, thereby enhancing operational standards and encouraging voluntary employee participation for a workplace culture that is safe and accommodating.

### Safety and Health Management Goals and Strategies

Mission	2023 GROUP Safety & Environment Leading Company 2026 GLOBAL Safety & Environment Leading Company			
Vision	Safe and Healthy life for everyone, everywhere! Beneficial to our Environment and the Community!			
Strategic Direction	A. Internalization and Consolidation of Safety Culture	B. Advancement of Management Practices	C. Enhancement of Internal Capabilities	D. Enhancement of ESG Management
Safety and Health Achievements of 2023	[Global] No. of Serious Accidents: 1 [E&C] No. of Serious Accidents: 3 [Momentum] No. of Serious Accidents: 0, No. of Occupational Diseases: 0			
Safety and Health Goals for 2024	[Global] No. of Serious Accidents: 0 [E&C] No. of Serious Accidents: 0 [Momentum] No. of Serious Accidents: 0, No. of Occupational Diseases: 0			

### Implementation of Data-Driven Safety and Health System

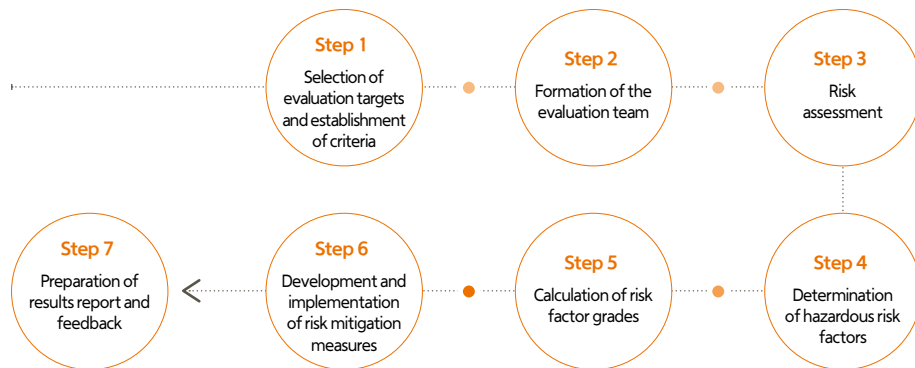
The E&C Division operates a safety and health platform to encourage active employee participation in safety and health activities and obtain relevant information via smartphone. The platform's key features (e.g., sharing pre-risk assessments, TBM participation certification, safety and health training and education, safety hotline, and safety and health activity mileage) consistently and effectively enhance a participation-based system for safety and health. The Momentum Division has expanded its managerial scope by introducing an electronic system not only at installation sites but also business sites that was sophisticated through a database for reviewing laws and regulations related to chemical substance control. To prevent safety blind spots during high-risk operations, a remote monitoring system has been established at high-risk installation sites. The division plans to further digitize safety and health tasks and upgrade its management system by introducing safety and health kiosk systems within business sites.

## Workplace Safety Management

### Safety Risk Management

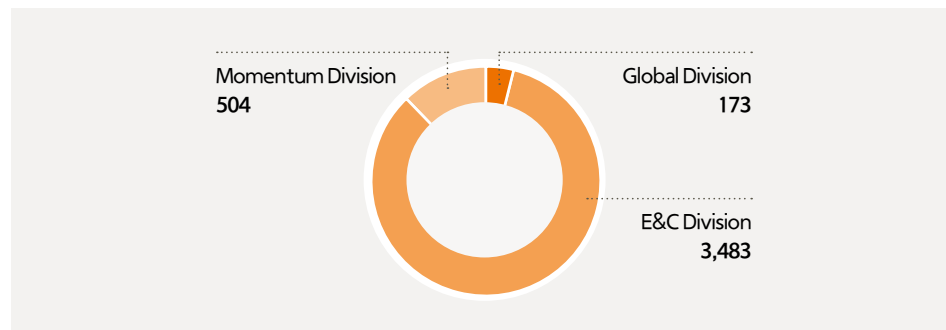
Hanwha Corporation has established a risk assessment system that is tailored to the characteristics of each business division in an effort to comply with relevant laws (Occupational Safety and Health Act, Serious Accidents Punishment Act) and manage potential risk factors in the workplace. Furthermore, risk assessments are conducted per division on both a regular (annual) and irregular basis to check for hazardous risk factors that may arise during processes and operations. It categorizes risk factors by accident type (e.g., fall, entrapment, and collision) and checks regularly for such accidents through such assessments and minimizes safety risks by identifying and improving critical hazardous risk factors.

#### Risk Assessment Process (Regular)



#### Risk Assessments Conducted in 2023

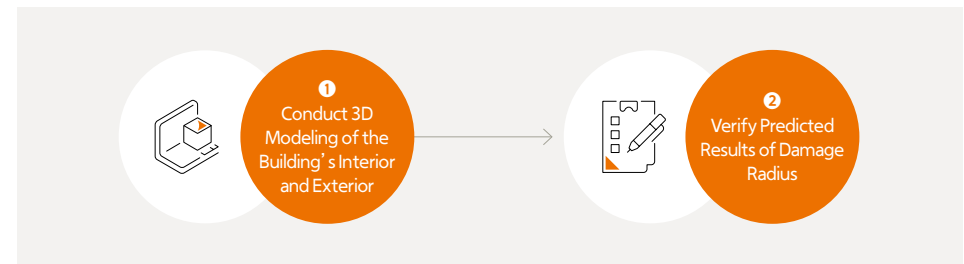
(Unit: No. of cases)



### Safety Accident Simulation

The Global Division conducts explosion damage simulations to predict and prevent damages that may occur during the handling stages in the construction process of new explosive manufacturing facilities. This simulation allows the company to quantitatively predict the extent of damage caused by potential accidents (e.g., explosions) and incorporate such predictions into workspace design and workflows to maximize workplace safety. Moreover, the division employs a sensitivity standard tester to assess the hazards of the substances being handled and employs strict management standards for sensitive processes to minimize risks.

#### Safety Accident Simulation Procedure



### Hazardous Material Safety Management

The Global Division operates a Smart Integrated Control Center (SICC) to prevent risks that may arise during the transport and storage of hazardous materials. The SICC monitors on a 24-hour, real-time basis storage sites, the location of vehicles and/or transport workers, delivery status, whether vehicles are speeding or there are prolonged stops, and for accidents and responds immediately to any reported incidents or accidents. Furthermore, regular drills are conducted to prepare for emergencies such as accidents and terrorism, and a Chemical and Hazardous Material Dispersal Plan has been established to safely oversee hazardous material storage sites in the event of natural disaster.

### Safety Management at Installation Sites

The Momentum Division has introduced the "Pre-Global SHE KOM" system to ensure comprehensive safety management of overseas installation sites. This system implements pre-project reviews of overseas regulations and safety work plans, as well as safety training that is tailored to the needs/circumstances of local workers. For key sites, safety management is enhanced by collaborating with safety officers currently based in North America to establish management systems and develop manuals and procedures.

### Weekly Hazard Alert System

The E&C Division uses a Weekly Hazard Alert System to prevent safety accidents and manage construction site risks by assigning hazard alert levels and corresponding colors based on objective data (e.g., weekly accident reports, risk assessments of high-risk tasks, and safety inspection results). The safety management status indicated by such levels and colors is shared across the entire corporation. On-site teams use this system to diagnose issues and mitigate risks through advance warnings, thereby minimizing potential workplace hazards.

### Enhancing Accident Prevention and Emergency Response System

Hanwha Corporation established an Emergency Response Committee to ensure a prompt and coordinated company-wide response in the event of natural disasters and/or emergency situations. To minimize human and material damage during such situations, it implements an Emergency Response Management Plan and conducts annual emergency drills for each business division that are designed to assess the readiness of the emergency response system and ensure swift action in a dangerous situation. Furthermore, the company enhances employees' disaster response capabilities through regularly-conducted, scenario-based training (scenarios are designed based on pre-assessed risks and analyses of similar cases from Korea or other countries). Following each drill, evaluations and analyses are conducted to identify areas for improvement, which are then incorporated into future training to ensure safer workplaces.

## Dissemination of Safety and Health Culture

### Safety Culture Diagnosis and Evaluation

The Global and Momentum Divisions regularly conduct company-wide safety culture assessments to promote safety awareness and culture among all members, including the management. To quantitatively evaluate the current status of Hanwha Corporation's safety culture, survey questions are categorized into five categories: safety leadership, safety systems, education and training, on-site safety practices, and contractors management. Through this evaluation, the company identifies workplace weaknesses and establishes optimized safety culture improvement strategies to address such weaknesses. Efforts are also made to strengthen voluntary implementation of safety management systems at workplaces and enhance employees' safety awareness to minimize the risk of accidents.

#### Safety Culture Diagnosis Process



### Safety Management Capability-Building




#### Implementing a "Safety Day"

The Global and Momentum Divisions host a monthly "Safety Day" that is participated in by all employees of business sites. Safety Day includes various activities, such as safety training, inspections, on-site improvements, and feedback sharing. These activities enhance employees' awareness of the importance of workplace safety and help to consistently identify areas for improvement, thereby preventing accidents and strengthening Hanwha Corporation's safety culture.

## Employee Safety and Health Training and Education

Hanwha Corporation supports employees in identifying and responding properly to potential workplace hazards through a wide range of specialized safety training programs. These programs are designed to enhance employees' safety expertise and ensure that they are well-prepared to manage risks.

### Safety and Health Capability Building Programs

Division	Program	Target	Details	Outcomes in 2023
 Global	Specialist Cultivation	Safety and Health Practitioners	<ul style="list-style-type: none"> <li>Exam/course fee subsidies for safety and environment-related certifications</li> <li>Reward(s) for employees who demonstrate outstanding skills improvement</li> </ul>	Certifications obtained and rewards provided for 21 employees
 E&C	Safety and Health Academy	Employees (including contractors)	<ul style="list-style-type: none"> <li>Education for the establishment of self-discipline prevention systems and enhancement of safety and health capabilities for both employees and contractors</li> </ul>	No. of training sessions conducted: 187 No. of employees who completed training: 5,994
 Momentum	Safety and Environment Competency Enhancement for Supervisors	Safety and Health Supervisors	<ul style="list-style-type: none"> <li>Site inspections and identification of areas of improvement with supervisors from each department</li> <li>Specialized lectures to foster safety and health leadership and establish a strong culture of safety</li> <li>Informal meetings of multiple business sites for sharing model examples of safety leadership</li> </ul>	Cumulative no. of participants: 642

## Safety Management of Contractors

### Safety and Health of Contractors

Hanwha Corporation carries out safety management regulations regarding contractors to ensure a safe workplace environment and enhance their safety and health management capabilities. The company operates customized safety management support and evaluation systems for contractors that are tailored to each manufacturing process. The Global Division conducts awareness training on accident prevention for all contractor representatives and employees. The E&C Division provides safety and health consulting to high-risk and/or accident-prone contractors and supplements their budgets for appointing safety managers to encourage proactive safety. In the first half of 2023, the Momentum Division shared key safety and environmental trends, safety accident occurrences, preventive measures, contractor evaluation results, and safety-related plans with 125 contractors and 139 contractors in the second half-year. Discussions on safety improvement measures and feedback on deficiencies were conducted for 170 low-scoring contractors to improve their safety and health capabilities. Through a cooperative program with the Korea Occupational Safety and Health Agency (KOSHA), Hanwha Corporation supports safety consulting and the establishment of risk assessment-based management systems for contractors. This year, the program has led to the recognition of exemplary workplaces in the form of diverse benefits and support for contractors (such support and benefits/incentives will be expanded in the coming years).

### Safety Management and Evaluation for Contractors

Hanwha Corporation screens prospective contractors based on safety and health criteria, including the CEO's safety and health commitments and objectives, current industrial accident rates, safety and health operations, and risk assessment performance. The results of such screenings are incorporated into the contractor selection and bidding process. At the initiation stage for each project, the company conducts safety kickoff meetings with contractors to review safety management plans and budget status for key processes. During project execution, risk assessments and safety inspections are conducted often to ensure compliance with safety regulations and standards. Furthermore, safety and health training is provided to foster a safe workplace environment. Upon a project's completion, the number of safety rule violations and level of voluntarily-conducted safety management practices are evaluated to encourage proactive safety management among contractors.

## Safety and Health Communication

### Employee Feedback System

In accordance with the Industrial Safety and Health Act, Hanwha Corporation operates Safety and Health Councils comprised of representatives from both labor and management, including the Industrial Safety and Health Committees or Labor-Management Councils per division (Global, E&C, Momentum). These councils, which also include contractor-side representatives and practitioners, discuss major safety and health issues, develop policies and measures to improve workplace safety and health, and consistently communicate with stakeholders to create a safe industrial environment. In compliance with Article 52 of the Industrial Safety and Health Act, the company has institutionalized a Stop Work Authority (SWA), which allows employees to request an immediate halt to operations when there is an imminent risk of industrial accidents, thereby implementing a bottom-up approach to safety management.

### Safety and Health Communication Activities


Program	Target	Details
Industrial Safety and Health Committee and Labor-Management Council	Labor and management representatives per business site	<ul style="list-style-type: none"> <li>Hear about and discuss safety and health-related issues</li> <li>Review each business site's application of and compliance with safety and health policies and regulations</li> </ul>
CEO's Safety and Health On-Site Management	Executives (including CEO)	<ul style="list-style-type: none"> <li>Identify and discuss safety and health issues related to all production activities at Hanwha Corporation</li> <li>Inspect and identify improvements in safety and health issues led by business owners</li> <li>Collect employee suggestions through safety and health communication and apply them where relevant</li> </ul>
Safety Meetings Led by CSO	Safety and health leaders and employees	<ul style="list-style-type: none"> <li>Conduct on-site inspections and identify improvements with safety- and environment-related departments and supervisors per business site</li> <li>Provide specialized lectures to foster safety and health leadership and create a culture of workplace safety</li> <li>Hold in-depth discussions to share examples of exemplary safety leadership and best practices among business sites</li> </ul>
Safety and Health Council	Contractors (representatives and practitioners)	<ul style="list-style-type: none"> <li>Regularly conduct joint safety inspections and CEO meetings</li> <li>Share safety and health policies and collect suggestions</li> </ul>
Safety and Health Information Sharing	Employees and contractors	<ul style="list-style-type: none"> <li>Share periodic internal and external trends, accident cases, and safety- and health-related information per business division</li> </ul>

## Occupational Health Management

### Employee Health Promotion Activities

Hanwha Corporation operates various physical and mental health management programs to guarantee a healthy workplace environment for all employees.


### Employee Health Management Program



- Operation of health management offices per worksite and follow-up management enhancement for employees who have underlying health issues (e.g., doctor consultations, referrals to health examination institutions)
- Job stress factor assessment, analysis, and measures (e.g., psychological counseling)
- Risk evaluation and follow-up management of cerebrovascular and cardiovascular disease
- CPR training for employees
- Comprehensive health checkups tailored to the needs of all employees and their spouses/families
- Mandatory installation of rest facilities at all workplaces to protect employees' health and proactively prevent serious accidents via rest facility guidelines

**Health Checkups Conducted in 2023**

Employees	Spouses and Families	Total
3,565	1,468	5,033



- Programs for employees with hypertension, diabetes, dyslipidemia, and obesity; rewards for participants who reap tangible outcomes
- Obesity/smoking clinics, alcohol moderation programs, rewards for successful participants
- Mental health improvement campaigns
  - Operation of mental health experience booths and provision of succulents to foster emotional safety
  - Surveys for assessing stress, depression, and alcohol dependency levels; individual counseling and group psychological education with external experts for at-risk employees

## Management of Workplace Environments

Hanwha Corporation ensures employees' right to know about their working environment by securing Material Safety Data Sheets (MSDS) for all hazardous substances handled at workplaces and sharing related information with employees. It sets internal standards to be stricter than legal requirements to measure and manage exposure levels to hazardous factors and conduct inspections of work environments through external organizations such as the Korea Industrial Health Association, implementing improvement measures as needed. It also conducts special health checkups for workers exposed to certain hazardous factors to closely monitor their health conditions. Through such efforts, the Momentum Division has achieved a "Zero Occupational Illness Frequency Rate (OIFR)" for five consecutive years.

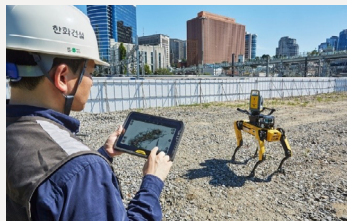
To ensure safety at construction sites, Hanwha Corporation actively utilizes diverse smart technologies, such as robot dogs equipped with 3D scanners and HS2E (Hanwha Safety Eagle Eye), a mobile safety management system. Notably, the E&C Division has established its own high-risk integrated control system (H-HIMS) to prevent accidents and improve worksite safety.

### Smart Construction Technology in the E&C Division



#### Mobile Safety Management System HS2E (Hanwha Safety Eagle Eye)

- Photo Sharing: Allows anyone to instantly take and/or share photos taken with a smartphone of hazards or safety issues on construction sites
- Real-time Notification: Sends real-time notifications to all site workers to ensure timely response and a safer environment



#### Robot Dog Equipped with 3D Scanner

- 3D Laser Scanner: Measures site conditions and calculates elevation values and earthwork quantities
- High Utility: Especially useful in areas with restricted human access due to security or safety concerns



### Special Case Process Safety Management at Hanwha Corporation's Global Division

The Global Division implements a comprehensive plan for process safety management (PSM) enhancement to proactively manage process-related accidents (e.g., fire, explosion, leak). The plan includes reassessing the appropriateness of previously identified explosion hazard areas, supplementing explosion protection measures, and utilizing new risk assessment techniques such as K-PSR (KOSHA Process Safety Review) for detailed hazard analysis. Active participation of all employees in identifying and mitigating potential hazards has helped significantly with minimizing process safety risks, resulting in all business sites achieving a PSM grade of S or higher, with the Boeun Plant gaining P, the highest grade, in 2023. Hanwha Corporation is committed to maintaining top PSM levels across all work sites through consistent employee engagement and proactive safety practices.

SOCIAL

# Talent Management

## Achievements in 2023

Enacted in 2023



Human Rights Management Charter

Family-friendly management certification



12 consecutive years

Total welfare expenditure



KRW 78.68 billion

## Going Forward

Hanwha Corporation is committed to identifying and expanding academic-industry collaborations and global talent development programs to secure top talent and make its workforce more capable. It also aims to systematically improve human rights management by revising evaluation and management systems in accordance with the Human Rights Management Roadmap.

## SDGs Alignment



## Talent Management Implementation System

### Role-Focused Talent Recruitment

Guided by its slogan, “Great Challenger,” Hanwha Corporation is committed to recruiting individuals who demonstrate a sense of ownership, exceptional skills that transcend conventional frameworks, and flexibility that enables embracing of opportunity. The company’s employment policies ensure fairness and rationality by explicitly prohibiting discrimination based on gender, age, birthplace/place of origin, education, or marital status/pregnancy/childbirth. Hanwha Corporation operates a recruitment website, “Hanwha In”, for continuous and accessible recruitment throughout the year. The recruitment process focuses on job competency: during the initial screening of new hires, any irrelevant information is blind-reviewed to ensure fair and equitable talent acquisition. Furthermore, the company communicates its business and corporate culture to potential candidates through various channels, including its official website, blog, and social media channels—an approach that improves matchings of hires with jobs they are best suited to by providing detailed information about roles and responsibilities. Hanwha Corporation’s YouTube channel features videos of current engineers and developers discussing their work responsibilities, as well as interviews with recent hires about their experiences. These videos provide applicants with invaluable insights into Hanwha Corporation’s work environment and job specifics.

[Recruitment Website Hanwha In](#) [Shortcut](#)

### Talent Acquisition

Hanwha Corporation is dedicated to attracting and nurturing exceptional talent who meet the technical and competency needs of its business divisions. For early identification and securing of top-tier talent, Hanwha Corporation engages in industry-academia collaboration programs and technical exchange meetings and utilizes diverse channels, such as headhunting and employee referral programs, to recruit and manage international and/or outside experts. For jobs that require an extremely specific skill set, the company employs direct sourcing strategies targeting industries and companies with high-caliber professionals. Furthermore, headhunting and internal employee recommendations help build a talent pool that is ready to make immediate contributions. Such a multifaceted approach ensures that Hanwha Corporation has access to a diverse and skilled workforce, driving its mission to foster future-leading professionals.

### Strategy for Securing Top Talent




Objective	Strategy Division	Global Division	E&C Division	Momentum Division
	Become a specialized IT materials company focused on technology-intensive specialty chemicals and silicon gases		Be a leader in mixed development and eco-friendly projects	Secure specialized/top-level personnel to expand Hanwha Corporation’s business portfolio
2023 Talent Acquisition Activities	<ul style="list-style-type: none"> <li>Expand direct sourcing platforms to access a diverse talent pool</li> </ul>	<ul style="list-style-type: none"> <li>Secure outside experts in R&amp;D and business development fields</li> <li>Establish favorable relationships with university research teams for early securing of talent with necessary skills and competencies</li> <li>Collaborate with overseas universities on joint academic seminars and educational programs</li> </ul>	<ul style="list-style-type: none"> <li>Secure outside experts for future strategic projects (e.g., mixed development, natural circulation, and water treatment)</li> <li>Utilize various channels (e.g., employee referral programs, direct recruiting) to secure talent</li> </ul>	<ul style="list-style-type: none"> <li>Secure outside experts for R&amp;D in rechargeable batteries and turnkey projects</li> <li>Conduct direct sourcing activities targeting specific companies</li> <li>Recruit new specialists to train specialized manufacturing personnel</li> <li>Conduct campus recruiting at target universities and departments to hire top-tier local talent</li> </ul>

## Employee Competencies

### Talent Development Strategy

Hanwha Corporation aligns its talent development education plans with each business division’s future strategies and business portfolios, and it designs and implements comprehensive programs aimed at maximizing individual potential and developing employees into leaders. The E&C Division has established a three-tiered development framework to guide the growth of both common and job-specific competencies at each level, with key competencies and qualifications required for each role linked to major KPIs. This approach not only enhances employee capabilities but also improves organizational competitiveness. The Momentum Division operates job- and rank-specific training programs to consistently develop relevant skills and competitiveness and has a strategy in place to cultivate experts in various fields, with extensive programs designed and implemented to support this strategy.

#### Division-Specific Talent Development Strategy

	 Global Division	 E&C Division	 Momentum Division
Vision	Provide sustainable key materials and eco-friendly solutions	Lead large-scale mixed development and green energy projects	Lead the global market in engineering solutions and process equipment
Direction of Talent Development	Increase talent based on chemical technology that connects energy and the environment	Secure talent to lead mixed development and eco-friendly construction projects	Acquire innovative and passionate talent that can lead the global market in engineering solutions and process equipment
Talent Development Programs	<ul style="list-style-type: none"> <li>• Design personalized career paths for each employee</li> <li>• Operate diverse training and educational courses on explosives, trade, and chemical weapons</li> </ul>	<ul style="list-style-type: none"> <li>• Establish a self-directed development system (CRM)</li> <li>• Manage and nurture a pool of top talent for strategic projects</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct job training based on core skills for each business item</li> <li>• Build leadership capabilities of department heads and provide one-on-one coaching</li> <li>• Support employees in enhancing language skills and operate programs for expatriates</li> </ul>

### Employee Competency Enhancement Programs

Hanwha Corporation provides comprehensive and systematic training programs that are designed to enhance job skills, leadership, and global competencies for all employees, including everyone from new hires to executives. It is committed to strengthening organizational capabilities by ensuring individual learning opportunities, fostering a culture of self-directed learning, and offering access to external educational resources.

#### Individual Employee Development

The Global Division offers various programs which, through self-directed learning, help employees improve their job competencies. Employees can choose from a range of language platforms, with the company providing support for language exams to monitor progress and facilitate continuous improvement, as part of the company’s goal of fostering global talent. There are also courses on business understanding to improve employees’ awareness of other business units and promote a collaborative organizational culture.

The E&C Division promotes employee development and self-improvement through an annual self-directed Career Roadmap, which involves approval from team leaders and submission of outcomes to the HR Team. It also operates an internal free agent (FA) system, Job Market, to allow employees to design their career paths and develop competencies by facilitating timely internal job transfers to fill vacancies with suitable candidates. It enhances individual job skills and strengthens technical assets by having employees share specialized skills and experiences through business unit-specific training programs.

The Momentum Division strives to imbue employees with core job competencies through a job competency certification system. It conducts quarterly in-house training for engineering roles, leveraging the extensive experience and know-how of internal trainers to strengthen technical capabilities specific to each business item.

## Global Talent

Hanwha Corporation operates language qualification systems and provides foreign language education (online and offline) that is tailored to each job’s unique set of responsibilities and division-specific global talent development programs based on the characteristics of each business unit. The Global Talent Program (GTP) gives exceptional employees the opportunity to gain valuable international experience by working at an overseas subsidiary for up to two years. Additionally, Hanwha Corporation provides programs, such as global leadership courses and business communication skills training, to further develop its employees’ capabilities.



### Special Case Hanwha Corporation Global Talent Development Programs: METP (Mining Engineer Training Program)

The Global Division operates the METP (Mining Engineer Training Program) to cultivate technical personnel based outside Korea. The program involves dispatching technical staff to countries such as Indonesia and Australia for local capacity-building training. Following the successful deployment of cohorts in 2021 and 2022, the program has been extended into 2023 and continues to yield positive results. The E&C Division focuses on developing key talent with global capabilities by providing M&A specialist training. To enhance job competencies and support career development, it also provides diverse global talent development programs (e.g., MBA programs or master’s/doctoral degree programs at overseas universities). All of these initiatives are designed to imbue employees with extensive experience and the skills necessary for their professional growth.

## Leadership Building Workshops

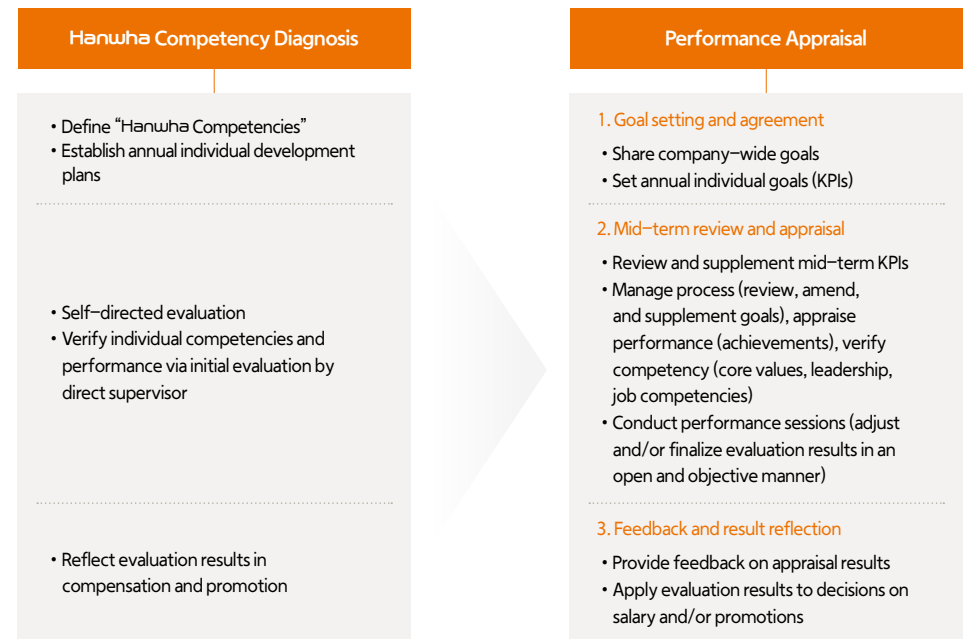
Hanwha Corporation regularly conducts leadership-building training and workshops for executives and managerial-level employees to address key organizational issues. To cultivate professional competencies and horizontal leadership among leaders, the company operates in-house programs focusing on vision setting, awareness improvement, and specialized leadership lectures. These initiatives aim to enhance leaders’ ability to communicate effectively with team members and demonstrate leadership in instances that require issue/conflict resolution. The Momentum Division offers various training programs on leadership skill-building for department heads based on comprehensive leadership assessments. Such training is conducted to address critical organizational issues, with 1:1 coaching program provided to facilitate the development of good leadership.

## Fair Evaluation and Compensation

### Fair Performance Appraisal

Hanwha Corporation defines the core values and competencies expected of employees and establishes individual development plans to evaluate annual performance against set goals. A three-tiered systematic performance appraisal system ensures objective and exhaustive conducting of evaluations to ensure rational compensation based on actual performance and the enhancement of employee capabilities. To maintain fairness, different weightings are assigned to achievements and competencies according to job position/level, with key roles clearly defined for both higher- and lower-level positions, resulting in equitable performance appraisals. Based on its commitment to fostering a performance-centric organizational culture, Hanwha motivates employees and boosts work efficiency through objective evaluations and fair compensation. The HR Department leads company-wide performance sessions to consistently monitor adherence to appraisal procedures, exhaustiveness of appraisal content, rationality of goal levels and appraisal criteria, and validity of appraisals. Such ongoing oversight ensures the integrity and effectiveness of the appraisal process, driving continuous improvement across the organization.




### Hanwha Competency Diagnosis and Performance Appraisal Process



## Rational Compensation System

Hanwha Corporation integrates its performance management and compensation systems in accordance with its HR compensation principle, “High Performance, High Reward.” It implements an individualized salary system that reflects personal performance and competencies in compensation appraisals. To motivate employees, they are offered a variety of monetary and non-monetary compensation programs.

### Compensation Systems

 <b>Global Division</b>	<ul style="list-style-type: none"> <li>• Provide allowances for job-related certifications to improve employee expertise</li> <li>• Offer separate annual rewards to individuals or teams who achieve corporate-wide performance targets</li> </ul>
 <b>E&amp;C Division</b>	<ul style="list-style-type: none"> <li>• Expand compensation to secure top talent for strategic projects</li> <li>• Operate a separate performance bonus system to motivate/reward employees for skill improvement and outstanding performance</li> </ul>
 <b>Momentum Division</b>	<ul style="list-style-type: none"> <li>• Provide incentives for ideas that increase project profitability (e.g., cost reduction, additional profit acquisition methods, project process improvements)</li> <li>– Offer stage-specific incentives to idea proposers and project contributors based on project timelines</li> <li>– Provide differentiated cash incentives for idea submission, application, and adoption of excellent ideas</li> <li>• Establish an in-house “Hall of Fame” to commend and promote outstanding research and development achievements</li> </ul>

## Collaborative Organizational Culture

### Enhancing Organizational Culture

Hanwha Corporation is committed to creating a positive work environment and enhancing organizational culture by actively engaging with employees and incorporating their feedback. Each year, an anonymous, 52-question survey is conducted of all employees to collect feedback on organizational culture. Survey results are thoroughly analyzed to identify areas for improvement, which are then integrated into policies and procedures to make substantive improvements to workplaces. To accelerate innovation and drive new business initiatives, the company has developed a comprehensive global work environment enhancement strategy that integrates changes in work policies and environments, thereby promoting innovation and supporting new business ventures. The strategy continues to serve as the basis for the gathering of employee feedback to identify and implement additional improvements.

