

HD Hyundai Energy Solutions Sustainability Report 2025

Promising Future with Green Energy

About This Report

Overview

This report details HD Hyundai Energy Solutions’ sustainability management activities and performance and is published annually to offer transparent updates on progress and future plans to address both financial and non-financial risks faced by the company to stakeholders. HD Hyundai Energy Solutions will publish annual Sustainability Reports to provide transparent updates on relevant information to diverse stakeholders.

Reporting Standards and Frameworks

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards 2021, the international guidelines for sustainability reporting. In order to incorporate key issues relevant to the solar energy industry, it also adheres to the disclosure framework of the Task Force on Climate-related Financial Disclosures (TCFD) and the industry-specific metrics of the Sustainability Accounting Standards Board (SASB). In addition, key environmental and social topics are reported using the “Governance - Strategy - Risk Management - Metrics and Targets” framework.

Reporting Period

The report covers the activities of HD Hyundai Energy Solutions from January 1 to December 31, 2025. To respect stakeholders’ right to know and ensure greater transparency, this report includes some activities and performance beyond the reporting period. For quantitative performance and indicators, including financial metrics, data from 2023 to 2025 is presented to help identify three-year trends.

Independent Assurance

To enhance the credibility and quality of this report, a third-party assurance review has been conducted by an external agency. The detailed assurance statement is available on pages 77–78.

Reporting Scope

This report covers HD Hyundai Energy Solutions and its subsidiaries. Financial performance has been prepared in accordance with the Korean International Financial Reporting Standards (K-IFRS). Unless mentioned otherwise, disclosures of non-financial activities and performance are limited to HD Hyundai Energy Solutions’ headquarters and the Eumseong plant.

Contact Information

For inquiries or feedback regarding the 2025 HD Hyundai Energy Solutions Sustainability Report, please contact us using the information below.

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Interactive Guide

HD Hyundai Energy Solutions’ 2025 Sustainability Report is available for download on the company’s official website (https://www.hd-hyundaies.co.kr/). For user convenience, the report has been published in an interactive PDF.

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CEO Message

We will lead the age of sustainable future energy
and the solar energy ecosystem.



CEO & President of HD Hyundai Energy Solutions
PARK JONG HWAN

Dear Valued Stakeholders,

I sincerely thank you for your trust in and support for the sustainability management of HD Hyundai Energy Solutions.

In 2025, despite the stagnant domestic market, HD Hyundai Energy Solutions focused on expanding exports to overseas markets such as the United States, reducing costs through the early stabilization of new investment facilities, and expanding our product lineup. As a result, we were able to overcome the net loss in 2024 and achieved remarkable business performance by recording an operating margin of over 8%, while maintaining Outstanding (AA) / Excellent (A) ratings in ESG assessments.

This year, the domestic and international solar power markets are anticipated to encounter even greater unpredictability, with growing uncertainties marked by global economic indicators such as exchange rates and oil prices due to policy changes, rising prices of major raw materials, and geopolitical risks such as war. Despite these significant uncertainties in the domestic and international environment, we are determined to implement the following key initiatives to achieve sustainable management.

First, we will advance our competitive edge with the development of next-generation solar technology.

By 2026, we will advance the development of high-efficiency HJT mass-production technology and, based on N-type high-efficiency silicon cells such as HJT, collaborate with leading domestic institutions and companies to promote the mass production of silicon-perovskite tandem solar cells with an efficiency of over 30% by 2030. Through this, we will respond proactively to the next-generation solar cell market while minimizing energy loss and contribute to accelerating carbon neutrality.

Second, we will elevate stakeholder trust with transparent disclosure of ESG information.

In line with the government's strengthened greenhouse gas reduction policies and the trend toward mandatory ESG disclosures, HD Hyundai Energy Solutions is monitoring risks and performance across its entire value chain and accumulating data through the HD Hyundai Group ESG Integrated Platform to ensure the reliability and objectivity of disclosed information. Furthermore, we will conduct systematic analysis and diagnosis of qualitative and quantitative performance and utilize a reliable disclosure data system to engage in open communication based on trust with our stakeholders.

Third, we will strengthen the governance framework for ESG management.

HD Hyundai Energy Solutions implements systematic management and decision-making for its environmental, social, and governance activities, with the ESG Committee at its center. Through the operation of the Human Rights Management Committee, we are strengthening human rights protection and responsibility across our employees and suppliers, while remaining committed to advancing our GHG emissions management and climate change response system through the establishment of an internal Carbon Management Committee. Based on these governance systems, we will fulfill our social responsibilities for sustainable management.

HD Hyundai Energy Solutions remains committed to engaging with our stakeholders and creating a sustainable future based on eco-friendly solar energy. Thank you for your continued interest in and support for HD Hyundai Energy Solutions' ongoing efforts toward a better future.

Thank you.

Company Overview

About HD Hyundai Energy Solutions

Company Overview

HD Hyundai Energy Solutions is a leading solar energy company in South Korea, established to drive the sustainable growth of the solar industry. We began our solar energy operations in 2004 as part of Hyundai Heavy Industries’ Green Energy Division. To develop its expertise and enhance global competitiveness in the solar sector, the division was spun off as an independent corporation on December 21, 2016.

Focusing on the Eumseong Plant in Chungcheongbuk-do, we have continuously strengthened our solar cell and module production capabilities and, through partnerships with overseas manufacturers, are expanding our supply capacity as needed. HD Hyundai Energy Solutions provides integrated solutions that encompass the manufacturing and sales of solar cells and modules, as well as the installation and maintenance of systems such as high-efficiency cells, modules, inverters, and ESS. We are committed to making the leap forward as a Total Energy Solution Provider that meets a diverse range of energy demands.

Corporate Profile

Company Name	HD Hyundai Energy Solutions	CEO	PARK JONG HWAN
Date of Establishment	December 21, 2016	Head Office Address	9F, 477, Bundangsuseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Main Business	Manufacturing and sales of PV modules	Credit rating	A- (Stable)
Listing Date	November 19, 2019	Stock Exchange	Korea Exchange (KRX), KOSPI Market

* Credit ratings as of April 2026 (NICE Ratings).

Sales Performance for the Past Three Years

(Unit: KRW million)

Sales Type		Item	2023	2024	2025
Product	Module	Export	136,574	114,046	194,674
		Domestic	343,213	186,982	179,482
	Inverter	Export	-	-	-
		Domestic	55,542	74,089	85,198
Order Contract			4,321	42,894	28,584
Service Contract			2,524	2,623	3,580
Other			3,945	1,737	1,142
Total	Export		136,574	114,048	194,672
	Domestic		409,546	308,323	297,988
	Total		546,120	422,371	492,660

Business Overview

Based on continuous investments in R&D and advanced production facilities, HD Hyundai Energy Solutions manufactures and supplies world-class solar cells and modules. Driven by our product competitiveness, we are expanding our business into inverters, solar solutions, and O&M, offering a range of solutions and services tailored to the solar power industry and leading the solar energy business.

With solar modules as our primary sales driver, we achieved overseas sales of KRW 194.67 billion, domestic sales of KRW 179.48 billion, and inverter sales of KRW 85.20 billion in 2025 on a consolidated basis through continuous customer acquisition, strengthened marketing efforts, and enhanced product competitiveness. Furthermore, leveraging the production capacity of the Eumseong Plant in Chungcheongbuk-do, we produce our core products, cells and modules, internally. We also enhance our supply capabilities and boost production flexibility by partnering with top-tier overseas manufacturers, enabling us to adapt to evolving market demand.

Production Capability and Facilities

(Unit: Sheet)

Category		Business site	2023	2024	2025
Production Capability	Cell Plant		97,996,489	10,326,000	29,988,000
	Module Plant		2,716,654	1,795,371	2,123,400
Production Performance	Cell Plant		69,182,160	5,426,520	20,916,300
	Module Plant		1,603,473	1,233,205	1,277,089

Sales and Market Share Trends

(Unit: %)

Category			2023	2024	2025
Overseas	Module	U.S.	0.2	0.3	0.7
		Non-U.S.	0.1	0.1	0.1
Domestic	Module		29.1	26.4	26.6
	Inverter		40.0	55.4	55.9

※ The solar power market size is based on data from the Export-Import Bank of Korea's Solar Industry Trend Report, and the market share for the current year is an estimate.

Company Overview

Global Network

Domestic Business Sites

Category	Location
Headquarters	9F, 477, Bundangsuseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Eumseong Plant	313, Soi-ro, Soi-myeon, Eumseong-gun, Chungcheongbuk-do, Republic of Korea

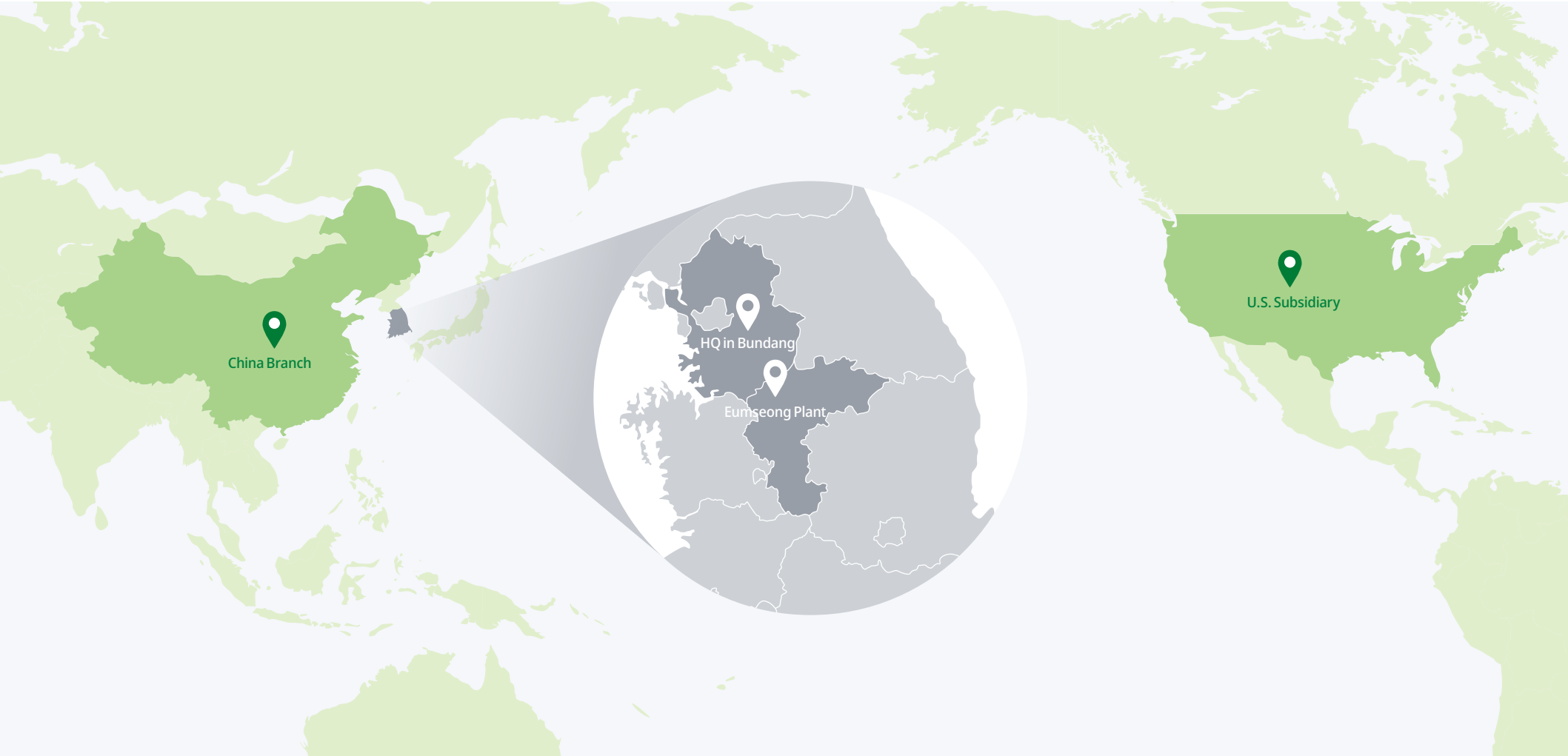
Consolidated Subsidiaries

Name	HD Hyundai Energy Solutions America Inc.
Date of Establishment	April 19, 2019
Location	California, U.S.A.
Main Business	Sales of PV modules
Total Assets	KRW 88,975 million

Overseas Subsidiaries and Branches

Name	HD Hyundai Energy Solutions America Inc.
Date of Establishment	April 19, 2019
Location	California, U.S.A.
Main Business	Sales of PV modules

Name	HD Hyundai Energy Solutions Co., Ltd. Shanghai Representative Office
Date of Establishment	November 13, 2019
Location	Shanghai, China
Main Business	Global sales of PV modules and procurement of modules and raw materials



Company Overview

About Solar Energy Industry

Industry Landscape

The solar energy industry is part of a capital-intensive industry that requires substantial facility investment for manufacturing, a technology-intensive industry that requires continuous R&D and investment to improve product efficiency and reduce costs, and a knowledge-intensive industry that requires experience and expertise across diverse areas. As part of the renewable energy industry, it is also subject to industrial volatility driven by changes in national energy policies.

The solar value chain includes upstream processes such as polysilicon, the raw material, and its processing into ingots and wafers, followed by solar cells that convert sunlight into electricity, modules made by assembling multiple cells, and integrated solar power systems. Upstream segments such as polysilicon and ingot/wafer manufacturing involve high initial capital investment and high technological barriers, resulting in an oligopolistic market structure dominated by a few leading companies. On the other hand, downstream segments, which are more labor-intensive and have lower technological entry barriers, are characterized by fierce competition.

Industry Growth Outlook

Amid accelerating global efforts to achieve carbon neutrality and enhance energy efficiency, demand for solar energy is expected to continue growing. Policy support from governments to strengthen energy security and expanded investment in solar power have further elevated the importance of solar power in the global energy transition.

Meanwhile, due to policy changes in China and the U.S., the forecast for global newly installed solar PV capacity in 2025 has been revised downward. The 2026 forecast is expected to reach approximately 649 GW(DC), which is 0.9% lower than the 2025 figure. However, driven by rapid adoption in emerging markets such as the Middle East and Africa, the rapid adoption of BESS, and technological innovations, global cumulative installed solar PV capacity is expected to nearly double over the next five years.

Amid the changing industrial paradigm, the next-generation solar technologies are gaining attention as new growth drivers. High-efficiency cell technologies such as N-Type and HJT, as well as next-generation technologies like perovskite and tandem structures, are regarded as key innovations that will determine future market competitiveness.

Operational Status

Solar Solution Business

Driven by our product competitiveness stemming from manufacturing and supplying solar cells and modules, HD Hyundai Energy Solutions is expanding its business into inverters, solar solutions, and operation and maintenance (O&M). We are responding to our customers’ diverse solar energy needs by providing integrated solutions that include high-efficiency cells and modules, inverters, ESS, and system installation. Our goal is to evolve from just a solar manufacturing company into a Total Energy Solutions Provider. We are also establishing a one-stop service system that encompasses design, installation, and maintenance in order to provide integrated services that address power generation, storage, and management.

Domestic Market Outlook

The domestic solar market is expected to continue its growth supported by stable installation demand, driven by the global energy transition flow. In 2026, the new domestic PV installation capacity is expected to be around 4 GW, and the market is entering the qualitative growth phase that focuses on business stability and operational capabilities, moving away from the installation-volume-centered growth of the past. In particular, the role of solar power generation is becoming increasingly important as PPAs and distributed energy policies expand, and the adoption of new energy solutions, such as ESS-integrated systems and smart operational technology are expected to grow. Accordingly, it is expected that the solar power market will develop into a competitive structure centered on integrated energy solutions, including not only equipment installation but also power generation, management, and operation capabilities.

Overseas Market Outlook

Growth in the global solar power market is expected to slow somewhat. According to market research agency forecasts, global newly installed solar PV capacity is expected to be around 649 GW(DC) in 2026, which is a slightly lowered figure compared to previous projections due to policy changes in major markets such as China and the United States. However, due to the expansion of emerging markets such as the Middle East and Africa and ongoing energy transition policies, solar power demand is expected to steadily increase in the medium to long term. The global market is undergoing structural changes amid oversupply and intensified price competition, and it is expected that the competitive landscape will be reorganized around companies with technological competitiveness and business stability.

Activities

Net Zero Energy Journey

[Advanced Energy Technology for a Sustainable Future](#)

HD Hyundai Energy Solutions participated in the 2025 World Climate Industry Expo in August 2025, demonstrating its integrated capabilities and technological competitiveness. HD Hyundai Energy Solutions showcased next-generation technology by exhibiting solar modules, tandem cells, and HJT (heterojunction) cells, all based on high-efficiency solar cell technology. The 645 W solar module, which maximizes power generation efficiency, meets carbon emission reduction standards and has received Grade 1 Carbon Certification from the Korea Energy Agency. In particular, this product has strengthened both technological independence and supply chain competitiveness by localizing the entire process from TOPCon cell production to module manufacturing.



HD Hyundai Energy Solutions Booth

ESG Management

HD Hyundai
ESG Management

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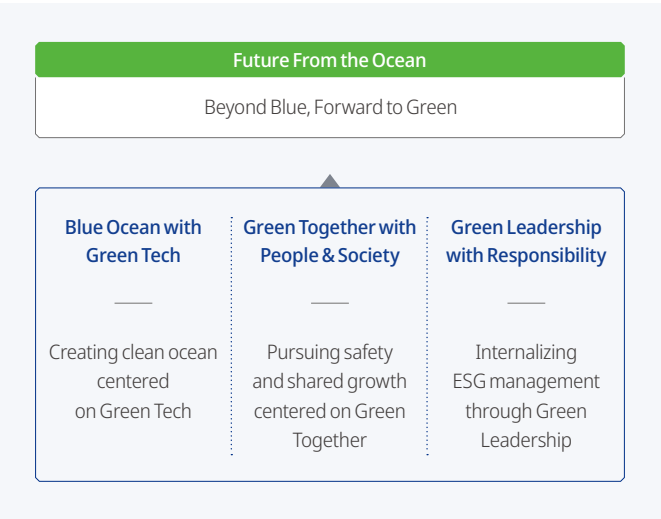
HD Hyundai ESG Management

HD Hyundai ESG Management System

HD Hyundai ESG Vision

HD Hyundai Group has set its ESG vision as “Future from the Ocean” and adopted the slogan “Beyond Blue, Forward to Green” to drive ESG initiatives. Based on this slogan that expresses the Group’s ambition to become a leading eco-friendly future company through technological innovation, ESG strategies have been formulated across three key areas: environmental, social, and governance. In the environmental area, under the theme “Blue Ocean with Green Tech,” HD Hyundai Group is focused on developing eco-friendly technologies and expanding its investments. In the social area, it promotes “Green Together with People & Society” by enhancing the safety and health framework and promoting shared growth with suppliers. With regard to governance, the Group is advancing transparent and ethical management under the principle of “Green Leadership with Responsibility” and is committed to establishing a responsible and accountable corporate governance structure.

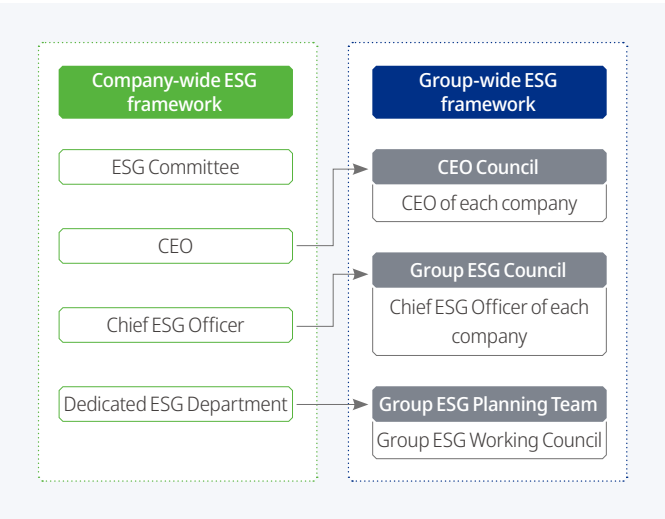
HD Hyundai ESG Vision



HD Hyundai ESG Management

To strengthen ESG governance across the group, HD Hyundai Group operates a Group ESG Council, composed of Chief Sustainability Officers (CSOs) from each affiliate. This council facilitates communication on key ESG policies and issues, supporting the advancement of ESG management at the affiliate level. The group has also established an ESG Advisory Group comprising outside experts in such fields as environment, shared growth, and compliance to enhance expertise and objectivity in ESG policy development. Each affiliate’s dedicated ESG departments work closely with the Group ESG Planning Team to share policies and guidelines, while group-level ESG agendas are reviewed through the CEO Council and reflected in affiliate operations. Based on this governance system, the Group continues to strengthen execution capabilities for ESG management and has introduced ESG KPIs and linked to employee compensation systems.