Hanwha Corporation is also committed to enhancing policies, systems, and workspaces to boost employee engagement and productivity. By conducting surveys and Focus Group Interviews (FGI), the company makes every effort to hear directly from employees. Feedback gained from such efforts are used to make informed adjustments to foster innovative ways of thinking that enhance organizational culture.

### Global Work Environment Improvement Strategy

Strategic Direction	Innovate Existing Businesses & Early Stabilization of New Ventures			
Improvement Focus	Enhance Work Environment, Policies, and Mindsets/Behaviors to Support Business Initiatives			
	Enhancing Communication and Creating Synergies	Creating a Desirable Workplace	Fostering an Outward-Looking Mindset	Improving Work Productivity and Engagement
	<ul style="list-style-type: none"> <li>• Eliminate silos between business units</li> <li>• Encourage interaction and collaboration among business units</li> <li>• Create synergies through inter-unit collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance corporate competitiveness to attract top talent</li> <li>• Providing flexible work environment</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a market and customer-oriented work mindset</li> <li>• Enhance business capabilities to excel in the market</li> <li>• Build positive relationships with stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Enable efficient and productive work anytime, anywhere</li> <li>• Promote smart working practices to achieve better performance</li> </ul>
Detailed Tasks	Spatial Changes	Policy and System Changes	Mindset and Behavioral Changes	
	<ul style="list-style-type: none"> <li>• Upgrade outdated facilities and expand convenience amenities</li> <li>• Create workspaces catering to diverse preferences</li> <li>• Enhance space efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Promote Work-From-Home (WFH)</li> <li>• Revise information security policies to eliminate constraints on work locations</li> <li>• Encourage flexible working hours to maximize time spent at work</li> <li>• Improve performance management and evaluation systems</li> </ul>	<ul style="list-style-type: none"> <li>• Introduce a flexible seating system</li> <li>• Increase activities that encourage interaction between business units and teams</li> <li>• Utilize collaboration tools to ensure sharing and connectivity</li> <li>• Revise goal-setting and work management systems to accommodate new working styles</li> </ul>	

### Key Achievements in Improving Work Environment

- Flexible Working System: Implemented on a bi-weekly basis to allow employees to use time effectively in a way that best suits their job's characteristics
- Work-Life Balance Leave: Introduced a leave system that gives employees the autonomy to choose between compensatory leave or additional pay for overtime hours (unused leave is monetized on a quarterly basis)
- Refresh Areas and Amenities: Established common areas and amenities (e.g., refresh rooms, lounges, snack bars, and stationery stations) to help employees recharge and foster interaction
- Psychological Counseling Services: Established a psychological counseling center (Rapporena) with an on-site counselor; provided psychological education (individual, group) to improve employee well-being and ability to concentrate at work **E&C Division**
- Employee Morale Events: Organized food truck events at over 50 construction sites nationwide to boost employee morale **E&C Division**
- Flexible Working Hours: Introduced a flexible working hour system that allows employees to choose their work hours based on job-specific peak productivity times **Momentum Division**

### Work-Life Balance

Hanwha Corporation provides diverse welfare programs to help employees find a healthy balance between work and personal life. It is especially committed to implementing policies that alleviate the burden of childbirth and childcare to create an environment in which female employees can perform at peak levels. Hanwha Corporation's family-friendly certification from the Ministry of Gender Equality and Family has been maintained for 12 years since it was first awarded in 2013 in recognition of governance, implementation performance, and employee satisfaction with family-related corporate policies.



### Key Welfare Programs

<b>Childbirth and Childcare</b>	<ul style="list-style-type: none"> <li>• 90 days of maternity leave (120 days for multiple births) and up to one year of parental leave in accordance with legal standards</li> <li>• Financial support for infertility treatments to encourage pregnancy and childbirth among employees</li> <li>• Reduced working hours and flexible work periods during childcare phase to help employees balance work and childcare responsibilities</li> <li>• "Hanwha Mom's Package" of maternity and childcare items</li> <li>• Workplace daycare centers to support working mothers</li> <li>• Paternity leave and a childcare leave policy to support the healthy lives of employees and their families</li> <li>• Subsidies for children's education fees</li> </ul>
<b>Family-Friendly Workplace Culture</b>	<ul style="list-style-type: none"> <li>• Refresh Leave Policy, which allows up to 15 days of leave for physical and/or emotional recharging</li> <li>• Hanwha Group benefits for employees' families for communal services and leisure facilities (e.g., Hanwha Resorts)</li> <li>• PC-Off policy to minimize unnecessary overtime</li> </ul>
<b>Flexible Organizational Culture</b>	<ul style="list-style-type: none"> <li>• Remote work, flexible working hours, and flexible seating arrangement</li> <li>• One-month sabbatical to celebrate a promotion or long-term service through Sabbatical Program</li> </ul>
<b>Employee and Family Health</b>	<ul style="list-style-type: none"> <li>• Psychological counseling services for employees</li> <li>• Subsidies for health checkups for employees and their spouses</li> <li>• Group accident insurance and global safety insurance to protect employees in the event of an accident, whether in Korea or overseas</li> </ul>
<b>Self-Development and Personal Interests</b>	<ul style="list-style-type: none"> <li>• Chae-eum Leave System, a system that offers a leave period of 6~24 months that supports employees in obtaining degrees, job-related certifications, or language learning</li> </ul>

### Employment Stability

Hanwha Corporation offers reemployment support services to employees who opt for voluntary or mandatory retirement. To assist retiring employees in planning their post-retirement careers, it provides various career exploration opportunities and career consulting services tailored to suitable jobs and life planning. To help employees better prepare for retirement, it introduces new individual pension products and holds retirement pension briefings at the end of each year.

### Communication Among Employees and Across Generations

Hanwha Corporation hosts an annual management briefing to transparently communicate with employees on overall management and key industry issues. Through virtual meetings, the company enhances employee participation through efficient communication methods that are not limited by location or scale. Moreover, it actively gathers employee feedback through surveys, interviews, and meetings, incorporating their opinions into organizational decision-making for the ultimate goal of establishing a mature labor-management relationship. To bridge the generational gap and foster a flexible and horizontal organizational culture, Hanwha Corporation conducts various activities for Gen MZ employees that are tailored to each business unit, including flexible seating arrangements, coffee salons, and educational programs. To ensure that the intentions and direction of such changes are well-communicated, content is developed and disseminated (internally and externally) via social media channels. The Momentum Division regularly conducts town hall meetings led by the business unit's executive officer that promote open dialogue between management and employees, enhance organizational transparency, and garner an informed understanding of and support for the business unit's goals and current status.

### Communication Activities

Division	Programs	Effects
Global Division	<ul style="list-style-type: none"> <li>• Annual town hall meetings for all employees (bi-annual from 2023)</li> <li>– Sharing of key management issues (e.g., company vision, business goals, performance, and challenges)</li> <li>• Periodic surveys on systems and policies</li> <li>• Activity planning (e.g., departmental workshops)</li> </ul>	<ul style="list-style-type: none"> <li>• Create a platform for communication and consensus between management and employees</li> <li>• Gather employee feedback and apply it to system improvements</li> <li>• Encourage communication and interaction among employees, resulting in improved work efficiency</li> </ul>
E&C Division	<ul style="list-style-type: none"> <li>• CEO visits to construction sites to hear from on-site employees</li> <li>– Opinions gathered from on-site workers under the "field management" principle</li> <li>• Regular job training and departmental meetings per business unit</li> </ul>	<ul style="list-style-type: none"> <li>• Collect employees' feedback and convey it to management to address grievances</li> <li>• Share job-related challenges across generations and ranks, enhancing mutual understanding among employees</li> </ul>
Momentum Division	<ul style="list-style-type: none"> <li>• Regular satisfaction checks per department</li> <li>– Interviews (HR department) to gauge employee satisfaction</li> <li>• Company culture bulletin board</li> <li>– F.Y.I (For Your Information): Company-employee communication channel</li> <li>• Work Smart: Campaign that provides guidelines on utilizing organizational systems</li> <li>– Ground rules and action guides for flexible working hours, remote work, etc.</li> <li>• New HWM People: Self-introduction profiles of new hires on company bulletin board</li> </ul>	<ul style="list-style-type: none"> <li>• Collect employee feedback on systems (e.g., HR) to improve organizational culture in a healthy and sustainable direction</li> <li>• Share information on internal systems and issues (e.g., survey results), enhancing internal communication</li> <li>• Maximize work efficiency and enhance employee engagement</li> <li>• Improve understanding of new team members' capabilities and backgrounds, supporting quick integration into the organization</li> </ul>

## Cooperative Labor Relations

Hanwha Corporation guarantees employees' freedom of association and abides by the rights to organize, bargain collectively, and take collective action in accordance with the Constitution and relevant laws. In the Global and Momentum Divisions, labor unions have been established to foster a cooperative labor culture based on trust and cooperation between labor and management. Quarterly labor-management councils and regular meetings are held to hear from on-site workers and discuss issues concerning employee welfare, working conditions, and workplace safety. Through these discussions, Hanwha Corporation addresses matters that require joint effort between labor and management as a means of working together toward constructive resolutions and improvements.

## Culture of Respecting Human Rights

### Human Rights Policy

Hanwha Corporation is committed to protecting and respecting the human rights of all stakeholders impacted by its business activities and value chain, including employees, suppliers, local communities, and customers. It has established a Human Rights Management Charter and guidelines that adhere to international human rights standards such as the Universal Declaration of Human Rights, UN Guiding Principles on Business and Human Rights, UN Global Compact (UNGC), and standards specified by the International Labor Organization (ILO). In accordance with Article 13 of the ESG Committee's regulations, the company reviews/approves activities for the improvement of working conditions (e.g., workplace safety management, gender equality assurance) and deliberates on internal policies on human rights protection to prevent and/or mitigate negative human rights impacts. In 2023, Hanwha Corporation developed a mid-/long-term human rights management roadmap to make such efforts more effective. A human rights violation remedy process will be developed to systematically diagnose and alleviate human rights impacts arising from its business activities.

[Human Rights Management Charter](#) [Shortcut](#)

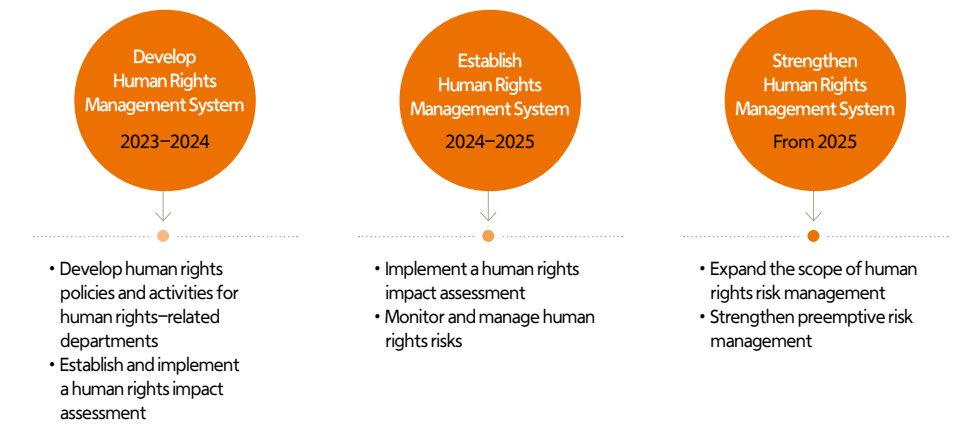
#### Detailed Principles of Human Rights Management

- Respect for Human Rights
- Prohibiting Discrimination in Working Conditions and Ensuring Favorable Working Conditions
- Ensuring Freedom of Association and Collective Bargaining
- No Child Labor
- No Forced Labor
- Ensuring Industrial Safety
- Preventing Sexual Harassment and Workplace Bullying
- Responsible Supply Chain Management
- Ensuring Human Rights and Environmental Rights of Citizens
- Protecting Customers' Human Rights

## Human Rights Risk Management

Hanwha Corporation has established a system for reviewing human rights-related risks through the ESG Committee and the Board of Directors in accordance with risk management regulations. It presents its human rights management policies and ethical code in a clear and transparent manner to ensure that all employees understand the importance of ethical behavior, responsibility, and high standards of human rights and respect. Furthermore, it prohibits unfair discrimination, provides fair evaluations and opportunities of employees based on abilities and qualifications, and shares its guidelines on human rights and labor with suppliers to promote a culture of respect for human rights. Hanwha Corporation will continue to elevate its human rights management practices through human rights impact assessments for systematic management of the human rights risks of all stakeholders.

### Human Rights Management Roadmap





## Human Rights Education

Hanwha Corporation conducts multiple human rights-related training sessions every year. Such sessions are offered both online and offline to maximize participation and cover topics including workplace harassment, sexual harassment prevention, and disability awareness improvement. Hanwha Corporation strives to promote the importance of human rights and ethics to foster mutual respect among employees and build a sustainable corporate culture.

## Human Rights Grievance Handling

Hanwha Corporation operates various internal reporting channels, including Cyber Hotline and workplace-specific sexual harassment counselors, to report illegal, unfair acts and grievances that may arise during business activities. The identity of the whistleblower and the content of filed reports are kept strictly confidential, with follow-up actions taken within 48 hours of filing. Reports of sexual harassment and human rights violations are reported to the CEO within 24 hours and investigated and resolved in a timely manner. Hanwha Corporation will continue to strengthen its human rights management and proactively address grievances to protect employees' human rights and create a work environment that is equal for all.

### Key Consultation Channels for Human Rights Grievances

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 <div style="background-color: #e67e22; border-radius: 50%; width: 60px; height: 60px; display: flex; align-items: center; justify-content: center; color: white; font-weight: bold; font-size: 16px;">Offline</div>	<p><b>Sexual Harassment Counselors:</b>                  Designated male and female counselors are available at each workplace to ensure effective counseling on human rights-related grievances</p>

## Non-Discrimination and Respect for Diversity

Hanwha Corporation embraces fair and equal HR policies and non-discrimination as core values to interact effectively with the diverse talents who are at the forefront of its business innovation activities. It strictly prohibits discrimination based on race, age, religion, disability, or social status in recruitment, promotion, wage payment, and educational opportunities to ensure that all employees can work in a pleasant setting and maximize their potential. Special hiring opportunities and additional points are provided in the recruitment process for individuals with disabilities, veterans, and the families of the Cheonan warship victims. Hanwha Corporation will continue to raise awareness to create an inclusive organizational culture that respects diversity and transcends the shackles of discrimination and prejudice.

SOCIAL

# Win-Win Cooperation

## Achievements in 2023

Number of suppliers receiving ESG management consulting



50

Size of Win-Win Fund



KRW 58.2 billion

Number of suppliers who have completed training programs



1,135

## Going Forward

Hanwha Corporation will expand support programs that meet suppliers' needs to achieve growth that is both inclusive and sustainable. It will be fortifying its supply chain risk management system to effectively respond to potential risks that occur either internally or externally.

## SDGs Alignment



## Win-Win Cooperation Implementation System

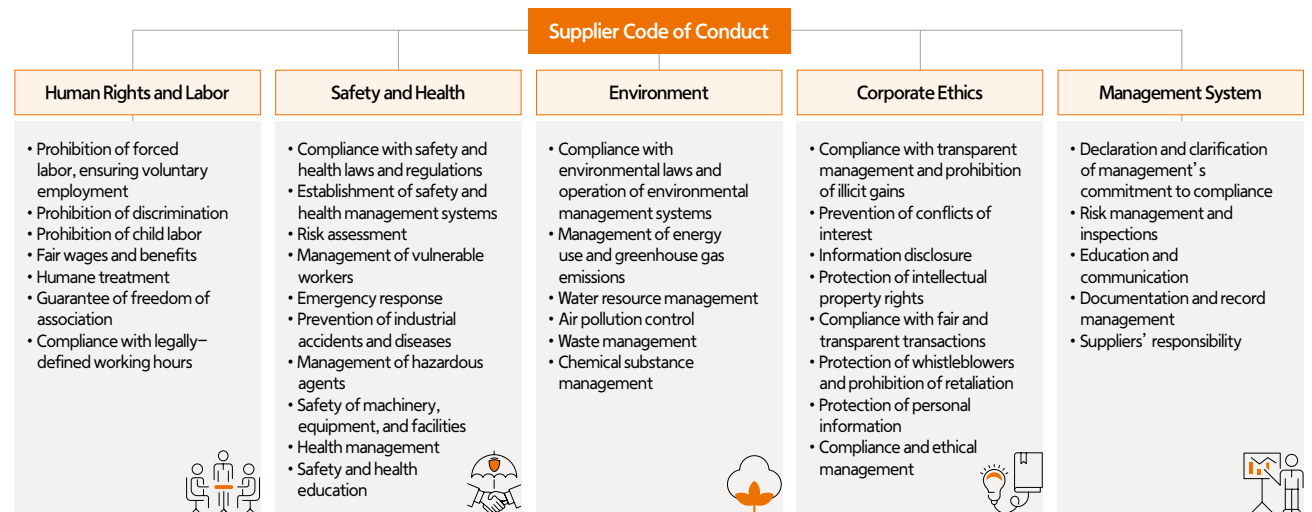
### Win-Win Cooperation Strategy and Implementation Pathway

Hanwha Corporation recognizes that enhancing the competitiveness of its suppliers by assisting in their growth directly correlates with Hanwha Corporation's growth. Based on its mission statement, "Going Further Together," the company pursues growth that is partnered and consistent. Under Article 7 of its Ethical Code ("Fair Transactions with Suppliers"), Hanwha Corporation strives to establish a system of inter-party cooperation that is equal and fair. The Four Action Guidelines for Shared Growth, which is comprised of financial support, management and technical support, educational and human resources support, and open communication as the core strategies, ensures active cooperation with suppliers. In 2023, Hanwha Corporation established a new Supplier Code of Conduct and, in 2024, introduced a detailed set of guidelines for this code that was shared with suppliers. Hanwha Corporation encourages its suppliers to comply with the Ethical Code under a regulatory framework and regularly monitors implementation and performance to ensure partnered growth and, ultimately, transformation into a global company.

[Win-Win Cooperation System](#) [Shortcut](#)

[Four Action Guidelines for Shared Growth](#) [Shortcut](#)

### ESG Management Areas in Supplier Code of Conducts



## Win-Win Cooperation Governance

Hanwha Corporation operates a dedicated Win-Win Cooperation module within the ESG Council that handles all supplier-related tasks, including everything from cooperative growth to supply chain management and fair subcontracting practices. The module plans and implements company-wide strategies and activities for win-win cooperation, overseeing various aspects of subcontract transactions and managing the systems and activities related to shared growth. Furthermore, Hanwha Corporation has established division-specific designated departments responsible for shared growth to facilitate smooth communication with suppliers and effectively address related issues and tasks.

### Win-Win Cooperation Organizational Chart



## Sustainable Supply Chain Management

### Supply Chain Management Strategy

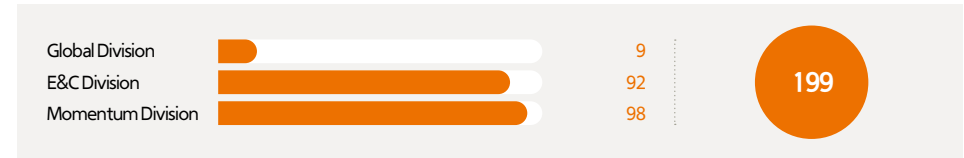
Hanwha Corporation is fortifying its supplier verification processes and making a more concerted effort to find new suppliers to ensure the sustainability of supply chain management. Such efforts, which involve conducting comprehensive evaluations of both new and existing suppliers based on financial capability, construction and delivery capability, bidding performance, and field and headquarters evaluations, resulted in the selection of competitive suppliers. Hanwha Corporation also makes an effort to find new suppliers to enhance cost efficiency and risk management, thereby maintaining a sustainable supply chain and ensuring stable business operations by addressing supply instability and cost increases.

### Selection of New Suppliers

Hanwha Corporation has established a new supplier registration process to select suppliers with outstanding capabilities. The process includes automatic screening for asset soundness and compliance issues, as well as evaluations across six due diligence areas: management, finance, technology, security, quality systems, and process evaluation. New supplier registration decisions are made based on evaluation grades categorized into four levels: Best, Excellent, Fair, and Poor.

### Number of New Suppliers Registered in 2023 per Division

(Unit: Number of suppliers)

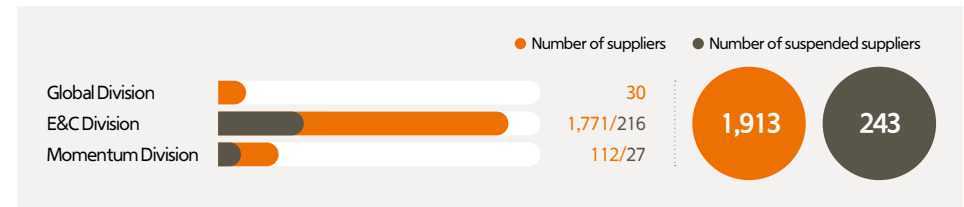


## Supplier Evaluation and Management

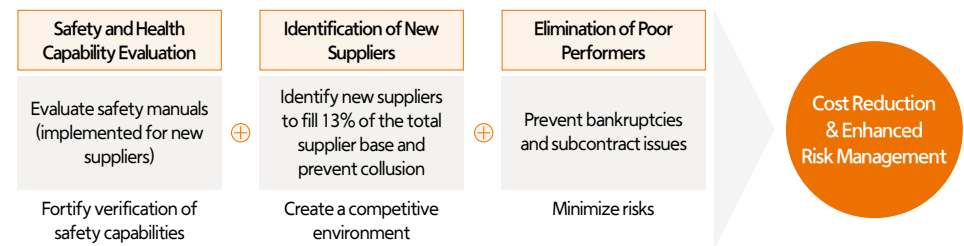
Hanwha Corporation conducts regular evaluations of suppliers based on five key areas (management capability, production capability, quality control, cooperation, and environmental, safety, and social assessments) in accordance with the ISO's supplier evaluation procedure. In 2023, it evaluated 1,563 suppliers whose average transaction amount exceeded a certain threshold over the past three years, in addition to 350 new suppliers. Among them, 243 suppliers were suspended from transactions due to reasons including credit rating downgrades or business closures. The company is committed to building a sustainable supply chain by assessing the capabilities and long-term viability of all suppliers. Furthermore, Hanwha Corporation provides incentives, such as financial and welfare support, to suppliers who achieve top evaluation scores. Low-scoring suppliers are offered meetings and consulting to encourage voluntary improvement.

### Number of Suppliers Assessed via Comprehensive Evaluation

(Unit: Number of suppliers)



### Supply Chain Management Strategy



## Support for the Best and Excellent Suppliers

Hanwha Corporation designates “best” and “excellent” companies to be suppliers each year through supplier evaluations, offering designees awards, financial and contract support, and special programs for anniversaries. One noteworthy feature is the “Management Doctor” program, a program in which management experts provide guidance for suppliers on building HR and financial systems, exploring overseas expansion, and making improvements in technology, production, and quality. Hanwha Corporation will be sparing no effort to foster a collaborative corporate environment and lay the foundations for shared growth with its suppliers by regularly and frequently selecting excellent companies.

## ESG Evaluation of Suppliers

Since 2021, Hanwha Corporation has been conducting ESG evaluations of suppliers in order to effectively measure their social and environmental impacts. The evaluation, which covers 60 key ESG management items, aims to raise awareness of ESG practices among suppliers as well as provide necessary support and requirements for managing and improving sustainability risks. Based on the merger of the E&C Division, the company has strengthened evaluations related to employee safety and health and implemented multiple follow-up measures (e.g., encouraging suppliers to establish environmental management strategies and systems to improve environmental areas based on assessment results).

### Areas of ESG Evaluation of Suppliers

ENVIRONMENTAL		Environmental	<ul style="list-style-type: none"> <li>Environmental Permits and Reporting</li> <li>Pollution Prevention and Resource Reduction</li> <li>Hazardous Substances and Waste</li> </ul>	<ul style="list-style-type: none"> <li>Substance Regulations</li> <li>Water Resource Management</li> <li>Energy Consumption and Greenhouse Gas Management</li> <li>Environmental Management</li> </ul>
		Social Responsibility and Human Rights	<ul style="list-style-type: none"> <li>Voluntary Employment</li> <li>Working Hours</li> <li>Wages and Benefits</li> </ul>	<ul style="list-style-type: none"> <li>Humane Treatment</li> <li>Non-discrimination</li> <li>Education</li> </ul>
SOCIAL		Industrial Safety and Health	<ul style="list-style-type: none"> <li>Industrial Safety</li> <li>Contingency Planning</li> <li>Industrial Accidents and Diseases</li> <li>Physical Labor</li> </ul>	<ul style="list-style-type: none"> <li>Food, Hygiene, and Housing</li> <li>Health and Safety Management</li> <li>Safety Culture</li> </ul>
		Organization	<ul style="list-style-type: none"> <li>Executive Management (ESG Leadership)</li> <li>Internal Stakeholders (ESG Followership)</li> </ul>	
GOVERNANCE		Ethical Management	<ul style="list-style-type: none"> <li>Corporate Integrity</li> <li>Information Disclosure</li> <li>Intellectual Property Protection</li> <li>Personal Information Protection</li> </ul>	<ul style="list-style-type: none"> <li>Industrial Protection</li> <li>Protection Against Retaliation</li> <li>Responsible Procurement</li> <li>Social Contribution</li> </ul>

## ESG Capabilities of Suppliers

In 2023, Hanwha Corporation provided ESG management consulting for 50 suppliers, including those that received Excellent and Good ratings in the annual supplier evaluation, as well as needed to strengthen their ESG capabilities. Comprehensive management diagnostics were carried out across key ESG areas. The overall average score, 5.3, indicates that suppliers generally possess a moderate level of ESG management systems. Based on ESG results and feedback, Hanwha Corporation provided individually-tailored solutions for each supplier to make suppliers aware of their ESG risks and manage them independently.

### Results of ESG Management Consulting for the Best and Excellent Rating Suppliers in 2023

Recipients	<ul style="list-style-type: none"> <li>50 suppliers, including those that received the Best and Excellent ratings in the 2023 annual supplier evaluation and those identified as needing to strengthen their ESG capabilities</li> </ul>
Content	<ul style="list-style-type: none"> <li>Diagnosis and assessment of current status in ESG areas (e.g., eco-friendly investments, safety management, information security, shared growth, and ESG management disclosure)</li> <li>ESG area-based diagnosis:                             <ol style="list-style-type: none"> <li>Environmental: Identified need for enhancement of overall environmental management strategies and systems</li> <li>Social: Recommended additional training for suppliers on safety management and compliance with working hours</li> <li>Governance: Emphasized need to maintain bid restrictions on suppliers who violate ethical regulations</li> </ol> </li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>Areas with deficiencies, such as environmental understanding and ethical management, and methods for improvement identified</li> <li>Areas of strength that should continue to maintain excellence, such as safety management and accounting transparency, identified</li> </ul>

## Supply Chain Risk Management

Hanwha Corporation is committed to ensuring transparent and responsible purchasing practices while securing global procurement competitiveness and fulfilling its social responsibilities. It avoids purchasing minerals and materials from regions that are notorious for severe human rights abuses or environmental destruction. Hanwha Corporation prepares for a wide range of potential global geopolitical risks by diversifying supply chain channels.

## Win-Win Cooperation

Hanwha Corporation operates Win-Win Cooperation programs aligned with its four key strategies: financial support, management and technical support, educational and human resources support, and open communication. It also provides diverse welfare benefits and shared growth programs for supplier employees, building an ecosystem of cooperation in accordance with its mission statement, “Growing Further Together.”

## Financial Support

Hanwha Corporation offers low-interest Win-Win funds in cooperation with financial institutions to improve the liquidity and financial stability of its suppliers. To improve payment conditions for suppliers, thereby fostering partnered growth, it supports bond issuance, full cash payments, shortened payment terms, and early (pre-holiday) payments. In 2023, Hanwha Corporation, in collaboration with financial institutions such as Woori Bank, Shinhan Bank, and Korea Development Bank, established a Win-Win fund amounting to KRW 58.2 billion that supported first-, second, and third-tier suppliers who are facing difficulties due to rising interest rates and raw material costs.

[Financial Support Programs](#) [Shortcut](#)

## Management and Technical Support

Hanwha Corporation operates management and financial diagnostic/consulting programs to enhance the managerial capabilities and productivity of its suppliers and provides tailored solutions and equipment based on the expertise of its in-house specialists to build competitiveness and stabilize quality through technological advancement. It has also introduced a performance-sharing system to share the achievements of joint efforts with suppliers. Other supplier-customized programs include joint technology development, technology escrow, and market support.

[Management and Technical Support Programs](#) [Shortcut](#)

## Educational and Human Resources Support

Hanwha Corporation conducts annual online job training for employees of its first-, second-, and third-tier suppliers to enhance their practical skills. In 2023, training was provided on industrial laws and regulations (e.g., Serious Accidents Punishment Act) and trends in SME ESG management to help suppliers prevent risks and improve their understanding of ESG management. The company also provides incentives of up to KRW 10 million to supplier employees who have significantly contributed to industrial competitiveness and management performance to encourage long-term employment in addition to supporting suppliers' human resource management.

### Key Achievements in Supplier Training Support

Session	Period	Topics	No. of attending companies (no. of individuals who completed training)
1st	Apr. 3 - May 31, 2023	<ul style="list-style-type: none"> <li>Protection of SME Technologies</li> <li>Serious Accidents Punishment Act, Industrial Safety and Health</li> </ul>	83 (117)
2nd	Aug. 1 - Sep. 30, 2023	<ul style="list-style-type: none"> <li>Technology Leakage Prevention and Countermeasures for SMEs</li> <li>ESG Management</li> <li>Government Support and Policy Funds for 2023</li> </ul>	75 (98)
3rd	Oct. 16 - Nov. 30, 2023	<ul style="list-style-type: none"> <li>HR and Labor Management: Post-Resignation Issues and Cases</li> <li>Microlearning Education</li> </ul>	101 (118)
4th (E&C Division)	Oct. 23 - Dec. 31, 2023	<ul style="list-style-type: none"> <li>Construction Company Tax Practices</li> <li>Protection of Technologies in the Construction Field</li> </ul>	291 (802)

## Open Communication

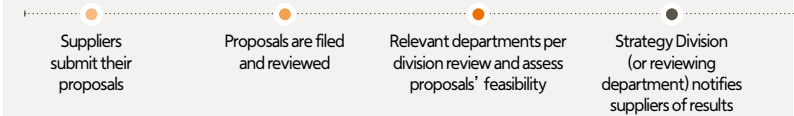
### Communication with Suppliers

Win-win Seminars

Each year, Hanwha Corporation holds seminars (online and offline) on policies regarding shared growth with suppliers. The seminars cover market environments, management status, management and technical information, sales information, and plans and support systems for shared growth activities.

Suggestion Platform

The Suggestion Platform allows suppliers to directly propose new transactions or joint business ventures, suggest joint technology development, and address any difficulties or suggestions related to transactions. The process is as follows:



Cyber Hotline & Dispute Resolution

Hanwha Corporation operates a channel through which suppliers can report disputes and/or issues related to unfair practices that may arise during transactions with Hanwha Corporation.

[Open Communication Programs](#) [Shortcut](#)

## Welfare for Suppliers

Hanwha Corporation operates Shared Growth Mall, an online shopping platform for SMEs that can be used by both Hanwha employees and supplier employees. To improve the welfare of supplier employees and maintain close cooperative relationships, diverse welfare programs are offered, including food truck events, tickets to sports games and/or cultural events, vouchers for hotel stays, gifts for company anniversaries, and gifts for personal milestones of supplier employees.

<b>Cultural Events for Supplier Employee Families</b>	<ul style="list-style-type: none"> <li>Organizes cultural events for supplier employees and their families (e.g., science experiments, magic shows, and sand art performances) along with supplementary events (e.g., balloon art, cotton candy) to boost employee morale</li> </ul>
<b>Summer Vacation Benefit</b>	<ul style="list-style-type: none"> <li>Provides/supplements hotel expenses for supplier employees in collaboration with the Ministry of Culture, Sports and Tourism's worker vacation support program</li> </ul>
<b>Food Truck Events for Shared Growth</b>	<ul style="list-style-type: none"> <li>Provides food trucks for ice cream, shaved ice, and fruit cups to suppliers' employees to give them a break from work and recharge physically</li> </ul>
<b>Hanwha Eagles Baseball Game Invitation</b>	<ul style="list-style-type: none"> <li>Fosters a sense of unity by having Hanwha employees and supplier employees cheer together for the Hanwha Eagles, promoting the "One Team, One Goal" spirit</li> </ul>
<b>Korean Orchestra Festival Invitation</b>	<ul style="list-style-type: none"> <li>Supports cultural and artistic pursuits by supplier employees by providing tickets to the (Hanwha-sponsored) Korean Orchestra Festival</li> </ul>
<b>Support for Culture Way</b>	<ul style="list-style-type: none"> <li>Offers opportunities to participate in cultural events, exhibitions, and/or performances (e.g., Hanwha Finance Classic (golf tournament)) by subsidizing admission fees</li> </ul>
<b>Anniversary Gifts</b>	<ul style="list-style-type: none"> <li>Provides gifts to celebrate the founding anniversaries of supplier companies</li> </ul>

SOCIAL

# Innovative Growth

## Achievements in 2023

International Standard Certification of Quality Management System



**ISO 9001 certification (obtained and maintained)**

Digitalization of quality management



**Quality Information System (QIS)**

Number of supplier quality management capability improvement tasks identified



**152**

## Going Forward

Hanwha Corporation will be communicating with customers to provide products and services that meet their needs, thereby increasing customer satisfaction. It also spares no effort in establishing a data-driven quality management system, supporting the development of suppliers' quality management capabilities, and proactively addressing quality risks.

## SDGs Alignment



## Building capabilities to provide high-quality products and services to customers

Hanwha Corporation is committed to enhancing its ability to provide high-quality products and services to customers. It enhances efficiency and safety at each production stage while minimizing quality costs through data-driven quality management, conducts competency evaluations to strengthen suppliers' quality management capabilities, and provides assistance in addressing deficiencies.

## Innovative Growth Implementation System

### Innovative Growth Implementation Pathway

Hanwha Corporation defines the quality management elements that have a critical impact on customer satisfaction and value and uses such definitions to establish and implement plans on achieving quality goals for the greater objective of providing products and services that meet customer needs. It enforces strict quality management in accordance with the action principles of Article 4, "Respect for Customers," in the Code of Ethics. Furthermore, Hanwha Corporation consistently identifies improvement measures and promotes quality enhancement based on a systematic PDCA (Plan-Do-Check-Act) quality management system and policy tailored to the characteristics of each business division.

#### Article 4: Respect for Customers

- ① Company is committed to achieving full customer satisfaction by conducting business from the customer's perspective and by providing the best products and services that meet customer needs and enhance their reliability.
- ② Company shall provide customers with accurate information concerning its products and services and refrain from excessive advertising or PR.

### Quality Management PDCA Cycle



## Organization with Expertise in Innovative Growth

Hanwha Corporation is transitioning from a strategy focused solely on maximizing corporate profit to the development of a sustainable growth strategy to ensure environmental stewardship and consistent growth alongside customers. To this end, the quality management module has been expanded to cover more areas and rebranded as the “innovative growth module” with the aim of establishing and implementing actionable improvement plans across all business areas (e.g., research, investment, production, sales, and after-sales service). Moreover, to address environmental responsibilities, meet customer demands, and provide safe and superior products and services, the company operates an optimized quality management system based on international standards (ISO 9001) that is designed to identify and implement multifaceted improvements.

## Quality Management System Certification

Hanwha Corporation has obtained ISO 9001 certification for all business sites as a means of providing top-quality products and services. The Global Division has obtained CE (EU) and EX (USA) certifications to enhance the global quality competitiveness of explosive products. The Momentum Division has obtained ISO/IEC 80079-34 certification for explosion-proof quality management systems in order to guarantee customer safety and product reliability.

### Product Quality and Safety Certifications

Division	Category	Certification Obtained
Global	Explosives Certification	CE, EX
	Detonator Certification	CE, EX
	Explosion-Proof Quality Management System	ISO/IEC 80079-34
Momentum	Robotics Safety Certification	EN ISO 12100, EN ISO 13849-1, EN ISO 10218-1, EN 60204-1
	Industrial Machinery Safety Certification	KCs, CE, EX
	Explosive Product Safety Certification (PECVD Model, T-aSi Model)	ISO/IEC 60079-7

## Enhancing Technological Competitiveness

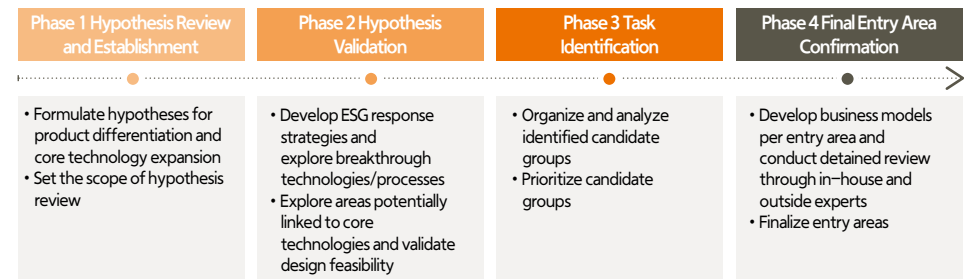
### New R&D Task Discovery System

Hanwha Corporation identifies R&D tasks imbued with growth potential and sustainability to enhance technological capabilities and competitiveness of its businesses. The process for pursuing future technology tasks is divided into four stages: hypothesis review, validation, task identification, and final determination of entry areas. In accordance with development guidelines aimed at creating products that are environmentally-friendly while also being safe and meeting customer needs, the Global Division conducts development tasks with consideration of environmental, safety, and health factors to achieve management goals in the areas of safety, environment, health, quality, and production. The E&C Division aims to transition to an added value-creating circular economy as well as carbon neutrality and a circular economy by enhancing the performance of aging environmental infrastructure with differentiated technologies. The Momentum Division has formed a Future Technology Research Task Force to create new growth engines, enhance product differentiation, and strengthen technological capabilities. Based on a mid-/long-term technology roadmap, it selectively chooses high-barrier and high-impact business items, aiming for technological innovation and differentiation through discussions.

### Project Risk Assessment

Hanwha Corporation strives to minimize risks and enhance profitability in newly-acquired projects. Based on the company’s bidding principles, risks are pre-identified for each project for meticulous evaluations on profitability, payment terms, transportation conditions, and the need for risk identification. A project’s status is required to be reported through a Project Management System (PMS), which monitors such reports in real-time to detect problems, including schedule delays, budget increases, or overdue milestones, at the earliest possible stage. This type of proactive approach ensures that risk factors in newly-developed tasks and ongoing projects are addressed in a timely manner to facilitate stable execution.

### New R&D Task Discovery Plan



## Quality and Safety Program

Hanwha Corporation has implemented stringent procedures for non-conforming product management and quality verification to ensure the production of high-quality and reliable products and has acquired multiple relevant international and domestic product certifications. It has actively invested in training quality management specialists and establishing a quality management system to monitor the quality of products from suppliers, thereby ensuring the stability of production.

### Data-Driven Quality Management

Hanwha Corporation stores quality inspection data and information for each step of quality management processes in databases such as the Quality Library and Eagle-TIMS (Technical Information Management System), facilitating company-wide information sharing. The Global and Momentum Divisions operate a Quality Information System (QIS) to digitize and streamline quality management. QIS encompasses the entire quality management process, from product development, design, production, and manufacturing to supplier management, non-conformance and improvement management, and quality performance management. Hanwha Corporation is committed to consistently enhancing data-driven quality management to improve efficiency and transparency as part of its greater goal of providing superior products.

### Responsible Product Management

#### Management of Counterfeit Products

Hanwha Corporation tracks and identifies counterfeit and/or non-conforming products throughout the production process to ensure quality management. For non-conforming products, QR codes for test report authenticity verification and inspection product numbers are issued. It also transparently discloses quality information through test reports and warranties to give customers access to accurate product information. The Quality Management System (QMS) manages the input and output of all quality data, thereby preventing data falsification and misuse, and strengthens the traceability of quality information as well as processes such as design, production, and purchasing. Moreover, strong sanctions are imposed on suppliers with quality issues, and recurrence-preventing processes are implemented to avoid product counterfeiting.

### Customer Safety with Quality Assurance

Hanwha Corporation manages the safe use of its products by providing user education and manuals. For explosion-proof products, it collaborates with internationally-accredited institutions to verify and approve technical information (e.g., design changes). If unsafe or non-conforming products come into contact with customers, a product identification and control process is immediately implemented after written notifications to relevant customers, certification bodies, and the media to prevent accidents and ensure customer safety. The Global Division ensures the safety of explosive products during air and sea transport by adhering to the packaging safety requirements set by international certification bodies and obtaining verification and approval from accredited institutions.

### Quality Risk Management

Hanwha Corporation enhances the quality of products and services and manages quality risks through S&OP (Sales and Operations Planning) activities. It monitors compliance with Human Error Prevention Plans (HEPP) and Standard Operating Procedures (SOP) to prevent issues during production, with automation of manufacturing and inspection processes ensuring production efficiency and quality competitiveness. To maintain advanced quality levels, it identifies quality risks at each stage and manages such risks from as early as the development and design phase. Regular quality diagnostics are conducted to analyze issues and/or causes of quality management failures or deficiencies, leading to insights for quality innovation based on identified issues and risks.

Furthermore, Hanwha Corporation prevents recurrence by analyzing both successful and failed quality management cases, distributing casebooks, and conducting regular training sessions. The Global Division conducts a Failure Mode & Effects Analysis (FMEA) during product and process design to minimize potential quality risks. Such analyses are incorporated into product and process designs to ensure that identified quality risks are preemptively eliminated.

## Quality Management—Building Activities

The E&C Division has developed a document management platform to efficiently manage the extensive blueprints and construction documents of large-scale sites. This effort aims to prevent various risks that may arise during the construction process and maximize work efficiency.

## Supply of Certified Quality and Safety Products

Hanwha Corporation ensures that, in compliance with domestic and international environmental and safety regulations, only products deemed to be safe are supplied to customers at every stage (sales, development, design, manufacturing, and service operations). To achieve this goal, strict evaluations are conducted at every stage, from design input requirements to design review and verification, to ensure adherence to international standards, national safety regulations, and customer requirements. The E&C Division conducts safety and health compliance evaluations for new bid assessments and performs regular safety and health evaluations for existing suppliers, maintaining transactions only with those that satisfy evaluation criteria. Upon a project’s completion, preliminary inspections and final inspections are performed to ensure compliance with quality, environmental, and safety standards, followed by confirmation with the commissioning body before handover. To ensure product reliability and protect customers’ lives and property, Hanwha Corporation will continue to make efforts to acquire and maintain specialized safety certifications for each of its products and services.

Hanwha Corporation will be acquiring and maintaining specialized safety certifications for all products and services with consistent renewal management.

## Technology Development and Patent Quality Validation

Hanwha Corporation is undertaking leading-edge technology development and securing patents through a technology development roadmap that is based on short- and long-term customer needs. It has fortified pre-delivery quality validation to ensure the reliability of products before they reach customers and guarantees the reliability of technology production quality by managing specialized international standard certifications (ISO, IEC) for each product. The E&C Division is developing technologies for wastewater treatment systems (e.g., DF-MBR, HDF, and Pro-MBR), with newly-developed wastewater treatment processes immediately applied on-site to enhance construction and operational efficiency.

## Optimization of Quality Costs

Hanwha Corporation manages quality costs (Q-Cost) incurred during the implementation of quality management as a key performance indicator (KPI) and reduces failure costs by setting Q-Cost improvement targets on an annual basis. The E&C Division has designated quality management of major defect occurrences and issues as a KPI based on the aim to lower defect rates and prevent unnecessary cost inputs and, therefore, optimize Q-Cost. In addition to reducing direct Q-Costs incurred during production stages (development, sales, design, and manufacturing), indirect Q-Costs are also targeted through improvements in non-conformance issues related to customer satisfaction that are linked to the Customer-Oriented Process (COP).

## Quality Management Talent

Hanwha Corporation conducts company-wide quality training to enhance employees’ awareness of product and service quality management and strengthen their expertise in such areas.

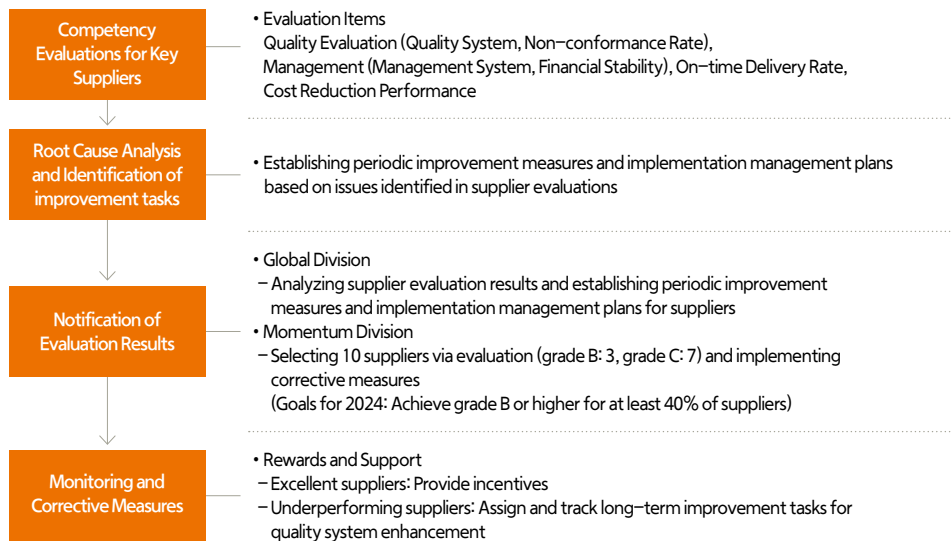
### Division-Specific Quality Talent Development Plans

Objective	Enhancing Expertise in Customer-Oriented Processes (COP) and Strengthening Quality Management Capabilities		
Division	Global Division	E&C Division	Momentum Division
Talent Development and Utilization	<ul style="list-style-type: none"> <li>Develop and operate a three-year quality education roadmap and master plan to ensure that employees acquire knowledge and enhance their skills in quality and quality management</li> <li>Train internal auditors and operation personnel to ensure the effectiveness and compliance of the division’s quality management system</li> </ul>	<ul style="list-style-type: none"> <li>Regularly conduct education and management for key personnel in field quality management led by Quality Council</li> <li>Promote the establishment of quality management hubs across all construction sites via cultivation of specialized talent</li> </ul>	<ul style="list-style-type: none"> <li>Cultivate talent tailored to each business area by defining the required quality competencies and skills for each functional unit through a Quality Maturity Model (QMM)</li> <li>Enhance the accuracy and timeliness of quality management by training certified auditors to ensure compliance with international standards</li> </ul>

## Quality Management of Suppliers

Hanwha Corporation operates the Hanwha Supplier Quality Audit (H-SQA) system to regularly evaluate its suppliers' quality management capabilities. H-SQA, which is comprised of five main modules (Quality Management, Process Control, Product Evaluation, Non-conformance, and Measurement Equipment) and 12 subcategories, allows the company to identify areas for improvement that suppliers need to address. In 2023, 152 improvement tasks were identified, with outcomes for such tasks reflected in suppliers' quality assessments. Suppliers that excel in evaluations are supported in setting quality goals to enhance their quality levels and promote horizontal expansion. Conversely, suppliers with higher non-conformance rates in parts and processes are assisted with root cause analysis and the development of plans for fortifying internal quality capabilities. The Global Division designates key suppliers for focused management to enhance preventive- and post-management of raw materials. The E&C Division conducts extensive management activities (e.g., supplier quality evaluations) to improve construction quality and viability. Hanwha Corporation diagnoses supplier quality capabilities to preemptively address risks and consistently monitor quality levels through post-evaluation, thereby gaining customers' trust and ensuring their safety.

### H-SQA Process



## Customer Satisfaction

### Customer Value Enhancement

#### Customized Products and Services

Hanwha Corporation is committed to enhancing customer satisfaction by actively incorporating feedback and demands at every production stage. By involving customers in reviewing product design and commissioning, the company ensures higher levels of satisfaction and overall quality of development. Furthermore, issues identified at each stage are addressed through improvement measures, which are then incorporated into the development of new technologies to provide optimized and customized products and services to customers.

#### Technological Innovation to Increase Customer Value

The Global Division offers smart mining services via HATS (Hanwha As a Total Solution). HATS, a system comprised of 10 modules that manage and analyze key mining processes (e.g., drilling, blasting) and environmental impacts (e.g., noise, vibration) on a digital platform, significantly enhances customer convenience. The E&C Division has adopted advanced technologies such as BIM for pre-construction support, which includes constructability analysis and interference checks between different types of work and drones and 3D scanning for accurate surveying and earthwork volume analysis, all of which improve productivity and accuracy so that satisfactory services can be provided to clients. It also developed WBS, a specialized PC (precast concrete) construction technique tailored to logistics warehouses, to reduce costs and enhance bidding competitiveness in warehouse construction, and Hi-NOTE (Hanwha Intelligent Note), a smart construction management system that facilitates the managing of mobile-based quality/processes and construction videos. Furthermore, the division has innovated by developing Korea's first ceiling-mounted EV charging system that can be installed in any location, thereby realizing customer satisfaction through technological advancements. The Momentum Division has independently developed AI-based core algorithms for equipment software and continues to innovate by developing cutting-edge equipment through participation in national projects and industry-academia collaborations.



\*Ceiling-mounted EV charging system/Hi-Note

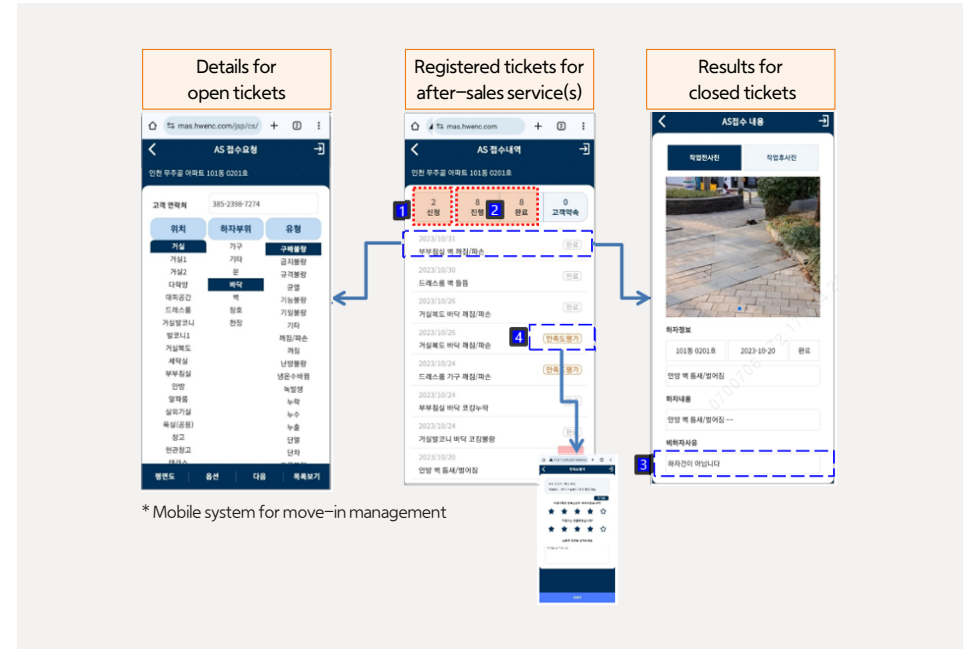
## Communication with Customers

### Customer Satisfaction Survey

Hanwha Corporation conducts annual customer satisfaction surveys in compliance with ISO 9001 (Quality Management System). The Momentum Division has established a system that consistently incorporates customer demands at all stages of production. In 2023, in-depth interviews were conducted for each stage, from design to on-site commissioning, of 29 key customers to collect VOC feedback and provide appropriate responses. The customer satisfaction survey is publicly disclosed through Hanwha Corporation's website and mobile platforms to improve customer accessibility.

### Dedicated Customer Satisfaction Channels

Hanwha Corporation operates dedicated customer service teams to enhance communication and satisfaction by taking VOC-related information seriously. Diverse VOC channels are utilized, and regular customer satisfaction surveys are conducted to incorporate the results into annual operational plans and performance indicators. By integrating customer needs into the development and improvement processes for new products, the company strives to enhance customer satisfaction. The Global Division regularly visits blasting sites for the purpose of collecting VOC, which is then taken into consideration during product development and production to improve customer convenience. The E&C Division has developed a mobile system with features of pre-inspection event management for residents (schedule management and reservation function), after-sales service management (pre- and post-move-in management (move-in status and handover process tracking)). The Momentum Division has established a process which, after delivering products and services, collects customer feedback on product usage and quality management system complaints and improvements through on-site visits and conveys it to relevant departments for action. Hanwha Corporation remains committed to deriving practical and rational improvements to realize customer satisfaction.



### Customer Satisfaction Survey: Momentum Division

Selection Criteria	• Completion of shipments and projects in 2023				
Survey Method	• Structured questionnaires				
Sample Size	Category	Secondary Battery	TS	FA	SE
	No. of Target Companies	10	6	8	4
Data Collection Tools	Online questionnaires (Link, QR Code)				
Survey Period	September 4 – September 12, 2023				

# SOCIAL

## Social Contribution

### Achievements in 2023

Total donations



**KRW 5.39 billion**

Total number of employee volunteer hours



**649**

Organized



**“2023 Seoul International Fireworks Festival with Hanwha”**

### Going Forward

Hanwha Corporation will continue to identify and pursue community support activities via efficient operation of its social contribution governance framework. By fortifying the performance management capabilities of its social contribution activities, the company aims to encourage voluntary participation of employees and foster an organizational culture that realizes the value of shared growth.

### SDGs Alignment



## Social Contribution Framework

### Social Contribution Implementation System

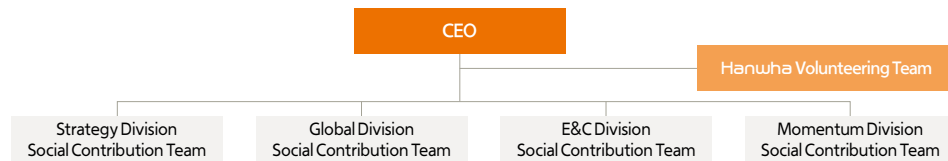
Hanwha Corporation goes beyond simply helping its neighbors: it actively practices the true meaning of sharing as a corporate citizen by making meaningful and tangible contributions. Leveraging its unique characteristics and strengths, Hanwha Corporation’s social contribution framework is categorized into four main themes (talent cultivation, environmental protection, arts and culture, and philanthropy and volunteerism) through which it engages in social contribution activities aimed at supporting future generations and local communities.

#### Social Contribution Framework

Vision	Hanwha Corporation is committed to accompanying everyone on their journey toward a happier tomorrow.			
Theme	<b>Talent Cultivation</b> Hanwha Corporation pursues a world in which all dreams are respected.	<b>Environmental Protection</b> Hanwha Corporation nurtures a healthy future that starts with the most intimate aspects of daily life.	<b>Arts and Culture</b> Hanwha Corporation seeks to offer experiences that invigorate and expand the horizons of everyone’s daily lives.	<b>Philanthropy and Volunteerism</b> Hanwha Corporation pursues a world in which everyone practices the true meaning and value of sharing.
	Hanwha Corporation believes that everyone should have equal opportunities to pursue their dreams. The more people discover their dreams, take on challenges, and share their achievements, the more society will become prosperous and an engine of happiness.	Hanwha Corporation aims for a society in which multiple generations can coexist. It will continue activities that help ensure a sustainable environment.	Hanwha Corporation engages in various activities to share the emotions of arts and culture with many people. It will strive to popularize arts & culture activities to support customers’ emotional stability and creative growth.	Hanwha Corporation will be sharing real hope with community members and working together to create a better tomorrow.
UN SDGs				
Philosophy	Based on the founding principle “Contributing to the nation and society” and a spirit of “Trust and Loyalty,” Hanwha Corporation adopts the philosophy of “Going Further Together” rather than “Going Fast Alone” in an effort to fulfill its social responsibilities as a corporate citizen.			

## Social Contribution Organizational Structure

Hanwha Corporation established the Hanwha Volunteer Corps, the foundation for a systematic and efficient social contribution program structure, in 2007. Each division actively engages in social contribution activities nationwide on the four themes (talent cultivation, environmental protection, arts and culture, and volunteerism). Social contribution managers in each division review activities and the direction of such activities on a quarterly basis to ensure alignment with corporate goals. Furthermore, the company raises funds with employees for the Bright World Fund, which is managed and executed transparently to make contributions to local communities in an orderly and tangible manner.



## Dissemination of Participatory Culture of Social Contribution Activities

### Encouraging Employee Participation in Social Contribution Activities

Hanwha Corporation engages in “Participatory Social Contribution Activities” that emphasize voluntary employee involvement in giving back to the community. Examples include collaborating with welfare facilities and operating a paid volunteer leave system that acknowledges volunteer hours as hours worked, thereby encouraging employee participation. Moreover, Hanwha Corporation operates volunteer programs that encourage involvement by employees’ families as part of efforts to simultaneously foster family unity and social contribution.

### Awards for Outstanding Social Contribution Activities

Hanwha Corporation evaluates the performance and outcomes of social contribution activities of each business site and provides compensation for exemplary activities and programs. It also recognizes exceptional personnel and volunteers in areas such as expertise, specialization, and joint events to encourage voluntary participation in social contribution activities and improve employees’ ability to manage their outcomes.

<p><b>Hanwha Volunteering Team</b></p>	<p>From Praiseworthy Company to Responsible Company Since its founding over 70 years ago, Hanwha has pursued a corporate culture of shared growth and social responsibility based on the core principles of “Trust and Loyalty” to fulfill its social responsibilities.</p>	<p>Systematic and Sustainable Social Contribution Activities With the intent of returning the profits provided by society to local communities, Hanwha mobilizes its human and material resources for such activities in a well-organized and consistent manner.</p>
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## Communication with Local Communities

Hanwha Corporation is committed to the development and resolution of issues in localities where its business sites are located by forming regional alliances and consistently identifying potential social contribution activities. These regional alliances plan and operate volunteer work, public campaigns, material and financial support, and partnership activities that reflect the characteristics of each locality. For example, Hanwha Corporation collaborates with local NGOs and welfare foundations affiliated with local governments to support vulnerable groups such as children, single-senior households, and individuals with disabilities. Furthermore, it helps to revitalize local economies by sponsoring local events. Hanwha Corporation strives to fulfill its corporate social responsibility by paying attention to feedback from local residents and creating a community in which all stakeholders can live peacefully alongside one another.

### Bright World Fund

The Bright World Fund is a community support fund established by Hanwha Corporation to support underprivileged groups by understanding and supporting their difficulties. It is maintained through voluntary donations from employees of a predetermined portion of their salaries and matching corporate proportional to the employee donations. The fund is used to assist marginalized individuals in the localities where employees live and work, as well as support environmental and cultural development, and sponsor nonprofit organizations and social welfare institutions connected with employee volunteer activities, thereby ensuring meaningful and impactful use of resources.

Special Case

Hanwha Seoul International Fireworks Festival 2023

Hanwha Group has hosted the Seoul International Fireworks Festival (SIFF) since 2000 under the slogan “Sharing Hope through Fireworks.” The SIFF is not only the largest of its kind in Korea but also a flagship social contribution program by Hanwha Corporation. In 2023, it featured top-tier pyrotechnic displays from Hanwha Corporation alongside teams from China and Poland. Hanwha Corporation’s theme for this year, “Lights of Tomorrow,” employed “fireworks of hope” in vibrant colors. The phenomenal fireworks display was followed by a drone show that included over 400 drones. This year, Hanwha Group and its affiliates increased their participation by 16% compared to 2023 with 3,400 employees from Hanwha Group and its affiliates participating in addition to conducting a cleanup to make the SIFF a safe and clean experience for all. Moreover, the SIFF developed Korea’s first safety management app that is capable of measuring crowd density and facilitating crowd dispersion as part of efforts to establish an emergency response system for accident prevention.

Hanwha Seoul International Fireworks Festival 2023

## Social Contribution Activities

Hanwha Corporation operates diverse social contribution programs centered on four key themes: talent cultivation, environmental protection, arts and culture, philanthropy, and volunteerism. All efforts are guided by the mission statement (“Going Further Together”).



Talent Cultivation

### Support for Youth Independence



As of 2024, Hanwha Corporation designated the Youth Independence Support project as its flagship initiative, and it is preparing a campaign to help self-reliant youths who are turning 18 to become independent, healthy, and high-functioning members of society. By collaborating with partner institutions and local communities, Hanwha Corporation will select beneficiaries and provide tangible support (e.g., living expenses, certification acquisition fees, housing environment improvement, technical education, and mentoring) to provide a stable foundation for independence.

### Hanwha Science Challenge



Since 2011, Hanwha Corporation, with the goal of nurturing young Korean Nobel Prize winners in the sciences, has been hosting the Hanwha Science Challenge in cooperation with Hanwha Group. Approximately 600–700 teams participate each year. In 2023, the competition was held under the theme “Saving the Earth” for sustainable human development. Finalists are given prizes, overseas expeditions, step-by-step mentoring, and career management programs to facilitate talent development.