HD Hyundai ESG Management Structure



HD Hyundai ESG Council

In support of group-wide ESG management, HD Hyundai Group promotes collaboration among major affiliates through ESG councils. The Group ESG Working Council, consisting of ESG personnel from 13 affiliates, identifies and proposes common priority ESG tasks with high priority across the Group. Based on these proposals, the Group ESG Council, composed of CSOs, discusses and determines key tasks, action plans, and strategic priorities. The ESG governance framework of HD Hyundai Group is centered on establishing ESG policies and integrating them into the overall management strategy. As chair of the ESG Council, the Chief ESG Officer of the Group coordinates all related topics and provides clear guidelines for selected ESG tasks, enabling each affiliate to effectively implement them.

2025 Group ESG Council Performance

Date	Description
Sep. 18, 2025	2025 1st meeting of the Group ESG Working Council - Roadmap for responding to mandatory Group ESG disclosures - Need for and direction of developing the Group ESG Platform - Establishment of carbon governance (proposal)

HD Hyundai Energy Solutions ESG Management

HD Hyundai Energy Solutions has developed and operates its own mid- to long-term ESG management roadmap to expand ESG management through the internalization of ESG and the strengthening of management capabilities. Evaluation results from domestic and international ESG initiatives are analyzed to identify areas requiring improvement in environmental, social, and governance aspects, and are used to determine ESG improvement tasks. Each year, key ESG improvement tasks and the annual implementation schedule are reported to the ESG Committee and finalized.

2026 will be the year for focusing on enhancing our ESG management capabilities. We plan to establish an internal Carbon Management Committee and define related work processes, thereby establishing a carbon management governance system. In addition, we aim to strengthen the human rights management system through the advancement of HD Hyundai Group’s human rights management initiatives and establish a climate disclosure response system by defining climate disclosure work processes.

Key ESG Improvement Actions in 2026

Category	Improvement Actions
Enhancement of ESG Management Capabilities	- Establish a carbon management governance framework → Establish an internal Carbon Management Committee and define work processes - Strengthen the human rights management system → Implement the advancement of HD Hyundai Group's human rights management initiatives - Establish a climate disclosure response system → Define climate disclosure work processes and review the carbon reduction roadmap - Support biodiversity activities

HD Hyundai ESG Management

ESG KPIs

Background

At HD Hyundai Energy Solutions, we have introduced ESG Key Performance Indicators (KPIs) to strengthen the execution capability of sustainability management and systematically manage non-financial performance. We set quantitative and qualitative indicators for major issues in the environmental, social, and governance areas, and employ these indicators for periodic reviews of strategy implementation progress to identify improvement tasks. By linking the KPIs to performance evaluations and compensation systems for executives and employees, we are providing a tangible incentive to promote the organization-wide internalization of ESG values.

Application Strategy

HD Hyundai Energy Solutions provides a foundation that can be used as a standard for establishing and managing short-term and mid- to long-term goals and performance, and serves as the groundwork upon which each organization can establish and execute detailed tasks. KPI performance is used as a basis for sustainability management disclosures, providing relevant information to stakeholders transparently. Thus, we are employing ESG KPIs as key indicators for company-wide sustainable management promotion and performance management.

ESG KPI Areas



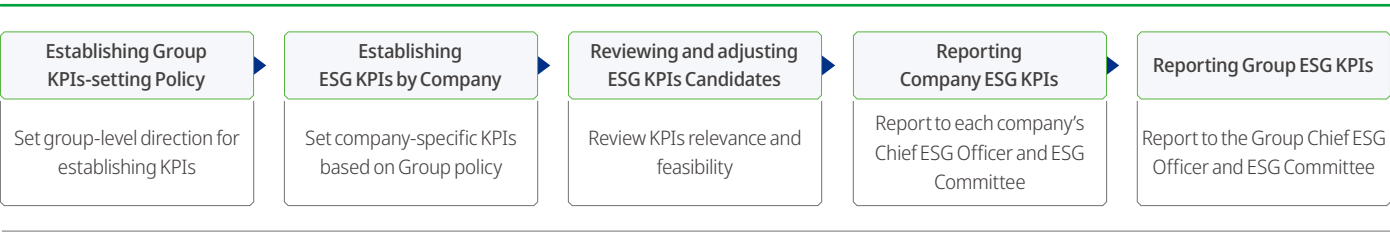
ESG KPI Areas and Indicators

In establishing ESG KPIs, HD Hyundai Energy Solutions considered our industry characteristics, benchmarking of ESG leaders in the same industry, and sustainability management strategies. Quantitative indicators were selected for each identified material issue area, with defined baseline years and performance targets to support continuous performance management. Domestic and international ESG disclosure standards and the requirements of major ESG rating institutions were incorporated to enhance the indicators' reliability and comparability.

Development of ESG KPI Pool and Guidelines

HD Hyundai Energy Solutions has comprehensively reviewed domestic and international ESG trends, disclosure standards, evaluation criteria, industry-specific issues, and stakeholder requirements to create a pool of ESG KPI candidates. Subsequently, considering alignment with sustainability management strategies, response to external evaluations, and feasibility of implementation, we identified ESG KPIs suitable for the Company and established operational guidelines. To ensure the consistency and reliability of KPIs, we established item definitions, calculation standards, goal-setting guidelines, and key data management criteria to build a systematic foundation for performance management.

ESG KPIs Setting Process



ESG KPI-Based Performance Evaluation and Compensation

HD Hyundai Energy Solutions monitors progress toward ESG KPI targets to evaluate the performance of the CEO, executives, and departments and determines performance-based compensation based on the results. Evaluations consider both individual efforts and organizational contribution to ESG KPI target achievement, with differentiated rewards based on the evaluation results.

Current Status of ESG KPI Implementation

HD Hyundai Energy Solutions incorporated ESG indicators into the KPIs for the CEO and key executives to systematically evaluate organizational ESG management performance. In addition, ESG goals were integrated into the KPIs of heads of team and managers across all departments, establishing a top-down MBO system from division and sector heads to department heads and team leaders.

ESG Goal-Setting Guideline

Category	KPIs	Details
HR	Human Rights	Receiving human rights impact assessments, family-friendly company certification, etc.
Procurement Team	Strengthening Supply Chain Management	Operating evaluation programs and participating in Korea Commission for Corporate Partnership projects, etc.
General Affairs	Eco-friendly Transportation Equipment and Improved Welfare Programs	Introducing eco-friendly equipment and eco-friendly workwear, etc.
Environmental Data	Legal Risk Management and Mid- to Long-term Goal Setting	Identifying and managing risks and improving the waste recycling rate, etc.
Security	Information Security and Prevention of Information Leakage	Increasing investment in security and completion rate of information security training, etc.
Assets	Renewable Energy Usage Rate and Energy Efficiency	Improving renewable energy usage rate and water recycling rate, etc.
Safety	Safety-related Technology Development and Risk Management	Introducing smart technologies such as near-miss standards and DT, etc.
Finance	Protection of Shareholder Rights and Communication	Establishing management rights protection mechanisms and shareholder opinion collection mechanisms, etc.
	Auditor independence	Monitoring long-serving auditors or audit committee members, etc.
R&D	Eco-friendly Protection Technology	Improving carbon emission factors and developing technologies to reduce paint and fuel use, etc.
	Pollution Reduction Technology	Improving VOC reduction systems, etc.

HD Hyundai ESG Management

ESG Disclosure

Disclosure of ESG Performance Data

At HD Hyundai Energy Solutions, we are enhancing our integrated ESG data management system and building trust with our stakeholders through transparent and consistent disclosure of ESG performance data. Our group-wide integrated ESG framework specifies key ESG indicators, measurement criteria, and data collection cycles. This allows us to strategically manage our key indicators across environmental, social, and governance areas. The standardized data collection criteria encompass key ESG indicators and are refined to align with global ESG disclosure standards and external requirements. ESG data is reviewed and updated on a regular basis to ensure an effective response to external assessments and disclosure demands, and it is utilized by the Board of Directors and key decision-making bodies for strategic decision-making.

ESG Disclosure Channels

HD Hyundai Energy Solutions maintains ESG disclosure channels to promote communication with stakeholders. Through the Sustainability Report and the HD Hyundai ESG website, stakeholders can access core ESG performance data such as GHG emissions, energy consumption, and industrial accident rates, as well as information on ESG policies and related activities, including human rights, safety and health, and ethical management. Through these efforts, HD Hyundai Energy Solutions provides transparent channels for stakeholders to access ESG information, thereby reinforcing a foundation of trust with external stakeholders.

Publication of the Sustainability Report

To comprehensively communicate its ESG management performance and enhance communication with stakeholders, HD Hyundai Energy Solutions publishes a Sustainability Report annually. Focusing on key ESG issues, the Sustainability Report covers management strategies, implementation activities, and performance across the environmental, social, and governance areas. It is prepared in accordance with domestic and international ESG disclosure standards. By disclosing our sustainability performance with transparency and integrity, we will remain committed to enhancing the transparency and reliability of ESG information and supporting long-term corporate value creation.

Double Materiality Assessment

Double Materiality Assessment Process

Review of Global Indicators

HD Hyundai Energy Solutions has analyzed key indicators from major ESG ratings and evaluation organizations such as DJSI, MSCI, and KCGS, as well as international disclosure standards including ESRS and GRI, and used them in the materiality assessment. Based on this review, ESG-related data points were extracted, and then overlapping and similar items were consolidated to identify a set of 239 key ESG keywords. In line with a comprehensive analysis of industry characteristics, main product lines, and the value chain, we have created a long-list pool of ESG issues suitable for HD Hyundai Energy Solutions.

Internal and External Environment Analysis

As a basis for the double materiality assessment, HD Hyundai Energy Solutions has conducted a comprehensive analysis of both internal and external environments. Internally, we reviewed our corporate vision and strategy, business structure, key product offerings, and supply chain status. For the external environment, we examined ESG policy trends, industry-specific issues, and evolving domestic and international regulatory landscapes. This analysis helped establish a clearer understanding of the environmental and social issues that we face and served as an informational basis for the materiality assessment.

Collection of Internal and External Stakeholder Opinions

At HD Hyundai Energy Solutions, we conducted surveys to collect opinions from internal and external stakeholders. Stakeholders assessed the impact type, scope, duration, and likelihood of each shortlisted issue generated from global indicator analysis and internal and external environment assessments. Based on these assessments, the importance of each issue was measured.

Impact and Financial Materiality Assessment

To evaluate the impact materiality of each issue, HD Hyundai Energy Solutions sets scale, scope, and irremediability as our primary metrics. The scale of impact was reviewed based on the global disclosure and assessment requirements, while scope was measured through an analysis of stakeholders across the value chain. Irremediability was measured based on the potential severity of regulatory penalties associated with legal violations. Financial materiality was analyzed based on stakeholder survey results that reflect the global disclosure and assessment requirements. We also assessed the degree of issue-specific investor engagement with reference to the ESG issue lists published by global institutional investors, such as BlackRock and UBS.

Double Materiality Assessment Outcome

Final Results

HD Hyundai Energy Solutions comprehensively reviewed stakeholder survey results, global indicator analysis, and internal and external environment analysis to identify the final material issues. Out of a total of 15 issues, the top seven issues were selected as material issues for 2025. Climate action, environmental impact reduction technology, and supply chain management continued to be identified as key issues for HD Hyundai Energy Solutions, as in the previous year. In addition, quality management and human resource management were newly selected as material issues.

Double Materiality Assessment Results

Rank	Issue	Scope of Impact	Impact Materiality	Financial Materiality	YOY change	GRI	Reported page
1	Environmental Impact Reduction Technology	Customers, employees, investors, suppliers, local community	22.66	25.35	▲ 1	Non-GRI	p.18-21
2	Quality Management	Employees, customers, suppliers	6.87	16.01	▲ 5	416	p.45-46
3	Climate Action	Local community, suppliers, investors, government	9.13	8.82	▼ 2	302, 305	p.15-17
4	Supply Chain Management	Suppliers, employees, investors, customers, government	6.10	10.62	▲ 1	308, 414	p.41-44
5	Human Resource Management	Employees, suppliers, local community	4.39	10.01	NEW	2-7, 2-8, 401, 404	p.34-37
6	Shareholder Protection	Investors, government	8.02	5.60	NEW	201	p.58
7	Social Contribution	Local community, customers	9.12	3.18	NEW	413	p.49-52

Stakeholder Engagement

Category	Related Issues	Other Interests	Key Communication Channels	Response Activities	2025 Highlights
Customers 	· Climate Action · Environmental Impact Reduction Technology · Quality Management · Business Ethics	· Strengthening product and technology competitiveness · Development of eco-friendly and high value-added products · Enhancement of product quality and stability · Improvement of communication satisfaction	· Customer Technical Support Center · Trade fairs, exhibitions, and forums · Customer satisfaction surveys · Customer service center	· Product training and technical consulting · Participated in trade fairs, exhibitions, and technology forums, etc. · Enhanced customer satisfaction management through employee quality training · Pursued eco-friendly product certifications	· Participated in major exhibitions, including the International Green Energy Expo
Shareholders & Investors 	· Climate Action · Quality Management · Board of Directors · Risk Management	· Enhancing shareholder value · Creating stable business performance · Managing business opportunities and risks · Transparent corporate governance	· General Shareholders' Meeting · Corporate briefings · Public disclosures and website postings	· Disclosed board resolutions and other major information · Announced quarterly earnings and provided IR materials · Introduced shareholder rights protection systems (e.g., e-voting) · Conducted IR activities for analysts and institutional investors	· IR Presentation/NDR (4 times) · Provided guidance on the exercise of minority shareholder rights (1 time)
Suppliers 	· Environmental Management · Quality Management · Supply Chain Management	· Promoting shared growth · Strengthening fair trade practices · Supporting supplier capability development · Managing supplier safety and health and human rights	· Supplier meetings and supplier council · Consultation channel for suppliers on unfair trade practices · On-site meetings with suppliers	· Operated HiPRO (integrated procurement system) · Provided financial, educational, and technical support to suppliers · Invited top-performing dealers to solar exhibitions and held meetings with them · Evaluated supplier safety management activities	· Internal suppliers: Conducted process and work improvement meetings and quality council meetings
Local Community 	· Environmental Management · Human Rights · Supply Chain Management · Ethics and Compliance	· Maintaining local industries and increasing employment in local communities · Protecting and improving the local environment · Social contribution activities centered on local communities · Communication with local communities	· Local government council · Meetings with local community organizations · Meetings with local volunteer groups	· Organized employee-participatory social contribution programs (e.g., volunteer activities) · Operated local talent development programs · Supported investments for local community development · Operated support programs for vulnerable groups	· Operated consultation channels for social contribution in cooperation with local administrative offices · Formed and operated a chemical safety community with local businesses · Maintained communication channels with the resident council and issued chemical safety notices to residents
Employees 	· Safety and Health · Human Resource Management · Ethics and Compliance	· Fair evaluation and compensation · Enhancement of employee benefits and support for employee capability development · Activation of labor-management communication · Safe workplace operations	· Labor-management council · Whistleblowing system for ethics and human rights · Intranet and newsletters · Business briefings and dialogue with executives	· Held quarterly labor-management council meetings · Promoted communication activities, including meetings with the CEO · Introduced various employee benefit programs (e.g., family-friendly programs) · Personalized training programs tailored to job roles and interests	· Held labor-management council meetings · Implemented an executive meeting observation program (monthly) · Operated a Corporate Culture Improvement TF
Government 	· Climate Action · Environmental Management · Safety and Health · Ethics and Compliance	· Participation in and support for government policies · Revitalization of the local economy · Safety- and labor-related issues · Sharing industry and corporate information	· Cooperative network with relevant organizations · Visits to the National Assembly and government ministries · Policy advisory bodies · Policy meetings	· Enhanced external communication · Introduced and operated compliance guidelines for economic sanctions laws · Diversified the business portfolio in response to regulations · Participated in seminars and forums hosted by major economic organizations	· Participated in projects organized by the Ministry of Climate, Energy and Environment · Attended industry seminars on solar industry policy issues · Submitted industrial opinions for the establishment of the K-GX implementation strategy
Media 	· Climate Action · Environmental Management · Safety and Health · Ethics and Compliance	· Business performance and industry issues · Key company-wide issues · Strategic direction of the Company's major business areas	· Media interview · Press releases · Website Media Center · Media meetings	· Responded to media interviews · Provided timely press releases · Posted news on the website · Supported media coverage for journalists	· Published press releases on the website

Environmental

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Climate Action System

Roles of the Board of Directors

To advance sustainable management alongside environmental protection, HD Hyundai Energy Solutions discusses key ESG issues and systematically reviews related agenda items through the ESG Committee under the Board of Directors. The ESG Committee proactively identifies environmental risks and opportunities, while conducting comprehensive reviews of ESG strategies and goals, as well as the direction and implementation plans of mid- to long-term roadmaps. The ESG Committee also deliberates and resolves matters related to the company-wide ESG strategy direction, implementation plans, progress, and the fulfillment of social responsibility, thereby helping enhance the effectiveness of ESG management. Lastly, the Committee continuously reviews support measures to strengthen and internalize ESG capabilities within the organization, striving to ensure that the company-wide sustainability management system operates stably.

Role of the CEO

The CEO of HD Hyundai Energy Solutions is responsible for establishing the company-wide strategic direction for climate action and managing overall GHG reduction strategies and environmental impact mitigation plans. The CEO also analyzes business opportunities stemming from climate change and incorporates them in mid- to long-term business plans, while preemptively identifying potential risks and formulating response strategies to minimize management risks. Climate action strategies and key performance are submitted as Board agenda items, and then discussed and coordinated during the decision-making process, thereby establishing systematic, company-wide climate action governance.

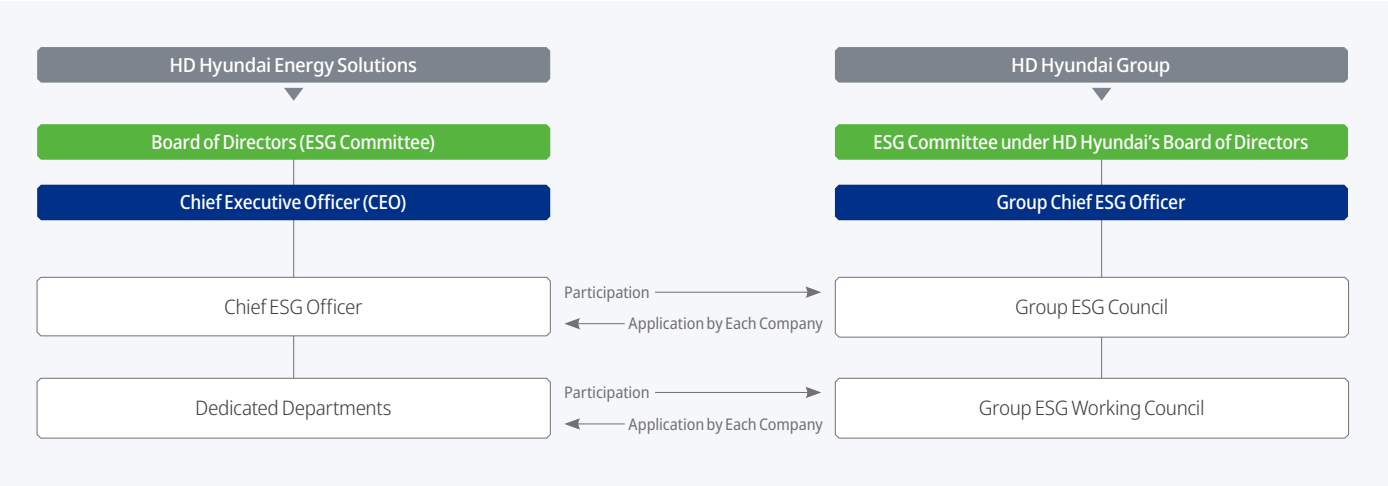
Roles of Dedicated Departments

The dedicated climate action department at HD Hyundai Energy Solutions is responsible for identifying and executing the tasks for elevating the organization’s capabilities to implement climate change responses. This department continuously monitors domestic and international laws and regulations, policy changes, and industry trends related to climate change, as well as reviews management measures and implementation directions to respond to these, reflecting them in our business operations.

Climate Action KPIs

To strengthen climate action capabilities, HD Hyundai Energy Solutions establishes company-wide KPIs on an annual basis and systematically monitors their progress. The CEO, relevant executives, and dedicated departments are evaluated based on these climate action KPIs, which are also reflected in compensation calculations, thereby promoting responsible management practices. GHG emissions reduction targets are incorporated into the KPIs for both the CEO and relevant executives. Based on these KPIs, heads of teams in the dedicated departments define detailed objectives aligned with the roles and responsibilities of their respective teams and are evaluated accordingly.

Climate Action System



Climate Action KPIs*

Year	Description
2026	Reduction of energy consumption intensity by 5%
2025	Reduction of GHG emissions by 7%
2024	Reduction of GHG emissions by 1%

* Each annual target represents the reduction rate compared to the previous year.

Climate Action

Strategy

Climate Action Strategy

GHG Emissions Management Strategy (Scope 1 and 2)

In order to reduce GHG emissions, HD Hyundai Energy Solutions quantifies its emissions and energy consumption in accordance with relevant laws and guidelines, prepares emissions quantification plans and emission reports, and undergoes third-party verification before transparent disclosure. We also fulfill our legal obligations by submitting relevant data to the Ministry of Environment through the National GHG Management System (NGMS). GHG emissions from not only production facilities but also the headquarters and research centers are monitored on a monthly basis and managed systematically across the Company.

In 2025, HD Hyundai Energy Solutions recorded 3,122 tCO₂eq of Scope 1 emissions and 26,433 tCO₂eq of Scope 2 emissions, for a total of 29,555 tCO₂eq of GHG emissions.

Adoption of Renewable Energy

As part of our efforts to reduce GHG emissions during business operations and to increase the use of renewable energy, HD Hyundai Energy Solutions installed rooftop solar power systems at the Eumseong Module Plant 3 in 2024. By utilizing unused roof space on the plant, we were able to generate electricity cost-effectively without requiring additional land. The generated power is consumed directly at the business site, thereby reducing energy losses that may occur during transmission and distribution and improving energy efficiency. The facility, covering approximately 4,700m² with a total capacity of 426.24 kW, commenced full-scale operation in December 2024.

By utilizing the electricity generated from these facilities for on-site consumption, the Company reduced its reliance on externally supplied electricity from the Korea Electric Power Corporation (KEPCO), thereby reducing greenhouse gas emissions.

In addition, in 2025, HD Hyundai Energy Solutions invested in repowering an existing solar power plant within the Eumseong Plant Solar Demonstration Complex, increasing its generation capacity to 1,117 kW.

As a result, HD Hyundai Energy Solutions now operates solar power generation facilities with capacities of 426 kW and 1,117 kW. Through the operation of these facilities, the Company achieved a total reduction of 649.546 tCO₂eq in greenhouse gas emissions.



Solar Power System of Eumseong Module Plant 3

Climate Risk Management

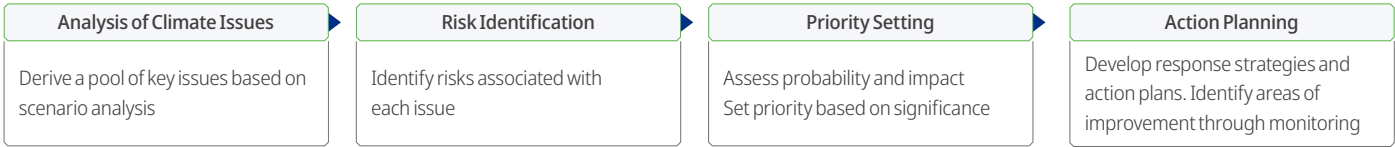
Risk Identification and Assessment

HD Hyundai Energy Solutions manages climate-related risks and opportunities by categorizing them into short-term (within 5 years), mid-term (5 to 10 years), and long-term (beyond 10 years), and analyzes the impact of each factor on the Company’s finances and business operations. In the short term, we recognize the strengthening of the government’s GHG emissions regulations and the expansion of climate-related disclosure obligations as major risk factors. In the long term, we consider increased investment burdens from the transition to eco-friendly technologies, limited ability to attract investment due to inadequate responses to climate change, and reputational risks as potential risk factors. On the other hand, we recognize business opportunities arising from growing demand for renewable energy and advances in ultra-high efficiency solar cell technology.

Risk Management

HD Hyundai Energy Solutions assesses the likelihood and potential financial impacts of identified climate-related risks and establishes and implements response strategies accordingly. The climate change and risk management functions jointly oversee key climate-related risks, identify improvement initiatives for material issues, and monitor the progress of their implementation. The Company also continuously monitors its production sites and key environmental data to minimize operational risks.

Risk Identification Process



Physical and Transition Risks

Category			Description
Physical	Acute	Natural disasters (e.g., typhoons, floods)	· Damage to facilities and power outages from natural disasters such as typhoons or heavy rain may reduce productivity
	Chronic	Rising average temperatures	· Higher average temperatures may affect worker safety and lower productivity
Transition	Policy	Enhanced regulations on GHG emissions	· Costs may increase due to lower free allocation for emission allowances and more paid ones · More proof of eco-friendliness, such as origin and carbon certifications, may be required
	Technology	Competition for commercialization of next-generation technologies	· Accelerating competition in the commercialization of new technologies may lead to falling behind global competitors and weaken position in overseas market
	Market	Market oversupply	· Lower demand from reduced government subsidies may lead to price drops · Despite expected market growth due to RE100 and carbon reduction targets, large capital input in equipment and oversupply from global competitors may cause inventory risks
	Reputation	Investment risks due to failure to achieve carbon neutrality	· Shareholder activism and divestment, such as investment restrictions and shareholder letters, may occur

Climate Action

GHG Emissions Management

Current Status of Scope 1 and 2 GHG Emissions

At HD Hyundai Energy Solutions, we systematically calculate our GHG emissions in accordance with the IPCC Guidelines and domestic GHG emissions calculation guidelines. Emissions are measured and monitored on a monthly basis, and any significant variations are reported to the CEO for swift management. The collected data is verified annually by an independent third-party verification agency to ensure the integrity of inventory operation and the data’s reliability. Then, we transparently disclose the verified GHG emissions data through the sustainability report, business reports, and the ENV-INFO System.

Actions and Plans for Scope 1 and 2 GHG Emissions Reduction

To reduce GHG emissions and achieve zero environmental incidents, HD Hyundai Energy Solutions conducts regular inspections and implements various emissions reduction initiatives. These include phasing out CO₂ welding equipment, optimizing gas supply pressure, installing LED lighting, and minimizing the operation of air compressors to improve energy efficiency and reduce unnecessary emissions. We are also introducing advanced technologies in our production process to effectively reduce GHG emissions. For instance, we replaced the conventional primary scrubbers with plasma-type equipment to significantly reduce emissions of nitrous oxide (N₂O) emissions, which fall under the main GHG emissions. Furthermore, we are replacing equipment to reduce Scope 2 emissions, which also contributes to continuous improvement of power efficiency.

Energy Management

Business Site Energy Efficiency Improvement and Reduction

HD Hyundai Energy Solutions transitioned our existing 500 MW solar module production lines to high-output module production lines for 625-700 MW modules. This transition was implemented to reduce power consumption in the process while enhancing products’ power generation efficiency through the introduction of high-productivity facilities.

The newly produced modules employ TOPCon technology and large-area cells, enabling an increase of over 5% in power generation compared to conventional modules of the same area, which is expected to improve renewable energy generation efficiency and contribute to GHG emissions reduction. Additionally, the product offers high durability and uses an eco-friendly design that eliminates lead (Pb), making it suitable for use in floating, marine, and agricultural environments without concerns for pollution.

Progress Toward GHG Emissions Reduction Targets							
(Unit: tCO ₂ eq)							
Category	2023	2024 Target	2024 Emissions	Achievement Rate	2025 Target	2025 Emissions	Achievement Rate
GHG Emissions	41,779	22,000	19,982	110.1%	35,000	29,555	118.4%

* Includes the KPI target to reduce GHG emissions intensity by 7%.

Progress Toward Energy Consumption Reduction Targets							
(Unit: TJ)							
Category	2023	2024 Target	2024 Consumption	Achievement Rate	2025 Target	2025 Consumption	Achievement Rate
Energy Consumption	780	450	401	112.2%	680	578	117.6%

Green Products

Strategy

Technology Development Framework

R&D Organizations

At HD Hyundai Energy Solutions, we conduct our R&D initiatives under the leadership of the PV R&D Center to improve our competitiveness in solar technology. The center comprises four teams: PV Cell Development, PV Module Development, Reliability Development, and Inverter Technical, each working to enhance product technology with their respective expertise. They focus on market-driven innovation in solar cells and modules, including enhancing efficiency and output, improving product reliability and power generation efficiency, while developing module application technology and inverter products to address diverse installation environments and meet demand. Such R&D activities serve as the foundation for enhanced product competitiveness that meets market demands and for expanding our business.

PV R&D Center Framework



PV R&D Center

The PV R&D Center is dedicated to improving the efficiency and output of solar cells, modules, and systems and to developing core technology to strengthen product reliability. Since 2024, the center has conducted joint research on the development of perovskite top-cell materials using a dry vacuum-deposition process and is pursuing high-efficiency, next-generation solar cell technology. To develop tandem structure technology based on N-type silicon solar cells, we are expanding technical exchanges and collaborations with leading domestic perovskite research institutions, including the Korea Research Institute of Chemical Technology (KRICT) and Korea Electric Power Corporation (KEPCO), and are continuously pursuing research and development to secure competitiveness in high-efficiency and next-generation solar technologies.

Technology Development Strategy

Investment Process

To minimize environmental impacts during the facility investment phase, HD Hyundai Energy Solutions operates an investment decision-making system that incorporates eco-friendly factors. In the investment planning stage, plans are established after considering mid- to long-term business strategies, as well as energy efficiency, GHG reduction, and the transition to eco-friendly processes. Subsequently, during the preliminary review stage, we analyze the financial feasibility of introducing facilities and their environmental impact from multiple perspectives. Then, in the investment deliberation and preparation step, we outline detailed environmental risks and their management. Potential contaminants, resource usage, safety, and environmental risks that may occur during equipment operation are identified in advance, and we establish design and operational standards to minimize them. In addition, we comprehensively verify the investment feasibility and environmental impact through internal reviews. During the follow-up management stage after investment implementation, we continuously monitor energy consumption and emissions using actual operational data after facility introduction and compare performance against the initial plan.

Resource Circulation Process



Green Products

Technology Development Strategy

PERC Solar Cells

At HD Hyundai Energy Solutions, we continue to develop high-efficiency solar cell technologies to further enhance its product competitiveness. Since becoming the first manufacturer in Korea to mass-produce high-efficiency PERC solar cells in 2014, we have enhanced the output of P-type cells by applying a rear PERC structure.

In 2019, we introduced a bifacial solar cell structure, enabling bifacial solar modules and improving their power generation efficiency, thereby achieving actual improvements in power output. Since late 2022, we have commercialized large-area M6 and M10 solar cells to deliver even higher-efficiency products, continuing to expand our high-output-centered product portfolio.

Solar Modules

In order to minimize environmental impact during the production process, HD Hyundai Energy Solutions is improving high-efficiency processes and developing eco-friendly products. In the module manufacturing process, we are increasing energy efficiency by introducing new high-productivity equipment and conducting ongoing research to improve module output. In addition, by thinning the silicon wafers, we have reduced raw material use and the resulting carbon emissions. Furthermore, we have minimized environmental impact in our module products by eliminating the use of lead (Pb) from floating solar module products, and obtained KS certification in recognition of their durability and eco-friendliness. As of the end of 2025, we hold 166 carbon emissions verification certificates for solar module products from the Ministry of Climate, Energy and Environment, objectively demonstrating environmental performance throughout the entire product life cycle.

BIPV Modules

At HD Hyundai Energy Solutions, we strive to create a distributed energy system with Building Integrated Photovoltaics (BIPV) solutions that combine building materials with PV modules, enabling both on-site power generation and consumption. BIPV systems integrate PV modules into exterior wall, roofing, and window materials, enabling high-efficiency power generation without additional installation space and providing an eco-friendly solution suitable for urban environments. They use low-iron glass to minimize transmission loss while achieving performance comparable to standard modules. In particular, Color BIPV Modules make various colors available, delivering both aesthetic and functional excellence. In 2021, the modules were installed on the research building at the Eumseong plant to complete demonstration projects, and we are striving to commercialize exterior wall-mounted modules by enhancing this technology. In addition, we have continually expanded our application modules for different purposes, including floating, agrivoltaic, soundproof wall/tunnel, and vehicle types.

N-Type Solar Cells

At HD Hyundai Energy Solutions, we are developing N-type solar cells, which offer higher efficiency and durability than conventional P-type cells, to further enhance our competitiveness in the next-generation products. The N-type wafer-based cell technologies using thin-film technologies include TOPCon structure, in which an oxide layer is created between the metal and silicon to reduce electrode losses, and HJT structure, in which amorphous thin films are coated on crystalline silicon to minimize recombination losses. We have established a TOPCon cell mass production line to manufacture high-efficiency domestically produced N-type solar cells, and based on this, we have launched low-carbon solar modules with less than 630 kgCO₂/kW. Both technologies provide over 2%p higher power generation efficiency than existing P-type cells. HJT solar cells, in particular, are regarded as the next industry-leading core technology thanks to their high compatibility with next-generation tandem cells that aim to achieve more than 30% efficiency.



Agrivoltaic System



Soundproof Wall/Tunnel-integrated Photovoltaic System



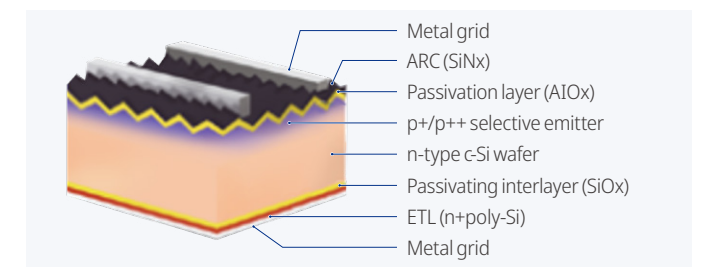
Floating Photovoltaic System



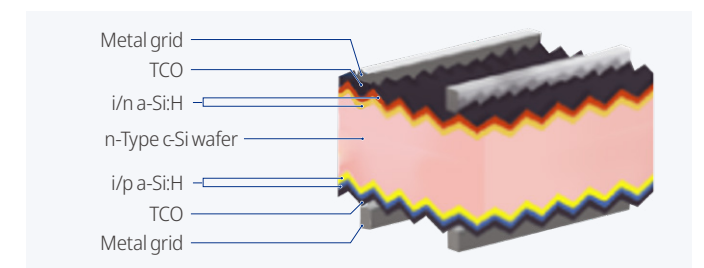
Vehicle-integrated Photovoltaic System



Building-integrated Photovoltaic System (Eumseong Plant)



TOPCon (Tunnel Oxide Passivated Contact)



HJT (Heterojunction Technology)

Green Products

Activities

Eco-friendly Technology Leadership Activities

Participation in Green Energy Expo

In April 2026, HD Hyundai Energy Solutions showcased its latest solar technologies and solutions at the International Green Energy Expo and unveiled Grade 1 carbon-certified ultra-low-carbon modules for commercial use (650 W) and residential use (500 W). Featuring the entire cell and module production process carried out solely in Korea, the product reduces carbon emissions to below 630 kg CO₂/kW, contributing to Korea's Nationally Determined Contributions (NDCs).

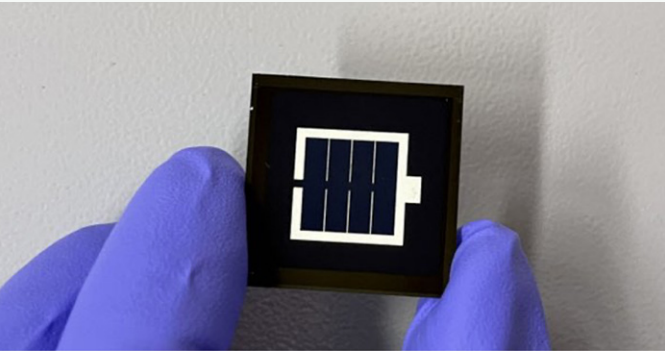
Additionally, we presented the roadmap for next-generation solar products by unveiling a tandem mini module (HJT silicon and perovskite hybrid) applying large-area tandem technology based on a dry process, a multi-cut module that minimizes power loss through an ultra-fine process (1/4 cut), and a high-output 760 W module based on G12 wafers. We are accelerating the development of next-generation tandem solar cells in collaboration with leading domestic and international organizations specializing in perovskite technologies. Along with promoting the localization of inverters and introducing 150-500 kW-class inverters, we plan to lead eco-friendly technology investments, firmly built on our supply chain competitiveness and domestic production facilities.



HD Hyundai Energy Solutions Booth

Securing a Foundation for Commercializing Next-generation Solar Cells through Industry-Research Collaboration

HD Hyundai Energy Solutions has developed core technology for next-generation silicon-perovskite tandem solar cells through joint research with the Korea Research Institute of Chemical Technology (KRICT), achieving world-class efficiency. The joint research team applied dry vacuum-deposition technology used in OLED mass production processes to solar cell manufacturing, enabling the production of high-quality perovskite thin films suitable for large-area production. This was combined with HD Hyundai Energy Solutions' HJT (heterojunction) solar cell technology. As a result, we achieved a world-leading photoelectric conversion efficiency of 28.7% in dry vacuum deposition-based tandem solar cells. This is expected to overcome the limitations of large-area processing and process reproducibility in existing solution processes, thereby increasing the likelihood of commercializing next-generation solar cells. HD Hyundai Energy Solutions and the Korea Research Institute of Chemical Technology plan to lead the next-generation solar market by achieving over 30% certified efficiency in the future and developing large-area and modularization technologies.



Tandem Solar Cell

Expansion of Solar Projects on Idle Sites

With companies accelerating their RE100 commitments and aiming to boost global competitiveness, renewable energy systems for self-consumption are gaining traction. Rooftop solar power is emerging as a practical alternative in this trend. In response to the growing demand for these self-consumption systems, we plan to expand solar installations on idle spaces such as rooftops and support corporate energy transition and carbon reduction activities.

Green Products

Eco-friendly Product Production

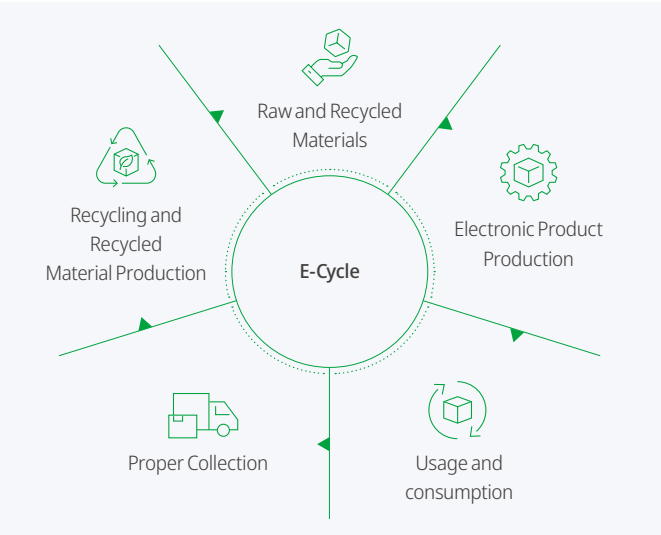
Green Procurement Policy

In 2022, to minimize environmental impacts across its business activities, HD Hyundai Energy Solutions established its own Green Procurement Policy, which serves as the basis for procurement activities. This policy applies not only to raw materials used in manufacturing processes, but also to all items that can be replaced with eco-friendly alternatives, such as office supplies, consumables, and household goods.

Recycling of Retired Solar Modules

Following the implementation of the Eco-Assurance System (EcoAS) in January 2023, HD Hyundai Energy Solutions complies with the collection and recycling obligations imposed on manufacturers, importers, and sellers of solar modules. To this end, we proactively joined E-Cycle Governance to ensure a responsible system for the collection and recycling of retired modules.

Resource Circulation System



Resource Circulation Process

At HD Hyundai Energy Solutions, we design component connections to facilitate easy disassembly of modules and aim to incorporate more recyclable materials to improve recyclability. Scrap, byproducts, and other waste generated during the process are collected and processed by specialized recycling service providers. When shipping products, we prioritize the use of recyclable packaging materials and follow eco-friendly packaging standards by minimizing the use of unnecessary packaging.

Environmental Efficiency in Manufacturing Processes

HD Hyundai Energy Solutions has successfully upgraded its solar module Plant 3 from conventional 500W lines to the latest 625–700W high-output production lines, simultaneously boosting production efficiency and environmental performance. The new facilities were designed for high productivity, reducing electricity use in the production process and thereby reducing around 2,700 tons of GHG emissions on an annual basis. In addition, we are optimizing energy use by simultaneously implementing equipment efficiency measures, such as preventive maintenance of cell plant manufacturing equipment, improvement of PCW piping, and replacement of ceiling lighting in the logistics warehouse with LEDs. Through these improvements, we have achieved annual cost savings of over KRW 200 million in operating expenses.

Investments in Eco-friendly Facilities

HD Hyundai Energy Solutions has undertaken a repowering project for its in-house solar power plants to achieve the group’s 2030 RE30 target and reduce Scope 2 GHG emissions. We plan to replace the low-output modules (less than 200 W) of existing solar facilities whose long-term contracts (RPS) have expired with high-output 640 W modules, thereby approximately doubling the generation capacity, with an aim to increase the share of renewable energy use and create cost savings in power purchases.