[Official website for Hanwha Science Challenge](#) [Shortcut](#)

### On-Site Dream School



The Momentum Division operates the “On-Site Dream School” employment support program for underprivileged youth in Asan and Changwon, both areas where its business sites are located. It provides various educational and career mentoring programs (e.g., voice training, image consulting, and interview coaching) to help local youth explore careers and build confidence in employment, helping them become successful members of society.



Environmental Protection

### Support for Creative Activities of Disabled Artists and Production of Eco-Friendly ESG Goods



The E&C Division sponsors the “Our Campus” contest for discovering artists with disabilities. The contest helps individuals with disabilities to be recognized as artists and be as active as possible, promoting social participation of artists with disabilities and improving social awareness of disabilities. It also produces and distributes eco-friendly ESG goods using the works of artists with disabilities, thereby helping to establish an eco-friendly culture.

### Distribution of Environmental Picture Books Created by Disabled Artists and Essay Contests

The E&C Division, in cooperation with Seongdong Community Rehabilitation Center for the Disabled, organizes essay contests through which authors with disabilities and local residents jointly create picture books on environmental themes. The books are distributed to local institutions as educational materials, providing opportunities for local children and residents to become more aware of and interested in environmental conservation.





Arts and Culture



### Cultural and Artistic Support Programs for Underprivileged Residents

Hanwha Corporation actively addresses issues related to those who have little access to cultural resources, such as seniors who live alone, individuals with disabilities, and child domestic violence victims. Hanwha Corporation sponsors barista education for those with disabilities supports emotional stability and cultural activities for victims of domestic violence to help underprivileged individuals grow into functioning members of society who can foster healthy relationships.



Philanthropy and Volunteerism



### Forena Library Project

Since 2011, the E&C Division has been remodeling unused spaces in social welfare facilities across the country every year to create small libraries and donating books through the Forena Library project. In 2023, in collaboration with Kakao, it opened Ansan Forena Library (102nd) and, in cooperation with Korea Midland Power, established Forena-EcoSecomi Library (103rd) inside Yeonpyeong Island's only elementary school.



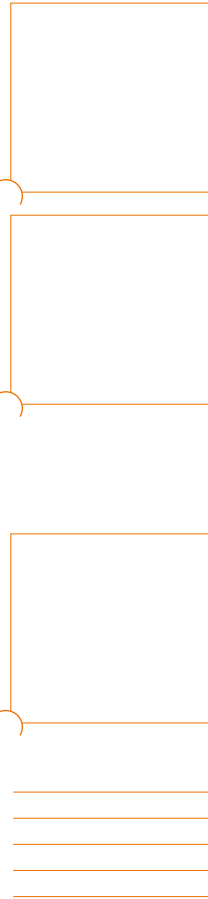
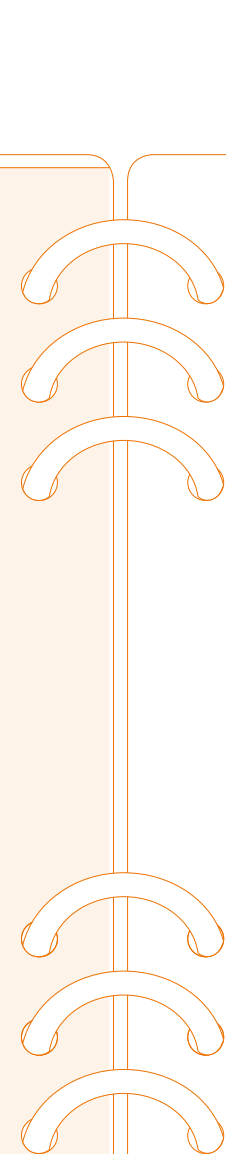
### Hanwha Orchestra Festival

Hanwha Corporation has been sponsoring the Hanwha Orchestra Festival, which is held at the Seoul Arts Center (SAC), in cooperation with Hanwha Group since 2000. It provides opportunities for municipal and provincial symphony orchestras, mid-career musicians, and talented next-generation musicians to perform at the SAC to facilitate the popularization of classical music. Furthermore, Hanwha Corporation donated KRW 9 billion to the Hanwha Cultural Foundation for the establishment of Pompidou Center Hanwha Seoul (tentative name), which is slated to open in 63 Building in 2025, leading the sustainable development of the culture and arts community by discovering and supporting emerging artists.



### Voice Donation Volunteer Program

Hanwha Corporation employees read books aloud to create audiobooks for children who have difficulty reading. These audiobooks are donated to welfare facilities for the visually-impaired, residential facilities for children with disabilities, and special needs schools through the Voice Donation Volunteer Program. Such efforts help visually-impaired children, children from multicultural families, and children without family ties who have difficulty accessing books, thereby supporting the improvement of language skills and emotional development.



# GOVERNANCE

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GOVERNANCE

# Corporate Governance

## Achievements in 2023

Established under BOD



### Compensation Committee

Conducted for independent directors



### ESG education

Average BOD meeting attendance rate



98.4%

## Going Forward

Hanwha Corporation established a Compensation Committee in 2024 to ensure fairness of decision-making through preliminary reviews on compensation and/or compensation limits for executive directors. Moving forward, Hanwha will transparently disclose all governance-related matters through the annually-published Corporate Governance Report, which will detail the implementation of shareholder value enhancement activities.

## SDGs Alignment



## Establishing transparent and sound governance to protect stakeholder rights and drive sustainable growth

Hanwha Corporation aims to protect stakeholders' rights and drive sustainable growth by establishing transparent and sound governance. To achieve this goal, the company enhances the independence, diversity, and expertise of its Board of Directors and has established several committees under the BOD, including the Audit Committee, Independent Director Candidate Recommendation Committee, Internal Transaction Committee, ESG Committee, and Compensation Committee, to deliberate and decide on important matters. Through such efforts, Hanwha Corporation maintains its obligation to protect shareholder rights as outlined in the Corporate Governance Charter.

## Governance Principles

### Principles of Corporate Governance

Hanwha Corporation operates its governance policies with a focus on ensuring management transparency, soundness, stability, and pursuing checks and balances to ensure sustainable growth and the protection of shareholder value and rights. To implement transparent governance, the full text of the Articles of Incorporation is disclosed on the company's website. Sub-regulations based on the Articles are established to execute governance-related tasks according to principles and procedures, with results disclosed regularly and as needed.

[Hanwha Corporation Articles of Incorporation](#) [Shortcut](#)

[2023 Hanwha Corporation Corporate Governance Report](#) [Shortcut](#)

### Director Appointment Procedure and Criteria

Hanwha Corporation adheres to fair and transparent procedures for the appointment of directors by the General Shareholders' Meeting. Executive director candidates are selected based on their compatibility with management needs after undergoing long-term development training offered by the Human Resources department. Candidates, after being evaluated based on their competencies, understanding of management, expertise, and professional experiences, are proposed at the General Shareholders' Meeting, where the final appointment is made after a comprehensive evaluation. For independent directors, the Independent Director Candidate Recommendation Committee, comprised entirely of independent directors, rigorously verifies candidates' qualifications, expertise, and independence as required by the Commercial Act. After exhaustive qualification reviews and evaluations, the committee proposes candidates for appointment decisions at the General Shareholders' Meeting. Qualification certification for the candidates is submitted to Korea Exchange.

### Independence, Diversity, and Expertise of the BOD

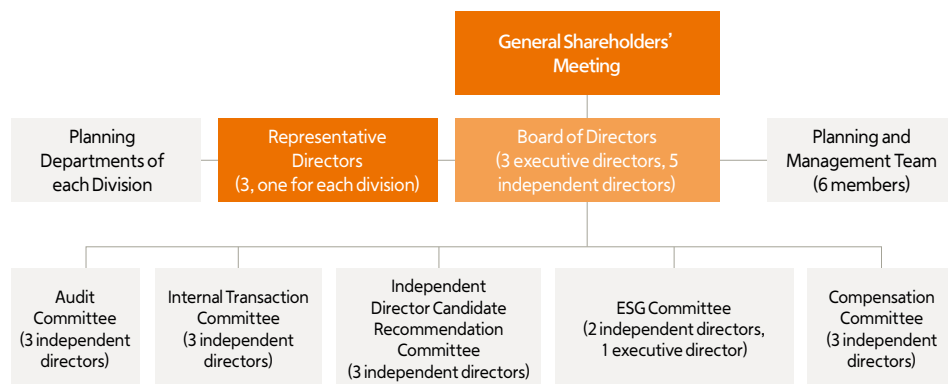
Hanwha Corporation proclaimed the Corporate Governance Charter in 2021 to ensure transparency and soundness of management. Based on this charter, it has established policies to secure the independence, diversity, and expertise of the BOD and aims to protect the rights of various stakeholders while proliferating sustainable values. By ensuring a BOD composition centered on independent directors, Hanwha Corporation has enhanced the efficiency and independence of the BOD by including members with diverse experiences and expertise across a vast array of fields. When appointing independent directors, considerations of diversity (e.g., gender, race, nationality, background, and religion) are taken into account to ensure a broad range of experts in management, law, finance, humanities, and anthropology. The recent appointment of independent directors Hye Ryung BYON and Edwin FEULNER has further fortified the BOD's expertise and diversity.

## Composition and Operation of the BOD

### Composition of the BOD

As of May 31, 2024, Hanwha Corporation's BOD is comprised of eight directors: three executive directors and five independent directors (ratio of independent directors: 62.5%). The BOD functions as the highest permanent decision-making body, holding the authority to appoint and dismiss the CEO. It deliberates and resolves key matters related to fundamental management policies and the execution of business as stipulated by laws, Articles of Incorporation and/or as delegated by the general meeting of shareholders. Moreover, through regular and extraordinary meetings, the BOD effectively addresses a variety of challenges and issues faced by the company while also establishing and making decisions on ESG management strategies to promote sustainable management. To ensure the BOD's transparent operation, all directors are appointed by the general meeting of shareholders in accordance with the Articles of Incorporation. Based on the BOD's regulations, Seung Mo KIM, CEO of the E&C Division, is currently serving as chairperson.

### Board of Directors Organizational Chart



### Operation and Activities of the BOD

Hanwha Corporation holds regular board meetings on a quarterly basis as stipulated by the Corporate Governance Charter and Board Regulations and convenes special board meetings as needed. To ensure smooth BOD operation, agenda items are collected by seven days before the meeting, with meeting materials, including resolutions and reports, provided to each director by three days prior. Since 2022, pre-meeting briefings have been conducted one week before BOD meetings to ensure that independent directors can perform their duties effectively. Management issues are reported as needed. In 2023, the BOD held 12 meetings with an average attendance rate of 98.4%, through which deliberations were made, and resolutions passed on a total of 83 agenda items.

### Board of Directors Composition

(As of May 31, 2024)

Category	Name	Position	Gender	Date of Birth (month/year)	Area of Expertise	Career Highlights	Term
Executive Director	Seung Mo KIM	Chairman of the BOD / CEO (E&C Division)	Male	August 1967	Management	• Former Non-Executive Director, Hanwha Aerospace Co., Ltd. • Former CEO, Hanwha Defense Co., Ltd.	Mar. 29, 2023 – Mar. 29, 2025
	Dong Kwan KIM	CEO (Strategy Division)	Male	October 1983	Management	• CEO, Hanwha Solutions Co., Ltd. • CEO, Hanwha Aerospace Co., Ltd. • Non-Executive Director, Hanwha Ocean Co., Ltd.	Mar. 28, 2024 – Mar. 29, 2026
	Ki Won YANG	CEO (Global / Momentum Division)	Male	May 1970	Management	• CEO, Hanwha Machinery Corporation • Executive Director, Universal Bearings LLC • Non-Executive Director, Hanwha Robotics Co., Ltd. • Former Business Development Director, Hanwha Solutions Co., Ltd. • Former Strategy Planning Director, Hanwha Solutions Co., Ltd.	Mar. 28, 2024 – Mar. 29, 2026
Independent Director	Suk Jae LEE	Independent Director / Audit Committee Member	Male	November 1967	Humanities	• Professor, Department of Philosophy, Seoul National University • Independent Director (Audit), Shinsegae I&C Co., Ltd.	Mar. 28, 2024 – Mar. 29, 2026
	Ik Hwan KWON	Independent Director / Audit Committee Member	Male	September 1967	Legal Affairs	• Independent Director (Audit), SK Bioscience Co., Ltd. • Lawyer, Kim & Chang Law Office	Mar. 28, 2024 – Mar. 29, 2026
	Hye Ryung BYON	Independent Director	Female	January 1979	Chemistry (Energy)	• Associate Professor, Department of Chemistry, College of Natural Sciences, KAIST • Former Principal Researcher, RIKEN (Japan)	Mar. 28, 2024 – Mar. 29, 2026
	Edwin FEULNER	Independent Director	Male	August 1941	Global Management / Society	• Chairman, Asian Studies Center, The Heritage Foundation (USA) • Former Researcher, Center for Strategic and International Studies (USA)	Mar. 29, 2023 – Mar. 29, 2025
	Yong Gyu LEE	Independent Director / Chair of Audit Committee	Male	January 1975	Finance	• Independent Director (Audit) at PlayD Co., Ltd. • Associate Professor, School of Business, Seoul National University	Mar. 29, 2023 – Mar. 29, 2025

### Board Activities and Attendance Rates

(As of May 31, 2024)

Meetings Held	Resolutions Passed	Reports Presented	Average Attendance Rate (%)	Attendance Rate (Executive Director) (%)	Attendance Rate (Independent Director) (%)
12	66	17	98.7	96.2	100

## Composition of Board Committees

Hanwha Corporation operates an Audit Committee and an Independent Director Candidate Recommendation Committee in accordance with the Commercial Act and has established and operates an Internal Transaction Committee, ESG Committee, and Compensation Committee to enhance the expertise, independence, and efficiency of the BOD. The Audit Committee, Independent Director Candidate Recommendation Committee, Internal Transaction Committee, and Compensation Committee are all comprised of independent directors, with chairpersons being independent directors who possess high levels of expertise in their respective fields, thereby enhancing the expertise and transparency of corporate governance. According to Article 12 of the Audit Committee regulations, the committee may seek advice from experts as necessary. Furthermore, the ESG Committee shares ESG management performance on compliance control activities and matters related to environmental (E), social (S), and governance (G) areas. Notably, the Compensation Committee was formed in February 2024 to enhance the fairness and transparency of director remuneration.

### 2023 Board Committees Meetings

(As of December 31, 2023)

Committee <sup>1)</sup>	Number of Meetings	Agenda
Audit Committee	7	26 items (5 resolutions passed / 21 reports made)
Independent Director Candidate Recommendation Committee	2	3 items (3 resolutions passed / 0 reports made)
Internal Transaction Committee	8	13 items (13 resolutions passed / 0 reports made)
ESG Committee	7	16 items (7 resolutions passed / 9 reports made)

1) The Compensation Committee, as it was established in February 2024, is not included in meeting records for 2023.

### Board Committees Composition and Roles

(As of May 31, 2024)

Board of Directors					
Committee	Audit Committee	Independent Director Candidate Recommendation Committee	Internal Transaction Committee	ESG Committee	Compensation Committee
	3 Independent Directors	3 Independent Directors	3 Independent Directors	1 Executive Director / 2 Independent Directors	3 Independent Directors
Chair	Yong Gyu LEE	Suk Jae LEE	Ik Hwan KWON	Hye Ryung BYON	Suk Jae LEE
Members	Ik Hwan KWON Suk Jae LEE	Hye Ryung BYON Edwin FEULNER	Yong Gyu LEE Hye Ryung BYON	Ki Won YANG Ik Hwan KWON	Hye Ryung BYON Yong Gyu LEE
Main Responsibilities	<ul style="list-style-type: none"> <li>Supervise tasks performed by directors and executives</li> <li>Approve the appointment of external auditors</li> </ul>	<ul style="list-style-type: none"> <li>Recommend and decide on independent director candidates</li> <li>Determine other necessary matters for recommending independent director candidates</li> </ul>	<ul style="list-style-type: none"> <li>Pre-examine and approve large internal transactions</li> <li>Review and approve changes to existing transactions</li> </ul>	<ul style="list-style-type: none"> <li>Review compliance management policies</li> <li>Review and set policy goals for environmental protection, human rights, fair competition, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Review compensation limits for board directors</li> <li>Resolve any other matters requiring committee approval</li> </ul>

## Board Evaluation and Compensation

### Board Education

Hanwha Corporation provides multiple systems and programs to ensure that independent directors can objectively monitor company management and effectively make decisions on key management policies. It has established a dedicated department for board-related tasks to promptly respond to the information-related needs of independent directors and regularly share information on management issues. Notably, to enhance the efficiency of tasks performed and strengthen their expertise, Hanwha Corporation conducts training for independent directors. In 2023, external training on accounting system reforms was provided to Audit Committee members to enhance their audit capabilities, while ESG training was conducted for independent directors to bolster their understanding of ESG-related matters.

#### Training Provided to Independent Directors

Training Date	Attending Independent Directors	Content of Training
December 20, 2023	Seung Heon KIM, Ik Hwan KWON, Hye Ryung BYON, Yong Gyu LEE, Edwin FEULNER	ESG-related disclosure items, roles of management, recent trends – Policies and trends in ESG information disclosure – Roles and strategies of management in response to ESG information disclosure

#### Training Provided to Audit Committee

Training Date	Attending Independent Directors	Content of Training
July 27, 2023	Seung Heon KIM, Ik Hwan KWON, Yong Gyu LEE	Financial Services Commission's accounting system reform plan, recent trends in accounting standards – Complementary measures for accounting system announced by Financial Services Commission on June 13 – Accounting impact of the introduction of global minimum tax (starting in 2024)

### Evaluation of Independent Directors

Hanwha Corporation evaluates the capabilities and contributions of independent directors through the Independent Director Candidate Recommendation Committee to ensure transparency and independence of management. This comprehensive performance evaluation considers the directors' expertise, diligence, responsibility, and ability to perform duties impartially. The results of such evaluations are used to inform decisions regarding the appointment and reappointment of independent directors.

### Board Remuneration

Hanwha Corporation determines the remuneration of its directors based on its policies and the Executive Remuneration Regulations. The Compensation Committee conducts a preliminary review, after which remuneration is paid within the limit approved by the general shareholders' meeting. Remuneration for executive directors consists of a fixed base salary and a variable performance-based bonus. For independent directors, to ensure their independence, remuneration is not linked to performance; instead, they receive a fixed monthly activity fee limited to base salary and expenses incurred through performance of duties for and/or on behalf of the company and do not receive stock options or retirement benefits.

## CEO Succession Policy

### Regulations and Procedures for CEO Succession

Hanwha Corporation operates an internal process related to the CEO succession policy to ensure the soundness of corporate operations and the ability to generate performance. According to Article 33 of the Articles of Incorporation, the BOD has the authority to appoint and dismiss the CEO. If a change in CEO is deemed necessary, the CEO succession procedure is initiated. The BOD finalizes a candidate based on leadership and expertise from a systematically developed pool of CEO candidates through the company's internal programs. The selected candidate is then appointed as an executive director through the general shareholders' meeting. Following this, the appointed executive director undergoes final review and deliberation by the BOD before being appointed as CEO.

### CEO Candidate Training

Hanwha Corporation manages potential CEO candidates, ensuring a smooth succession process by securing multiple candidates and facilitating succession by the most suitable individual. To foster self-directed competency improvement among CEO candidates, the company supports both internal and external training programs. It also operates many internal programs, such as mentoring and shadowing, to cultivate leadership through proactive development of junior staff. To enhance the leadership and global capabilities of CEO candidates, Hanwha operates GELP (Global Executive Leadership Program), which supports studies at overseas universities. For candidates in highly-specialized business areas, it offers ALPS2 (Advanced Leaders Program for National Future Security & Strategy) at universities in Korea to strengthen industry expertise.

#### 2023 CEO Candidate Training Programs

Program Name	Training Institution	Number of Participants	Training Period
Hanwha EEA Product Development		3	Jan. 13, Jan. 27, Feb. 2, 2023 (3 sessions)
Hanwha EEA SCM	Hanwha HRD Center	3	Feb. 10, Feb. 17, Feb. 24, Mar. 29, 2023 (4 sessions)
Hanwha EEA (Execution Excellence Academy) Wave2		1	August 2023 – February 2024
Division Head Business Coaching Program	Global Division	4	June 2023 – December 2023 (10 sessions)

## Shareholder-Friendly Management

### Shareholding and Capital Structure

In accordance with the Articles of Incorporation, the total number of authorized shares is 200,000,000, with each share valued at KRW 5,000. As of December 31, 2022, the number of common shares with voting rights is 74,958,735, with each shareholder entitled to one vote per share. In compliance with the Korean Commercial Code, 1,132,437 treasury shares are restricted from voting, and 22,951,294 are non-voting preferred shares.

### Shareholder Return Policy

Hanwha Corporation is committed to enhancing shareholder value by consistently providing a certain level of dividends each year as part of its shareholder return policy. To improve the predictability for stakeholders, dividend-related information is announced via the "Cash and In-Kind Dividend Decision" notice by four weeks before the general shareholders' meeting. In 2023, Hanwha Corporation provided dividends with yields of 2.9% for common shares, 2.5% for first preferred shares, and 5.6% for third preferred shares. The company will be striving for stable profit generation to meet shareholders' dividend expectations.

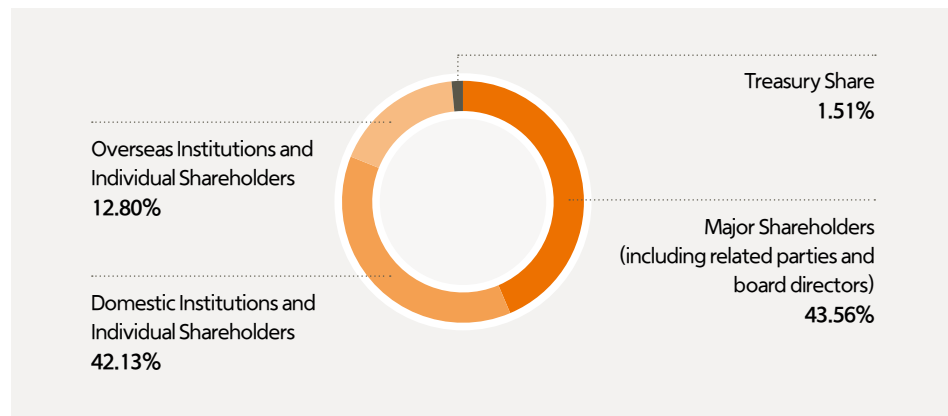
#### Types and Voting Rights of Shares

(As of December 31, 2023)

Category	Type of Share	Number of Shares	Remarks
Total Number of Issued Shares	Common Share	74,958,735	
	First Preferred Share	479,294	
	Third Preferred Share	22,472,000	
Shares without Voting Rights	Common Share	1,132,437	Treasury Share
	First Preferred Share	479,294	
	Third Preferred Share	22,472,000	
Shares with Legal Voting Rights Restrictions	Common Share	1,371,105	Shares held by Public Interest Foundations
Shares with Voting Rights	Common Share	72,455,193	

## Shareholder Composition

(As of December 31, 2023)



## Key Dividend Indicators

Category	Unit	Type of Share	2020	2021	2022	2023
(Consolidated) Net Profit	KRW million		805,701	973,499	1,312,179	380,490
(Consolidated) Earnings Per Share	KRW		8,745	10,568	14,169	3,920
Total Cash Dividend	KRW million	-	65,443	69,877	73,731	73,731
(Consolidated) Dividend Payout Ratio			8.1	7.18	5.62	19.38
Cash Dividend Yield	%	Common Share	2.6	2.35	2.7	2.9
		First Preferred Share	1.7	2.07	2.4	2.5
		Third Preferred Share	5.3	4.83	5.4	5.6

## Protection of Shareholders' Rights

Hanwha Corporation has implemented both written and electronic voting systems to ensure the voting rights of shareholders who are unable to attend general meetings. For all shareholders listed in the shareholder register at the end of the fiscal year, the company encourages proxy voting. Furthermore, to facilitate the exercising of shareholders' rights, Hanwha Corporation announces the date, venue, and agenda of the general meeting at least four weeks in advance. The company avoids scheduling the meeting on dates on which multiple general meetings are held to ensure that shareholders can exercise their rights effectively. For the announcement of the general meeting, Hanwha Corporation submits accurate financial statements that reflect subsidiary settlements by two weeks before the meeting to ensure effective voting by shareholders. Through constant improvement of business processes, Hanwha Corporation strives to comply with the "four weeks prior notice" principle of the Corporate Governance Code.

## Communication with Shareholders

Hanwha Corporation enhances the understanding of shareholders and investors on its businesses by disclosing corporate activities and performance data through its website and the Electronic Disclosure System. It creates an environment for active communication with stakeholders through regular conference calls and Non-Deal Roadshows (NDR) targeting domestic and international analysts and institutional investors. Hanwha Corporation publishes an annual Sustainability Report that delineates its governance, management plans and strategies, financial and non-financial performance, and goals with stakeholders, solidifying its role as a leader of ESG management. The company will continue to actively communicate with shareholders, investors, and other domestic and international stakeholders through channels such as conferences, seminars, and social media to provide corporate information in a timely manner.

### Communication Activities with Key Shareholders and Investors in 2023

Category	Target	Key Content	No. of Session Held
Seminar	High-net-worth individual investors	IR presentations for securities firm Wealth Management (WM)	2 (ad-hoc)
Meeting	Analysts	Analyst meetings	1 (ad-hoc)
Conference	Analysts and domestic institutional investors	Securities firm conferences	1 (ad-hoc)
NDR	Domestic institutional investors	Domestic Non-Deal Roadshow (NDR) sessions	4 (quarterly)
	Overseas institutional investors	Overseas Non-Deal Roadshow (NDR) sessions	2 (ad-hoc)
Conference Call	Analysts and domestic institutional investors	Quarterly performance announcements	4 (quarterly)
	Domestic institutional investors	Online IR sessions with Korea Exchange (KRX)	3 (ad-hoc)

GOVERNANCE

# Compliance

## Practicing “Righteous Management” through fair transactions and transparent corporate activities

Hanwha Corporation is committed to the transparency of its corporate activities through diverse compliance management systems. It strives to foster an exemplary compliance culture, fulfilling its social responsibilities and pursuing sustainable righteous management.

### Achievements in 2023

Internal compliance reporting and corrective action rate



100%

July 2023



### Implementation of Fair Trade Compliance Program announced

Number of recipient suppliers of “Letter from the CEO” with emphasis on compliance and ethics



2,636

### Going Forward

Hanwha Corporation prioritizes transparency and fairness of management. To reinforce compliance management, it provides tailored online and offline compliance education and training for employees based on job characteristics. Through various compliance activities, Hanwha supports all employees in practicing fair transactions and ethical behavior to build a corporate culture with employees and suppliers that is grounded in equity and credibility.

### SDGs Alignment



## Compliance Management System

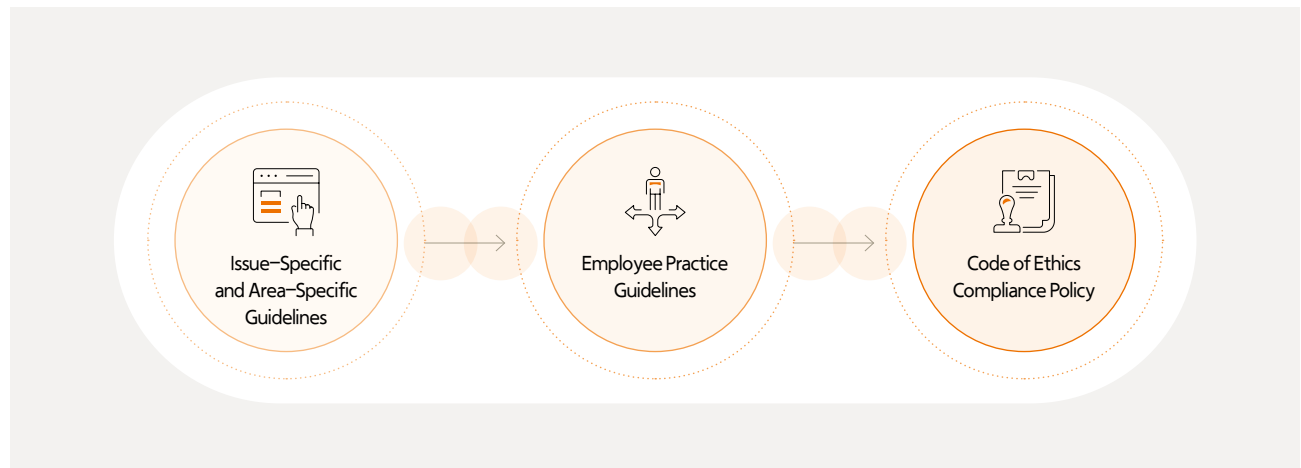
### Compliance Policy

Hanwha Corporation’s principle of ethical management provides a foundation for transparent and credible corporate operations, which are ensured through the Compliance Policy and the Code of Ethics. Moreover, detailed employee practice guidelines and area-specific guidelines provide clear decision-making criteria for all members of the Hanwha family in performing their duties, articulating Hanwha Corporation’s ethical principles and conveying them to stakeholders.

[The Hanwha Corporation Code of Ethics](#) [Shortcut](#)

[The Hanwha Corporation Compliance Policy](#) [Shortcut](#)

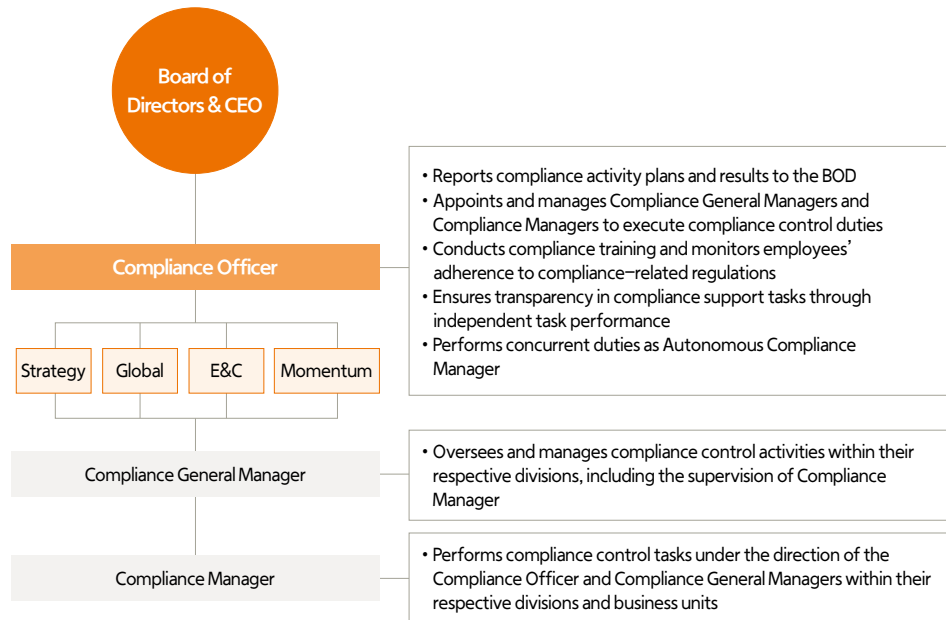
### Compliance Policy System



## Compliance Governance

Hanwha Corporation appoints a compliance officer whose independent execution of duties is ensured through BOD resolutions. The compliance officer regularly reports the performance of and plans regarding compliance activities to the BOD and oversees the compliance control activities of each division's Compliance General Managers and Compliance Managers.

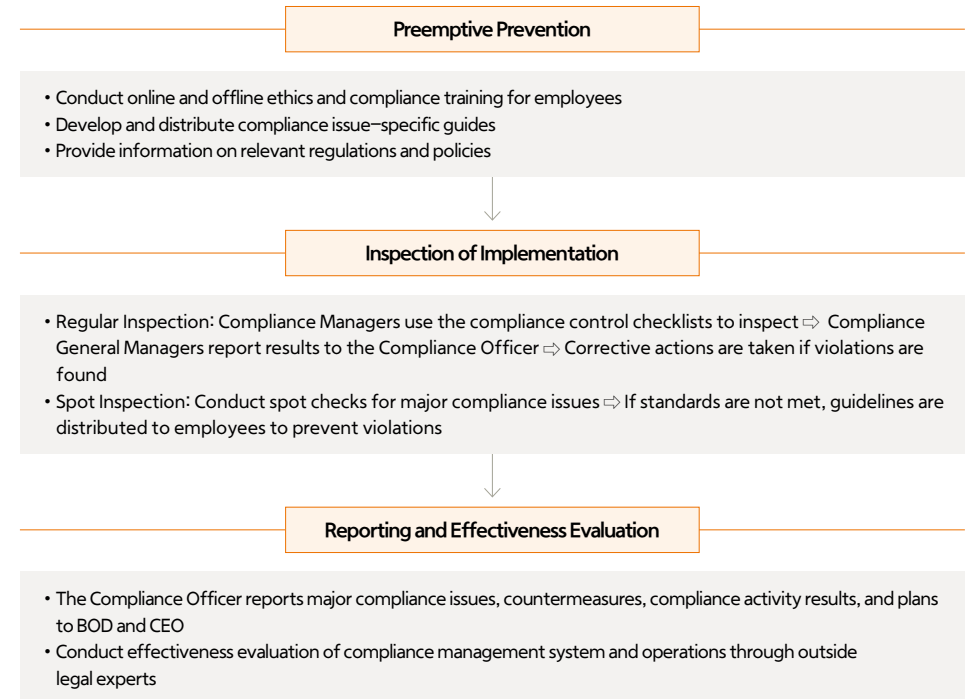
### Compliance Management Organizational Chart



## Compliance Management System

Hanwha Corporation has established and is continuously strengthening a robust compliance control system for the effective implementation of compliance activities. The system is comprised of three procedural stages (preemptive prevention, implementation and inspection, and reporting and effectiveness evaluation) and supports ethical and legal compliance across areas, including fair trade, anti-corruption, and personal data protection. Compliance General Managers conduct team-level compliance inspections twice per year using company-wide and division-specific compliance control checklists, with the results of such inspections reported to the Compliance Officer. In 2023, no significant deficiencies, risks, or abnormalities were discovered during inspections. In February 2023, an outside law firm conducted an effectiveness evaluation of Hanwha Corporation's compliance control system, which concluded that the system operates effectively and appropriately according to corporate law.

### Compliance Control Process



## Compliance Activities

### Key Compliance Activities in 2023

Target	Category	Program Name	Date	Content	Method
Compliance General Managers/Compliance Managers	Education	Compliance Workshop	December 19, 2023	<ul style="list-style-type: none"> <li>– Interaction among compliance team members, including Compliance Officer</li> <li>– Discussion of 2023 compliance activities and plans for 2024</li> <li>– Compliance education and quiz activities for Compliance Managers</li> </ul>	Offline Training & meeting
		Internal Transactions between Affiliates	April 2023, May 2023	– Introduction of laws and cases related to internal transactions between affiliates	Offline training
		Improper Solicitation and Graft Act	April 2023, May 2023	– Education on real cases related to Improper Solicitation and Graft Act	Offline training
		Unfair Trade Practices, Agency Act	May 2023	– Education focused on precautions for agency transactions	Offline training
		Ethics & Compliance Management	June–July 2023	– Education on ethics and compliance management	Online training
		International Legal Affairs	July 2023	– Compliance education on key issues for international tasks (e.g., contracts in English)	Offline training
		Subcontracting Law	June–July 2023, December 2023 - January 2024	– Bi-annual education on Subcontracting Law and Act on Fair Transactions in Subcontracting	Online training
Employees	Education	Personal Information Protection Act	August–September 2023	– Education on Personal Information Protection Act	Online training
		Unfair Collusive Acts	August 2023	– Compliance education on unfair collusive acts	Offline training
		M&A	September 2023	– Compliance education on M&A	Offline training
	Correspondence	Notice on Revision of Subcontracting Law	July 2023	– Notification of all employees about revision of Subcontracting Law related to linkage system for supply prices to subcontractors	Online training
	Materials	Major Revised Laws and Regulations Information	Ongoing (12 cases)	– Posting of major revised work-related laws and regulations information related to corporate bulletin board	Online training
		Fair Trade Autonomous Compliance Program Newsletter	From August 2023 (5 cases)	– Publication and distribution of monthly newsletter to establish a culture of compliance with fair trade procurement and encourage voluntary participation by employees	Online training
		Fair Trade Autonomous Compliance Handbook	July 2023	– Distribution of guidelines to enable employees to voluntarily comply with fair trade	Offline distribution
	Risk Assessment	Fair Trade Autonomous Compliance Program Risk Assessment	September–October 2023	– Conducting of risk assessments to identify the risk involved in violating the Fair Trade Act and to prevent violations of the laws	Online training

## Compliance Education for Employees

Hanwha Corporation operates diverse educational programs to ensure that employees understand and comply with the laws and regulations that they are required to adhere to while performing their responsibilities. Guides on key compliance issues such as the Subcontracting Act, the Improper Solicitation and Graft Act, and the Fair Trade Act are created and distributed, while the compliance capabilities and expertise of all members are enhanced through related training. Furthermore, customized education is provided by selecting topics for each business division that are highly relevant or entail significant legal risks. To ensure that compliance education is effective and applicable to field operations, educational materials are prepared, and lectures are conducted by the legal department’s education officers.

## Posting of Legislative Updates

Hanwha Corporation constantly monitors the enactment and revision of major laws related to ethics and compliance, as well as those pertinent to its business operations. It posts promulgated and enforced laws deemed to be important to its internal bulletin board to prevent any violations of compliance and ethical management. To make complicated compliance-related information easy for employees to understand, Hanwha Corporation prepares educational materials that are distributed company-wide, thereby ensuring that all members are informed of and adhere to the latest legal updates. Furthermore, to make information easier for foreign employees to access, Hanwha Corporation posts translations of its Compliance Policy, Code of Ethics, and ethical guidelines on its website.

## Dissemination of Compliance Culture

Hanwha Corporation endeavors to ensure compliance with all regulations and put into place a healthy and equitable in-house compliance culture. In July 2023, the CEO announced the implementation of the Fair Trade Autonomous Compliance Program, while the Compliance Officer established a system that enables employees to voluntarily adhere to fair trade practices. In February 2024, the CEO sent a letter to all employees emphasizing the importance of practicing Righteous Management and reinforcing the company's commitment to compliance. In July 2023, the Compliance Officer sent a detailed compliance letter to all employees on amendments to the Subcontracting Act introducing the New Subcontract Price Linkage System. Accordingly, Hanwha Corporation was recognized as a "Delivery Price Linkage Company" for actively reflecting such amendments in contracts with subcontractors.

## Internal Transaction Review System

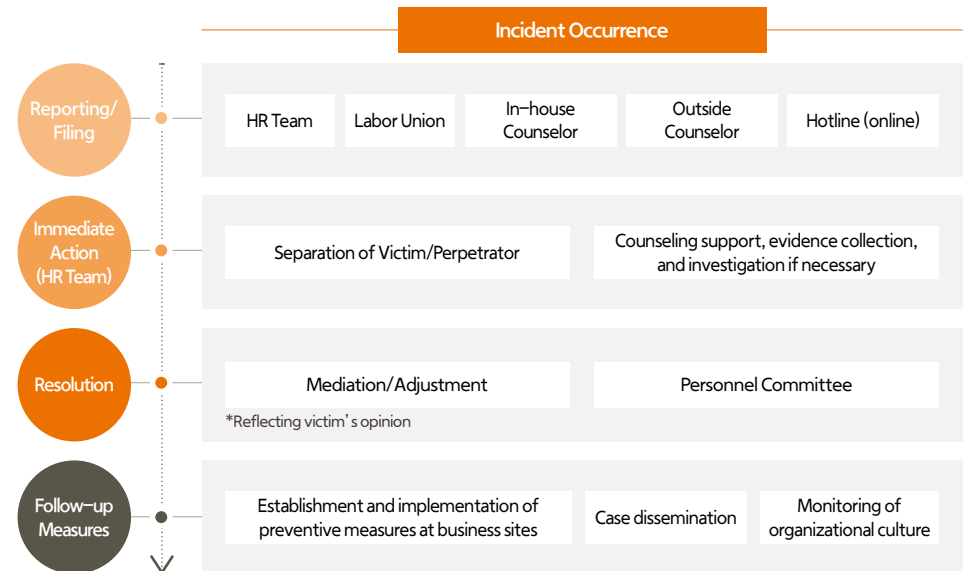
Hanwha Corporation has revised its internal transaction review regulations and reorganized its processes to comply with the Fair Trade Act and maintain a fair trading ecosystem. In 2023, the review of transaction procedures, necessity, and appropriateness of internal transactions between affiliates was fortified. Face-to-face training sessions were conducted on the revised internal transaction review procedures to ensure that employees can effectively reflect such changes into their daily operations.

## Compliance Reporting Channels

Hanwha Corporation operates comprehensive and accessible compliance reporting channels to ensure the establishment of an ethical corporate culture. It operates a hotline through its website, allowing employees, suppliers, customers, and other external stakeholders to report illegal activities or unfair business practices. Reports are directly forwarded to the Compliance Officer, who responds within 48 hours to facilitate swift issue resolution. The personal information and the content of reports are kept strictly confidential in accordance with the Compliance Policy.

For employees, an internal reporting system is in place to immediately report incidents of workplace harassment, sexual harassment, human rights violations, and unethical behavior. The reporting process and timeline are clearly communicated, and important issues are promptly reported to the CEO for timely response. Each business site has one male and one female sexual harassment counselor available for consultation. To protect whistleblowers from retaliation or job-related disadvantages, the company ensures confidentiality of the reporter's identity as well as details of the consultation and report. To further guarantee anonymity, an outside reporting channel is provided through the Korea Workers' Compensation & Welfare Service for workplace harassment issues. Hanwha Corporation also collaborates with outside legal advisors to conduct regular legal reviews and training sessions as a means of fortifying its compliance policies.

### Internal Reporting Response Process



## Fair Trade Compliance

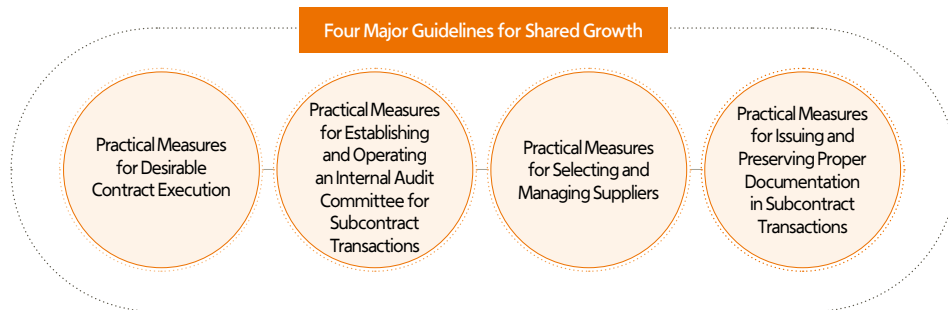
### Fair Trade Autonomous Compliance Program

Hanwha Corporation offers the Fair Trade Autonomous Compliance Program (CP) to foster a culture of fair trade compliance, enhancing employees' awareness of compliance and preventing violations of fair trade regulations. In 2023, it established CP operational regulations applicable division-wide to ensure the CP's effective operation. The Compliance Officer, who is appointed by the Board of Directors, concurrently serves as the Autonomous Compliance Manager, establishing a governance system that reports the CP's operating status and performance to the CEO.

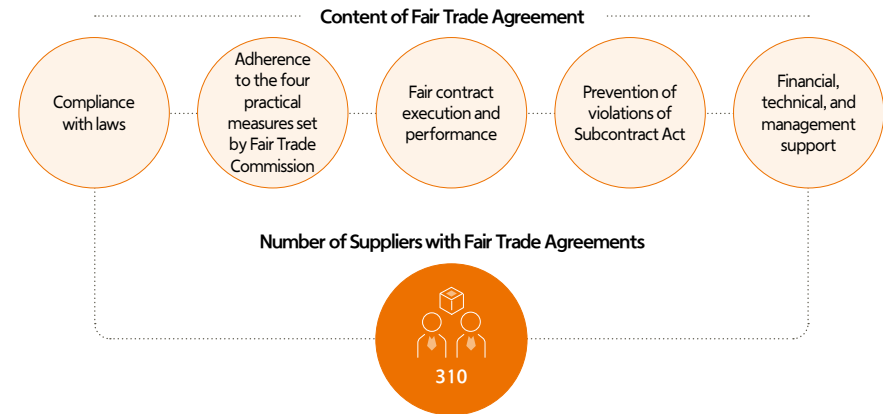
Furthermore, Hanwha Corporation conducts a fair trade risk assessment to identify risks of violating fair trade laws that may arise during employees' performance of their duties and prevent such violations as much as possible. After establishing multiple CP-related policies, it created and distributed the CP Compliance Handbook to ensure that employees are able to adequately implement the CP. To establish a culture of fair trade procurement through voluntary participation, it publishes and distributes a monthly "CP Newsletter" that provides employees with trends and updates on fair trade cases.

### Fair Trade Autonomous Compliance Activities

Hanwha Corporation is committed to promoting shared growth through fair transactions with suppliers—a commitment that is demonstrated by its four major fair trade guidelines. Employees are strictly prohibited from accepting money, gifts, or entertainment from suppliers or other stakeholders. To create a fair trade-conducive environment, the company conducts pre-contract reviews and legal consultations to prevent violations of the Subcontracting Act. In June 2024, an on-site inspection was conducted for subcontract transactions that took place in 2023. The inspection included a survey on payment practices, issuance of contracts and documents, requests for technical data, and the establishment of confidentiality agreements to ensure that the Subcontracting Act was not violated during the transaction process. If violations were discovered, immediate corrective actions were taken in a timely manner.



### Fair Trade Agreements



### Letters Prohibiting Offering and/or Acceptance of Gifts and Monetary Transactions

In 2023, to prevent supplier-related illegal and unethical activities, Hanwha Corporation sent compliance and ethical management letters to 2,636 suppliers before the Chuseok holiday. These letters, issued under the CEO's name, strictly prohibited employees from receiving money, gifts, or entertainment from business partners and/or other stakeholders and instructed suppliers to report any such requests to the Compliance Officer, thereby promoting a transparent and fair trading environment and maintaining equitable relationships with suppliers.

### Unfair Transaction Reporting Channels

To ensure fairness and transparency in all transactions with suppliers, Hanwha Corporation has implemented multiple measures. If an unfair practice or abuse of power occurs during a transaction, reports can be quickly processed through the company's online ethics hotline. Once a report is filed, the Internal Review Committee for Subcontract Transactions conducts a fact-finding procedure, review, and other necessary actions, with results communicated to the whistleblower. By guaranteeing an open communication channel, Hanwha Corporation strives to eradicate all types of unfair transactions, including hospitality/bribes, unethical behavior, leakage of confidential information, exclusive trading conditions, and discrimination.

GOVERNANCE

# Risk Management

## Achieving sustainable growth and becoming a trusted company through transparent management activities and systematic risk management

Hanwha Corporation effectively manages financial and non-financial risks through a systematic risk management and internal control system, pursuing transparent management and sustainable growth. By doing so, it ensures transparency and reliability of accounting practices in accordance with global standards and fulfills its role as a responsible corporate citizen.

### Achievements in 2023

Company-wide integrated risk management



### Risk Management Regulations established

Internal Accounting Control System evaluation



### “Effectively designed and operated”

### Going Forward

Hanwha Corporation systematically manages financial and non-financial risks to achieve sustainability of growth and transparency of management. By fortifying its internal control system and Consolidated Internal Control over Financial Reporting (ICFR), it ensures accounting transparency and compliance with domestic and international tax regulations, thereby fulfilling its role as a responsible corporate citizen.

Hanwha Corporation will be enhancing its risk management framework to maintain highly reliable management that is aligned with global standards.

### SDGs Alignment



## Risk Management System

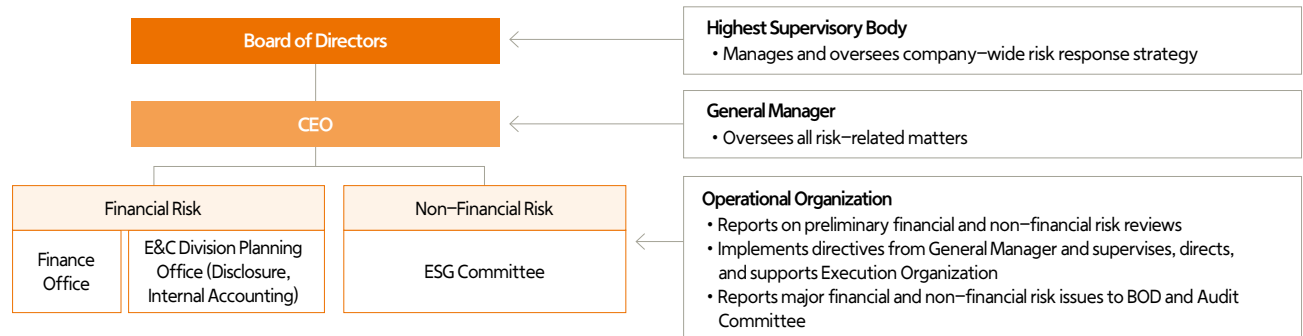
### Company-wide Integrated Risk Management

Hanwha Corporation systematically manages potential financial and non-financial risk factors that may arise from business activities, thereby ensuring corporate stability and sustainability. It conducts proactive risk management through a dedicated internal team, which follows a three-step process (identification/analysis, evaluation/mitigation, and follow-up measures). Major issues are reported to the BOD both annually (December) and as needed throughout the year. In 2023, Hanwha Corporation established risk management regulations that formalize the basic principles of risk management. The regulations standardize risk management principles and procedures across the entire organization in addition to streamlining the risk identification and reporting system for more efficient operation.

### Risk Management Governance

Hanwha Corporation established a company-wide risk management system to prevent and manage risks proactively. The risk management framework is operated through the highest supervisory body, general manager, operational organization, and execution organization. The execution organization is the smallest official unit within the company, responsible for reporting preliminary risk reviews related to its operations to the operational organization. Comprising the Finance Office, E&C Division Planning Office, and ESG Committee, the operational organization reports on financial and non-financial risks, implements directives from the general manager, and oversees, directs, and supports the execution organization. The general manager is responsible for reporting major risk issues to the highest supervisory body, such as the BOD and relevant subcommittees. The BOD manages and supervises the company-wide risk response strategy, establishing and maintaining stringent corporate risk management governance.

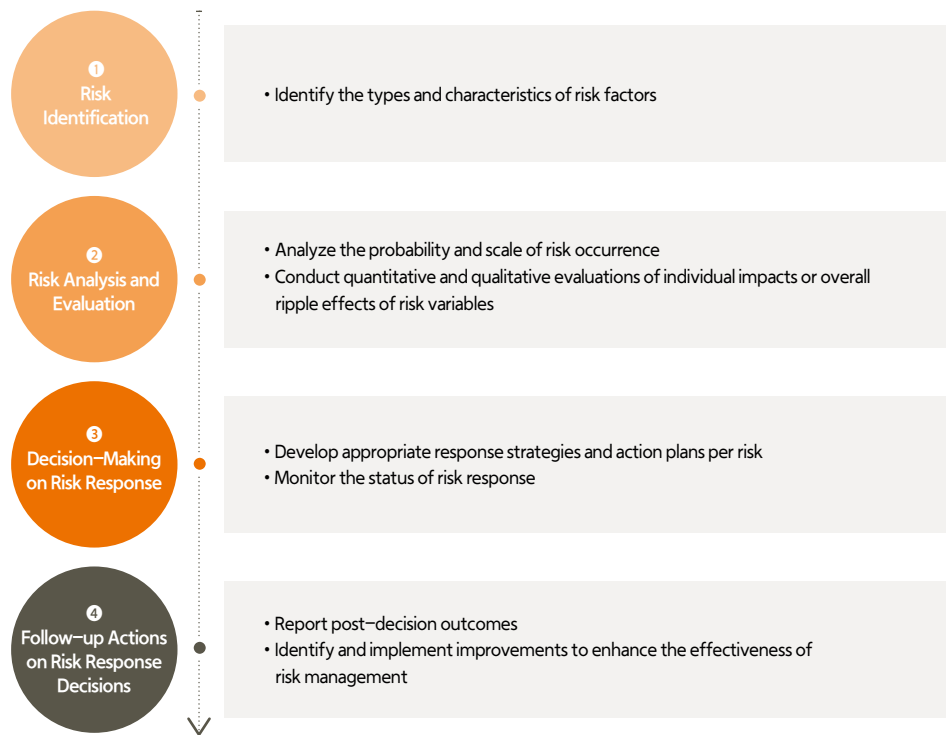
### Risk Management Organizational Chart



## Risk Management Process

Hanwha Corporation has established a companywide risk management process comprised of four stages: risk identification, analysis and evaluation, decision-making on responses, and follow-up measures on response decisions. This process systematically evaluates and analyzes the probability, scale, and overall impact of diverse risks. Based on the results of the analysis, optimal response strategies (e.g., risk transfer, avoidance, mitigation, and acceptance) are formulated to enhance risk response capabilities. Furthermore, the implementation details of risk management plans are reviewed, and constant feedback on the results is provided to further sophisticate the risk management process.

### Four Stages of the Risk Management Process



## Management of Various Risk Types

Hanwha Corporation defines risk as “the potential likelihood for various uncertainties arising from business activities to adversely affect the company’s equity, profits, business opportunities, financing, organizational operations, and reputation.” Risks are categorized into financial and non-financial risks. Risk management begins at the preliminary planning stages of all operations and is handled through a company-wide risk management system under consistent principles. Moreover, Hanwha Corporation constantly monitors internal and external environmental changes, including relevant regulations and policy shifts, as well as feedback from major stakeholders. By utilizing intranet and internal bulletin boards, the company actively supports employees in keeping up with the latest industry trends and preventing risks.

### Financial Risk Management

Financial risk encompasses all financial threats that may arise during business activities, including accounting treatments, Internal Control over Financial Reporting (ICFR), external audits, tax reporting and payment, interest rates, liquidity, exchange rates, and credit ratings, as well as the company’s accounting, tax, finance, and disclosure policies. Hanwha Corporation, through its Financial Office, E&C Division’s Planning Office, and financial risk management organizations, expertly addresses the growing financial and economic risks associated with consistent business expansion. This approach ensures financial stability, thereby laying the foundation for the company’s sustainable economic growth.

#### Financial Risks

Key Risks	Risk Response Activities
Accounting, Tax, Market Interest Rates, Liquidity Risks	<ul style="list-style-type: none"> <li>Consistent management of asset-liability ratios to maintain financial soundness</li> <li>Establishment of internal policies and regulations based on authoritative interpretations</li> </ul>
Internal Accounting Risks	<ul style="list-style-type: none"> <li>Operation and enhancement of internal control systems</li> </ul>
Foreign Exchange Risks	<ul style="list-style-type: none"> <li>Monitoring of exchange rate volatility and establishment of risk-hedging systems</li> <li>Regular company-wide checks on foreign exchange risks through operation of the Foreign Exchange Risk Management Committee</li> </ul>

## Non-Financial Risk Management

Non-financial risks encompass all non-financial risks that may arise during business activities, including environment, safety, health, social contribution, supply chain, win-win cooperation, HR, talent management, governance, information security, compliance, business strategy and operations, reputation, and their disclosures. To effectively manage ESG-related risks, Hanwha Corporation has reorganized its ESG council into ten specialized modules to consistently monitor and manage non-financial risks. Each module formulates specific and practical response strategies based on expertise to minimize the impact of non-financial risks and enhance corporate sustainability and social responsibility.

### Non-Financial Risks

Key Risks	Risk Management Activities
Business and Operational Risks	<ul style="list-style-type: none"> <li>• Monitoring of domestic and international industry, technology trends, and regulations</li> <li>• Development of technologies and sophistication of internal operational processes via digital transformation</li> <li>• Strategic business portfolio management and operation to secure future markets</li> <li>• Improvement of corporate competitiveness by securing top talent and building employees' expert capabilities</li> <li>• Enhancement of project risk management through strict compliance and PMS (Project Management System)-based management when securing projects</li> </ul>
Compliance Risks	<ul style="list-style-type: none"> <li>• Monitoring of domestic and international laws and regulations</li> <li>• Compliance training and educational support for employees and suppliers</li> </ul>
ESG Risks	<ul style="list-style-type: none"> <li>• Establishment of an ESG management system in accordance with domestic and international ESG initiatives and regulations</li> <li>• Review of the company's medium-/long-term ESG strategic directions and implementation plans</li> <li>• Development and implementation of response scenarios for identified potential climate change risks</li> <li>• Formation of dedicated management organizations for each ESG area and ongoing identification of risks</li> <li>• Establishment of risk management regulations and systems</li> <li>• Sustainable management of supply chains via ESG education/training, consultation, and risk assessments for suppliers</li> </ul>

## Internal Accounting Control System

### Evaluation and Management of Internal Control System Operation

Hanwha Corporation operates Internal Control over Financial Reporting (ICFR) to ensure the reliability of financial information and manage risks associated with financial reporting. Internal accounting control regulations clearly define the roles and responsibilities of the CEO, internal accounting managers, and the Audit Committee in addition to the design and operation of the system, evaluation and reporting procedures, and measures for regulatory violations. Each year, management meticulously inspects the effectiveness of the ICFR, and reports its operational status to the general shareholders' meeting, BOD, and Audit Committee, promoting consistent system improvements to ensure effectiveness of operations. The Audit Committee evaluates the design and operation of ICFR and reports outcomes to the BOD to maintain transparency. As of December 31, 2023, based on the Framework for Design and Operation of Internal Control over Financial Reporting, it was assessed as being effectively designed and operated in terms of materiality (a similar assessment was made by external auditors).

### Introduction of Consolidated Internal Control over Financial Reporting

Hanwha Corporation has responded since 2023 to the mandatory implementation of consolidated financial statements by designing, operating, and evaluating its Internal Control over Financial Reporting based on the advice of outside accounting experts. Operational plans for each major domestic and international subsidiary were established, and accounting reporting guidelines were distributed. The progress made on operational plans was monitored, and whether appropriate procedures for evaluation methods were performed and reported was verified. Furthermore, group-level controls (e.g., ethics regulations, fraud prevention programs) and controls related to consolidated settlements were established, operated, and evaluated group-wide. As of December 31, 2023, in accordance with the Framework for Design and Operation of Internal Control over Financial Reporting, it was concluded that the Consolidated Internal Control over Financial Reporting was effectively designed and operated from a materiality perspective (this assessment was corroborated by outside audits). Hanwha Corporation will be striving to ensure the Consolidated Internal Control over Financial Reporting's effective operation.

## Tax Risk Management

### Tax Management Policy

As a responsible corporate citizen, Hanwha Corporation strictly complies with domestic and international tax laws, faithfully fulfilling its tax obligations. The company understands the intent of tax regulations and ensures that all transactions are handled in accordance with the tax laws of each respective country to manage tax risks. Hanwha Corporation consistently monitors tax trends in each country, strictly prohibits illegal activities such as tax evasion and tax avoidance, and adheres to relevant regulations.

GOVERNANCE

# Information Security

## Enhancing security management to build trust and create a safe digital environment for everyone

Hanwha Corporation proactively addresses both internal and external environmental changes and diverse security issues with flexibility and promptness to improve the quality of information security. Through such efforts, it aims to consistently strengthen company-wide cybersecurity capabilities and provide a secure and trustworthy business environment for all stakeholders.

### Achievements in 2023

April 2024



### Information Security Declaration proclaimed

Number of information security violations and cybersecurity incidents



0

Number of personal information leaks



0

### Going Forward

Hanwha Corporation will be identifying and improving security vulnerabilities by conducting assessments on information security level, thereby implementing a systematic information security management system. It will also streamline the data management system to efficiently manage key ESG performance indicators (e.g., greenhouse gas emissions). Furthermore, the company will be pursuing more reliable ESG disclosures through data-based analysis and follow-up task identification.

### SDGs Alignment



## Information Security Management System

### Information Security Declaration

Hanwha Corporation must establish a secure information security management system to protect information assets and personal data, ensuring business continuity in response to the ever-increasing and sophisticated cyber threats. To prevent the loss, damage, and leakage of core technologies and critical information assets, it must comply with relevant laws and update internal information security regulations and policies in accordance with changes in external and internal environments. As such, all members must adhere to the following information security practices to avoid damages stemming from internal/external hacking and security threats:

- One** We strictly comply with the company's information security regulations.
- Two** We take full responsibility for information assets and information security.
- Three** We protect information assets from illegal access and leakage.
- Four** We recognize the importance of information security and consistently engage in information security activities to enhance security awareness.

### Information Security Governance

Hanwha Corporation establishes and implements well-organized information security policies and regulations to minimize legal risks and improve the efficiency of information security operations. To this end, a dedicated company-wide information security team is in place that facilitates comprehensive information security strategies through inter-divisional collaboration. Moreover, the appointment of a Chief Information Security Officer (CISO) strengthens expertise and accountability in information security, while the expanded role of the DT Security Team includes updating security policies, enhancing security training programs and improving internal security through security incident prevention/response measures.