Expanding self-generated renewable energy to compensate for the decreased free allocation of GHG emission allowances is expected to help reduce the cost burden of purchasing emission allowances.

Environmental Management

Governance

Environmental Management System

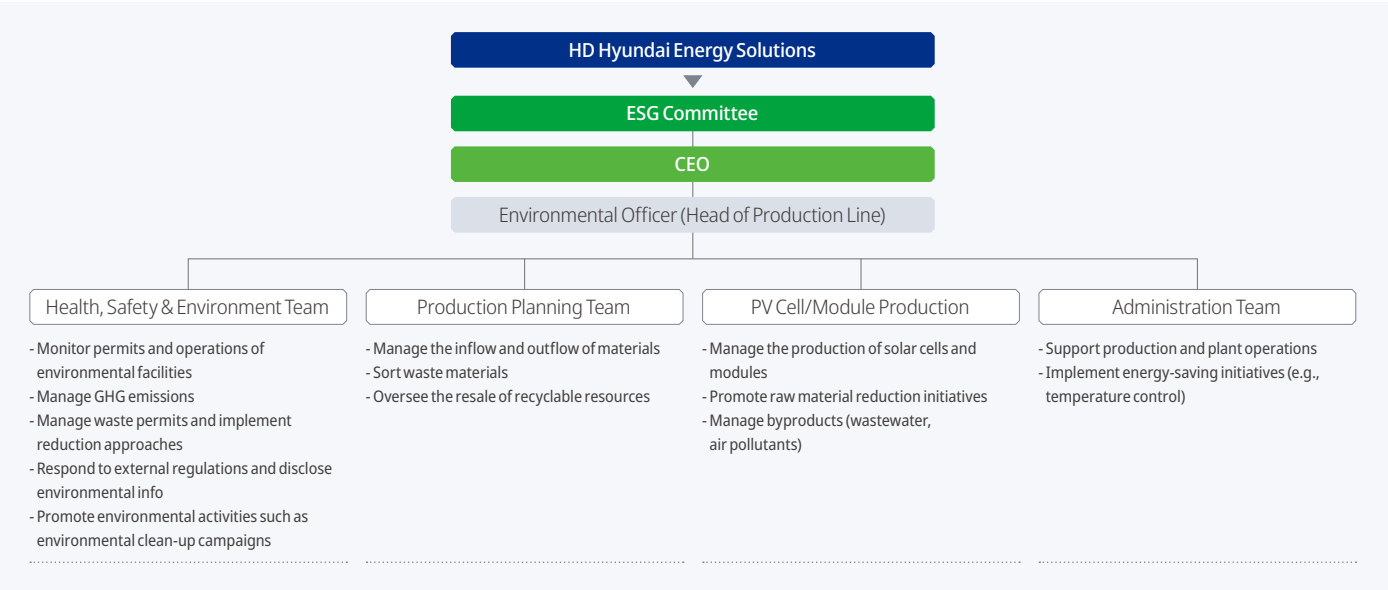
Roles of the Board of Directors

To advance sustainable management alongside environmental protection, HD Hyundai Energy Solutions engages in key agenda discussions through the ESG Committee under the Board of Directors. The ESG Committee plays a central role in systematically identifying environmental risks and opportunities, developing response strategies and objectives, and reviewing the direction and key elements of medium- to long-term roadmaps.

Roles of Executive Management

The CEO and the Environmental Officer at HD Hyundai Energy Solutions receive regular reports on environmental management initiatives and monitor major activities. They review the entire process, including action plans, implementation steps, post-implementation performance monitoring for environmental management, and make strategic decisions based on their reviews.

Environmental Management System



Strategy

Environmental Management Strategy

Environmental Declaration

In order to minimize the environmental impacts of our business operations and implement coordinated environmental management practices, HD Hyundai Energy Solutions has established clear policies and objectives related to safety, health, and the environment. Based on these activities, we take proactive action in managing environmental risks and strengthen company-wide execution capabilities. To further strengthen our commitment, we are expanding our external cooperative bases, for example, by exploring participation in global environmental initiatives, and are participating in diverse activities to enhance environmental protection and sustainability.

Financing

HD Hyundai Energy Solutions was selected for the “Carbon-Neutral Transition Leading Project” loan-support program administered by the Korea Industrial Complex Corporation in 2024. Through this selection, the company secured financing and is advancing investments in eco-friendly, high-productivity equipment. As part of this initiative, we upgraded our existing low-output 480-500W solar module production lines into 625-700W N-type TOPCon-based high-output module production lines while investing in new production lines utilizing large-area solar cells. We were able to reduce electricity consumption and GHG emissions in the production process through facility upgrades. Also, the high-efficiency modules that were produced have improved power-generation capacity compared to existing products based on the same number of installed modules, contributing to reduced GHG emissions domestically.

Environmental Training

To promote its capabilities to execute environmental management, HD Hyundai Energy Solutions provides systematic environmental training programs for all employees. The program includes in-depth training in hazardous materials safety and in environmental and hazardous materials management, thereby enhancing employees’ capabilities in relevant legal compliance and on-site actions.

Environmental Training Performance

Category	Completion Rate
Hazardous Chemicals Safety Training	100 %
Statutory Training for Environmental and Hazardous Chemicals Managers	100 %

Environmental Management

Risk Management

Environmental Risk Management

Establishment of Environmental Management System

HD Hyundai Energy Solutions has obtained ISO14001 certification for its environmental management system. Our head office and production sites certified under this international standard regularly monitor environmental performance and analyze the data to assess the operational effectiveness of the system.

Environmental Management System Certifications

Standard	Agency	Validity
ISO14001	kiwa	Apr. 20, 2026 - Apr. 19, 2029

* Renewed in Mar. 2026

Response to Environmental Laws

Category	Response Status
Clean Air Conservation Act	We manage air pollutant emissions using internal standards that surpass the legal requirements. Regular maintenance and upgrades of pollution control equipment help improve efficiency to handle sources of air pollution, while emissions are closely monitored through in-house inspections on a periodic basis.
Act on the Promotion of Transition to a Circular Economy and Society	In alignment with the Act on that the establishment and operation of the national circular economy information system, we set annual goals for circular use ratio through circular economy performance management. To this end, we have expanded the use of circular raw materials and strived to achieve circular use by recycling all generated wastes.
Water Environment Conservation Act	We operate under wastewater management standards that exceed legal requirements. Performance testing has been conducted to identify the optimal wastewater treatment chemicals that help comply with the defined discharge levels and improve treatment efficiency. We also carry out regular inspections on wastewater discharge facilities and implement improvements to water pollution control facilities.
Wastes Control Act	We have established waste management guidelines to ensure a lawful and responsible framework throughout the generation and disposal of waste. In addition, we monitor and manage relevant data using the Ministry of Environment's "Allbaro System."
Act on the Integrated Control of Pollutant-discharging Facilities	As a designated business subject to the integrated environmental permit (IEP) system, we obtained our first IEP for semiconductor manufacturing in 2024. To ensure integrated management of pollutant-discharging facilities, we prepare monthly inspection logs and submit the saved data to the Ministry of Environment as part of our post management process.
Act on the Allocation and Trading of Greenhouse Gas Emissions Permits	As a designated business subject to the Ministry of Environment's Emissions Trading System, we quantify our GHG emissions annually and receive independent third-party verification for the collected data to be disclosed in public. In addition, we set emissions reduction targets and implement various initiatives to lower our carbon footprint.

Response to Environmental Laws

HD Hyundai Energy Solutions maintains a comprehensive list of environmental laws relevant to our operations and ensures strict compliance with their requirements. Our internal compliance managers regularly monitor enactments and amendments of applicable laws and share revisions and required response actions with the relevant departments. In coordination with these departments, we also take proactive measures to minimize legal risks. As a result, there have not been any violations or penalties in the past three years, including 2025.

Activities Environmental Impact Reduction Activities

Chemical Safety Community Initiatives

HD Hyundai Energy Solutions organized Chemical Safety Community activities with nearby SMEs to prevent chemical accidents and improve the management of hazardous chemical facilities. In 2025, the community was selected as the top-performing company in the Chemical Safety Community in Gangwon-Chungcheong region, gaining recognition for its environmental safety training against chemical accidents. The Chungju and Seosan Fire Station Disaster Prevention Center Environmental Teams also participated in this training, sharing methods for operating analysis vehicles and detection equipment, as well as accident response strategies. By checking the real-time information system, they strengthened their ability to quickly disseminate relevant information in the early stages of an accident. We also continuously strengthen our safety cooperation system with the community by holding regular information exchange meetings and chemical safety campaigns.



Installation of IoT Monitoring Devices for Air Pollution Control Facilities

In response to amendments to the Enforcement Decree of the Clean Air Conservation Act, we installed IoT monitoring devices to manage operations of our air pollution control facilities in real-time. As a Class 4 business site with annual air pollutant emissions of less than 10 tons, we have installed IoT monitoring devices that operate 24 hours a day, collecting electric current, hydrogen ion concentration (pH), pressure, and temperature for four control facilities at our Eumseong Plant. The collected data is automatically transmitted to the Korea Environment Corporation's Green Link system for real-time monitoring. With this device, we constantly monitor the operation of air pollution control facilities and strengthen operational transparency, while also consistently improving the reduction of air pollutants and compliance with environmental regulations.



Environmental Management

Risk Management

Water Consumption Management

At HD Hyundai Energy Solutions, the HSE Team is responsible for monitoring daily water consumption throughout the production process. Water resources used in operations are categorized into incoming water supply (withdrawal), wastewater generated (water consumed in the process), and external discharge (effluents) and managed accordingly. These are recorded in a wastewater operation journal after confirming relevant standards.

To prevent pollution of the Hanbeolcheon stream, the final discharge point within the Han River basin, we utilize a TMS to manage pollutant concentrations in real time. Water used in the production process is also tracked by category, such as DI and PCW, and shared with the Utility Management and Production Departments. By managing water in this way, we are improving the water consumption efficiency and implementing activities to reduce wastewater.

Water Withdrawal

Category	Unit	2023	2024	2025
Total Water Withdrawal	m ³	516,561	206,866	316,465
Third-party Water Supply (e.g., municipal water, industrial water)	m ³	516,561	206,866	316,465
Total Water Withdrawal Intensity	m ³ /KRW million	0.99 [*]	0.51 [*]	0.65

^{*} Due to changes in data management units, the total water withdrawal intensity values for 2023 and 2024 have been corrected.

Water Recycling and Reuse

To support water recycling, HD Hyundai Energy Solutions is committed to improving its process technologies. For example, concentrated water from the EDI process, a byproduct from the ultrapure water production in cell manufacturing, is redirected to Process Cooling Water (PCW) storage tanks and reused as cooling water. It is also used as absorption liquid in POU scrubbers, thereby enhancing the water usage efficiency across the process and increasing the recycling ratio.

Water Resource Risk Management

In line with the World Resources Institute (WRI) guidelines, HD Hyundai Energy Solutions establishes a water risk management strategy based on water stress levels in the regions where its sites are located. According to the analysis, the water resource risk of the Eumseong-gun, Chungcheongbuk-do site was assessed as a Medium High level of quantitative physical risk, while the transition risk was assessed as relatively low. Based on these results, we are developing targeted strategies to manage water usage efficiency and risks.

[WRI \(Water Risk Atlas\)](#)

Water Resource Risk Exposure

Category	Exposure
Physical Risk (Quantitative)	Medium High (2~3)
Physical Risk (Qualitative)	Low Medium (1~2)
Transition Risk (Regulation and Reputation)	Low (0)

▶ Activities Investment to Improve Wastewater Treatment Facility Efficiency

Improvement of Wastewater Treatment Facility

We at HD Hyundai Energy Solutions are continuously inspecting and improving wastewater treatment facilities to maintain and enhance the efficiency of wastewater processing. In 2025, we improved the wastewater treatment facilities to respond to the increase in wastewater generation due to TOPCon investment at the cell plant. The filter press cloth was improved to reduce sludge moisture content and enhance dehydrating efficiency. Additionally, the capacity of the reaction tank and chemical storage tank was expanded to strengthen processing stability.

To improve the efficiency of the chemical treatment process, we enhanced the reaction tank and coagulation tank, and carried out repairs on the interior walls of the reaction tank. At the same time, we replaced the entire outdated chemical supply pipes to secure supply stability and enhance the wastewater treatment efficiency.

Repair of the effluent flow meter at the wastewater treatment facility outlet

HD Hyundai Energy Solutions also continuously performs maintenance on related facilities to ensure the stable operation of wastewater treatment facilities and compliance with environmental regulations. In 2025, we repaired and replaced some parts of the flowmeter converter at the wastewater treatment facility's discharge outlet, and calibrated it to improve the accuracy of discharge measurements. We took special action to replace the flow meter converter (conversion controller) to meet the Ministry of Environment's management standards and ensure smooth data transmission of the TMS (Tele-Monitoring System) to the Korea Environment Corporation, thereby strengthening the reliability and operational stability of effluent water management. This also contributes to the efficient management of wastewater treatment processes and the prevention of environmental risks by ensuring the accuracy of measurement data.

Environmental Management

Risk Management

Water Pollutant Management

At HD Hyundai Energy Solutions, we monitor pollutant discharge concentrations in real time through TMS to ensure that harmful substances or micropollutants are not discharged above regulatory limits. We also operate a wastewater treatment facility with a daily capacity of 1,800 tons to reliably treat wastewater and sewage generated by production processes and business sites. To further improve water quality, we remain committed to making various efforts, including optimizing biological treatment processes using hydrogen peroxide removal agents and nitrifying microbial agents to reduce nitrogen concentrations in discharged water.

Water Pollutant Discharge Performance

Category	Unit	2023	2024	2025
TOC Discharge	kg	505	116	531
TOC Discharge Intensity	kg/ KRW billion	0.9	0.3	1.1
BOD Discharge	kg	82	40	692
BOD Discharge Intensity	kg/ KRW billion	0.1	0.1	1.4
SS Discharge	kg	367	83	310
SS Discharge Intensity	kg/ KRW billion	0.7	0.2	0.6
T-N Discharge	kg	1,895	239	868
T-N Discharge Intensity	kg/ KRW billion	3.5	0.6	1.8

* The scope of data calculation is limited to the Eumseong Plant.

Air Pollutant Management

HD Hyundai Energy Solutions establishes and implements enhanced internal standards, stricter than legal requirements, to minimize air pollutant emissions and reduce environmental impact. During new investment in our cell production line, we eliminated NOx emissions at the production stage by excluding any processes using HNO₃, a major source of NOx emissions. To promote stable and proper operations of pollution control facilities, we also install IoT monitoring devices for each facility to send real-time data directly to the authorities, thereby enhancing our air pollutant emissions management system.

Air Pollutant Emissions Performance

Category	Unit	2023	2024	2025
NOx Emissions	kg	1,146	682	2,208
NOx Emissions Intensity	kg/ KRW billion	2.1	1.6	4.5
SOx Emissions	kg	60	46	3,209
SOx Emissions Intensity	kg/ KRW billion	0.1	0.1	6.5
Dust Emissions	kg	2,075	280	4,101
Dust Emissions Intensity	kg/ KRW billion	3.8	0.7	8.3

* The scope of data calculation is limited to the Eumseong Plant.

Waste Management

HD Hyundai Energy Solutions meticulously manages various types of waste generated during production such as waste synthetic resin, paint, sludge, wood, and glass. Each type of waste is then separated and discharged at designated collection areas where registered waste treatment service providers collect them for proper waste treatment, in compliance with relevant regulations. Since 2021, we have switched from incineration to recycling for general waste from the business site through a recycling service provider, thereby increasing our recycling rate and reducing waste disposal costs. As a result, we achieved a 99.3% waste recycling rate in 2025.

Waste Disposal Performance

(Unit: t)

	Category	2023	2024	2025
General Waste	Landfill	-	-	-
	Incineration	-	-	-
	Recycling	4,979	2,724	3,223
	Total	4,979	2,724	3,223
Designated Waste	Landfill	-	-	-
	Incineration	21	5	41
	Recycling	2,282	619	2,727
	Total	2,303	624	2,768
Total Waste	Landfill	-	-	-
	Incineration	21	5	41
	Recycling	7,261	3,343	5,950
	Total Discharge	7,281	3,348	5,991

* The scope of data calculation is limited to the Eumseong Plant.

Chemical Management

The Eumseong Plant of HD Hyundai Energy Solutions handles various types of chemicals and manages potential environmental and safety risks. From the purchase and receipt stages of chemical products, the hazards of substances are identified in advance to determine whether to allow their receipt, and our integrated control center monitors chemical sensors and safety valves in real time to prevent environmental accidents at the source. To ensure the safety of our local community, we share our accident prevention and management plans related to chemical use with local residents in advance and have established an emergency contact system to ensure prompt response in the event of an emergency.

Environmental Management

Metrics & Targets

Water Target Management

In order to minimize the environmental impacts of our business operations and implement coordinated environmental management practices, HD Hyundai Energy Solutions has established systematic management of water consumption. Rather than simple monitoring, our focus is on establishing an annual water consumption target and conducting regular reviews of its achievement rates against the target to ensure advanced management.

Water Withdrawal Target

Category	Unit	2024 Target	2024 Performance	2025 Target	2025 Performance	2026 Target
Withdrawal	t	250,000	206,866	450,000	316,465	600,000

Key Initiatives to Reduce Water Consumption

Promoting Water Reuse Activities

- Improved processes and invested in technology and equipment to facilitate water reuse

- Implemented continuous improvements to processes. (e.g., recycling concentrate water using EDI as cooling water in production processes and utilizing it as a liquid absorbent in POU scrubbers)

Investment in High-efficiency Production Lines

- Promoted the introduction of high-efficiency equipment designed to reduce water consumption per unit of production when installing new equipment, including TOPCon cell production lines

Waste Target Management

HD Hyundai Energy Solutions has established goals for waste disposal and recycling, and annually evaluates its performance to promote waste discharge reduction activities based on these assessments.

Waste Discharge and Recycling Target

Category	Unit	2024 Target	2024 Performance	2025 Target	2025 Performance	2026 Target
Waste Discharge	t	5,000	3,348	7,000	5,991	8,000
Recycling Rate	%	95.0	99.9	95.2	99.3	95.5

Key Initiatives to Achieve Waste Discharge and Recycling Rate Targets

Used Paper Towel Recycling Campaign

- Promoted the recycling of used hand towels that were previously treated as general waste

- Achieved an annual reduction of approximately 365 kgCO₂eq in carbon emissions and improved the recycling rate

Investment in Waste Collection Facilities

- Demolished the existing outdoor waste storage area and relocated and rebuilt it as an indoor waste collection facility in compliance with storage standards under the Waste Control Act, thereby improving waste management efficiency and recycling rate

Biodiversity

Governance

Biodiversity Conservation System

Roles of the Board of Directors

Our Board of Directors is responsible for approving response strategies and goals, including the establishment of biodiversity policies, and then determining the company-wide direction for implementation. The board also regularly reviews the key risks and opportunities associated with biodiversity conservation, overseeing reports about achievements and key issues of related activities to ensure effective governance.

Roles of Executive Management

Following the board’s directives, the executive management operates an implementation system that formulates biodiversity protection objectives and integrates them within business operations. We systematically manage biodiversity conservation activities by assessing the environmental impact of the area where the business site is located and establishing and implementing protection measures and restoration activities to reduce those impacts.

Roles of Dedicated Departments

Our dedicated departments are responsible for on-site implementation, which requires constant monitoring and review of legal requirements and global biodiversity guidelines. They also assess their on-site applicability and implementation status and provide hands-on coordination. In addition, they set and coordinate specific action plans such as assessing environmental impact and monitoring protected species, reporting periodically to management to facilitate systematic management and improvements.

Strategy

Biodiversity Conservation Strategy

Biodiversity Policy

In line with the global biodiversity agreements and guidelines, including the Convention on Biological Diversity (CBD), HD Hyundai Energy Solutions is committed to minimizing the impact of our operations on ecosystems and fulfilling our responsibilities toward ecosystem restoration. In local areas, we also strictly comply with all legal requirements governing biodiversity enhancement, as well as habitat conservation and natural resource use.

Identifying Nationally Protected Species

In the areas of Eumseong-gun in Chungcheongbuk-do, where its business sites are located, and Seongnam-si in Gyeonggi-do, our headquarters is located, a total of 17 nationally protected species—such as otters, leopard cats, and Siberian flying squirrels—have been identified. To minimize negative impacts on the ecosystem near our work sites, we implement biodiversity conservation initiatives in coordination with local communities. We also have monitoring systems in place to track changes and assess potential impacts, as well as a management system that can take immediate action should any environmental issues arise.