### Information Security-Dedicated Organization



#### DT Security Team's Main Responsibilities

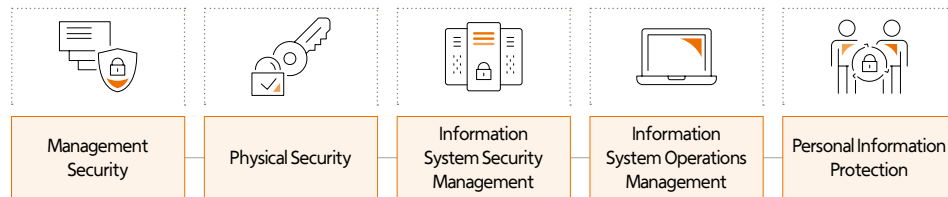
- ① Reorganize and update company-wide information security systems, policies, and guidelines (once per year, including personal information protection)
- ② Analyze, assess, and improve vulnerabilities for information security risk management (including personal information protection)
- ③ Conduct self-assessments of information security activities (once per year, including personal information protection)
- ④ Perform pre-inspections of information security for newly implemented systems
- ⑤ Monitor and respond to internal and external intrusions/threats/leaks (as needed)
- ⑥ Disclose information security status (once per year)

## Information Security Risk Management

### Information Security Level Assessment

Hanwha Corporation recognizes the importance of information security and has been consistently improving security management vulnerabilities through the information security level assessment system that was introduced in 2021. The assessment system is divided into five management areas and 24 control domains, designating items directly related to relevant information security laws as mandatory control items to more rigorously measure information security maturity. Hanwha Corporation aims to improve its assessment system and enhance information security levels through regular evaluations.

#### Information Security Level Assessment – 5 Areas



### Industrial Security Management

Hanwha Corporation is committed to sharing cyber security threats and response strategies with industry stakeholders and addressing blind spots in information security. It actively participates in the Cyber Threat Analysis and Sharing System (C-TAS) operated by the Korea Internet and Security Agency (KISA) and shares real-time cyber threat information through the Korea Cybersecurity Technical Institute (KCTI) system provided by the National Cybersecurity Center. Such efforts fortify public-private collaboration networks, prevent technology leaks, and enhance response capabilities to security incidents.

Furthermore, Hanwha participates in the annual Industrial Security Conference, which is organized by the National Core Technology Security Academy of Korea and serves as a platform to discuss industrial security trends and response strategies, fostering a collaborative industrial security management ecosystem. Through the conference, Hanwha Corporation actively engages in discussions on protecting industrial technology and preventing technology leaks, sharing advanced industrial security technologies and expertise with stakeholders as a means of improving national industrial security standards.

### Personal Information Protection Management

Hanwha Corporation is dedicated to safeguarding the personal information of employees and customers by adhering to relevant laws and updating its privacy policies. To prevent data breaches, it strictly complies with data retention periods and promptly destroys information once its purpose is achieved. The company discloses its privacy policy on its website, detailing the types of data collected in addition to purposes of such collection, periods of use, subcontractors, destruction procedures, and methods, thus improving stakeholder accessibility. Hanwha has appointed a company-wide Chief Privacy Officer (CPO) and a dedicated department to manage legal risks related to personal information protection and leaks. These roles are described clearly in order to promptly address complaints and related issues. The company has also secured personal information leakage liability insurance to provide recourse for users in the event of data breaches.

[Privacy Policy](#) [Shortcut](#)

### Cyber security Risk Management

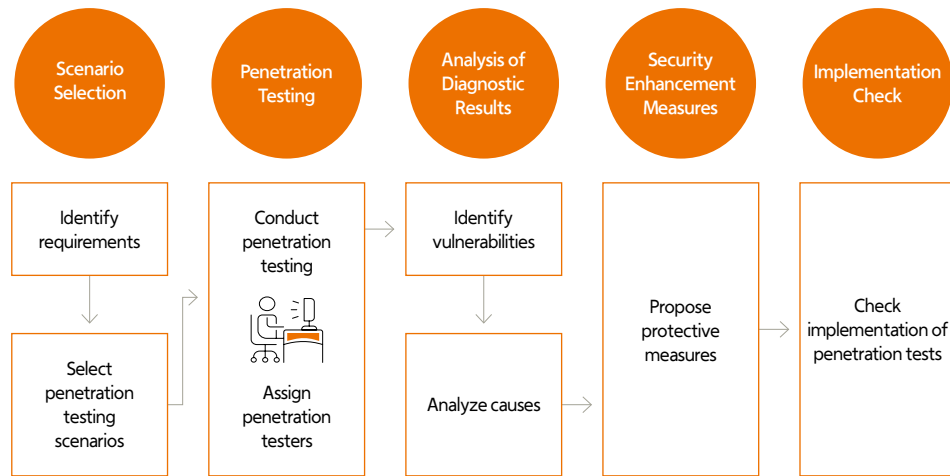
Hanwha Corporation is enhancing its cyber security capabilities by monitoring the latest trends and undertaking diverse activities. It analyzes international cyber threats and cases of information breaches, conducting regular annual drills to combat threats such as malware infections and email hacking. In response to a rise in cyber threats caused by a surge in remote work, it has implemented remote access control measures, thereby prohibiting unauthorized device access and introducing additional authentication procedures to fortify internal cyber security risk management. Hanwha Corporation will be making a sustained effort to respond adequately to changing environments and diverse IT issues to improve its information security capabilities.

## Information Security Culture

### Prevention and Response Activities for Security Incidents

Hanwha Corporation conducts regular IT diagnostics, including Web, Infra, and Secure Coding assessments, to address vulnerabilities and operate secure information protection services against external threats (e.g., hacking, ransomware). By conducting penetration tests on key systems, identified weaknesses are improved in order to be able to respond effectively to cyber threats and enhance security capabilities. The Integrated Security Control Center (Jukjeon IDC) operates year-round, conducting real-time monitoring to prevent cyber incidents and quickly detecting and addressing external attacks and risks to protect corporate information assets and customer data.

#### Penetration Testing Process

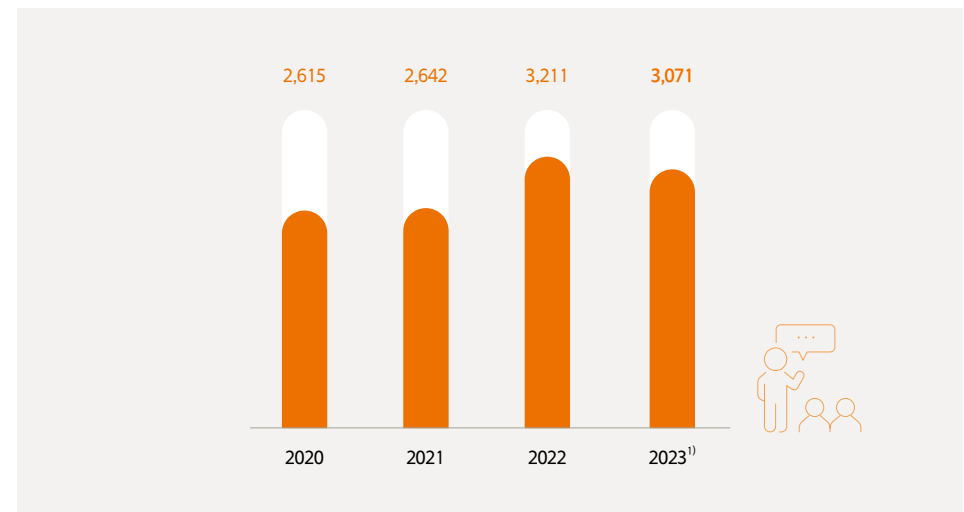


### Information Security Awareness Enhancement

Hanwha Corporation undertakes many activities to enhance employees' awareness and understanding of information security. Regular information security training is provided alongside updates on the latest cyber threat trends, countermeasures, and best practices through internal bulletins, newsletters, and emails. All of these efforts aim to heighten security consciousness among employees. Employees are encouraged to participate in strict information leakage management, respond to simulated attack drills, and report suspicious emails to improve their proactive security measures and response capabilities.

#### Results of Personal Information Protection Training

(Unit: No. of participants)



1) In 2023, the Global Division conducted training only for HR departments that handle sensitive information, resulting in fewer training sessions.

# ESG Factbook

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# Financial

The consolidated statements of financial position for the fiscal year of 2021 and 2020 have been restated due to the accounting policy changes following the adoption of K-IFRS No. 1117 “Insurance Contracts,” published by the Korea Accounting Standards Board on April 27, 2022.

## Consolidated Statements of Financial Position

Classification	2020	2021	2022	2023
<b>Assets</b>				
Current assets	14,953,767	17,597,982	22,317,004	23,053,899
Cash and cash equivalents	4,279,157	5,496,492	6,673,028	4,909,149
Financial assets at fair value through profit or loss(current)	2,923	0	5,946	5,669
Financial assets at fair value through other comprehensive income(current)	246	44	500	363
Financial assets at amortized cost	0	0	68	23
Other financial assets	492,571	588,450	861,747	627,823
Accounts receivables and other receivables	3,450,397	3,748,904	4,962,880	5,420,413
Other current assets	2,281,057	2,428,371	3,097,351	4,277,211
Inventories	4,114,372	5,166,955	6,557,534	7,749,659
Current tax assets	12,111	32,496	33,803	62,122
Assets held for sale	320,933	136,270	124,147	1,467
Non-current assets	19,404,378	22,554,488	29,535,220	36,591,190
Financial assets at fair value through profit or loss(non-current)	147,424	368,075	700,441	968,865
Financial assets at fair value through other comprehensive income(non-current)	15,622	77,129	472,345	332,577
Other financial assets	180,660	329,529	442,756	361,194
Accounts receivables and other receivables	581,272	487,135	396,086	989,602
Investments in associates and joint venture	2,607,536	3,766,911	3,967,508	6,634,602
Investment property	903,727	1,041,181	1,970,935	1,443,694
Property, plant, and equipment	11,304,941	11,324,966	15,852,298	19,647,350
Right-of-use assets	434,713	617,239	610,870	706,910
Intangible assets	2,477,318	3,706,148	4,101,230	4,239,031
Other non-current assets	181,764	226,133	481,734	703,990
Deferred tax assets	569,401	610,042	539,017	563,375
Assets for financial business	157,771,733	151,450,816	145,124,702	150,093,060
Cash and cash equivalents	1,253,955	2,105,569	2,923,167	3,619,590
Insurance contract assets	N/A	859,731	833,743	723,341

Classification	2020	2021	2022	2023
Financial assets at fair value through profit or loss	26,222,269	46,266,513	45,276,907	47,914,274
Financial assets at fair value through other comprehensive income	34,593,236	45,723,161	36,438,736	49,993,915
Financial assets at amortized cost	57,362,991	47,916,610	48,721,939	37,266,154
Investments in associates and joint venture	270,767	352,768	534,736	595,248
Investment property	1,598,156	1,870,896	1,740,618	1,524,762
Property, plant, and equipment	3,083,402	2,814,775	3,324,717	3,346,918
Right-of-use assets	90,102	105,067	242,672	287,350
Intangible assets	374,016	418,282	423,543	742,847
Derivative financial assets	1,496,713	255,011	1,007,318	854,966
Current tax assets	147,749	20,777	236,492	310,321
Deferred tax assets	28,507	287,706	1,113,900	58,076
Other financial assets	2,746,507	2,379,501	2,162,606	2,549,206
Other assets	3,181,222	74,449	143,608	306,092
<b>Total assets</b>	<b>192,129,878</b>	<b>191,603,286</b>	<b>196,976,926</b>	<b>209,738,149</b>
<b>Liabilities</b>				
Current liabilities	15,652,116	16,468,961	21,094,631	26,074,591
Accounts payables and other payables	3,108,185	4,224,696	4,149,014	4,977,220
Borrowings and debentures	7,064,927	6,323,696	8,305,473	9,671,863
Other financial liabilities	938,250	1,072,249	1,512,974	1,932,679
Provisions	380,752	296,028	282,237	336,334
Other current liabilities	3,920,742	4,320,521	6,209,450	8,950,206
Current tax liabilities	239,260	231,771	635,483	206,289
Non-current liabilities	12,532,380	14,368,998	14,500,841	16,726,533
Accounts payables and other payables	226,063	410,602	415,370	357,333
Borrowings and debentures	6,929,913	8,257,694	8,067,264	9,815,600
Other financial liabilities	956,688	1,228,168	1,640,192	1,925,762
Net defined benefit liabilities	1,699,480	1,690,833	1,546,484	1,692,935
Provisions	338,956	345,807	336,097	392,867
Other non-current liabilities	1,101,729	1,142,964	1,198,512	1,201,573

Classification	2020	2021	2022	2023
Deferred tax liabilities	1,279,551	1,292,930	1,296,922	1,340,463
Liabilities for financial business	145,414,292	136,084,373	128,205,546	133,738,286
Withheld liabilities	2,111,984	2,265,319	1,986,810	2,236,804
Insurance contract liabilities	104,937,315	118,668,342	105,388,267	111,572,538
Policyholder's equity adjustments	406,028	15,091	133,520	156,475
Current tax liabilities	19,282	19,247	129,464	7,047
Deferred tax liabilities	102,812	1,521,872	2,960,530	1,912,628
Derivative financial assets	453,142	1,006,887	2,306,919	1,392,904
Net defined benefit liabilities	192,937	249,896	212,841	247,524
Provisions	132,543	137,147	170,226	173,070
Other financial liabilities	11,432,357	12,118,515	14,800,191	15,807,732
Other liabilities	261,343	82,057	116,778	231,564
<b>Total liabilities</b>	<b>173,598,788</b>	<b>166,922,332</b>	<b>163,801,018</b>	<b>176,539,410</b>
<b>Equity</b>				
Equity attributable to owners of the Parent Company	4,708,162	6,579,772	10,813,167	10,791,035
Share capital	489,550	489,550	489,550	489,550
Capital surplus	522,939	477,757	1,338,136	1,354,755
Capital adjustments	16,953	11,503	43,806	81,298
Accumulated other comprehensive income and loss	(272,399)	(966,332)	1,168,146	1,266,309
Retained earnings	3,951,119	6,567,294	7,773,529	7,599,123
Non-controlling interest	13,822,928	18,101,182	22,362,741	22,407,704
<b>Total equity</b>	<b>18,531,090</b>	<b>24,680,954</b>	<b>33,175,908</b>	<b>33,198,739</b>
<b>Total liabilities and equity</b>	<b>192,129,878</b>	<b>191,603,286</b>	<b>196,976,926</b>	<b>209,738,149</b>

## Financial and Business Performance

### Credit Rating

Classification	Unit	2020	2021	2022	2023
Korea Ratings	Rating	A+	A+	A+	A+
NICE Credit Rating		A+	A+	A+	A+

### Distribution of Financial Values for Stakeholders

Classification	Unit	2020	2021	2022	2023
Customers Sales	KRW 1 million	4,000,775	3,935,569	3,879,925	7,186,351
Employees Salary		438,405	438,726	434,335	506,476
Suppliers Purchase volume from suppliers		1,542,661	1,531,355	1,370,131	1,888,741
Shareholders Cash dividend		65,443	69,877	73,731	73,731
Investors Interest expenses		59,545	52,742	94,953	190,600
Government Corporate tax & tax and public imposts		38,567	47,452	48,015	52,149
Local communities Expenses for donations and social contributions		2,124	1,605	3,236	5,392

### Sustainability Taxonomy

Classification	Unit	2020	2021	2022	2023
Total sales	Sales	3,288,353	2,633,456	4,007,340	4,930,297
Total amount of activities considered to be taxonomy-eligible		74,953	36,896	81,699	83,652
Total amount of taxonomy-ineligible activities		3,213,400	2,596,560	3,925,641	4,846,645
Total capital expenditure	Capital expenditure	2,867,287	2,269,518	3,475,660	4,698,102
Total amount of activities considered to be taxonomy-eligible		67,444	33,598	70,476	71,940
Total amount of taxonomy-ineligible activities		2,799,843	2,235,920	3,405,184	4,626,162
Total operational expenditure	Operational expenditure	27,652	33,693	19,960	11,615
Total amount of activities considered to be taxonomy-eligible		2,861	-6,698	-837	-661
Total amount of taxonomy-ineligible activities		24,791	40,391	20,797	12,275

### R&D Investment

Classification	Unit	2020	2021	2022	2023
Total expenses	R&D investment expenses	77,896	58,507	71,529	35,919
Selling and administrative expenses, cost of sales		77,833	57,888	68,612	12,658
Intangible assets		63	619	2,917	23,260
R&D investment-to-sales ratio <sup>1)</sup>	%	1.95	1.49	1.84	0.50
R&D personnel <sup>2)</sup>	Persons	148	155	149	195
Number of patents and trademarks applied (cumulative) <sup>3)</sup>	Domestic (Korea)	558	656	756	783
	International (Non-Korea)	250	304	389	459
Number of patents and trademarks registered (cumulative) <sup>3)</sup>	Domestic (Korea)	418	464	506	442
	International (Non-Korea)	124	146	171	216

1) 2020-2022 data have been adjusted to match sales and R&D figures published in management report, by extracting values from Hanwha E&C before the 2022 acquisition.

2) 2020-2022 data have been adjusted due to errors in previous calculation (146 → 148, 158 → 155, 152 → 149).

3) The number of patents and trademarks applied and registered are based on the figures in Hanwha Corporation's internal management system (limited to valid cases as of the end of each fiscal year), due to the difference between the figures in the business report and those in the internal management system.

# Environmental

## Environmental Management

### Greenhouse Gases (GHG)

Classification	Unit	2020	2021	2022	2023	
GHG Emissions (Scope 1 + Scope 2)						
Total GHG emissions (Scope 1 + Scope 2)						
Direct emissions (Scope 1)	tCO <sub>2</sub> -eq	60,851	64,822	64,263	68,748	
Indirect emissions (Scope 2)		15,749	24,553	20,368	21,389	
GHG emission intensity (based on nonconsolidated sales <sup>1)</sup> )	tCO <sub>2</sub> -eq/ KRW 100 million	1.14	1.24	1.06	0.98	
GHG Emissions (Scope 3)						
Other indirect emissions (Scope 3) <sup>2)</sup>		N/A	3,912,742	4,236,881	7,446,486	
1. Purchased goods and services		N/A	1,636,330	1,743,325	2,930,820	
2. Capital goods		N/A	318	349	23	
3. Fuel- and energy-related activities not included in Scope 1 or 2		N/A	2,354	3,705	6,543	
4. Upstream transportation and distribution	tCO <sub>2</sub> -eq	N/A	6,112	8,568	24,566	
5. Waste generated in operations		N/A	5,630	8,196	12,562	
6. Business travel		N/A	2,383	5,829	10,163	
7. Employee commuting		N/A	2,135	2,341	3,679	
9. Downstream transportation and distribution		N/A	2,509	2,760	8,344	
11. Use of sold products		N/A	1,567,664	1,701,867	3,309,699	
12. End-of-life treatment of sold products		N/A	2,399	5,967	60,148	
13. Downstream leased assets		N/A	18,310	18,063	19,225	
15. Investments		N/A	666,598	735,911	1,060,714	
Reduction of GHG Emissions						
Reduction of GHG emissions <sup>3)</sup>		Clean Development Mechanism (CDM)-related emission reduction	438,759	354,382	293,153	Certification delayed <sup>4)</sup>
		External emission reduction	427,856	344,250	287,290	
		Voluntary on-site emission reduction	N/A	N/A	2	
Number of carbon reduction activities		Cases	N/A	N/A	1	11

1) GHG emission intensity is calculated based on nonconsolidated sales, which is based on the current three business divisions (Global·E&C·Momentum).

2) Scope 3 emissions data in 2020 was marked as not applicable due to the unavailability of excluding Defense Division data before the business reorganization.

3) CDM related emission reduction and external emission reduction are based on the year when Hanwha Corporation obtained a KOC (Korea Offset Credits) certificate.

4) Following the Paris Climate Agreement coming into effect in 2021, transitioning CDM activities to SDM, certification for carbon reduction is delayed (KOC-certified reduction figure unavailable).

### Energy

Classification	Unit	2020	2021	2022	2023
Total energy consumption <sup>1)</sup>		974	800	912	1,020
Non-renewable energy consumption	Total consumption	1,141	967	1,124	1,189
	Subtotal	214	201	212	199
	Gasoline	12	7	16	16
	Diesel	14	13	21	22
	Kerosene	2	0	12	15
Direct energy consumption	LPG	3	2	1	2
	LNG	56	39	29	24
	Others	128	140	134	121
	Subtotal	927	766	912	990
Indirect energy consumption	Electricity	923	762	909	990
	Steam	4	5	3	-
Renewable energy consumption <sup>2)</sup>	MWh	18.25	18.25	18.25	18.25
Consumption intensity (based on nonconsolidated sales) <sup>3)</sup>	TJ/KRW 100 million	0.01830	0.01536	0.01507	0.01461
Share of renewable energies in electricity consumption	%	0.01	0.01	0.01	0.01
Cost for total energy consumption	KRW 100 million	137	119	174	188
Total on-site energy consumption <sup>4)</sup>	MWh	96,128	79,458	94,892	103,106
Share of grid electricity in energy consumption	%	36	36	37	36

1) (Total energy consumption) = (Non-renewable direct energy consumption) + (Non-renewable indirect energy consumption) + (Renewable energy consumption) - (Energy sold)

2) Self-generation through PV generation

3) Consumption intensity is calculated based on nonconsolidated sales, which is based on the current business divisions (Global·E&C·Momentum).

4) Total energy consumption in worksites is based on National GHGs Management System (NGMS)-reported data.

## Air Pollutants<sup>1)</sup>

Classification	Unit	2020	2021	2022	2023
Nitrogen oxide (NOx) emissions		5.03	5.04	8.44	13.95
Sulfur oxide (SOx) emissions	ton	0.03	0.01	0.00	0.47
Dust		4.08	1.62	1.26	4.41

1) 'Air pollutants' only applies to Global Division.

## Concentration of Air Pollutants Emission<sup>1)</sup>

Classification	Unit	2020	2021	2022	2023
Nitrogen oxide (NOx) emission concentration		26.25	22.70	35.51	42.14
Sulfur oxide (SOx) emission concentration	ppm	1.91	4.98	1.47	1.79
Dust	mg/Sm <sup>3</sup>	4.05	2.86	5.63	3.80

1) 'Concentration of Air Pollutants Emission' only applies to Global Division.

## Water Pollutants<sup>1)</sup>

Classification	Unit	2020	2021	2022	2023
Total Organic Carbon (TOC)		0.47	0.46	0.10	0.13
Biological Oxygen Demand (BOD)	ton	0.45	0.44	0.50	0.04
Suspended Solids (SS)		0.37	0.77	1.19	0.12

1) 'Water Pollutants' only applies to Global Division.

## Concentration of Water Pollutant Emission<sup>1)</sup>

Classification	Unit	2020	2021	2022	2023
Total Organic Carbon (TOC)		7.85	5.47	5.95	1.78
Biological Oxygen Demand (BOD)	ppm	7.52	5.68	6.15	0.83
Suspended Solids (SS)		7.08	9.59	14.85	1.50

1) 'Water Pollutant Emission Concentration' only applies to Global Division.

## Water and Wastewater

Classification	Unit	2020	2021	2022	2023
Water withdrawal <sup>1)</sup>	Total water withdrawal	N/A	N/A	N/A	905,885
	Groundwater	N/A	N/A	N/A	208,572
	Third-party water <sup>2)</sup>	N/A	N/A	N/A	697,313
Water consumption <sup>3)</sup>	Total water consumption	687,293	756,399	1,053,328	905,885
	Groundwater	208,989	193,664	210,609	208,572
	Third-party water	477,317	562,735	842,719	697,313
Water intensity (based on nonconsolidated sales) <sup>4)</sup>	ton/KRW 100 million	12.91	14.53	17.41	12.97
Amount of wastewater released	ton	36,318	50,270	50,447	74,746
Amount of wastewater consigned	ton	3,203	2,725	2,920	2,484

1) Data related to water withdrawal has been managed since 2023.

2) Third party water: Water from municipal water suppliers and wastewater treatment plants, public or private utilities and other organizations involved in the provision, transportation, treatment or use of water and wastewater (ex: public water supply).

3) Freshwater is the only type of water used.

Water consumption in 2020 is the combined amount of two divisions(Global-Momentum) and water consumption in 2021-2023 is the combined amount of three divisions(Global-E&C-Momentum).

4) Water intensity is calculated based on nonconsolidated sales of the current business divisions(Global-E&C-Momentum).

## Waste

Classification		Unit	2020	2021	2022	2023
Total waste generated	Subtotal		261,344.3	288,913.5	424,690.6	474,771.3
	Recycled waste		13,263.8	9,299.6	13,261.0	472,662.1
	Pretreatment process for recycling		934.6	767.8	528.0	456,259.1
	Recycled waste		12,329.2	8,531.8	12,733.0	16,403.0
	Landfill		29.1	38.5	54.4	202.1
	Incineration		576.1	245.8	190.2	1,450.6
	Recovered energy		0.8	1.4	0.6	1,221.6
	Non-recovered energy		575.3	244.4	189.6	229.0
	Others		247,475.3	279,329.0	411,185.0	456.5
	Subtotal		1,357.7	1,192.4	964.2	5,325.4
General waste generated	Recycled waste		1,219.9	1,054.2	850.2	4,180.9
	Pretreatment process for recycling		933.9	739.5	528.0	2,136.4
	Recycled waste		286.0	314.7	322.2	2,044.5
	Landfill		29.1	38.5	50.9	24.1
	Incineration		103.9	98.0	60.8	1,120.5
	Recovered energy		-	-	-	1,030.1
	Non-recovered energy		103.9	97.3	60.8	90.4
	Others		4.8	1.7	2.4	-
	Subtotal	ton	55.2	73.0	123.1	426.6
	Recycled waste		14.1	40.6	25.4	116.2
Designated waste generated	Pretreatment process for recycling		0.7	28.3	-	15.2
	Recycled waste		13.4	12.3	25.4	101.0
	Landfill		-	-	3.5	175.8
	Incineration		41.1	30.6	94.2	134.2
	Recovered energy		0.8	1.4	0.6	2.8
	Non-recovered energy		40.3	29.2	93.6	131.4
	Others		-	1.8	-	0.5
	Subtotal		259,931.4	287,648.1	423,603.3	469,019.3
	Recycled waste		12,029.8	8,204.7	12,385.4	468,365.1
	Pretreatment process for recycling		-	-	-	454,107.6
Construction waste generated	Recycled waste		12,029.8	8,204.7	12,385.4	14,257.5
	Landfill		-	-	-	2.3
	Incineration		431.1	117.9	35.2	195.9
	Recovered energy		-	-	-	188.7
	Non-recovered energy		431.1	117.9	35.2	7.2
	Others		247,470.5	279,325.4	411,182.7	456.0
	Intensity of generated waste <sup>1)</sup>	Ton/KRW 100 million	4.91	5.55	7.02	6.80
Cost for waste disposal	KRW 100 million	46.83	51.00	83.19	131.92	

1) Intensity of generated waste is calculated based on nonconsolidated sales, which is based on the current business divisions(Global·E&C·Momentum).

## Hazardous Chemical Substances<sup>1)</sup>

Classification	Unit	2020	2021	2022	2023
Amount of hazardous chemical substances used	ton	245,929	149,638	202,228	316,758
Number of hazardous chemical spills	Cases	-	-	-	-
Amount of released chemical		1.4	1.5	1.2	1.7
Amount of transferred chemical	ton	36.6	38.7	39.0	25.3

1) 'Hazardous Chemical Substances' only applies to Global Division.

## Environmental Training and Education

Classification	Unit	2020	2021	2022	2023
Total hours of environmental training and education	Hours	5,542	1,450	4,810	8,047
Number of attendees	Persons	561	461	697	3,301

## Environmental Management System

Classification		Unit	2020	2021	2022	2023
ISO 14001 Certification	Ratio of certified worksites	%	80	80	80	83
	Number of certified worksites		4	4	4	5
	Number of worksites applicable for certification	Number	5	5	5	6
Green company certification <sup>1)</sup>	Number of certified worksites		1	1	1	1

1) 'Environmental Management System' only applies to Global Division.

## Environmental Regulations<sup>1)</sup>

\* Based on business report

Classification	Unit	2020	2021	2022	2023
Number of violations of environmental regulations	Cases	-	-	1	1
Penalty and fine for noncompliance with environmental regulations	KRW	-	-	3,000,000	1,500,000

1) The number of violations of environmental regulations and fines in 2022 are based on the business reports, which includes the Defense Division.

# Social

## Safety and Health Management

### Occupational Accidents

Classification		Unit	2020	2021	2022	2023
Number of victims (Fatalities excluded)	Direct employees	Persons	1	–	1	1
	Contractors		136	163	266	459
Occupational accident rate <sup>1)</sup>	Direct employees	%	0.02	–	0.02	0.02
	Contractors		0.86	1.43	1.49	1.83
Number of serious accidents <sup>2)</sup> (Fatalities excluded)	Direct employees	Cases	N/A	N/A	–	–
	Contractors		N/A	N/A	–	–
Number of fatalities caused by work related diseases	Direct employees	Persons	–	–	–	–
	Contractors		1	–	–	–
Number of fatalities caused by accidents	Direct employees	Persons	–	–	–	–
	Contractors		–	2	1	5
Fatality rate	Direct employees	%	–	–	–	–
	Contractors		–	0.00	0.00	0.02
Lost Time Injury Rate (LTIR) <sup>3)</sup>	Direct employees	–	0.02	–	0.02	0.04
	Contractors		0.69	0.91	1.20	1.51
Occupational Illness Frequency Rate (OIFR) <sup>4)</sup>	Direct employees	–	–	–	–	–
	Contractors		0.15	0.22	0.08	0.11
Total Recordable Incident Rate (TRIR) <sup>5)</sup>	Direct employees	–	0.02	–	0.02	0.02
	Contractors		0.69	1.16	1.20	1.50

1) Occupational accident rate = (Number of victims from occupational accidents / Number of workers) \* 100

2) Serious accidents subject to application of Serious Accident Punishment Act

3) LTIR = (Number of lost time injuries / Total hours worked) \* 200,000 hours

4) OIFR = (Number of occupational diseases / Total hours worked) \* 200,000 hours

5) TRIR = (Number of work-related incidents / Total hours worked) \* 200,000 hours

### Environmental Investments and Expenditures<sup>1)</sup>

Classification	Unit	2020	2021	2022	2023
Environmental investments	KRW	8	10	13	16
Environmental expenditures	100 million	140	135	191	211

1) Environmental investments and expenditures in 2022 include E&C Division data and exclude Defense Division data due to the business reorganization.