Nationally Protected Species

Nationally Protected Species in Seongnam-si		
Category	Class 1	Class 2
Mammals		Leopard cat, Siberian flying squirrel
Birds	Scaly-sided merganser	Oriental honey-buzzard, Eurasian sparrowhawk, Eurasian hobby, owl, long-billed plover
Amphibians and reptiles		Narrow-mouthed toad
Terrestrial plants		Prickly waterlily

Nationally Protected Species in Eumseong-gun		
Category	Class 1	Class 2
Mammals	Otter	Leopard cat
Birds	Scaly-sided merganser, white-tailed sea eagle	Cinereous vulture, Chinese sparrow hawk, Eurasian sparrow hawk, Eurasian hobby, northern goshawk, long-billed plover
Amphibians, reptiles, and birds	Suwon treefrog	Argynnis nerippe

(Source: Statistical Data Book of Endangered Wildlife by National Institute of Ecology)

Biodiversity

Risk Management

Activities Biodiversity Conservation Activities

UN Biodiversity Youth Forum Sponsorship

In an effort to raise awareness of biodiversity conservation and environmental awareness among future generations, HD Hyundai Energy Solutions sponsored the “UN Biodiversity Youth Forum,” hosted by “Eco Now,” a non-profit civil organization. We donated KRW 10 million to the forum jointly hosted by the United Nations Environment Programme (UNEP) and the International Union for Conservation of Nature (IUCN) to encourage youth and future generations to forge consensus on biodiversity loss caused by the climate crisis and to search for practical actions from the perspective of future generations.

Participants, including vulnerable youth, took part in programs such as expert ecological exploration, creating bio-blitz exploration notes, observing endangered species, and making posters for biodiversity conservation action plans at the Baekdudaegan National Arboretum and the National Youth Future Environment Center. In these programs, they learned the importance of ecological preservation from environmental experts on biodiversity and civic science and discussed ways to resolve environmental issues from the perspective of future generations.



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Safety and Health

Governance

Safety and Health Framework

Roles of the Board of Directors

To foster a corporate culture of safety and health and prevent industrial accidents, HD Hyundai Energy Solutions establishes objectives and strategies for safety and health and continuously reviews its progress. When investments are required to ensure a safe working environment for our employees, such decisions are made through board resolutions in accordance with the regulations. Furthermore, the Occupational Safety and Health Committee is operated with labor and management representatives to discuss key safety and health matters in work sites and manage potential risks. Through this organized planning, we are strengthening the safety and health management system across the company, striving to ensure a safe workplace environment.

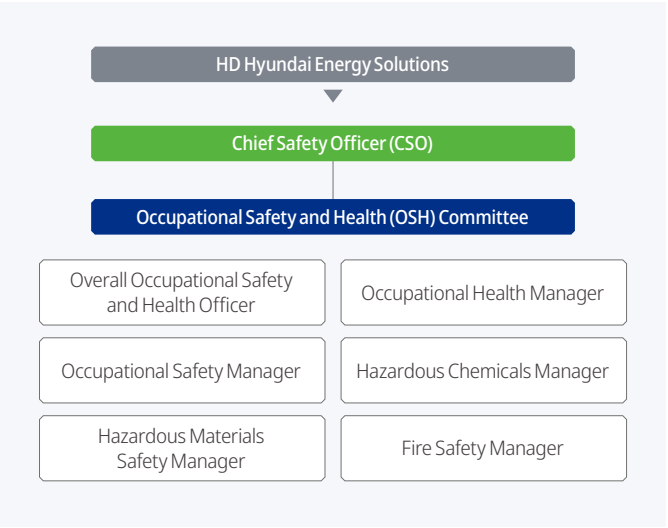
Roles of Chief Safety Officer

The Chief Safety Officer (CSO) is responsible for overseeing and managing all aspects of the safety and health management, including establishing the companywide safety and health policies and frameworks, managing the proper operation of the safety and health management system, and planning and implementing workplace safety programs. The CSO also monitors major hazards identified through risk assessments and conducts on-site safety inspections, providing instructions for remedial actions for those with a high likelihood of occurrence, thereby elevating the level of safety across work sites.

Roles of Dedicated Departments

The HSE Team, the dedicated safety and health department, is responsible for formulating and implementing safety, health, and environmental policies and objectives at work sites. Each work site develops annual safety and health plans based on risk assessments while incorporating relevant domestic and international legal requirements and accident trends into work manuals on a regular basis. Through on-site routine inspections and real-time monitoring, the team tracks compliance with safety standards, and will halt work to take preemptive action in response to any abnormal signs that may occur in an effort to prevent industrial accidents and create a safe working environments.

Safety and Health Governance



OSH Committee

HD Hyundai Energy Solutions’ OSH Committee, composed of representatives from both labor and management, convenes quarterly meetings to jointly inspect workplace hazards and discuss improvement measures. Resolutions and decisions made during the meetings are shared with all employees through communication channels such as internal bulletin boards to ensure full awareness across the organization. Matters deliberated, resolved, and mediated by the OSH Committee are shared with all employees through internal bulletins so that all our staff members can have a thorough understanding of the relevant information. In addition to implementing regular and ad hoc risk assessments, HD Hyundai Energy Solutions conducts internal audits that assess compliance with internal safety and health audit standards at least once a year to support ongoing reviews and improvements of the safety and health management system.

Key Agenda of OSH Committee Meetings in 2025

No.	Agenda
1	Strengthen pedestrian safety management at Module Plant 3
2	Strengthen preventative measures for accidents at the areas where forklifts operate
3	Repair the damaged concrete pavement
4	Pre-inspections to prevent natural disasters during heavy rain seasons
5	Prevent forklift collisions; install safety lasers



Forklift Safety Laser

Safety and Health Meeting

To promote a workplace safety and health culture and achieve safety management aimed at “ZERO Serious Accidents,” we at HD Hyundai Energy Solutions conduct on-site communication activities, such as safety and health meetings. The CEO has also led a safety campaign, emphasizing that safety is the top priority in all management activities.



Safety Campaign

Safety and Health

Strategy

Safety and Health Strategy

Safety and Health Policy

We have established a safety, health, and environmental policy to foster a safe working environment, and continuously implement various improvement initiatives based on this policy. This policy applies not only to all employees of the company, but also to those of its suppliers. HD Hyundai Energy Solutions also recommends that its business partners engaged in its business activities comply with it. Based on this policy, we are promoting a culture that prioritizes safety and health across all business sites, thus striving to create safer working conditions.

Safety and Health Training

To raise safety awareness among our employees, we organize ongoing safety training including regular mandatory training for supervisors, new employees, and employees with job changes.

In 2025, a total of 198 employees completed safety and health training, averaging 24 hours of training per person. To ensure safe handling of hazardous chemicals in each process, Material Safety Data Sheets (MSDS), covering key information such as substance properties, hazards, and emergency response procedures, are made readily available at work sites for employees to consult at any time.

Permit-to-Work System

HD Hyundai Energy Solutions operates a permit-to-work system to implement preventive measures for high-risk work. Before initiating hazardous work such as hot work, confined space work, and working at heights, safety inspections and approvals from the relevant departments are required to identify and thoroughly manage workplace hazards thoroughly. Furthermore, a permit to work can be granted once all required checklists—risk assessment, personal protective equipment, and safety devices—are confirmed. Compliance with safety rules is also constantly monitored during work to reinforce on-site safety management.

Supplier Safety and Health Evaluation

To enhance suppliers' safety management standards, HD Hyundai Energy Solutions conducts supplier safety and health assessments. We conduct comprehensive reviews on suppliers' safety management framework, worksite hazard management, and regulatory compliance, and continuously monitor implementation progress. By doing so, we are creating a safe workplace environment with our suppliers while strengthening their safety and health management system for the prevention of industrial accidents.

안전 · 보건 · 환경 방침

안전 · 보건 · 환경 관리 체계를 구축하고 전 직원이 안전하고 쾌적한 환경에서 근무할 수 있도록 다음 사항들을 지속적으로 수행하고 발전시켜 나갈 것을 전 임직원 및 모든 이해관계자에게 밝힌다.

- ◎ 근로자의 생명 보호
 - 법규 및 안전기준 준수 철저
 - 관리감독자 중심 안전관리 추진
- ◎ 안전한 작업환경 조성
 - 지속적인 작업환경 개선 전개
 - 예방중심의 보건관리체계 운영 추진
- ◎ 친환경 지향 기업문화 정착
 - 온실가스 관리를 통한 저탄소 배출
 - 환경오염 예방 및 개선 활동 강화

박종환

대표이사 박종환

현대에너지솔루션주식회사

Safety, Health, and Environment Policy

Safety and Health Training

Category	2023	2024	2025
No. of participants	203	173	198
Training hours	4,872 hours	4,152 hours	4,752 hours
Training hours per person	24 hours	24 hours	24 hours



Safety and Health Training



Supplier Safety and Health Assessment

Safety and Health

Strategy

Safety and Health Risk Management

Third-party Certification of Safety and Health Management System

HD Hyundai Energy Solutions has established a safety and health management system, which helps set action plans, identify potential hazards, and develop improvement measures, and this system is aimed at preventing industrial accidents and enhancing performance of our operations. We obtained third-party certification for our system based on ISO 45001, the international standard for occupational safety and health management systems. Our efforts to qualify for certification have enabled us to identify workplace hazards and establish a risk management process with a focus on prevention, thereby allowing us to operate an organized safety and health management framework.

Safety and Health Management System Certification

Standard	Agency	Validity
ISO45001:2018	kiwa	Mar.20,2026-Mar.22,2029*

* Renewed in Mar. 2026

Safety and Health Management Guidelines

To ensure safety across all our work sites, HD Hyundai Energy Solutions maintains safety and health guidelines that serve as overarching standards, along with detailed guidelines that incorporate characteristics of each production line. These guidelines are developed in accordance with relevant legal requirements, workplace-specific safety standards, and specific workplace attributes, covering procedures for hazardous work, protective equipment requirements, and emergency response protocols. In addition, we are continuously enhancing the practical applicability of the guidelines through regular revisions and training for field personnel. When new processes are introduced or should accidents occur, we promptly review the relevant content and reflect it in the guidelines, thereby continuously strengthening safety management at our work sites.

Compliance with Safety and Health Laws

In addition to the establishment of a safety and health management system, HD Hyundai Energy Solutions ensures full compliance with all relevant regulations, thereby minimizing legal risks within work sites and ensuring safety at workplaces.

In particular, we have set internal rules and procedures in accordance with safety and health laws such as the Serious Accidents Punishment Act and the Occupational Safety and Health Act. We regularly monitor and review any amendments to the laws and regulations, promptly incorporating them into our system. In addition, employee training and internal audits are conducted to prevent potential legal violations. We also fully cooperate with regard to inspections and guidance from authorities, thus continuously reinforcing our safety and health management standards at our work sites.

Risk Assessment

In accordance with Article 44 of the Occupational Safety and Health Act on Process Safety Reports, and as a workplace with hazardous and dangerous facilities, HD Hyundai Energy Solutions prepares a process-safety report following the OHS Committee’s review. We also operate the Process Safety Management (PSM) system for the prevention of serious industrial accidents, and as part of this system, all departments annually develop and implement standardized work procedures and hazard and risk assessment reports.

Internal Audits and Inspections for Safety and Health Management

HD Hyundai Energy Solutions conducts internal audits at least once a year in accordance with internal audit regulations and performs on-site inspections on a monthly basis to proactively identify and manage potential safety risks. While managing firefighting and fire detection facilities as key management targets across the company, we also conduct regular safety inspections, including the implementation of

hazard prevention plans and safety inspections of pressure vessels, gas facilities, elevators, and chemical supply tanks.

We conduct tailored inspections at our production sites that take manufacturing characteristics into account. In the cell plant, inspections focus on equipment handling hazardous materials and substances, as well as the use of protective equipment, while we check the safety of powered equipment, such as conveyers and forklifts. We also conduct regular inspections of our utility facilities and office areas to reinforce prevention of occupational accidents across our work sites.

Emergency Response and Disaster Preparedness

In response to various types of emergencies and disasters, HD Hyundai Energy Solutions has developed emergency response manuals and conducts regular education and training based on them. We have also implemented a response framework to minimize damage and ensure employee safety during natural disasters such as typhoons and earthquakes. In the event of an emergency or safety incident at the company level, we work closely with local fire stations to conduct regular fire drills and promptly respond to actual fires, protecting people and their property and continuously reinforcing our emergency response capabilities.

Healthcare Programs

In an effort to prevent diseases and promote health of its employees, HD Hyundai Energy Solutions provides all employees and their family members with general and specialized health check-ups every year. Long-serving employees and their families are also provided with comprehensive health check-ups. As part of our efforts for preventing infectious diseases, we also provide influenza vaccinations to all employees, fostering a healthy workplace.

Activities **Safety and Health Enhancement Activities in 2025**

Strengthening Health Management for the Prevention of Heat Stroke

In response to the ever-increasing summer temperatures and the growing risk of our employees suffering heat-related illnesses, HD Hyundai Energy Solutions has introduced new high-efficiency turbo chillers to take preemptive action and improve the workplace environment.

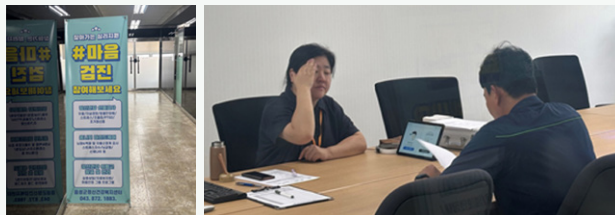
This allowed us to maintain optimal temperature and humidity at our work sites and enhance our health management standards by reducing employee fatigue and improving work concentration.



Turbo chiller

Activities **Prevention of Illnesses caused by Job Stress**

To manage job stress and promote mental well-being of its employees, HD Hyundai Energy Solutions operates various mental check-up programs. These programs provide a systematic assessment of mental pressures and stress levels resulting from everyday tasks. Furthermore, we offer personalized support programs tailored to the diagnosis to enhance our employees’ mental well-being and work engagement, thereby contributing to the establishment of a healthy organizational culture.



Safety and Health

Risk Management

Safety and Health Support for Suppliers

Safety and Health Support for Suppliers

HD Hyundai Energy Solutions is committed to communicating with its suppliers to enhance their awareness of safety and health standards through various approaches, including sharing its direction on relevant policies and strategies, reviewing key issues, and discussing ways to resolve on-site difficulties and improvement measures. Special lectures are organized to raise safety awareness among their representatives, while training programs are offered to strengthen the competency of safety managers so that their safety management systems can be effectively implemented on-site.

Risk Assessment Support for Suppliers

To enhance suppliers’ safety management capabilities, HD Hyundai Energy Solutions supports them in conducting risk assessments. We encourage them to identify hazards in major work activities in advance and assess the identified risks based on likelihood and severity. When necessary, safety professionals offer technical and on-site consultations to help our suppliers establish safety and health management systems. In addition to setting action plans for improvements based on assessment results, we monitor compliance with safety rules, including the use of protective equipment and compliance with work procedures, to continuously reinforce our suppliers’ capabilities to practice on-site safety management.

Supplier Safety Diagnosis and Management Support

While respecting the autonomous management of its suppliers, HD Hyundai Energy Solutions encourages them to comply with its safety and health policies and consider their safety and health management as a key evaluation criterion in the supplier selection process.

We also conduct regular assessments of our suppliers’ safety and health management to systematically manage relevant risks, through which we identify potential risk factors and carry out necessary improvement measures. By doing so, we are creating a safe workplace environment with our suppliers while elevating the safety and health management standards across our supply chain.

Metrics & Targets

Safety and Health Indicators and Objectives

Safety Management Target for 2025

As part of its efforts to prevent workplace accidents, HD Hyundai Energy Solutions has established internal safety and health objectives and systematically manages their progress. We set these objectives through comprehensive analysis of key internal management indicators, such as risk assessments, safety level analyses, and accident records.

2025 Safety and Health Performance

Action Plan	Objective
· Comply with applicable laws · Ensure that regulations are observed and supervisors fulfill their safety responsibilities · Thorough inspection of on-site organizational operation and improvement of hazard identification · Reinforce collection of workers’ opinions on safety and health management	· Protecting workers’ lives · Fostering a safe working environment

2026 Safety and Health Objectives

Scheduled Action Plan	Objective
· Enhance response capabilities for incidents in confined spaces · Mobile healthcare program: distribute smartwatches · AI safety poster contest · Process Safety Management (PSM) specialized training	· Reduce industrial incidents by 50% YoY · Promote participatory safety culture activities

Human Resource

Governance

Human Resource Management Framework

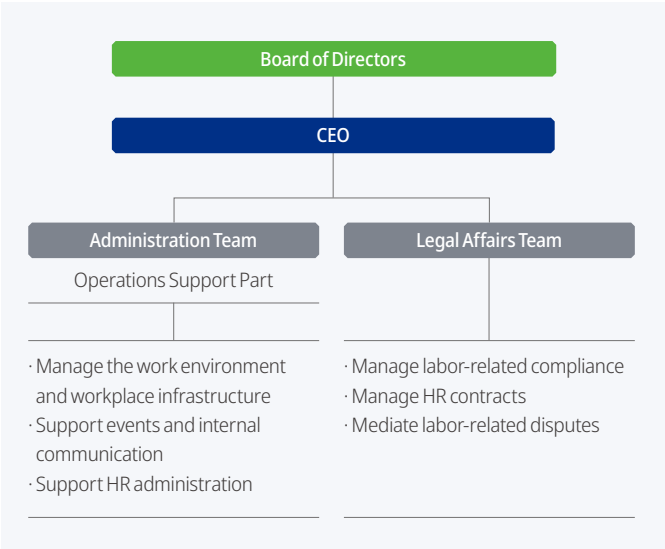
Management Organization

HD Hyundai Energy Solutions has established a systematic talent management system that covers the full scope of human resource management, including recruitment, capability building, performance assessment, compensation and benefits, organizational culture enhancement, and retirement support. In line with our vision of our company “Steering innovation and defying our limits,” we are committed to attracting, developing, and retaining top talent. By doing so, we are strengthening our competitiveness and drive sustainable growth.

Labor Union

We at HD Hyundai Energy Solutions respect our employees’ rights to organize and bargain collectively, and guarantee legitimate labor union activities in accordance with applicable laws.

HR Management Organization



Strategy

Capability Enhancement

Corporate Value Integration Training

To ensure all employees actively contribute to the realization of our corporate values, HD Hyundai Energy Solutions provides training programs designed to embed core values into their work. The internalization training consists of programs that help new recruits understand the group’s value system, including its mission, vision, and core values. Existing employees are provided with in-depth training sessions that delve into the group’s core values. These efforts foster a shared sense of our corporate direction and help them gain further insight into our organizational culture.

Online Learning Platform “Hi-Class”

To make training more accessible for its employees, HD Hyundai Energy Solutions operates Hi-Class. Employees can also access the online training platform to take job-related training and language learning at their convenience.

Leadership Development

HD Hyundai Energy Solutions cultivates next-generation leaders who can drive innovation and respond flexibly to a rapidly changing business environment with its leadership development programs at the group level, including the HLC (HD Hyundai Leader Course). The leadership program, provided to high-potential employees selected as next-generation leaders, offers a variety of work-related training with action learning programs, covering the core challenges in each business area, and is designed to nurture their problem-solving capabilities and leadership at the same time.

Production Capability and Facilities

Programs	Target	Description
Core Value Competency	New employees, transferred employees, etc.	· Understand the background and importance of corporate missions, visions, and core values · Share the significance, practical examples, and direction of each core value
HLC Training	High-potential talent from senior staff to executive level	· Provide leadership training program tailored by position and role, from senior talent to manager and executive levels · Provide foundational knowledge in business management, technology management, and leadership to nurture future leaders
Leadership Multifaceted Debriefing	Executives	· Enhance self-awareness through interpretation of multifaceted nature of leadership · Explore strategies to strengthen individual leadership capabilities
Training for Newly Appointed Managers	Newly appointed department heads, manager-level leaders, etc.	· Develop leadership skills such as goal setting, performance management, coaching, and feedback · Foster understanding of company-wide systems
Technical Skill Building	All production and technical staff	· Provide foundational competency training
Expertise Transfer	All production and technical staff	· Offer training in core production technologies

Human Resource

Strategy

Capability Enhancement

Job Competency Development Training

HD Hyundai Energy Solutions has established a systematic training system and learning infrastructure to develop talent who will drive the company's future growth. From the time of onboarding, everyone at HD Hyundai Energy Solutions is mandated to complete personalized training programs based on their job title, role, and position. For the selected personnel, in particular, are provided with various training programs, such as next-generation leader development, fostering convergence talent, developing job experts, and cultivating global talent. To support the digital transformation (DT) of our workplace, we also offer company-wide DT awareness training in two key areas, "Culture Building" and "Talent Development," supporting our employees' effective adaptation to digital changes.

Support for Pursuing Academic Degrees

As part of its commitments to enhancing employees' expertise in their field, HD Hyundai Energy Solutions offers support for pursuing master's and doctoral degrees. The program focuses on work-related majors and supports employees with scholarships, training costs, and other necessary expenses. We also provide flexible work arrangements to ensure a balance between their academic and professional responsibilities, while supporting other training costs.

Language Learning and Expatriate Training

At HD Hyundai Energy Solutions, we provide language (English) training programs to promote employees' practical job capabilities. With a focus on communication skills, specifically speaking and listening, we have expanded English test options from TOEIC Speaking to include OPIc and cover application fees to encourage continued self-development.

Evaluation and Compensation

Performance Evaluation System

In support for a fair and transparent evaluation system, HD Hyundai Energy Solutions uses HR evaluation as the foundation and system for compensation, promotion, talent development, and management of underperformers. Individual goals are set by using the management by objectives (MBO) system and key performance indicators (KPIs), and the evaluation grades are determined based on the achievement of these goals. The results of the evaluation serve as the foundation of various talent frameworks, supporting employee capability development and helping to embed a performance-driven culture throughout the organization.

MBO-based Team Evaluation

Based on the company's management strategies, visions, and mid- to long-term goals, HD Hyundai Energy Solutions designs sub-goals for employees to evaluate their performance. Executives define their individual KPIs based on the company KPIs, while team leaders establish their MBO targets in alignment with the KPIs of their direct senior managers and track them semi-annually. To ensure acceptance of the evaluation results, we promote a culture that values regular communication and feedback between evaluators and employees throughout the process.

Evaluation Based on Job Priorities

Priority tasks are established in line with its mid- to long-term goals and used as the foundation for performance assessments. Individual objectives are set through communication between managers and employees, taking into account each employee's role and performance. To ensure fairness, HD Hyundai Energy Solutions has coordination sessions and an appeal process, and provides comprehensive feedback after each evaluation cycle, promoting both individual and organizational growth.

Evaluation Review and Feedback

To ensure the fairness and validity of the performance evaluation process, HD Hyundai Energy Solutions has implemented a feedback process that allows employees to openly discuss goal alignment, the objectivity of performance indicators, and the completeness of task execution. The performance evaluation, conducted twice a year, consists of first-round, second-round, and calibration evaluations. Employees are also given the opportunity to raise objections to their evaluations freely and can request additional feedback at any time.

Ensuring Fairness and Acceptance

To increase transparency and trust in our HR evaluation system, we at HD Hyundai Energy Solutions disclose the results of first-round, second-round, and calibration evaluations and gather employee feedback. Employees are encouraged to freely provide input not only on the outcomes but also on the procedures and metrics. We also set performance goals and indicators for individual titles and roles, and then transparently share the outcomes of evaluation, thus improving acceptance of the results.

Level-specific Performance Evaluation System

Target	Method
Executives	Evaluation with MBO evaluation and multi-rater leadership assessment
Department Heads and Team Leaders	Evaluation with MBO evaluation and multi-rater leadership assessment
Non-position holders, including manager-level employees	Work-based performance evaluation
Certified Professionals	Self-evaluation, multifaceted evaluation, evaluation by department head
Research and Administrative Staff	Performance and competency evaluation
Production Staff	Comprehensive evaluation covering performance, capability, and attitude

Performance-based Pay System

At HD Hyundai Energy Solutions, we differentiate pay based on the principle that "rewards follow performance." We apply performance-based variation to both base and merit pay within the annual salary structure, and incentive bonuses are determined based on individual performance and contribution levels.

Reward Program

Each year, HD Hyundai Energy Solutions recognizes outstanding individuals and teams through our performance reward program. We select award recipients through an additional screening and provide individual rewards. In addition, employees at the Eumseong plant receive incentives for achieving 100 days at each cell and module plant, encouraging them to achieve the zero-accident target.

Retirement Pension Plan

To support employees in preparing for a stable post-retirement life, HD Hyundai Energy Solutions has a company-wide retirement pension plan in place. All retirement assets are managed through external reserves and are fully principal-protected, ensuring stable management of retirement funds. We also provide regular training sessions on the system to help our employees better understand it and take advantage of the full benefits.

Defined Benefit Plan in 2025		(Unit: KRW)
Category	Present Value Of Defined Benefit Obligations	
End of current year	7,716,885,000	
End of previous year	7,399,178,000	

Human Resource

Strategy

Employee Benefits

Flexible Work System

HD Hyundai Energy Solutions respects its employees’ work-life balance and provides a flexible work system to create an efficient working environment. Our employees can freely plan their monthly working schedules through the Hi-HR system and adjust their plans as needed, and they can have flexible working hours outside core working hours. Meanwhile, the PC-OFF system automatically shuts down computers at the end of working hours, and a half-day leave policy allows our employees to take leave in four-hour increments for improved focus on their jobs and quality of life.

Retirement Planning Training

To help its employees enjoy a healthy and stable life after retirement, HD Hyundai Energy Solutions provides the HD Hyundai Group retirement planning programs. These programs are available to those within two years of retirement, offering education on asset and health management, career exploration including re-employment and business start-up, and organized future planning. The training program is customized according to the demand of employees approaching retirement. We provide a variety of practical information, including self-assessments for designing a successful second stage of life; planning and implementation methods for different life areas; startup and career-creation preparation strategies; re-employment preparation methods; and information on farm and rural life.

Family-friendly Programs

HD Hyundai Energy Solutions has introduced various programs to support maternal protection and childcare. In addition to statutory maternity leave, we provide one month of special leave after childbirth and actively recommend work-from-home arrangements for pregnant employees. In addition, we provide KRW 5 million bonuses to celebrate our employees’ pregnancy and childbirth, while offering family-friendly policies, such as in-house (Group) childcare centers.

Job Stress Management

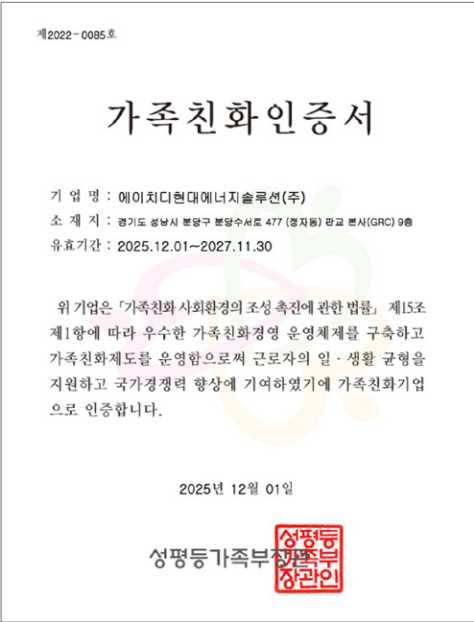
To address workplace stress and mental health issues, we have an in-house counseling center within the group. The group counseling center offers counseling services related to work stress as well as family and childcare issues for employees.

Fitness Center

Hi-GYM is our group fitness center, designed to promote employees’ health and create a healthy working environment. Personalized workout programs are available through equipment with advanced smart monitors, and on-site professional trainers support personal training (PT) and group exercise (GX) programs are always available. This helps employees manage their health more efficiently and experience improved focus and productivity at work.

Key Policies on Childbirth, Childcare, and Family Care

Category	Description
Work hours before and after childbirth	· Work at night and on holidays: Not for employees who are pregnant or gave birth less than a year ago · Overtime: Not allowed for pregnant workers, only allowed within the limits defined in the Labor Standards Act for employees who gave birth less than a year ago · Possible reduction of working hours during the early and late stages of pregnancy.
Medical check-up time for pregnant employees	· Provide time for weekly prenatal check-ups (up to once a week, four hours per check-up).
Maternity leave before and after childbirth	· Grant 90-day leave before and after childbirth (Extended to 100 days for premature births and 120 days for multiple births) · Grant an additional one month of special maternity leave upon completion of statutory maternity leave
Miscarriage/stillbirth leave	· Provide leave according to the number of pregnancy weeks (max. 90 days).
Parental leave and reduced working hours during childcare	· Applicable to employees with children aged 8 or younger or in 2nd grade or below in elementary school · Available upon request, with a guarantee for reduced working hours during childcare even if parental leave was used · Unused parental leave can be counted as double the unused duration and applied toward additional reduced working hours
Infertility treatment leave	· Grant up to 6 days per year (paid for the first three days) for infertility treatment such as artificial insemination or in vitro fertilization
Infertility treatment support	· Up to 5 days of remote work available for infertility treatments (per month)
Breastfeeding time guaranteed	· Provide 30 minutes of paid breastfeeding time twice a day for female employees with infants under one year old



Family-friendly Certification

Human Resource

Risk Management

HR Planning and Organizational Assessment

HR Supply and Operational Planning

To attract top talent in our key business areas, HD Hyundai Energy Solutions develops and implements mid- to long-term human resource plans. These plans include internal job transitions to strengthen workforce capabilities and active recruitment of experienced professionals with expertise in the solar energy sector. We also conduct in-depth analyses of workforce demand and supply by job category, accounting for economic conditions and market volatility. Based on this analysis, we conduct both internal transfers and external recruitment to fill the necessary talent gaps.

Employee Value Survey

To identify the strengths and weaknesses of our organizational culture, HD Hyundai Energy Solutions regularly conducts employee surveys. These biennial surveys focus on three key areas: employee engagement, alignment with corporate values, and change management (CM) initiatives. The results help us monitor satisfaction with the working environment, levels of job-related stress, and other productivity-related indicators.

Activities

Improving Organizational Culture

Impact-up Challenge

At HD Hyundai Energy Solutions, we have the “Impact-up Challenge,” a campaign that identifies and improves organizational pain points and work inefficiencies in each department has to enhance organizational culture and work efficiency. This initiative begins with an interview with a leader, then moves on to a small-group interview, identifying and implementing solutions, and disseminating the outcome. With this campaign, we aim to address inconveniences found in the organization and improve inefficiencies.

Activities

The CEO’s Treat! & Vacation Accommodation Benefits

HD Hyundai Energy Solutions carries out events to reinforce the employees’ sense of belonging and boost morale. “The CEO’s Treat,” an event that took place in the first half of 2025, gifted all our employees with KRW 20,000 in coupons each, which they could use freely.

As part of our efforts to support employee well-being, we offer 300,000 points through partnered accommodation platforms and access to affiliated hotels such as SEAMARQ Hotel.



Labor-Management Communication

Internal Communication

HD Hyundai Energy Solutions holds regular CEO town hall meetings with employees to foster an open and interactive organizational culture that encourages active communication. During these meetings, the CEO shares insights into our business operations with non-positional employees at various work sites, including Bundang and Eumseong, and has Q&A sessions that promote clear, honest communication. Our approach to communication has helped build trust across the organization and promoted a more flexible and innovative working environment.

Task Force for Improving Corporate Culture

To ensure continuous improvement of the organizational culture, we at HD Hyundai Energy Solutions host Monthly Council meetings consisting of TF members from each sector. Through these meetings, we were able to collect floor-level opinions, implementation of improvements, and feedback. We are considering to invite all our employees to participate in such improvement activities in the future.

Metrics & Targets

HR Management Indicators and Goals

HR Management KPIs

HD Hyundai Energy Solutions has set KPIs for each area to strengthen its company-wide HR management system and track progress consistently.

Employee Status

Category	Unit	2023	2024	2025
Regular employees	Person	201	197	217
Percentage of regular employees	%	85.5	89.5	91.2
Non-regular employees	Person	34	23	21
Percentage of non-regular employees	%	14.5	10.5	8.8
Total	Person	235	220	238

Diversity in the Workplace

Total number of employees	Percentage of female employees	Number of female position holders
238	15.6%	1

Employee Training

Category	Unit	2023	2024	2025
Total number of trained employees	Person	198	220	226
Total training hours	hours	2,475	3,289	2,877
Total training expenses	KRW million	101	50	100
Training expense per person	KRW million	0.421	0.222	0.412

Human Rights

Governance

Human Rights Management Framework

Human Rights Management Organization

At HD Hyundai Energy Solutions, the ESG Committee, operating under the oversight of the Board of Directors, plays a key role in human rights governance. Key human rights issues and risks are identified through cross-functional collaboration among relevant departments, including Finance (ESG), Administration, HSE, Purchasing, Sales Planning, and Legal Affairs. Issues that are identified to have potential or high risks are reported to both the Human Rights Management Committee and the ESG Committee. Based on these reports, the ESG Committee reviews and approves decisions related to human rights

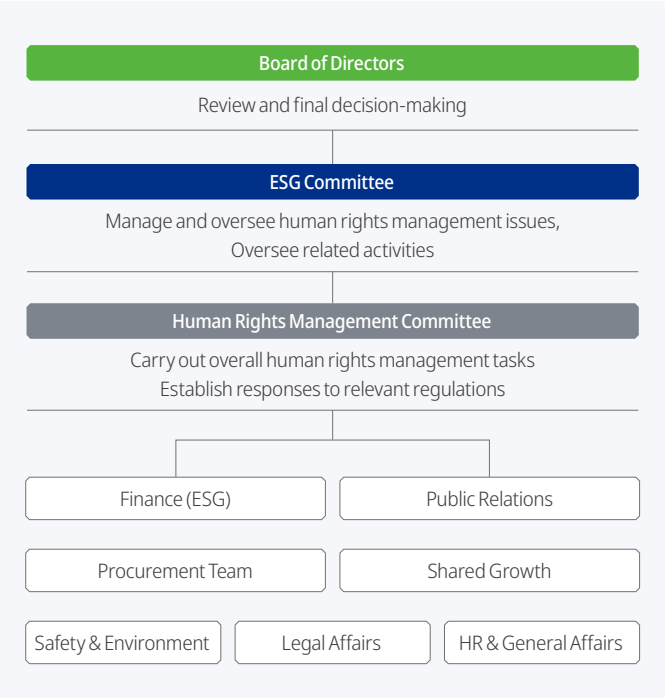
Human Rights Management Committee

At HD Hyundai Energy Solutions, the Human Rights Management Committee, chaired by the Chief ESG Officer, plays a key role in human rights governance. Through cross-functional collaboration among relevant departments, including Finance (ESG), Administration, HSE, Purchasing, Sales Planning, and Legal Affairs, the Committee identifies human rights risks and reports major human rights issues with high likelihood or potential risk to the ESG Committee. Based on these reports, the ESG Committee reviews and approves decisions related to human rights, and oversees the process to ensure a systematic human rights risk management.

Dedicated Departments

Human rights management is embedded into our daily operations in collaboration with relevant departments, such as Finance (ESG), Administration, HSE, and Purchasing. The dedicated ESG departments lead the development and implementation of action plans, while providing human rights training to employees. The departments also monitor human rights issues and conduct human rights impact assessments. These assessment results help identify human rights risks and are used to develop remedial measures, thus assisting our efforts to reinforce the human rights risk management framework.

Human Rights Management Framework



Strategy

Approach to Human Rights Management

Human Rights Management Declaration

In 2022, we at HD Hyundai Energy Solutions published our first Human Rights Management Report and issued the Human Rights Management Declaration, affirming our commitment to active human rights management practices that uphold human dignity and values. We will respect and uphold values, including human rights, labor, the environment, and anti-corruption, as set out in the Universal Declaration of Human Rights and the UN Guiding Principles on Business and Human Rights (UNGPs), and strive to put them into practice.

[HD Hyundai Energy Solutions Human Rights Management Report](#)

Human Rights Regulations

Following the adoption of our Human Rights Management Declaration, HD Hyundai Energy Solutions established separate implementation regulations to ensure a systematic and consistent approach to the human rights management and the protection of the rights of employees and other stakeholders. These regulations outline the guiding principles, execution framework, operations of the Human Rights Management Committee, and grievance mechanism for addressing violations. The regulations were developed through a legal review by the Compliance Office and deliberation by the Human Rights Management Committee, and they consist of six chapters and 33 articles, including supplementary provisions.

Human Rights Management Roadmap

In response to the growing global demand for human rights management—particularly following the enactment of the EU’s Corporate Sustainability Due Diligence Directive and disclosure regulations such as the IFRS disclosure requirements on human capital and human rights—HD Hyundai Group established a Human Rights Management Roadmap to create a systematic management framework at the group level.

As part of the implementation of the roadmap, HD Hyundai Energy Solutions conducted human rights management training to our employees from September 17 to October 15, 2025. A satisfaction survey will also be carried out during the training period to further improve the training sessions and programs.*

* Calculated per the training period

Human Rights Management Roadmap

Phase 1
(2024)

Human Rights Management Framework at the Group Level

1. Development and revision of group-wide human rights policies

2. Operation and oversight of the HD Hyundai Group's Human Rights Management Committee

Phase 2
(2025)

Human Rights Management at the Affiliate Level

1. Implementation of a human rights management framework aligned with the group-level system

2. Execution of impact assessments and publication of related reports

Phase 3
(2026 onward)

Dissemination of Human Rights Management Outcomes

1. Extension of human rights management initiatives to overseas subsidiaries

2. Human Rights risk management across the supply chain

Human Rights

Risk Management

Management of Human Rights Risks

Identification of Human Rights Risks

HD Hyundai Energy Solutions conducts materiality assessments based on the general principles outlined in its Human Rights Regulations to identify relevant risks. To assess the impact of each principle on our operations from multiple perspectives, we conducted a survey of members of the Human Rights Management Committee and staff in charge. The assessment results will be used to set the direction of our human rights management in response to changing business environments and serve as reference material for enhancing our human rights impact assessment checklist.

Results of Materiality Assessment

To ensure effective implementation of its human rights management framework, HD Hyundai Energy Solutions conducted a materiality assessment for each human rights issue based on the likelihood of occurrence and severity of impact. The stakeholder survey was designed with reference to the UN Guiding Principles Reporting Framework. Based on these results, we identified the right to a healthy environment, safety and health, and compliance with working condition standards as the most material human rights issues.

Human Rights Risk Assessment Criteria

Category	Likelihood	Severity	
		Scope of Impact	Recovery Time
Very Low	Potential risk exists, but no incidents have occurred	No impact	Very short recovery time
Low	No history of occurrence at the company, but similar cases have occurred in the industry	Very few stakeholders	Less than 1 year
Moderate	Has occurred in the past and may occur depending on the business characteristics	Some stakeholders	1 to 3 years
High	Has occurred in the past and is currently occurring	Most stakeholders	3 to 5 years
Very High	Has occurred continuously from the past to the present	All stakeholders	Over 5 years or irrecoverable

Human Rights Impact Assessment

Implementation of Human Rights Impact Assessment

HD Hyundai Energy Solutions defined the scope of our human rights impact assessment to include all work sites where our business operations are based, such as the headquarters, R&D center, and production facilities. The assessment scope was also expanded to encompass various stakeholders, including our employees, employees of suppliers, local communities, and customers, to systematically identify potential human rights risks.

Based on the results of our human rights materiality assessment, we developed a set of indicators to evaluate key human rights issues for each stakeholder group. Indicators continue to be refined through insights from internal and external environmental analyses, with a focus on high-priority issues such as the rights to a healthy environment, working conditions, and safety and health.

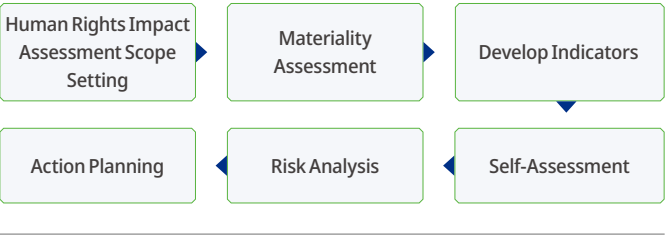
Key Human Rights Impact Assessment Indicators

HD Hyundai Energy Solutions Human Rights Impact Assessment Indicators		
Right to a Healthy Environment	Safety and Health	Prohibition of Workplace Bullying and Sexual Harassment
Compliance with Working Conditions	Responsible Supply Chain	Forced Labor, Child Labor, Exploitation
Discrimination	Human Rights Protection in Local Community	Freedom of Association and Collective Bargaining

Human Rights Impact Assessment Process

Building on our materiality assessment, HD Hyundai Energy Solutions conducted the human rights impact assessment using indicators aligned with the guidelines from the National Human Rights Commission of Korea. The assessment framework comprised 6 areas, 40 topics, and 342 detailed items. Led by the Human Resources Department, the assessment was carried out through a self-evaluation based on evidence from each working unit. The results were then analyzed to systematically identify human rights risks, derive improvement measures, and establish detailed implementation plans.

Human Rights Impact Assessment Process



Remedial Measures for Human Rights Risks

The human rights impact assessment allowed us to pinpoint areas for improvement to mitigate, address, or resolve the risks associated with identified issues. HD Hyundai Energy Solutions also develops detailed implementation measures and systematic plans through coordination with relevant departments on each issue.

Human Rights

Risk Management

Grievance Reporting and Resolution

Grievance Mechanism

To ensure prompt and fair resolution of human rights violations and other grievances, HD Hyundai Energy Solutions has established a grievance handling mechanism. This is managed by a committee composed of at least two members representing both labor and management, and is designed to receive and handle grievances arising in all areas of our operations. Once a grievance is received, a fact-finding investigation is conducted, and based on the investigation findings, disciplinary action may be taken against the responsible party where necessary. We also provide necessary information and support to the victim so that the grievance can be resolved appropriately.