### Sales and Purchase of Green Products and Services

Classification	Unit	2020	2021	2022	2023
Revenue from green products and services	KRW	212,450	426,000	389,600	601,900
Purchased green products and services	1 million	12,082	10,516	23,529	49,306
Ratio of purchased green products and services	%	3.1	2.0	2.9	5.6
Number of purchased green products and services	Cases	21	52	38	42

### Biodiversity<sup>1)</sup>

Classification		Unit	2020	2021	2022	2023
Area of worksites located in habitats for protected or endangered species		km <sup>2</sup>	N/A	N/A	1,171	390
IUCN <sup>2)</sup> -designated endangered species and government-designated endangered species that live within the business-impacted areas	Critically endangered (CR)	Species	N/A	N/A	0	0
	Endangered (EN)		N/A	N/A	77	5
	Vulnerable (VU)		N/A	N/A	29	1
	Near threatened (NT)		N/A	N/A	3	2
	Least concern (LC)		N/A	N/A	23	6

1) Data related to biodiversity has been managed since 2022.

2) International Union for Conservation of Nature

## Safety and Health Management System

Classification		Unit	2020	2021	2022	2023
ISO 45001 Certification <sup>1)</sup>	Ratio of certified worksites	%	60	60	60	67
	Number of certified worksites		3	3	3	4
	Number of worksites applicable for certification	Number	5	5	5	6
KOSHA-MS Certification <sup>2)</sup>	Number of certified worksites		2	2	2	2

1) In 2020, Momentum Division has shifted certification type for some worksites from OHSAS 18001 to ISO 45001.

2) In 2021, Global and E&C Divisions have shifted from KOSHA 18001 to KOSHA-MS.

## Employee Health Management

Classification		Unit	2020	2021	2022	2023
Medical checkups	Subtotal		4,426	4,176	4,161	5,033
	Employees	Persons	3,367	3,050	2,923	3,565
	Employees' spouses		1,059	1,126	1,238	1,468
	Contractors <sup>1)</sup>		N/A	N/A	-	-

1) Contractors' medical checkup data has been managed since 2022 due to the business reorganization.

## Occupational Safety Education<sup>1)</sup>

Classification		Unit	2020	2021	2022	2023
Industrial Safety Education	Total hours of training		N/A	N/A	531,607	992,859
	Direct employees	Hours	N/A	N/A	76,038	72,920
	Contractors		N/A	N/A	455,569	919,939
	Total number of attendees		N/A	N/A	88,805	122,874
	Direct employees	Persons	N/A	N/A	6,972	3,771
	Contractors		N/A	N/A	81,833	119,103
	Average training hours per person		N/A	N/A	6.0	8.1
	Direct employees	Hours	N/A	N/A	10.9	19.3
	Contractors		N/A	N/A	5.6	7.7

1) Industrial safety education data has been managed since 2022 due to the business reorganization.

## Suppliers' Safety and Health Grievances<sup>1)</sup>

Classification		Unit	2020	2021	2022	2023
Suppliers' safety and health grievances reporting channel	Cases submitted	Cases	N/A	N/A	2,889	6,887
	Cases handled		N/A	N/A	2,889	6,887
	Cases handling ratio	%	N/A	N/A	100	100

1) Suppliers' safety and health grievances handling has been managed since 2022 due to the business reorganization.

# Talent Management

## Employment Status

Classification		Unit	2020	2021	2022	2023	
Total employment							
Total number of employees (Korea)			4,214	4,212	4,927	5,115	
By employment type (direct recruitment)	Permanent employees	Persons	3,265	3,275	3,768	3,786	
	Male		2,986	3,027	3,431	3,430	
	Female	279	248	337	356		
	Ratio of permanent employees	%	77.5	77.8	76.5	74.0	
	Temporary employees	Persons	949	937	1,159	1,329	
	Male		778	761	957	1,103	
	Female		171	176	202	226	
	Ratio of temporary employees		%	22.5	22.2	23.5	26.0
	By employment type (indirect recruitment) <sup>1)</sup>	Non-guaranteed hours employee	Persons	N/A	N/A	5,116	337
		Male		N/A	N/A	4,972	337
Female		N/A		N/A	144	-	
Temporary agency worker		Persons	N/A	N/A	41	22	
Male			N/A	N/A	3	2	
Female			N/A	N/A	38	20	
Outsourced service provider		Persons	N/A	N/A	9,977	16,766	
Male			N/A	N/A	9,486	16,124	
Female			N/A	N/A	491	642	
By gender		Subtotal		4,214	4,212	4,927	5,115
	Male		3,764	3,788	4,388	4,533	
	Female		450	424	539	582	
	Ratio of female employees	%	10.7	10.1	10.8	11.4	
By age	Subtotal	Persons	4,214	4,212	4,927	5,115	
	Ages under 30		370	478	600	605	
	Ages 30 to 39		1,693	1,513	1,751	1,629	
	Ages 40 to 49		1,396	1,487	1,707	1,719	
	Ages 50 to 59		618	603	698	757	
	Ages 60 or above		137	131	171	405	

1) Indirect recruitment data has been managed since 2022 due to the business reorganization.

Classification		Unit	2020	2021	2022	2023
By nationality	Subtotal		4,214	4,212	4,927	5,115
	Korean nationals		4,206	4,205	4,915	5,107
	Non-Korean nationals		8	7	12	8
	Taiwanese	Persons	N/A	N/A	1	1
	Malaysian		N/A	N/A	1	1
	American		N/A	N/A	4	2
	British		N/A	N/A	1	1
	Iraqi		N/A	N/A	1	-
	Indonesian		N/A	N/A	1	1
	Chinese		N/A	N/A	2	1
Australian	N/A		N/A	1	1	
By region	Subtotal		4,761	3,569	5,625	5,794
	Korea	Persons	4,214	4,212	4,927	5,115
	Head office		1,511	1,451	1,827	1,898
	Other domestic worksites		2,703	2,761	3,100	3,217
	Overseas		547	519	698	679
By rank <sup>2)</sup>	Subtotal		4,214	4,212	4,927	5,115
	Executives	Persons	72	81	148	126
	Male		72	81	145	125
	Female		-	-	3	1
	Senior managers		1,804	1,904	2,178	2,190
	Male		1,753	1,845	2,084	2,096
	Female		51	59	94	94
	Middle managers		698	646	780	760
	Male		637	602	723	698
	Female		61	44	57	62
Staff	1,640		1,581	1,821	2,039	
Male	1,302	1,260	1,436	1,614		
Female	338	321	385	425		

2) Middle manager positions are at the assistant manager level or higher. Senior manager positions are at the manager level or higher, excluding executives.

Classification		Unit	2020	2021	2022	2023
By occupation	Subtotal		4,214	4,212	4,927	5,115
	Management		75	86	155	132
	Male		75	86	152	131
	Female		-	-	3	1
	General personnel		2,629	2,629	2,963	3,011
	Male		2,508	2,517	2,751	2,779
	Female		121	112	212	232
	Research personnel		34	43	165	168
	Male		29	37	149	144
	Female	Persons	5	6	16	24
	Office personnel		115	98	75	68
	Male		-	-	-	-
	Female		115	98	75	68
	Professionals		412	419	410	407
	Male		374	387	379	376
	Female		38	32	31	31
	Temporary employees		949	937	1,159	1,329
	Male		778	761	957	1,103
	Female		171	176	202	226
Length of tenure						
Average length of tenure		Years	10.7	10.7	8.1	7.8
Diversity of employment						
Female talent	Number of female managers <sup>3)</sup>	Persons	51	59	94	94
	Ratio of female managers <sup>4)</sup>	%	2.8	3.0	4.3	4.3
	Number of female executives	Persons	-	-	3	1
	Ratio of female executives	%	-	-	2.0	0.8
	Number of female employees in STEM	Persons	44	51	64	76
	Ratio of female employees in STEM	%	2.6	2.9	3.2	12.1
	Number of female employees in revenue-generating functions	Persons	9	9	16	17
Ratio of female employees in revenue-generating functions	%	4.2	4.3	5.2	10.2	
Employment of socially vulnerable persons (permanent+ temporary) <sup>5)</sup>	Persons with disability	Persons	95	72	80	88
	Compliance with employment quota requirements for persons with disabilities	%	68.3	54.5	54.8	60.3
	National veterans	Persons	44	37	51	44
	Ratio of socially vulnerable employees	%	3.3	2.6	2.6	2.6

3) 2021 data has been adjusted due to errors in previous calculation (58 → 59).

4) 2020~2022 data have been adjusted due to errors in previous calculation (8.0 → 2.8, 9.7 → 3.0, 13.0 → 4.3).

5) Employment of socially vulnerable persons is the combined data of permanent employees and temporary employees.

Classification		Unit	2020	2021	2022	2023	
New recruitments and internal recruitment							
Total number of newly recruited employees (Korea)			196	524	847	710	
By employment type	Permanent (as new employees)		25	19	103	149	
	Permanent (as experienced employees)		68	337	496	246	
	Temporary employees		103	168	248	315	
By gender	Male		183	490	765	615	
	Female		13	34	85	95	
By age	Persons	Ages under 30	42	100	202	236	
		Ages 30 to 39	73	280	433	244	
		Ages 40 to 49	46	108	168	110	
		Ages 50 to 59	21	17	33	79	
		Ages 60 or above	14	19	14	41	
By region	Head office		54	74	346	269	
	Other worksites in Korea		62	248	504	441	
Employees recruited from internal candidates <sup>6)</sup>	Persons	N/A	N/A	23	21		
Average recruitment cost			KRW 1,000	N/A	N/A	8,609	8,663
Turnover and Retirement							
Total number of retirements and turnovers			212	334	309	255	
By reasons for turnover or retirement	Voluntary turnover and retirement		202	323	291	244	
	Voluntary redundancy		123	66	22	17	
	Voluntary retirement		79	257	269	227	
	Involuntary turnover and retirement		10	11	18	11	
	Regular retirement		6	7	17	9	
	Disciplinary dismissal		-	-	-	-	
By gender	Resignation under instruction		4	4	1	2	
	Persons	Male	170	294	285	229	
		Female	42	40	23	26	
By age	Ages under 30		25	37	27	29	
	Ages 30 to 39		73	142	147	103	
	Ages 40 to 49		66	79	84	76	
	Ages 50 to 59		42	74	32	33	
	Ages 60 or above		6	2	18	14	
By region	Head office		44	90	141	125	
	Other worksites in Korea		41	79	167	130	
Subtotal			6.49	10.20	8.09	6.72	
Turnover rate	Ratio of involuntary turnover		%	0.31	0.34	0.48	0.29
	Ratio of voluntary turnover (retirement ratio)			6.19	9.86	7.72	6.44

6) Internal recruitment and average recruitment cost data have been managed since 2022 due to the business reorganization.

## Maternity and Parental Leave

Classification	Unit	2020	2021	2022	2023
Number of employees on maternity leave	Subtotal	9	16	63	109
	Male	–	–	46	90
	Female	9	16	17	19
Number of employees returning to work after maternity leave	Subtotal	7	14	56	100
	Male	–	–	46	90
	Female	7	14	10	10
Ratio of return from maternity leave	Subtotal	77.78	87.50	88.89	91.74
	Male	–	–	100	100
	Female	77.78	87.50	58.82	52.63
Number of employees on parental leave	Subtotal	24	38	45	44
	Male	11	20	19	22
	Female	13	18	26	22
Number of employees expected to return to work after parental leave	Subtotal	18	32	24	35
	Male	8	17	14	19
	Female	10	15	10	16
Number of employees returning to work after parental leave	Subtotal	12	28	20	35
	Male	5	15	11	18
	Female	7	13	9	17
Ratio of return from parental leave	Subtotal	66.67	87.50	83.33	97.14
	Male	62.50	88.24	78.57	94.74
	Female	70.00	86.67	90.00	100.00
Number of employees who have been retained for 12 months or more after returning to work <sup>1)</sup>	Subtotal	N/A	N/A	20	14
	Male	N/A	N/A	8	7
	Female	N/A	N/A	12	7
Ratio of employees who have been retained for 12 months or more after returning to work <sup>1)</sup>	Subtotal	N/A	N/A	71.43	70.00
	Male	N/A	N/A	53.33	63.64
	Female	N/A	N/A	92.31	77.78
Duration of parental leave <sup>1)</sup>	Subtotal	N/A	N/A	42	38
	Male	N/A	N/A	36	33
	Female	N/A	N/A	47	43

1) Data related to number and rate of employees who have been working longer than 12 months after returning to work and duration of parental leave have been managed since 2022 due to the business reorganization.

## Employee Training and Education

Classification	Unit	2020	2021	2022	2023
Total number of participating employees	Subtotal	3,157	3,400	3,102	5,409
	Male	2,922	3,154	2,991	4,966
	Female	235	246	111	443
Total expenses for training	Subtotal	223	577	2,028	1,855
	Male	201	511	1,990	1,643
	Female	22	66	38	212
Total hours of training <sup>1)</sup>	Subtotal	94,811	91,341	108,325	103,953
	Male	84,686	82,146	96,475	95,015
	Female	10,125	9,195	11,850	8,938
Training expense per person (by gender)	Male	KRW 53	135	454	478
	Female	KRW 49	156	71	594

1) Data related to total hours of training is a sum of the three business divisions (Global, E&C, Momentum), excluding the Strategy Division.

## Employee Welfare Benefits

Classification		Unit	2020	2021	2022	2023
Total welfare benefit expenses <sup>1)</sup>	Total expenses	KRW 1 million	65,742	61,422	63,508	78,680
	Welfare benefit expense per person	KRW/person	13,222,461	12,928,140	12,889,775	15,382,241
Expenses for supporting retirees <sup>2)</sup>	Total expenses	KRW/person	N/A	4,171,122	1,500,000	400,000
	Number of employees subject to the support program	Persons	N/A	13	3	2
	Support expense per person	KRW/person	N/A	320,856	500,000	200,000
Human capital return on investment	Total revenue (a)		193,275	118,388	1,637,369	2,286,735
	Total operating expenses (b)	KRW 1 million	1,750	2,502	1,438,581	2,016,505
	Total employee-related expenses (c)		103,205	123,952	241,351	293,388
	HCROI(a-(b-c))/c	-	3	2	2	2
Retirement pension operating amount	Number of employees funding Defined-Benefit plan	Persons	123	467	519	433
	Operating amount of Defined-Benefit plan	KRW 1 million	3,527	6,048	32,307	31,768
	Number of employees subscribed to Defined-Contribution plan <sup>3)</sup>	Persons	18	29	39	22
	Operating amount of Defined-Contribution plan <sup>4)</sup>	KRW 1 million	335	1,087	771	810

1) Welfare benefit expenses are based on the "classification of expenses by nature of expense: welfare benefit expenses" on the nonconsolidated financial statement in the business report. Calculation logic: "Welfare benefit expense per person" = "Total welfare benefit expenses" / "Number of employees"

2) Expenses for supporting retirees includes support for reemployment and education.

3) Number of employees funding Defined-Contribution plan is the combined amount of Strategy, Global, and Momentum Divisions (E&C Division does not have a retirement pension plan).

4) Operating amount of Defined-Contribution plan is calculated based on Hanwha Corporation's data, with an identical calculation logic to that of nonconsolidated sales that does not reflect the business reorganization.

## Organizational Culture<sup>1)</sup>

Classification		Unit	2020	2021	2022	2023
Result of organizational culture assessment	Ratio of average positive response	%	N/A	N/A	63.1	59.4
	Ratio of average positive response	%	N/A	N/A	61.7	65.7
Result of employee satisfaction survey	Number of employees participated in the survey	Persons	N/A	N/A	2,743	2,742
	Response rate		N/A	N/A	55.1	53.5
	Ratio of employees who showed high engagement <sup>2)</sup>	%	N/A	N/A	53.5	57.8

1) Organizational culture assessment and employment satisfaction survey data have been managed since 2022 due to the business reorganization.

2) 2022 data has been adjusted to include the Global, E&C, Momentum Divisions and exclude the Strategy Division (18.8 → 53.5).

## Performance Evaluation<sup>1)</sup>

Classification		Unit	2020	2021	2022	2023
Employees subject to performance evaluations			N/A	N/A	3,800	3,418
Employees who received regular performance evaluations			N/A	N/A	3,800	3,418
Employees who received regular performance evaluations (by gender)	Subtotal		N/A	N/A	3,800	3,418
	Male		N/A	N/A	3,489	3,084
	Female		N/A	N/A	311	334
Employees who received regular performance evaluations (by rank)	Subtotal		N/A	N/A	3,800	3,418
	Executives		N/A	N/A	123	83
	Senior managers	Persons	N/A	N/A	1,971	1,818
	Middle managers		N/A	N/A	681	679
	Staff		N/A	N/A	1,025	838
Employees who received regular performance evaluations (by occupation)	Subtotal		N/A	N/A	3,800	3,418
	Management		N/A	N/A	123	83
	General personnel		N/A	N/A	2,797	2,509
	Research personnel		N/A	N/A	122	195
	Office personnel		N/A	N/A	75	66
	Professionals		N/A	N/A	401	369
	Temporary employees		N/A	N/A	282	196
Ratio of employees who received regular performance evaluations	Subtotal		N/A	N/A	100	100
	Male	%	N/A	N/A	100	100
	Female		N/A	N/A	100	100

1) Performance Evaluation data has been managed since 2022 due to the business reorganization.

## Labor Union Membership<sup>1)</sup>

Classification		Unit	2020	2021	2022	2023
Labor union	Number of employees eligible for labor union membership	Persons	366	375	384	392
	Number of employees joining the labor union		366	375	363	356
	Ratio of employees joining the labor union	%	100	100	95	91
Collective bargaining	Number of employees eligible for collective bargaining	Persons	366	375	363	356
	Ratio of employees eligible for collective bargaining	%	100	100	95	91
Labor-management council	Number of the meetings held	Sessions	8	8	8	12
	Number of agendas for resolution at the meetings	Cases	15	15	13	22
Total amount of fine imposed due to breach of labor regulation		KRW	0	0	0	0

1) Global Division was established in 2020 and its labor union membership has been managed since 2020. E&C Division does not have a labor union.

## Employee Wages

Classification		Unit	2020	2021	2022	2023
Average basic compensation by gender (annual)						
Male		KRW	76	79	90	74
Female		1 million	43	43	50	45
Ratio of average basic compensation by gender <sup>1)</sup>		%	56.5	55.0	55.4	60.5
Average basic compensation by rank (annual)						
Executives	Male		N/A	N/A	295,363	295,937
	Female		N/A	N/A	229,133	179,400
Managers	Male	KRW	N/A	N/A	87,465	86,538
	Female	1,000	N/A	N/A	62,312	79,741
Employees excluding executives and management	Male		N/A	N/A	57,458	59,551
	Female		N/A	N/A	46,341	49,769
Average basic compensation by rank + bonus pay (annual)						
Executives	Male		N/A	N/A	380,508	322,810
	Female		N/A	N/A	268,796	298,389
Managers	Male	KRW	N/A	N/A	116,931	95,725
	Female	1,000	N/A	N/A	79,016	91,196
Employees excluding executives and management	Male		N/A	N/A	73,612	66,448
	Female		N/A	N/A	63,785	57,272
Entry level wage by gender compared to local minimum wage (annual)						
Male		KRW	N/A	N/A	52,576	54,903
Female		1,000	N/A	N/A	52,576	54,903
Ratio of entry level wage by gender compared to local minimum wage		%	N/A	N/A	261.0	272.5
Median basic compensation by gender						
Male		KRW	N/A	N/A	66	73
Female		1 million	N/A	N/A	56	52
Ratio of median basic compensation by gender		%	N/A	N/A	84.5	71.0
Median bonus pay by gender						
Male		KRW	N/A	N/A	13	6
Female		1 million	N/A	N/A	10	8
Ratio of median bonus pay by gender		%	N/A	N/A	75.8	133.6

1) Ratio of average basic compensation by gender = Basic compensation for female employees / Basic compensation for male employees

## Win-Win Cooperation

### Suppliers

Classification		Unit	2020	2021	2022	2023
Total number of suppliers	Subtotal		3,867	4,073	4,225	2,338
	Tier 1 suppliers		2,537	2,693	2,786	1,337
	Core suppliers	Number	37	43	126	165
	Non-Tier 1 suppliers		1,330	1,380	1,439	1,001
	Core suppliers		73	75	236	34
Newly-registered suppliers			125	386	291	199
Total amount of purchase from suppliers			2,455,731	3,541,791	4,104,813	4,655,228
Total purchases from small and medium enterprises (SMEs)		KRW 1 million	1,199,621	2,442,976	1,954,912	2,397,297
Total purchases from major suppliers			853,103	1,989,553	1,542,690	2,075,030
Win-win growth index		Grade	Excellent	Excellent	Excellent	Best

### Fair Trade

Classification		Unit	2020	2021	2022	2023
Number of suppliers who signed Fair Trade Agreement		Number	210	296	307	310
Fair Trade Agreement implementation evaluation		Grade	Good	Excellent	Best	Best

### Support for Suppliers

Classification		Unit	2020	2021	2022	2023
Financial support (mutual growth fund)	Total amount raised	KRW	25,000	25,000	58,000	58,200
	Total amount executed	1 million	16,651	13,590	-	52,560
Management consultations	Management (finance)		2	1	1	-
	ESG competency enhancement	Sessions	-	-	1	3
	Others (safety, health, corporate social responsibility, etc.)		4	9	12	17
Technical support	Number of technical support sessions	Sessions	-	-	162	278
	Number of technical data escrow	Cases	-	-	17	17
Education support	Number of education and training programs	Programs	2	2	5	10
	Number of education and training sessions	Sessions	1	1	4	4
	Number of participants	Persons	912	599	1,418	1,135
	Total training hours	Hours	2,736	1,797	4,254	2,485
	Training hours per supplier company employee	Hours/person	3	3	3	2

## Communication with Suppliers

Classification	Unit	2020	2021	2022	2023
Win-win seminars held <sup>1)</sup>	Sessions	–	–	5	9

1) Win-win discussion meetings were not held from 2020 through 2021 due to COVID-19.

## Comprehensive Evaluation for Suppliers

Classification	Unit	2020	2021	2022	2023
Number of suppliers that received evaluation		1,407	1,459	1,933	1,913
Number of suppliers that received "excellent" grade	Suppliers	N/A	N/A	63	48
Number of suppliers suspended from trading		N/A	N/A	125	243

## Sustainability Evaluation for Suppliers

Classification	Unit	2020	2021	2022	2023
Number of suppliers that have completed ESG evaluation <sup>1)</sup>		N/A	24	35	50
Number of suppliers with ISO 14001 certification	Suppliers	–	18	28	30
Number of suppliers with OSHAS 18001 / ISO 45001 certifications		–	10	14	15

1) ESG evaluation for suppliers was conducted as part of the 2019–2020 comprehensive evaluation, while a separate ESG evaluation scheme was adopted in 2021.

## Innovative Growth

### Product Safety

Classification	Unit	2020	2021	2022	2023
Number of recalls issued	Cases	–	–	–	–
Total units recalled		–	–	–	–
Number of counterfeit parts detected	Number	–	–	–	–

### Voice of the Customer (VOC) Management

Classification	Unit	2020	2021	2022	2023	
Customer complaints submitted	Customer complaints submitted <sup>1)</sup>	11	34	18	2,734	
	Customer complaints handled <sup>1)</sup>	11	34	18	2,643	
	Customer complaint handling ratio	%	100	100	100	96.7
Customer satisfaction survey	Korea	Score	91.7	94.4	86.2	87.0
	Non-Korea	Score	93.6	91.6	89.5	96.7
	Ratio of customers responded "Satisfied"	%	80.00	75.00	45.83	63.64
	Response rate	%	41.7	54.5	82.8	39.3

1) 2021 data has been adjusted due to errors in previous calculation (15 → 34).

## Social Contribution

### Corporate Social Responsibility (CSR) Activities

Classification	Unit	2020	2021	2022	2023	
Donations	Total volume of donations	2,124	1,605	3,236	5,392	
	Company donations <sup>1)</sup>	1,492	1,108	3,041	5,258	
	Charity support	KRW	N/A	N/A	N/A	2,255
	Investment in local communities	1 million	N/A	N/A	N/A	1,102
	Investment in commercial initiatives		N/A	N/A	N/A	1,902
Employee volunteering <sup>2)</sup>	Employee donations	632	497	195	134	
	Total volunteering hours	Hours	1,711	1,231	1,525	1,097
	Number of employees volunteered	Persons	567	500	610	285
	Volunteering hours per employee <sup>3)</sup>	Hours	3.0	2.5	2.5	3.8
	Participation rate	%	13.5	11.9	13.8	6.6

1) Company donations data began to be managed in more detail since 2023, segmented into: charity support, investment in local communities, investment in commercial initiatives.

2) Since Hanwha Corporation manages integrated employee volunteering data, 2020–2021 data include Defense Division, while 2022 data includes E&C Division and excludes Defense Division due to the business reorganization.

3) Volunteering hours per employee = total volunteering hours / number of participants

# Governance

## Governance

### Operation of the Board of Directors (BOD)

\* Based on business report

	Classification	Unit	2020	2021	2022	2023
Composition of the BOD	Executive directors	Persons	3	4	5	3
	Independent directors		5	5	6	6
	Female independent directors		1	1	1	1
	Ratio of independent directors	%	62.5	55.6	54.5	66.7
	Ratio of female independent directors	%	12.5	11.1	9.1	11.1
Number of BOD meetings held	Number of meetings held	Sessions	11	12	18	12
	Average attendance rate		95.8	99.1	97.6	98.7
Board attendance rate	Executive directors	%	94.6	100	96.7	96.2
	Independent directors		97.7	97.9	98.9	100.0
Average tenure of directors	Executive directors	Years	1.8	2.0	1.0	2.0
	Independent directors		1.4	2.0	1.0	2.0
Independent director activities	Resolutions	Cases	50	59	71	59
	Reports		18	23	28	23
	Number of agenda items that received objections from independent directors		-	-	-	-

### Operation of Committees

\* Based on corporate governance report

	Classification	Unit	2020	2021	2022	2023
Audit Committee	Ratio of independent directors	%	100	100	100	100
	Number of accounting and finance professionals	Persons	2	2	2	1
	Number of meetings held	Sessions	6	9	8	7
	Attendance rate	%	94	100	100	100
	Ratio of independent directors	%	100	100	100	100
Internal Transaction Committee	Number of meetings held	Sessions	1	1	7	8
	Attendance rate	%	100	100	100	100
Independent Director Candidate Recommendation Committee	Ratio of independent directors	%	67	100	100	100
	Number of meetings held	Sessions	2	2	3	2
	Attendance rate	%	100	100	100	100
ESG Committee	Ratio of independent directors	%	Newly established in 2021	67	75	75
	Number of meetings held	Sessions	(May 2021)	5	8	7
	Attendance rate	%	(May 2021)	100	100	100

### Board of Directors' Remuneration<sup>1)</sup>

\* Based on business report

	Classification	Unit	2020	2021	2022	2023
Registered directors	Number of directors	Persons	4	4	5	4
	Total remuneration	KRW	2,663	2,907	9,012	5,353
	Average remuneration per director	1 million	726	775	2,002	1,338
Independent directors	Number of directors	Persons	2	2	3	3
	Total remuneration	KRW	132	160	224	272
	Average remuneration per director	1 million	66	80	83	91
Audit Committee members	Number of directors	Persons	3	3	3	3
	Total remuneration	KRW	197	240	252	252
	Average remuneration per director	1 million	66	80	84	84

1) The number of registered directors excludes independent directors and Audit Committee members, while the number of independent directors excludes Audit Committee members.

## External Audit

\* Based on business report and corporate governance report

Classification	Unit	2020	2021	2022	2023
Total audit fees	KRW	1,900	1,900	2,260	3,134
Total non-audit fees	1 million	23	52	142	174
Audit fees compared to non-audit fees	%	1.21	2.74	6.28	5.55

## Ratio of Maximum Remuneration to Average Wage of Employees

\* Based on business report

Classification	Unit	2020	2021	2022	2023
Annual compensation of individual with largest remuneration	KRW	1,456	2,700	2,293	3,058
Average annual compensation of employees	1 million	70	76	85	90
Ratio of maximum remuneration to the average wage of employees	Multiples	20.8	35.5	27.0	34.0
Annual gross compensation growth ratio	%	2.9	8.6	11.8	5.9

## Share Ownership

\* Based on business report

Classification	Unit	2020	2021	2022	2023
Share ownership by the CEO	%	0.05	0.07	4.50	4.93
Share ownership by government agencies		9.04	7.50	6.60	7.40

## Information about Major Shareholders (Ownership of 5% or more)

\* Based on business report

	Classification	Unit	2020	2021	2022	2023
Seung Youn KIM	Number of shares held	Share	16,977,949	16,977,949	16,977,949	16,977,949
	Percentage of ownership	%	22.65	22.65	22.65	22.65
Hanwha Energy Corporation, Ltd.	Number of shares held	Share	N/A	7,272,546	7,272,546	7,272,546
	Percentage of ownership	%	N/A	9.70	9.70	9.70
National Pension Service (NPS)	Number of shares held	Share	6,779,067	5,619,334	4,948,115	5,544,342
	Percentage of ownership	%	9.04	7.50	6.60	7.40
Korea Zinc Company, Ltd.	Number of shares held	Share	N/A	N/A	5,436,380	5,436,380
	Percentage of ownership	%	N/A	N/A	7.25	7.25

## Shareholder-Friendly Management

\* Based on business report

Classification	Unit	2020	2021	2022	2023
Total cash dividends	KRW 1 million	65,443	69,877	73,731	73,731
Cash dividend payout ratio (based on nonconsolidated sales)	%	48.5	53.1	25.7	81.3
Cash dividend per share (ordinary shares)	KRW	700	750	750	750
Voting systems adopted for the general shareholders' meeting	Written voting	0	0	0	0
	Electronic voting	0	0	0	0

## Internal Transaction Sales

\* Based on the disclosure of the status of large business groups

Classification	Unit	2020	2021	2022	2023
Internal transaction sales <sup>1)</sup>	KRW 1 million	360,076	340,708	691,003	855,757

1) According to the status of product and service transactions between affiliates, internal transaction sales = domestic affiliates sales + overseas affiliates sales

## Compliance Management

### Internal Compliance Review

\* Based on the internal management system

Classification		Unit	2020	2021	2022	2023
Internal ethics and compliance	Remedial action for violations	Cases	4	2	2	2
	Internal ethics and compliance violations		-	-	-	-
Worksites that received ethics & compliance assessment <sup>1)</sup>	Number of worksites that received ethics & compliance assessment	Number	-	-	1	1
	Ratio of worksites that received ethics & compliance assessment	%	-	-	100	100
Compliance-related cases reported	Subtotal		9	4	5	12
	Sexual harassment		-	-	4	3
	Anti-corruption		-	-	-	-
	Unfair trade practices		-	-	-	1
	Discrimination and harassment		-	-	1	-
	Conflict of interest		-	-	-	2
	Money laundering or internal transactions	Cases	-	-	-	-
	Failure to comply with other ethical standards		9	4	-	6
Remedial action for violations	Subtotal		9	4	5	12
	Disciplinary action		-	-	4	6
	Corrective action		1	-	-	-
	Transferred <sup>2)</sup>		8	3	1	6
	Answered <sup>3)</sup>		-	1	-	-

1) Third-party verification of whether the company's compliance system is suitable and valid for the compliance assistant system under the commercial law was completed in 2022.