Reporting and Resolution Process



Whistleblower Protection

HD Hyundai Energy Solutions protects the confidentiality of whistleblowers’ identities and the content of their reports confidentially through its Whistleblower Protection and Reward System. Reporters’ identities are not disclosed without their consent, and no retaliation or discrimination is allowed for legitimate reporting. If a report contributes to preventing financial loss, recovering revenue, or reducing costs, then the reporter is eligible for a reward of up to KRW 1 billion.

Number of Grievances Reported and Handled

Category	Number of Cases
Percentage of resolved cases	-
No. of cases reported	0 cases
No. of cases resolved	0 cases

Setting Human Rights Management Goals

Human Rights Management Goals

To implement an effective human rights management system in line with the group-wide roadmap, HD Hyundai Energy Solutions has established phased goals and is implementing them. In 2025, we conducted human rights due diligence at our domestic business sites and initiated an analysis of areas for improvement and follow-up actions.

In 2026, we will also expand the scope of due diligence to cover subsidiaries and the value chain, in line with the EU Corporate Sustainability Due Diligence Directive. HD Hyundai Energy Solutions is determined to set phased targets for human rights management, carry out necessary tasks to achieve these targets, and fulfill our corporate social responsibilities.

Human Rights Management Performance and Targets

Key action plans in 2025		Implementation plans in 2026	
Strengthening Human Rights Governance	Conducted online training	Strengthening supply chain management	Enhance supplier human rights management
Supplementing regulations on young workers	Established draft management standards for young workers	Environmental Data	Establish guidelines for workplace environmental factors and worker health and ecosystem protection

Supply Chain

Governance

Supply Chain Management Framework

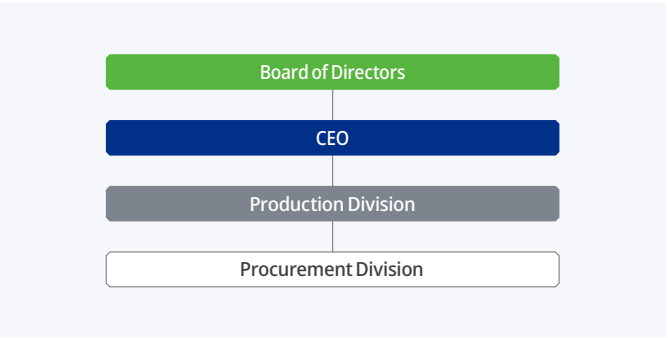
Roles of the Board of Directors

HD Hyundai Energy Solutions establishes strategic directions for supply chain management and continuously monitors major risks to respond to potential issues that may arise in the supply chain. Based on regular reports from management on key supply chain issues, the Board comprehensively manages potential risks related to raw material procurement, supplier compliance with ESG standards, and global regulatory changes. It also reviews indicators directly linked to our sustainable management—including carbon emissions within the supply chain, human rights issues tied to traditional labor practices, and geopolitical risks—and develops appropriate action plans in response, thereby reinforcing the stability and sustainability across the supply chain.

Roles of Dedicated Departments

The Procurement Team is responsible for managing the supply chain of HD Hyundai Energy Solutions, implementing related strategies, and integrating sustainability into supply chain operations. ESG indicators are incorporated into supplier evaluation and management criteria, reinforcing our commitment to human rights management and sustainable sourcing. As part of its continued efforts to build and manage a resilient and sustainable supply chain, HD Hyundai Energy Solutions is diversifying its supplier base to ensure stable access to raw materials and collecting and analyzing supply chain data to respond promptly to global regulatory changes.

Supply Chain Management Governance



Supplier Council Meeting

Through the Supplier Council Meeting, HD Hyundai Energy Solutions gathers suppliers’ opinions while maintaining a line of communication to provide operational support, such as sharing management policies and safety management initiatives. At the monthly technical council meetings, we discuss quality issues arising at manufacturing sites and share difficulties and areas for improvement in work processes. By building trust through communication, we are strengthening our collaboration with suppliers and building a sustainable supply chain grounded in the spirit of mutual growth.

Key Discussion Items

Category	Discussion
Cell	· Continued request for re-input of repaired strings: Input 4 modules per hour → Distribute repaired-string input across time slots
Other	· Increase in repair strings and decrease in processing volume: Improvement measures · Adjust the height of the repair workbench · Restore rear bulkhead of the lamination line

Quality Council Meeting

To support suppliers in improving manufacturing processes and product quality, HD Hyundai Energy Solutions holds weekly technical support meetings. These meetings focus on sharing technology to increase material yield and reduce defect rates, as well as discussing work environments that require improvement to enhance productivity. Through these meetings, we are committed to strengthening our suppliers’ production competitiveness and quality management standards, and continuously addressing challenges at work sites.



Quality Council Meeting

Supply Chain

Strategy

Supply Chain Management Strategy

Supply Chain Management Principles

HD Hyundai Energy Solutions follows HD Hyundai Group’s supply chain management principles to promote transparent and rational business practices in supply chain management and contribute to the establishment of fair subcontracting practices. These principles are based on transparency, legality, and fairness, and reflect the Fair Trade Commission’s four key guidelines. To build a sustainable supply chain in partnership with our suppliers, we maintain open communication to improve procurement policies, conduct regular supply chain inspections, and strive to reinforce the supply chain management system while being grounded in the spirit of mutual growth.

[🔗 HD Hyundai ESG Website](#)

Integrated Procurement System

HiPRO, the HD Hyundai Group’s integrated procurement system, systematically manages all procurement-related processes—from supplier selection and contracting to delivery and payment. This end-to-end solution covers material management, purchase requests, quotation submissions, and order placements and is used to improve supply chain operational efficiency and transparency.

Fair Contracting and Reasonable Payments

To ensure fair transactions, HD Hyundai Energy Solutions uses standard subcontract agreements and reviews them closely to eliminate unfair terms, such as unilateral modifications or unfair returns. We also support shared growth by factoring in changes in raw material and labor costs during unit price reviews, which are conducted regularly. By focusing on fairness, we are strengthening our collaboration with suppliers and building a sustainable supply chain grounded in the spirit of mutual growth.

Supplier Grievance Handling

To address diverse grievances from suppliers, HD Hyundai Energy Solutions maintains open communication channels. Issues related to unfair trade practices, delayed payments, unfavorable contract terms, or technology protection can be reported through the HD Hyundai Group’s ethical management website. We guarantee the anonymity of the reporter and confidentiality, and prohibit any retaliatory action as a matter of principle. Upon receiving a report, we investigate to establish the facts and take appropriate corrective measures. Relevant stakeholders are informed of the outcome of the grievance, and we conduct follow-up monitoring to prevent its recurrence.

Number of Supplier Grievances Reported and Handled

Reported cases	Resolved cases	Resolution Rate (%)
0 cases	0 cases	-

Financial Support Program

To help its suppliers maintain stable cash flow, HD Hyundai Energy Solutions provides diverse financial support programs, including early payment options. As a general principle, transactions below a certain amount are paid in cash. For payments made via electronic promissory notes, we use the accounts receivable collateral loan system to pay our suppliers.

Financial Support for Suppliers

Accounts Receivable Financing	KRW 7 billion (As of December 2025)
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Technical and Managerial Support Performance for Suppliers

HD Hyundai Energy Solutions offers various support programs to enhance its suppliers’ competitiveness in both technology and business management. Regular and ongoing meetings are held to exchange ideas for process improvements and operational efficiency, and to share our knowhow in quality enhancement through continuous communication. When temporary reductions in operations or production interruptions occur due to our facility investments, we provide support to help stabilize suppliers’ business operations during those periods, committed to creating a virtuous cycle of mutual growth.

Technical and Managerial Support for Suppliers

Technical and Managerial Support	Cycle
Process & Work Improvement Meeting	Ongoing
Quality Council Meeting	Weekly
Supplier Council Meeting	Weekly
Managerial Support Initiatives	4 meetings
Safety & Health Meeting	12 meetings

Supply Chain

Strategy

Supply Chain ESG Risk Management

Sustainable Supply Chain Policy

HD Hyundai Energy Solutions follows the HD Hyundai Group’s supply chain policies—covering human rights, safety and health, environmental protection, and ethics—to foster a healthy corporate ecosystem. Improving the ESG capabilities of our suppliers is key to establishing a sustainable supply chain. To this end, we have reinforced our group-wide management system with a focus on supplier ESG practices.

Since 2023, the “establishment and disclosure of ESG management systems for supply chain” has been integrated into the Group’s ESG KPIs, which reflect relevant issues in executive compensation. The scope of application is scheduled for gradual expansion.

Conflict Minerals Policy

HD Hyundai Energy Solutions recognizes the sustainability challenges posed by minerals mined in conflict-affected areas and has implemented a conflict minerals policy to address these issues. Conflict minerals refer to tantalum, tin, tungsten, and gold illegally or unethically mined in the Democratic Republic of the Congo and nine neighboring countries: Sudan, Rwanda, Burundi, Uganda, the Republic of the Congo, Zambia, Angola, Tanzania, and the Central African Republic. The mining of these minerals is often associated with severe social issues, including human rights violations, environmental degradation, and loss of life. In response, we at HD Hyundai Energy Solutions comply with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-affected and High-risk Areas and promote ethical sourcing of these minerals. We also recommend that our suppliers comply with the ethical sourcing principles, thereby reinforcing our management and coordination efforts to build a sustainable supply chain.

Supplier Code of Conduct

To mitigate sustainability risks in the supply chain, HD Hyundai Energy Solutions implements a Supplier Code of Conduct based on the core values of fairness, integrity, and legal compliance. The Code of Conduct has “fair, just, and lawful work” as its core value and was enacted to support the growth and development of suppliers and to promote our shared growth with them. The Code sets out the standards that all suppliers must comply with, including human rights, safety and health, the environment, ethics, and business management. Suppliers are required to ensure that they observe these standards in their business decision-making processes and operations at all times.

Actions Against Serious Violations

Suppliers are required to sign both the Pledge for Ethical Practice and the Code of Conduct for Logistics Partners during supplier registration. By enforcing personal accountability, HD Hyundai Energy Solutions encourages its suppliers to comply with key ESG standards and responsibilities in human rights, safety and health, the environment, and ethics. In addition, if a supplier violates relevant standards, measures such as warnings, demands to prevent recurrence, and restrictions on bidding for a certain period may be imposed, depending on the severity of the violation. In cases of serious violations, such as child labor, actions such as termination of contract or suspension of transactions may be implemented.

Business Case Supply Chain ESG Risk Management Activities

Outstanding Safety & Health Practice Awards Program

HD Hyundai Energy Solutions operates the Reward for Outstanding Safety and Health Practices program in which production and production support organizations, as well as suppliers, participate to promote a safety and health culture within the workplace and strengthen autonomous safety management capabilities. This program encourages organizations that achieve safety and health goals without major accidents over a certain period, while also comprehensively evaluating and rewarding their preventive safety and health initiatives, such as identifying risk factors, reporting near-misses, participating in safety training, and implementing improvement measures.

We select outstanding organizations and employees based on our internal reward criteria, and we provide funds to our suppliers to support their autonomous safety and health management activities. Through positive reinforcement, we are enhancing employees’ safety awareness, establishing a safety and health culture with our partners, and continuously improving the overall safety management level at our work sites.

Supply Chain

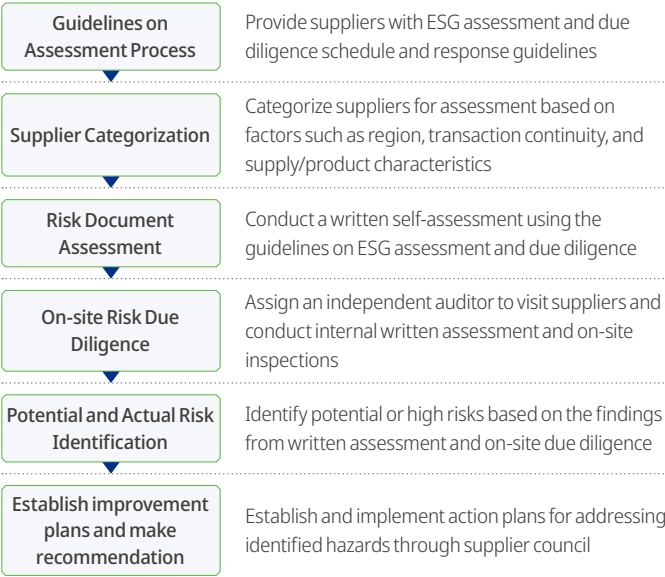
Risk Management

Supply Chain ESG Risk Management

Implementing Supply Chain ESG Risk Assessment

At HD Hyundai Energy Solutions, we assess suppliers' ESG risks in line with the Pledge for Supplier Code of Conduct. In 2025, we conducted supply chain ESG risk assessment with 10 out of 879 suppliers, including overseas suppliers, through self-assessments and on-site due diligence. We communicated the results and areas for improvement to each supplier and plan to review their progress in the following year's assessment.

Supply Chain ESG Risk Assessment Process



Supply Chain ESG Risk Assessment Metrics Design

HD Hyundai Energy Solutions' supply chain ESG risk assessment metrics consist of 82 detailed indicators across five categories: labor and human rights, safety and health, environment, ethics, and management systems. These indicators comprehensively reflect relevant laws and regulations as well as ESG requirements, such as assessment initiatives and sustainability disclosure standards.

Supply Chain ESG Risk Assessment Metrics

Category	Summary
Labor and human rights (23)	· Voluntary labor, underage labor, working hours · Wages and benefits, freedom of association · Humane treatment, non-discrimination
Safety and health (19)	· Occupational safety, emergency preparedness, industrial accidents · Industrial hygiene, physical labor, machinery safety · Food/hygiene/housing and safety and health communication
Environmental data (24)	· Environmental permits and reporting · Hazardous substances, waste, air pollutant · Material restrictions, water resource control, energy use and GHG emissions
Ethics (9)	· Anti-corruption, integrity, unjust enrichment, unfair trade · Intellectual property protection, personal data protection · Responsible sourcing of materials
Management System (7)	· Engagement, duties, and responsibilities of executive management · Legal and customer requirements · Risk assessment and management, improvement objectives, training

Written Supply Chain ESG Risk Assessment

We at HD Hyundai Energy Solutions support our suppliers in conducting self-assessments of ESG risks using our guidelines and checklists. Based on the responses submitted by our suppliers, supporting documents, and any additional statements provided, we conduct a comprehensive review to evaluate their ESG risk levels and select suppliers subject to on-site due diligence. We use written assessments that help us identify key items to be reviewed in depth during on-site due diligence, enabling more systematic risk management and continuously strengthening ESG management across the supply chain.

Supply Chain ESG Risk Due Diligence

HD Hyundai Energy Solutions conducts a comprehensive review of the written ESG risk questionnaire and the supporting documents to select suppliers for on-site due diligence. To ensure the fairness of due diligence, it is conducted by an independent third-party agency that has no affiliation with us. The due diligence includes reviewing suppliers' documentation, such as internal policies and guidelines, conducting interviews with both managers and workers, and inspecting work sites and working conditions, for accurate assessment of the extent of their ESG risks. The identified risk factors are then reviewed and confirmed through consultation with their designated personnel, and are ultimately used to formulate improvement actions.

Supply Chain ESG Risk Identification and Action Planning

Based on the 2025 supply chain ESG risk assessments, most suppliers demonstrated ESG management capabilities that exceeded the average standards of the solar and broader manufacturing sectors across all areas. The results showed that eight of the ten suppliers demonstrated strong or satisfactory ESG performance.

In response, HD Hyundai Energy Solutions recommends that suppliers who need improvement implement an improvement action plan and work with the supplier to establish a timeframe, measures, and objectives. Then, we continuously monitor the progress of the supplier's improvement tasks and, when necessary, manage the process to facilitate effective improvements through additional support, such as modifying or supplementing plans or providing related resources.

Supply Chain ESG Risk Assessment Result

(Unit: companies)

Category	2023	2024	2025
No. of suppliers assessed through written assessment	30	5	10
No. of suppliers assessed through on-site due diligence	5	5	3
Suppliers with identified risks	-	1	2

ESG Improvement and Training Support for Suppliers

HD Hyundai Energy Solutions provides improvement support to suppliers whose written assessment results show low compliance with key indicators or fail to meet the key requirements, or those for which significant or potential risks are identified. We also provide ESG training, which is offered online for better accessibility, to the suppliers that participated in the supply chain ESG risk assessments. The training program covers ESG risk assessment indicators and processes, as well as assessment response measures, and was provided to 10 domestic suppliers who were subject to the ESG risk assessment.

Supply Chain ESG Risk Assessment Result

Indicators	Directions for Improvement
Labor & Human Rights	· Update internal regulations e.g., human rights management policy · Increase training to raise awareness
Safety & Health	· Update internal regulations e.g., safety policies · Increase safety inspections and preventive measures
Environmental data	· Set targets for environmental impact and energy efficiency · Provide training on GHG management and related regulations
Ethics	· Improve systems e.g., grievance handling procedures · Organize training on ethical management and compliance
Management System	· Introduce anti-corruption programs and related activities

Quality Management

Governance

Strengthening global quality competitiveness

Roles of Executive Management

HD Hyundai Energy Solutions is committed to ensuring the stability and reliability of our products and services, which are directly related to the safety and convenience of our customers. Our executive management is responsible for ensuring the quality-centered management system operates across all stages of the product life cycle, from design and development through manufacturing and after-sales service, while striving to embed a culture that prioritizes quality throughout the organization.

Quality Management Framework



Roles of Dedicated Departments

The QM team plays a pivotal role in setting quality objectives for each sector in accordance with the company-wide quality management policies and developing action plans to achieve them. Based on the company’s internal quality standards for products and services, the QM Team conducts thorough inspections and employs a monitoring framework. When quality issues arise, HD Hyundai Energy Solutions promptly conducts root cause analyses and implements necessary measures to prevent recurrence.

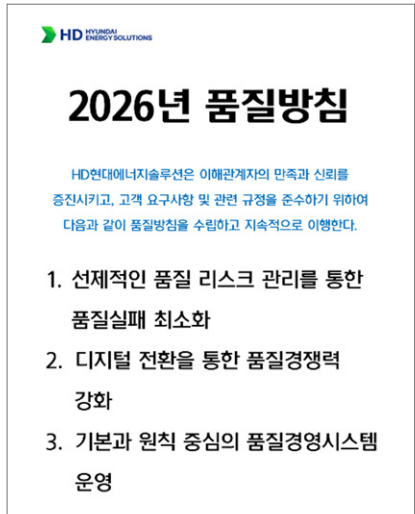
We also promote continuous improvement of our quality management system through various measures, such as quality training programs, enhanced internal communication, customer feedback, and external certification.

Strategy

Quality Management Strategy

Quality Management Policy

To step up as a global leader in solar solutions through reliable, high-quality products, HD Hyundai Energy Solutions has established and implemented a quality management policy. By doing so, we are strengthening our quality competitiveness against global standards and enhancing product competitiveness through continuous quality improvements. With the continuous enhancement of customer-centered quality management activities, we are elevating our customer satisfaction and strengthening trust in the market.



Quality Policy 2026

Customer Satisfaction Surveys

To evaluate its service levels and better understand customer needs, HD Hyundai Energy Solutions conducts customer satisfaction surveys as a basis for improvement. These surveys are regularly administered through our distributors at customer touchpoints. The feedback from these surveys is collected to identify complaints and areas for improvement in our products and services. For areas with low satisfaction scores, we conduct a comprehensive analysis to identify the cause and establish action plans for improvement, reinforcing our commitment to customer-focused quality management.

Key Customer Satisfaction Evaluation Items

- Satisfaction with the information about products and contracts
- Satisfaction with efficiency and output (nameplate rating)
- Satisfaction with energy generation
- Satisfaction with product pricing
- Satisfaction with the product warranty period
- Satisfaction with after-sales service measures and response
- Evaluation of corporate image
- Overall impressions

Quality Management

Risk Management

Quality Risk Management

Establishing Quality Management System

To ensure more consistent and structured quality management, HD Hyundai Energy Solutions has established a comprehensive quality management system and maintains internationally recognized certifications, which are certified by Kiwa: ISO 9001, ISO 45001, and ISO 14001. In the solar inverter sector, we provide KS-certified string inverters and independently developed central inverters, securing both technological competitiveness and quality assurance.

Advancing Solar Product Quality

At HD Hyundai Energy Solutions, we have developed floating solar modules with a bifacial design, optimized for aquatic environments, enabling light absorption from both the front and rear sides to maximize energy output. These modules are engineered for high durability, maintaining stable performance even in harsh conditions such as heavy snow, strong winds, and environments with high concentrations of ammonia or salt. To enhance output stability and long-term profitability, we incorporate technologies that prevent Light Induced Degradation (LID), which may occur after cell production, and Potential Induced Degradation (PID), caused by electric-field-induced degradation.

In addition, we provide a 12-year product warranty and have extended our performance warranty period from 25 to 30 years to enhance customer safety and quality satisfaction.