2) Number of transferred reports, which were transferred to the relevant affiliates after having confirmed misplacement

3) Number of cases handled by answering the inquiries

### Ethics and Compliance Education

\* Based on the internal management system

Classification		Unit	2020	2021	2022	2023
Ethics and compliance education <sup>1)</sup> (Training in progress)	Total hours of training and education	Hours	-	365	65	657
	Number of participating employees	Persons	-	730	186	528
Anti-corruption education <sup>1)</sup>	Total hours of training and education	Hours	-	365	243	246
	Number of participating employees	Persons	-	730	243	395
Fair trade education	Total hours of training and education	Hours	4,604	1,237	1,541	5,827
	Number of participating employees	Persons	2,302	1,237	1,343	1,769
Human rights education	Subtotal		9,474	12,809	13,677	16,755
	Education for preventing sexual harassment		2,721	3,620	3,852	4,683
	Education for raising awareness toward persons with disabilities	Hours	2,720	3,620	3,847	5,103
	Education for preventing workplace harassment		2,093	3,620	3,840	4,864
	Other training and education		1,940	1,949	2,138	2,105
	Number of participating employees	Persons	2,720	3,620	3,852	4,317

1) In 2020, training and education was replaced by online learning materials due to COVID-19.

### Legal Measures Taken for Compliance-Related Issues

Classification		Unit	2020	2021	2022	2023
Compliance violations	Subtotal		1	2	1	2
	Anti-corruption	Cases	-	-	-	-
	Fair trade		-	-	-	-
	Others		1	2	1	2
Fines imposed	KRW 1 million	31	8	3	3	
Number of lawsuits filed		1	2	2	6	
Number of non-financial penalties imposed	Cases	-	-	-	-	

## Information Security

### Information Security Violations

Classification		Unit	2020	2021	2022	2023
Number of violations or cybersecurity accidents			-	-	-	-
Number of privacy data leaks			-	-	-	-
Number of inspections on internal information protection practices	Cases		102	98	95	135
Improvements made following inspections on internal information protection practices			42	59	77	118
Total amount of monetary losses incurred owing to violations of information protection regulations or cybersecurity accidents	KRW 1 million		-	-	-	-
Information protection education <sup>1)</sup>	Total hours of training and education	Hours	114	388	769	1,714
	Number of participating employees	Persons	114	388	769	1,714
Privacy data protection	Total hours of training and education	Hours	3,255	2,642	3,269	3,071
	Number of participating employees	Persons	2,615	2,642	3,211	3,071

1) Information protection education data in Global and Momentum Division are calculated considering the number of views of information protection related announcement, etc. Information protection education data in E&C Division is calculated based on certifications of information protection education for new employees.

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# GRI Content Index

**[GRI content index in accordance]**

- Statement of use: Hanwha Corporation has reported its sustainability activities and performance in accordance with the GRI Standards for the period of Jan. 1, 2023 through Dec. 31, 2023.
- GRI 1 used: GRI 1: Foundation 2021
- Applicable GRI Sector Standard(s): N/A

GRI Standard	Disclosure	Location	Comment
General Disclosures			
	2-1 Organizational details	p. 2	
	2-2 Entities included in the organization's sustainability reporting	p. 2	
	2-3 Reporting period, frequency and contact point	p. 2	
	2-4 Restatements of information	-	No significant change
	2-5 External assurance	p. 118-121	
	2-6 Activities, value chain and other business relationships	p. 6	2023 Business report p. 6-18
	2-7 Employees	p. 100-101	
	2-8 Workers who are not employees	p. 100	
	2-9 Governance structure and composition	p. 76-77	
GRI 2: General Disclosures 2021	2-10 Nomination and selection of the highest governance body	p. 76	
	2-11 Chair of the highest governance body	p. 77	
	2-12 Role of the highest governance body in overseeing the management of impacts	p. 10-11, 77-78	
	2-13 Delegation of responsibility for managing impacts	p. 10-11, 78	
	2-14 Role of the highest governance body in sustainability reporting	p. 10-11	
	2-15 Conflicts of interest	p. 83-84	
	2-16 Communication of critical concerns	p. 83-84	
	2-17 Collective knowledge of the highest governance body	p. 76-78	
	2-18 Evaluation of the performance of the highest governance body	p. 78-79	
	2-19 Remuneration policies	p. 78	
2-20 Process to determine remuneration	p. 78		

GRI Standard	Disclosure	Location	Comment
General Disclosures			
	2-21 Annual total compensation ratio	p. 107	
	2-22 Statement on sustainable development strategy	p. 5	
	2-23 Policy commitments	p. 59, 81	ESG policy disclosed on official website
GRI 2: General Disclosures 2021	2-24 Embedding policy commitments	p. 59-60, 81-84	
	2-25 Processes to remediate negative impacts	p. 60, 84-85	
	2-26 Mechanisms for seeking advice and raising concerns	p. 60, 84-85	
	2-27 Compliance with laws and regulations	p. 81	
	2-28 Membership associations	p. 122	
	2-29 Approach to stakeholder engagement	p. 21	
	2-30 Collective bargaining agreements	p. 103	
	Material topics		
GRI 3: Material Topics 2021	3-1 Process to determine material topics	p. 17	
	3-2 List of material topics	p. 18	
Climate Change			
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 26-34	
GRI 201: Economic Performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	p. 27-30	
	GRI 302: Energy 2016	302-1 Energy consumption within the organization	p. 95
302-3 Energy intensity		p. 95	

GRI Standard	Disclosure	Location	Comment	
<b>Material topics</b>				
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	p. 95	
	305-2	Energy indirect (Scope 2) GHG emissions	p. 95	
	305-3	Other indirect (Scope 3) GHG emissions	p. 95	
	305-4	GHG emissions intensity	p. 95	
	305-5	Reduction of GHG emissions	p. 95	
	305-6	Emissions of ozone-depleting substances (ODS)	-	Not applicable
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	p. 96	
<b>Environmental Issues Excluding Climate Change</b>				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 35-46	
GRI 303: Water and Effluents 2018	303-2	Management of water discharge-related impacts	p. 41	
	303-3	Water withdrawal	p. 96	
	303-4	Water discharge	p. 96	
	303-5	Water consumption	p. 96	
GRI 304: Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and area of high biodiversity value outside protected areas	p. 91	
	304-3	Habitats protected or restored	p. 45-46	
GRI 306: Waste 2020	306-3	Waste generated	p. 97	
	306-4	Waste diverted from disposal	p. 97	
	306-5	Waste directed to disposal	p. 97	
<b>Own Workforce</b>				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 54-60	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	p. 101	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	p. 58, 103	
	401-3	Parental leave	p. 58, 102	

GRI Standard	Disclosure	Location	Comment	
<b>Material topics</b>				
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	p. 48	
	403-2	Hazard identification, risk assessment, and incident investigation	p. 49	
	403-3	Occupational health services	p. 52	
	403-4	Worker participation, consultation, and communication on occupational health and safety	p. 52	
	403-5	Worker training on occupational health and safety	p. 50-51	
	403-6	Promotion of worker health	p. 52	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p. 49, 53	
	403-8	Workers covered by an occupational health and safety management system	p. 48, 99	
	403-9	Work-related injuries	p. 98-99	
	403-10	Work-related ill health	p. 98-99	
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	p. 102	
	404-2	Programs for upgrading employee skills and transition assistance programs	p. 55-56	
	404-3	Percentage of employees receiving regular performance and career development reviews	p. 103	
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	p. 100-101	
	405-2	Ratio of basic salary and remuneration of women to men	p. 104	
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	p. 108	Not applicable
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	-	Not applicable
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents for child labor	-	Not applicable
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents for forced or compulsory labor	-	Not applicable

GRI Standard		Disclosure	Location	Comment
Material topics				
Suppliers and Contractors				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 61-70	
GRI 204: Procurement Practices 2016	204-1	Proportion of spending on local suppliers	p. 104	
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	p. 62	
	308-2	Negative environmental impacts in the supply chain and actions taken	p. 62	
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	p. 62	
	414-2	Negative social impacts in the supply chain and actions taken	p. 62	
Customers and Local Communities				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 71-74	
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	p. 94	
	203-2	Significant indirect economic impacts	p. 15, 94	
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	p. 15, 72	
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	p. 67-68	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	2023 Business report p. 920-925	2023 Business report p. 920-925
GRI 417: Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling	p. 66	
	417-2	Incidents of non-compliance concerning product and service information and labeling	2023 Business report p. 920-925	2023 Business report p. 920-925
	417-3	Incidents of non-compliance concerning marketing communications	2023 Business report p. 920-925	2023 Business report p. 920-925
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	p. 109	

GRI Standard		Disclosure	Location	Comment
Material topics				
Business Ethics				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 81	
	205-1	Operations assessed for risks related to corruption	p. 82	
GRI 205: Anti-corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	p. 83-84	
	205-3	Confirmed incidents of corruption and actions taken	p. 108	
GRI 206: Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	p. 108	
	207-1	Approach to tax	p. 88	
GRI 207: Tax 2019	207-2	Tax governance, control, and risk management	p. 88	

# SASB Index

## Sector: Resource Transformation – Chemicals

Table 1. Sustainability Disclosure Topics & Metrics			Hanwha Corporation Report
Topic	Code	Metric	2023 Data
Greenhouse Gas Emissions	RT-CH-110a.1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	21,389 tCO <sub>2</sub> -eq
	RT-CH-110a.2	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	p. 27-34
Air Quality	RT-CH-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N <sub>2</sub> O)	13.9506 ton
		(2) SOx	0.4672 ton
		(3) volatile organic compounds (VOCs)	N/A
		(4) hazardous air pollutants (HAPs)	N/A
Energy Management	RT-CH-130a.1	(1) Total energy consumed	1,019.9601 TJ
		(2) percentage grid electricity	36%
		(3) percentage renewable	0.0064%
		(4) total self-generated energy	18.25 MWh
Water Management	RT-CH-140a.1	(1) Total water withdrawn	905,885 ton
		(2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	905,885 ton p. 42
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	N/A
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	p. 41-42
Hazardous Waste Management	RT-CH-150a.1	(1) Amount of hazardous waste generated,	426.64 ton
		(2) percentage recycled	27.2%
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	p. 46, 71-74
Workforce Health & Safety	RT-CH-320a.1	(a) Direct employees and (b) contract employees: (1) Total recordable incident rate (TRIR) and	(a) 0.02 (b) 1.50
		(2) fatality rate	(a) 0.00% (b) 0.02%
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	p. 52-53, 58, 99
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use phase resource efficiency	p. 94
Safety & Environmental Stewardship of Chemicals	RT-CH-410b.1	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances	N/A
		(2) percentage of such products that have undergone a hazard assessment	p. 49
		RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human or environmental impact

Table 1. Sustainability Disclosure Topics & Metrics			Hanwha Corporation Report
Topic	Code	Metric	2023 Data
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	N/A
Management of the Legal & Regulatory Environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	p. 40-44
		Process Safety Incidents Count (PSIC)	1 person
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1	Process Safety Total Incident Rate (PSTIR)	0.02%
		Process Safety Incident Severity Rate (PSISR)	N/A
	RT-CH-540a.2	Number of transport incidents	N/A

Sector: Resource Transformation - Electrical & Electronic Equipment

Table 1. Sustainability Disclosure Topics & Metrics			Hanwha Corporation Report
Topic	Code	Metric	2023 Data
Hazardous Waste Management	RT-EE-150a.2	Number and aggregate quantity of reportable spills, quantity recovered	0 Cases
Product Safety	RT-EE-250a.1	Number of recalls issued, total units recalled	0 Cases
		Total amount of monetary losses as a result of legal proceedings associated with product safety	KRW 0
Product Lifecycle Management	RT-EE-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	N/A
	RT-EE-410a.2	Percentage of eligible products, by revenue, certified to an energy efficiency certification	N/A
	RT-EE-410a.3	Revenue from renewable energy-related and energy efficiency-related products	KRW 241,920 million
Materials Sourcing	RT-EE-440a.1	Description of the management of risks associated with the use of critical materials	p. 63
		Description of policies and practices for prevention of: (1) corruption and bribery and (2) anti-competitive behavior	p. 81-85
Business Ethics	RT-EE-510a.2	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	KRW 0
	RT-EE-510a.3	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behaviour regulations	KRW 0

Sector: Infrastructure - Engineering & Construction Services

Table 1. Sustainability Disclosure Topics & Metrics			Hanwha Corporation Report
Topic	Code	Metric	2023 Data
Environmental Impacts of Project Development	IF-EN-160a.1	Number of incidents of non-compliance with environmental permits, standards, and regulations	1 Case
	IF-EN-160a.2	Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction	p. 40-43
Lifecycle Impacts of Buildings & Infrastructure	IF-EN-410a.1	Number of (1) commissioned projects certified to a third-party multi-attribute sustainability standard and (2) active projects seeking such certification	N/A
	IF-EN-410a.2	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design	p. 31-32, 41-42
Climate Impacts of Business Mix	IF-EN-410b.1	Amount of backlog for (1) hydrocarbon-related projects and (2) renewable energy projects	N/A
	IF-EN-410b.2	Amount of backlog cancellations associated with hydrocarbon-related projects	N/A
	IF-EN-410b.3	Amount of backlog for non-energy projects associated with climate change mitigation	N/A
Business Ethics		Out of the 20 lowest-ranking countries in Transparency International's Corruption Perception Index,	-
	IF-EN-510a.1	(1) Number of active projects and (2) backlog	N/A
		Total amount of monetary losses as a result of legal proceedings associated with charges of	-
	IF-EN-510a.3	(1) bribery or corruption and (2) anti-competitive practices	p. 81-85

# TCFD Index

Topic	Recommended Disclosures	Location
Governance	a) Describe the board’s oversight of climate-related risks and opportunities.	p. 26–27
	b) Describe management’s role in assessing and managing climate-related risks and opportunities.	
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	p. 27–32
	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.	
Risk Management	a) Describe the organization’s processes for identifying and assessing climate-related risks.	p. 32, 88
	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.	
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.	p. 33–34
	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.	

# Greenhouse Gas Scope 1, 2 Emissions Verification Opinion

## Introduction

DNV Business Assurance Korea Ltd. (“DNV”) was commissioned by Hanwha Corporation (“Company”) to verify the Company’s Greenhouse Gas Inventory Report for the calendar year 2023 (“the report”) based upon a reasonable level of assurance. Company is responsible for the preparation of the GHG emissions and Energy consumption data on the basis set out within the guidelines on the operation of GHG emission trading scheme (“ETS) (Notification No. 2023–221, Korean Ministry of Environment)’. Our responsibility in performing this work is to the management of Company only and in accordance with terms of reference agreed with them. DNV expressly disclaims any liability or responsibility for any decisions, whether investment or otherwise, based upon this Verification Opinion.

## Objectives and scope of verification

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

- Organizational Boundary: Hanwha Corporation’s Sites in Korea
- Operational Boundary: Scope 1 (Direct emissions), Scope 2 (Indirect emissions)
- Reporting period: 2023.01.01 ~2023.12.31

## Verification Approach

The verification has been conducted by DNV and performed in accordance with the verification principles and tasks outlined in the guidelines on the operation of GHG ETS (Notification No.2023–221, Korean Ministry of Environment), the verification guideline for GHG ETS (Notification No. 2021–112, Korean Ministry of Environment). We planned and performed our work to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a reasonable verification opinion concerning the completeness of the emission inventory based on the materiality threshold of 5%. As part of the verification process:

- We have reviewed and verified the GHG emissions and energy consumption report
- We have reviewed and verified the process to generate, aggregate and report the emissions and energy data

## Conclusions

As a result of the work described above, in our opinion, the GHG emissions set out in Company’s report are fairly stated in all material respects, in accordance with the verification guidelines above. The GHG emissions and energy consumption of Company for the year 2023 were confirmed as below:

(Unit: ton CO<sub>2</sub>-eq)

Classification	Direct Emissions (Scope 1)	Indirect Emissions (Scope 2)	Total emissions
Hanwha Corporation	21,389	47,359	68,748

※ Greenhouse gas emissions may differ by less than ± 1 tCO<sub>2</sub>-eq due to rounding to report as an integer.

4 June 2024  
 Seoul, Korea

DNV Business Assurance Korea  
 Country Representative  
 Jang-Sub Lee




# Greenhouse Gas Scope 3 Emissions Verification Opinion

## Introduction

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

## Objectives and scope of verification

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

- Organizational Boundary: Hanwha Corporation
- Operational Boundary: Scope 3 (Other indirect emissions - Category 1, 2, 3, 4, 5, 6, 7, 9, 11, 12, 13, 15)
- Reporting period: 2023.01.01 ~ 2023.12.31

## Verification Approach

The verification has been conducted in accordance with the verification principles and tasks outlined in the ‘ISO 14064-3:2019’, based upon a limited level of assurance. We planned and performed our work so as to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a verification opinion with 5% materiality level, concerning the completeness of the emission inventory as well as the reported emission figures in ton CO<sub>2</sub> equivalent. As part of the verification process, we have reviewed as follows:

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

## Conclusions

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

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

(Unit: tCO<sub>2</sub>eq)

Classification	Other Indirect Emissions (Scope 3)
Hanwha Corporation	7,446,486

\* Refer to Annex for greenhouse gas emissions by categories.

11 June 2024  
Seoul, Korea

DNV Business Assurance Korea  
Country Representative  
Jang-Sub Lee



## Other indirect emissions (Scope 3) of Hanwha Corporation

(Unit: ton CO<sub>2</sub>-eq)

Categories	GHG Emissions
1 Purchased Goods and Services	2,930,820
2 Capital Goods	23
3 Fuel- and Energy-Related Activities (not included in Scope 1 or Scope 2)	6,543
4 Upstream Transportation and Distribution	24,566
5 Waste Generated in Operation	12,562
6 Business Travel	10,163
7 Employee Commuting	3,679
9 Downstream Transportation and Distribution	8,344
11 Use of Sold Products	3,309,699
12 End-of-Life Treatment of Sold Products	60,148
13 Downstream Leased Assets	19,225
15 Investments	1,060,714
<b>Total</b>	<b>7,446,486</b>

# Independent Assurance Statement

## Independent Assurance Report

### To the management of Hanwha Corporation

We have performed a limited assurance engagement on the following sustainability information of Sustainability Report 2024 of Hanwha Corporation (the “Company”) for the year ended December 31, 2023 (the “Report”).

### Scope and Subject matter information

For the year ended December 31, 2023, we have provided a limited assurance on the following:

- The ESG information (the “Subject matter information”), stated on ‘ESG Factbook’ of the Report Appendix, is prepared in accordance with the Company’s ‘Reporting Framework’ described on the ‘ABOUT THIS REPORT’.

We have read the other information included in the Report and considered whether it is consistent with the Subject matter information. We have also considered the implications for our report in the case that we became aware of any apparent misstatements or material inconsistencies with the Subject matter information. Our responsibilities do not extend to any other information.

### Criteria (the “Criteria”)

The Company has prepared the Subject matter information in accordance with Global Reporting Initiative (GRI) Standards 2021 and Task Force on Climate-related Financial Disclosures (TCFD). The report contains indicators set by the Sustainability Accounting Standards Board (SASB) and UN Sustainable Development Goals (SDGs) indicators.

### Inherent limitations

Non-financial information is subject to more inherent limitations than financial information, given the characteristics of the subject matter and the methods used for determining such information. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments.

In particular:

- We did not attend any stakeholder engagement activities. Therefore, our conclusion is based on our discussions with the management and the staff members of the Company, and our review of selected documents provided to us by the Company.
- The scope of our work was restricted to performance for the year ended December 31, 2023, only, as set out in the scope and subject matter section above. Information for the year ended December 31, 2022, and earlier periods have not been subject to assurance by us.

### Responsibility of the management of the Company

The management of the Company is responsible for selecting and establishing suitable criteria for preparing the Subject matter information and the preparation of the Subject matter information in accordance with the Criteria.

### Our responsibilities

Our responsibilities are the followings:

- Determining and performing the procedures to provide a limited assurance whether a material matter has come to our attention to cause us to believe the Subject matter information is materially misstated.
- Independently expressing a conclusion in accordance with provided evidence by the Company.

Because we have engaged to form an independent conclusion on the Subject matter information prepared by the Company, our involvement may compromise our independence and is therefore not permitted.

This report, including the conclusion, has been prepared for the Company’s management as a body, to assist the management in reporting on the Company’s sustainability performance and activities. We do not accept nor assume responsibility to anyone other than the Company’s management as a body and the Company for our work or this report save where terms are explicitly agreed and with our prior consent in writing.

### Our independence and quality control

We have complied with the independence and other ethical requirements of the code of ethics issued by the Ethics Standards Board of the Korean Institute of Certified Public Accountant. We have applied International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding the compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.



## The standard of assurance engagement

We have performed a limited assurance engagement in accordance with Assurance Engagement other than Audits and Reviews of Historical Financial Information issued by the Korean Institute of Certified Public Accountants (International Standard on Assurance Engagement 3000 (Revised) as adopted by the Republic of Korea).

## Summary of the assurance work we performed.

Our work includes the following activities:

1. Interviews with the Company’s personnel responsible for internal reporting and data collection
2. Review of the samples of the Company’s internal documents related to output from the risk assessment process, sustainability-related policies and standards, the sustainability materiality assessment matrix, and other documents from stakeholder-engaged activities.
3. Understanding the Company’s design and implementation of key processes and controls for managing and reporting the Subject matter information
4. Limited testing, through inquiry and analytical review procedures, of the preparation and collation of the Company’s Subject matter information

A limited assurance engagement is less in scope than a reasonable assurance engagement. Consequently, the nature, timing, and extent of procedures for gathering sufficient, appropriate evidence are deliberately limited relative to a reasonable assurance engagement.

## Conclusion

Based on the procedures we performed as described under the “Summary of the assurance work we performed” and the evidence by the Company, nothing has come to our attention that causes us to believe that the Company’s Subject matter information in the Report for the year ended December 31, 2023, is not prepared, in all material respects, in accordance with the Company’s reporting Criteria.

Shinhan Accounting Corporation Seoul, Korea  
July 27, 2024

Jong-Man Choi  
Chairman, Board of directors



# Awards and Organizational Memberships

## Major Awards (2023–2024 H1)

Award Date	Division	Type	Award Title	Awarding Organization
Apr. 12, 2023	E&C	Award	Technomics Audition Grand Prize (Minister’s Award)	Ministry of Science and ICT
Apr. 28, 2023	E&C	Award	2023 National Preferred Brand Award (High–Quality Residential Brand Category)	Kukmin Ilbo
May 26, 2023	E&C	Award	2023 Apartment Brand Award (Power Brand Category)	The Asia Business Daily
May 31, 2023	E&C	Award	2023 Korea Residential Service Award	Money Today
Jun. 05, 2023	Global	Citation	The 28 <sup>th</sup> Environment Day: Environmental Conservation Merit Award	Governor of North Chungcheong–do
Jun. 28, 2023	E&C	Award	2023 Newsway Urban Redevelopment Housing Brand Award	Newsway
Jul. 12, 2023	E&C	Award	The 27 <sup>th</sup> Desirable Apartment Selection Contest	Maeil Business
Aug. 29, 2023	E&C	Award	2023 Korea Luxury Housing Award	Money Today
Sept. 06, 2023	E&C	Award	2023 Korea High–Efficiency & Eco–Friendly Residential and Building Materials Award	Energy Economic News
Sept. 18, 2023	E&C	Award	Best Company in Win–win Growth Index Award	Korea Commission for Corporate Partnership
Sept. 21, 2023	E&C	Award	2023 Korea’s Signature Apartment Award	The Korea Economic Daily
Sept. 21, 2023	E&C	Award	The 18 <sup>th</sup> Asia Construction Excellence Award	The Asia Business Daily
Oct. 18, 2023	E&C	Award	2023 Ajou Business Daily Construction Award	Ajou Business Daily
Oct. 21, 2023	E&C	Award	The 28 <sup>th</sup> Gyeonggi–do Architecture Culture Award	Gyeonggi–do
Oct. 30, 2023	E&C	Award	The 15 <sup>th</sup> Asia Today Green Construction Award	Asia Today
Nov. 08, 2023	E&C	Award	2023 Etoday Smart Construction Award	Etoday
Nov. 08, 2023	E&C	Award	2023 Etoday Smart Construction Award	Ministry of Trade, Industry and Energy
Nov. 09, 2023	Global	Citation	The 61 <sup>st</sup> Firefighters’ Day Chungcheongbuk–do Governor’s Safety Citation	Governor of Chungcheongbuk–do
Nov. 09, 2023	Global	Citation	The 61 <sup>st</sup> Firefighters’ Day National Fire Agency Chief’s Safety Citation	Chief of National Fire Agency
Nov. 30, 2023	E&C	Award	2023 Green Housing Award	Hankook Ilbo
Dec. 05, 2023	E&C	Award	2023 MP Ethical Housing Award	Mediapen
Dec. 12, 2023	E&C	Award	2023 Win–win Growth Award	Fair Trade Commission
Dec. 13, 2023	E&C	Award	The 19 <sup>th</sup> Korea Civil Engineering & Construction Technology Award	Maeil Economy Media Group
Dec. 22, 2023	Global, Momentum	Citation	Fair Trade Commission Chairman’s Citation	Fair Trade Commission
Dec. 27, 2023	Global	Citation	Daejeon Regional Employment and Labor Office Cheongju Branch Chief’s Safety Citation	Daejeon Regional Employment and Labor Office
Mar. 13, 2024	Comprehensive	Award	2023 CDP Korea Awards Carbon Management Sector Honors: Industrial Materials Category	CDP (Carbon Disclosure Project)

## Key Associations and Organizations

Legal Counselor Association for Tier-1 Comprehensive Construction Companies	Council of Economic Organizations	Korean Society of Civil Engineers	Onsan Engineering Complex Association	Korean Society of Steel Construction	Korea National Committee on Large Dams	Korea Water Resources Association	GM Korea Association
A3 Association	Police Administration Development Association	Korean Society of Explosives and Blasting Engineering	Ulsan Environmental Technician Association	Korea Federation of Construction Contractors	Korean Society of Road Engineers	Korea Society for New and Renewable Energy	Korea Association of Occupational Health Nurses
International Cyanide Management Code	Structural Diagnostic Society	Defense Council	Korea Atomic Industrial Forum	Korea Construction Transport New Technology Association	Korea Road Association	Korean Society for Rock Mechanics and Rock Engineering	Korea Railway Construction Association
Korea Exchange	SEMI	Boeun-gun Women's Organization Advisory Committee	Korea Electrical Contractors Association	Korean Construction Engineers Association	Korea Display Industry Association	Korea Energy Engineer Association	The Korean Society for Railway
Gangwon Operational Safety Council	International Gunpowder Accident Information Association	Korean Bar Association	South Jeolla Wind Power Industry Association	Korean Recycled Construction Resources Institute	Korea Institute for Robot Industry Advancement	Korea Engineering & Consulting Association	Korea Railway Association
Korea Construction Technology Exchange Association	Naebuk-myeon Association of Organizations and Groups	Boeun-gun Enterprise Council	General Construction Industry Electrical Council	Korean Society of Automation and Robotics in Construction	Korea Remodeling Association	Korea Electrical Contractors Association	Korea Concrete Institute
Korea Construction Engineers Association	Naebuk-myeon Community Social Security Council	Boeun-gun Saemaul Association	Comprehensive Construction KOSHA-MS Council	Korean Institute of Architectural Sustainable Environment and Building Systems	Korea Mecenat Association	Korea Association of Electrical Engineers	Korean Solar Energy Society
Construction Health Council	Green Company Council	Boeunhoe Association	Housing Construction Forum	Korea Enterprises Federation	Korea International Trade Association	Korea Railway Electrification Technical Association	Korean Tunneling and Underground Space Association
Construction Industry Electrical Design Council	Korean Nurses Association	Korea Developer Association	Residential Facility Council	Federation of Korean Industries	Korea Bio Association Council	Korea Electronics Technology Institute	Korea Integrated Logistics Association
Construction Industry Electrical Practitioners Association	Korea Construction Materials Partnership Association	Building Smart Korea	Korean Geotechnical Society	Korea Association for Spatial Structures	Korea Semiconductor Industry Association	Korea Council of Chief Information Security Officers	Korea Wind Energy Industry Association
Construction Safety Manager Association	Construction Association of Korea	Green Ammonia Association	Jinhae Industrial Complex Management Department Chiefs Council	Fair Competition Federation	Korea Society of Hazard Mitigation	Korea Information Industry Association CIO Forum	Korea Project Management Association
Construction Safety Officer Committee	Architectural Institute of Korea	Firefighting Development Council	Changwon National Industrial Complex Factory Manager Council	Korea Customs Logistics Association	Korea Society for Advanced Composite Structures	Korea Information & Communication Contractors Association	Korea Plant Industries Association
Construction Safety Manager Committee	Korean Society of Transportation	Firefighter Association	Council for Advanced Regenerative Medicine	Korea Advertisers Association	Korea Industrial Technology Association (KOITA)	Telecommunications Technology Association	Hannam Club
Construction Outsourcing Association	Korea Mechanical Construction Contractors Association	Safety and Health Officer Council	Guns and Explosives Safety Technology Association	Korea Mining Association	Korea Association of Robot Industry	Korean Institute of Illuminating and Electrical Installation Engineers	Korea-U.S. Economic Council
Construction Equipment Safety Council	Korea Industrial Safety Association	Energy Transition Forum	Chungcheong Regional Chemical Safety Community Council	Korea Institute for Structural Maintenance and Inspection	Korea Listed Companies Association	Korea Construction Machinery and Equipment Association	Association of Korea-USA Friendship Alliance
Construction Environment Association	Korea Chamber of Commerce & Industry	Yeosu National Industrial Complex Technology Officer Council	International Management Institute, Federation of Korean Industries	Korea Defense Industry Cooperative	Korea Equipment Technology Association	Korea Housing Association	Korea-Japan Economic Association
Korea Structural Engineering Association	Society of Air-conditioning and Refrigeration of Korea	Onsan 119 Chemical Rescue Volunteer Fire Department	Korea Institute of Building Information Modeling	Korea Green Building Council	Korea Fire Facility Association	Korean Geotechnical Society	Korea-China Cooperation Department Committee
Korea Institute of Building Construction	The Korean Institute of Electrical Engineers	Onsan Engineering Complex Safety Management Council	Korea IR Services	Korean Society of Agricultural Engineers	Korea Fire Safety Institute	Korean Geosynthetics Society	International Contractors Association of Korea
Gyeongnam Environmental Engineers Association	Korea Electrical Association	Onsan Engineering Complex Environmental Management Association	Korean Society for Prognostics & Health Management	Korea Management Association	Korea Software Technology Association	Korea Society of Geotechnical Engineers	Korea Environmental Preservation Association