Supply Chain Quality Management

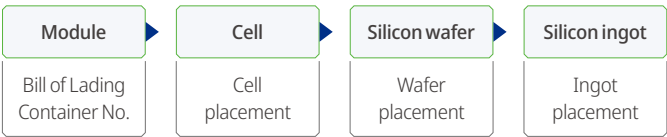
To prevent quality risks in advance and ensure consistent product quality, HD Hyundai Energy Solutions conducts quality assessments for our new suppliers. We also carry out regular evaluations for our existing partners through our continuous management system. These assessments cover various key indicators, including quality management systems and quality management performance.

To further strengthen product quality assurance, we implement a Quality Assurance Agreement (QAA) with our suppliers, and we also promote systematic quality improvement initiatives with internal and external partners in terms of changes and nonconformities in our 4Ms (Man, Material, Machine, Method).

Supplier Traceability Management

At HD Hyundai Energy Solutions, we manage our suppliers based on traceability standards. Suppliers in the silicon supply chain undergo audit processes, including on-site inspections and document-based traceability verification. The supplier’s compliance management capability, production tracking system, and traceability management capabilities are cross-checked in the process.

Traceability Management Structure



Metrics & Targets

Quality Management Indicators and Goals

Performance Against 2025 Quality Management Goals

To ensure consistent quality improvement, HD Hyundai Energy Solutions established department-specific quality objectives in 2024 for the R&D, sales, production, and quality departments and set forth detailed action plans and risk management measures to achieve these goals. The targets are rigorously reviewed and systematically reviewed and managed through semi-annual performance reviews and annual internal audits.

Key Productivity-Related Quality Management Performance in 2025

Category	Description
Quality objectives and risk management indicators by organization	· Achieved 84.6% of planned quality target · Achieved 95.8% of planned risk management target

Key R&D Quality Management Performance in 2025

Category	Description
Quality objectives and risk management indicators by organization	· Quality management in N-type high-efficiency TOPCon cells and modules · Minimization of quality failure costs through quality improvement

Information Security

Governance

Information Security Framework

Roles of Executive Management

HD Hyundai Energy Solutions has appointed a Chief Information Security Officer (CISO) to lead our efforts in safeguarding internal data from external threats. Based on the HD Hyundai Group's security system, we also maintain 24/7 security monitoring to manage and review our information security system. Under the leadership of the CISO, we oversee the operation of the information security system and the protection of key internal data.

Roles of Dedicated Departments

The department dedicated to our information security, led by the security officer and security manager, implements and enforces relevant policies in day-to-day work. The Department Security Officer oversees the overall information security activities, coordinates and controls security management tasks, and reviews key security risks. Meanwhile, the department security manager oversees departmental-level security management activities, such as operating the information security system, conducting security checks, providing security training for employees, responding to security incidents, and more, while preventing and addressing departmental-level information security risks in advance.

Security Management Structure



Strategy

Information Security Strategy

Establishing and Revising Information Security Regulations

To ensure compliance with domestic and international security laws and regulations, HD Hyundai Energy Solutions continuously establishes and revises internal security regulations, based on which it operates its internal information protection management system. We have established the standards for our information security activities based on various internal regulations, such as security management regulations, protection of national core technologies, personal data protection, and GRC facility security. Additionally, policies are regularly reviewed and updated to reflect changes in relevant laws and technologies, efficient business operations, security incident trends, and changes in technical environments, ensuring continuous improvement in our information protection management.

Posting Information Security Regulations

HD Hyundai Energy Solutions posts information security regulations on its internal network to raise employees' awareness of information security and ensure the effective implementation of security policies. We ensure key regulations and guidelines, such as security management regulations and personal information protection regulations, are accessible to our employees at all times. We also swiftly share any revisions through announcements and notifications.

Information Security Training

HD Hyundai Energy Solutions organizes monthly information security training programs for our employees through the HD Group's security portal system and holds regular information security education and training sessions on the "Security Day." Through these efforts, we are raising awareness among employees and reinforcing our capabilities to prevent security incidents.

We continue to make investments in strengthening our information security system. In 2025, we allocated 7.1% of total IT investments to information security.

Security Training Topics

Program	Description
Email Security	Training on email security precautions
Personal Information Protection	Daily protocols for safeguarding personal data
Protection of Trade Secrets	Understanding of the protection of trade secrets
Daily Security Protocols	Daily security protocols for all employees
Lost IT Equipment Response	Procedures for responding to the loss of portable IT devices
Workplace Security	Security guidelines in work environment
Ransomware	Preventive measures and response strategies for ransomware
Lost IT Equipment Response	Procedures for responding to the loss of portable IT devices
Account Protection	Caution against credential theft on social media and social commerce platforms
Qshing Scam Alerts	Warnings and guidelines on Qshing scams
Email Security	Warnings and guidelines on malware disguised as business emails

Risk Management

Information Security Risk Management

Third-party Certification for Security Systems

To protect information assets and ensure systematic security management, HD Hyundai Energy Solutions has acquired and maintains ISO/IEC 27001 certification, a globally recognized standard for information security management systems. This certification is awarded upon passing a stringent screening of 133 items across 11 areas of physical, administrative, and technical security measures, as well as overall information flow control. By meeting these criteria, we at HD Hyundai Energy Solutions earned recognition for our comprehensive information protection management capabilities, upon which we continue to build our company-wide information security system.

Security Vulnerability Assessment

To respond to increasingly sophisticated cyber threats and information breach attempts, HD Hyundai Energy Solutions conducts vulnerability assessments on a regular basis and develops action plans for improvement. In 2025, we held quarterly simulation training against malicious emails to heighten our employees' information security awareness and reinforce their response capabilities.

These simulations used complicated administrator-style emails to analyze employee responses in several categories: users who did not open the email, users who opened the email, users who clicked links with malware infection risks, and users who opened attachments.

The employees who engaged in risky actions received guidelines for responding to malicious emails and participated in Hi-Class training to improve their security response capabilities.

Information Security

Risk Management

Information Security Risk Management

Response to Security Incidents

Our 24/7 monitoring system enables immediate detection and response to security incidents. Any abnormal activities are analyzed by the HD Group’s Security Control Center and forwarded to the responsible information security department for action.

HD Hyundai Energy Solutions has established internal protocols for preventive measures and response strategies that provide guidelines based on a predefined response manual to promptly respond to data breaches or hacking attempts. The Security Incident Response team, comprising department security officers and managers and IT system operators, then takes necessary response measures for these issues. In addition, the regulation clearly defines the responsibilities and procedures for both prevention activities and follow-up management activities related to security incidents.

Principles of Personal Information Protection

HD Hyundai Energy Solutions recognizes the importance of protecting the personal information of data subjects and strictly complies with relevant laws and regulations, including the Personal Information Protection Act, the Act on Promotion of Information and Communications Network Utilization and Information Protection, the Communications Secret Protection Act, and the Telecommunications Business Act. We set and enforce personal information handling principles to ensure the appropriate use of personal information collected, retained, and processed for its intended purpose, in accordance with relevant laws. Collected personal information is not provided to any third parties unless permitted by law. If it is required to provide personal information to a third party, then we notify stakeholders through our website and relevant documents in principle. In addition, our privacy policy clearly outlines measures to protect personal information and safeguard the rights of data subjects.

Collection and Processing of Personal Information

HD Hyundai Energy Solutions collects and processes personal information solely for the purpose of responding to customer inquiries and providing services. Collected personal information is used only within the previously specified purposes. If the purpose changes, we will obtain additional prior consent in compliance with applicable laws. Unless otherwise required by laws such as the Act on Consumer Protection in Electronic Commerce or the Communications Secret Protection Act, personal information is retained for a certain period of time and then safely deleted. Customer inquiry data is retained for three months and then destroyed. For HI SMART members, only the minimum required data is retained and managed until membership is terminated.

Automatic Collection of Personal Data and Refusal

To protect the rights of data subjects, HD Hyundai Energy Solutions does not use automated data collection tools such as cookies. In cases where such tools should be installed and used in the future, we provide relevant options for individuals to refuse cookie storage through browser settings. Detailed information on cookie installation and blocking is available in our website’s privacy policy.

Technical and Administrative Security Measures

HD Hyundai Energy Solutions implements strict controls to prevent the loss, theft, breach, alteration, or destruction of personal information. To this end, we established a privacy policy for the processing of personal information, established internal management plan, and regularly monitor their implementation through our systematic personal information protection management system. We also apply technical measures, such as data encryption, to prevent security incidents, such as data leakage, during transmission. Our security systems are regularly updated, and we monitor them to ensure strong data protection with high stability.

Physical Security Measures

To strengthen personal information protection, HD Hyundai Energy Solutions implements physical security measures leveraging personnel and infrastructure from shared services provided by the HD Group’s ICT organization. Physical security measures refer to access control to major facilities, such as computer rooms and document storage rooms, to ensure safe management of personal information. In principle, all documents and storage devices containing personal data are stored in locked, secure areas. When materials containing personal information are moved in or out of the designated areas, prior security control measures are established and followed to prevent any privacy breach.

Social Contribution

Governance

Social Contribution Framework

Social Contribution Council

The HD Hyundai Social Contribution Council serves as the key decision-making body, overseeing the Group's social contribution initiatives and establishing the basic direction and policies for those efforts. Our CEO at HD Hyundai Energy Solutions participates in the council to review all group-wide projects and sets specific goals and plans for realizing the HD Hyundai Group's social value.

Social Contribution Implementation Organization

HD Hyundai Energy Solutions' social contribution activities are led by the Administration Team. Dedicated personnel are assigned at both the headquarters and the Eumseong plant to coordinate local engagement. Their responsibilities include establishing social contribution plans, managing donations and sponsorships, facilitating internal and external communications, and encouraging employee participation across all our initiatives.

HD Hyundai 1% Nanum Foundation

Through the HD Hyundai 1% Nanum Foundation, the HD Hyundai Group makes efforts to give back to the community, with each employee donating 1% of their salary. HD Hyundai Energy Solutions also engages in this donation initiative to share warm energy of hope. Donations collected from employees are used to support the Group's various social contribution programs.

[HD Hyundai 1% Nanum Foundation Website](#)

Business Case HD Hyundai 1% Nanum Foundation Initiatives

Opening of Dream Place in Jecheon, a Ship-themed Playground

Since 2023, the HD Hyundai 1% Nanum Foundation has continued the “Dream Place” project for the third consecutive year to protect children in welfare facilities and support their healthy growth by renovating aging facilities and improving unsafe living environments. The project consists of three types: “Green Renovation for Safety,” which renovates aging facilities to create a safe environment; “FUTURE BUILDER SPACE,” a creative space that fosters children's imagination and creativity; and “Dream Place with Develon,” which creates play areas using Develon excavators. In 2025, a total of KRW 700 million was invested to support 14 child protection facilities nationwide.

The Jecheon Dream Place, a children's playground in Jecheon opened in December 2025, features a ship-inspired design to promote safe play and stimulate imagination. At the opening ceremony, children from four local group home facilities, including Jecheon Green Star Group Home and other child welfare centers, participated and performed congratulatory acts and shows that they organized themselves to express their hopes and well wishes. On this day, HD Hyundai 1% Nanum Foundation sponsored 200 sand play bag sets from Dgrr, the kids brand of HD Hyundai Construction Equipment, adding meaning to the opening ceremony



Opening Ceremony of Jecheon Dream Place

HD Hyundai Smart Marine Expo

The “HD Hyundai Smart Marine Education,” supported by the HD Hyundai 1% Nanum Foundation, and the “HD Hyundai Smart Marine Expo & Graduation Ceremony,” which shares the achievements of the 2025 program, were held on November 22. To showcase the final results of the digital education project that began in August 2025 and to encourage the growth of participating children, about 100 children from 10 child welfare agencies in the Seongnam area took part in the event.

HD Hyundai Smart Marine Education is a coding program designed to heighten awareness of future science and technology. A total of 14 coding classes were held throughout the 2025 project, during which children learned the core principles of HD Hyundai Group's key sectors—shipbuilding, marine, refining, and industrial machinery—and engaged in hands-on activities to build innovative smart ship models using Lego Spike Prime. Children also had the opportunity to explore future jobs during their visit to the career exploration center.

On the day of the expo, the participating children's creative smart ship models were displayed in the center, attracting visitors' attention. These models demonstrate the outcomes of the children's digital skills and creative problem-solving capabilities.

HD Hyundai 1% Nanum Foundation will continue to provide coding education opportunities to children in local communities to help bridge the digital education gap and build a foundation for talented individuals with the potential to grow, focusing on core skills for future industries.

Social Contribution

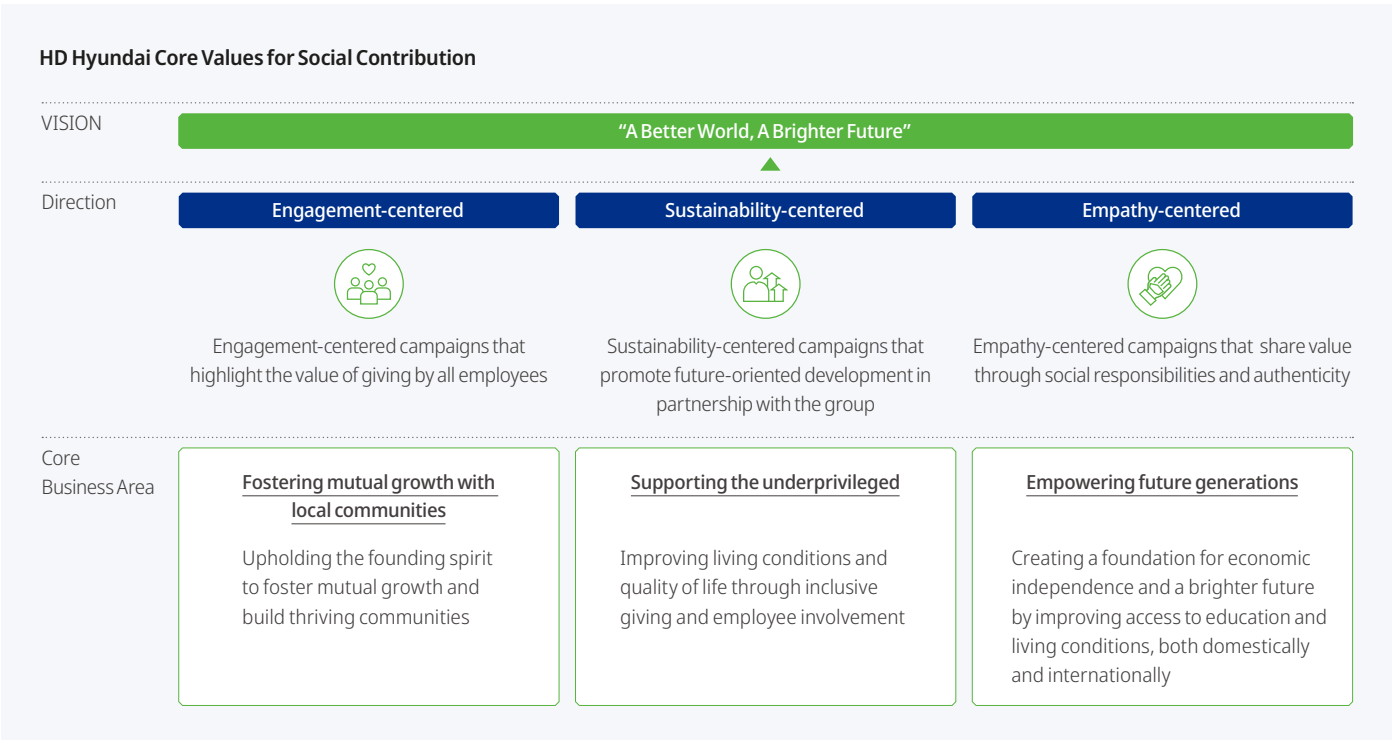
Strategy

Approach to Social Contribution

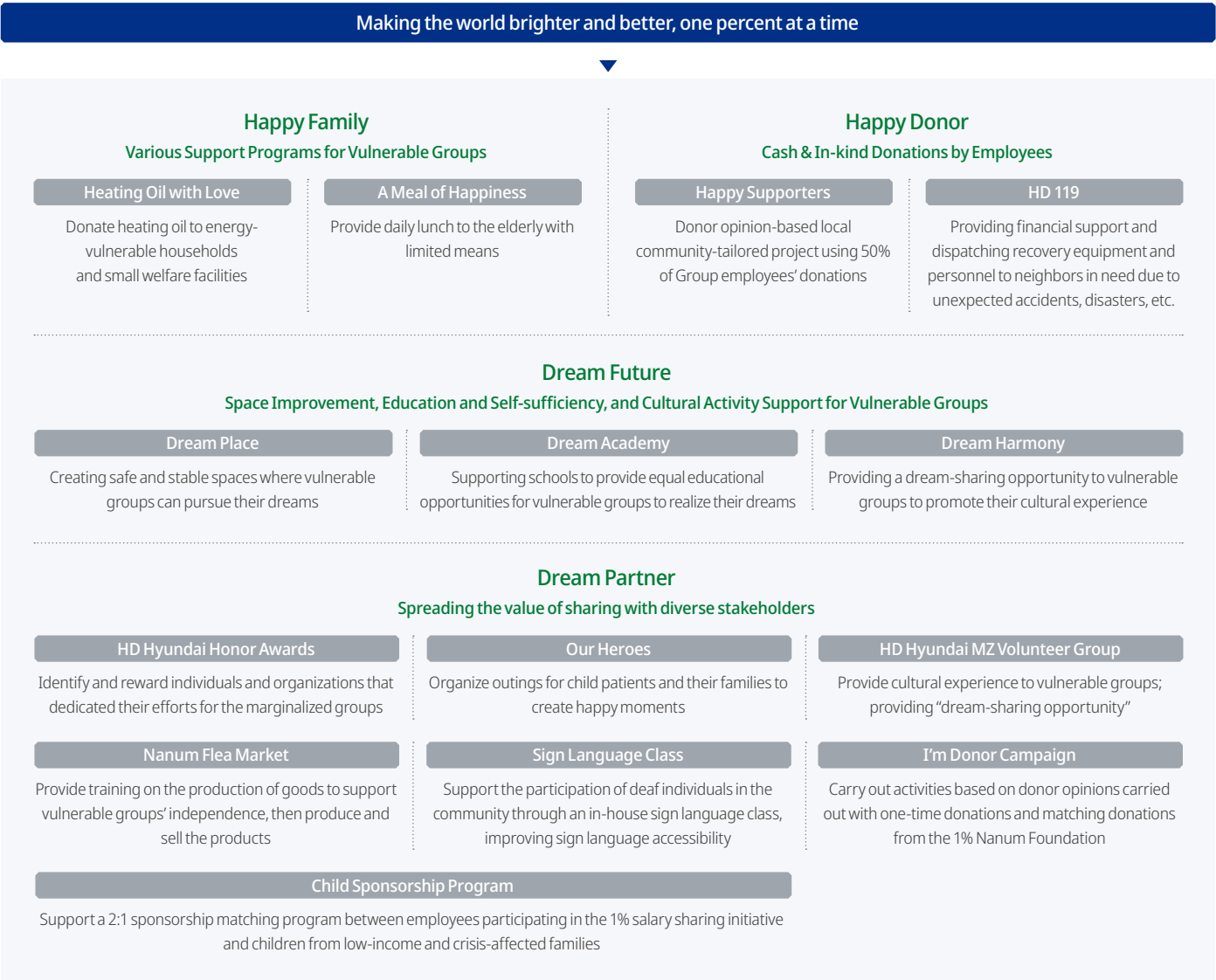
Vision for Social Contribution

HD Hyundai Energy Solutions is committed to building a warmer and healthier society in line with its vision of “A Better World, A Brighter Future.” To achieve this vision, we carry out a wide range of social contribution activities based on three key directions: engagement-centered activities in which employees actively participate, sustainability-centered activities pursued together with the Group, and empathy-centered activities grounded in social responsibility and authenticity.

Our efforts are aligned with the Sustainable Development Goals (SDGs) and focus on three core business areas: supporting the underprivileged, fostering mutual growth with local communities, and empowering future generations. Through our social contribution work, we help our neighbors and create opportunities for children to pursue their dreams.



HD Hyundai 1% Nanum Foundation Approach to Social Contribution



Social Contribution

Strategy

Social Contribution Initiatives

In-kind Donations for the Community

HD Hyundai Energy Solutions is committed to supporting senior centers and low-income households in Eumseong-gun, Chungcheongbuk-do, where our production facilities are located. Every year, in collaboration with HD Hyundai Construction Equipment, we donate a range of goods during traditional holidays such as Seollal and Chuseok to the Soi-myeon Administrative Welfare Center.



In-kind Donation Ceremony in Soi-myeon

Scholarship for Local High Schools

To foster local talent and support education in the community, we at HD Hyundai Energy Solutions provide scholarship programs to high schools located in Eumseong-gun, Chungcheongbuk-do province. We offer a semiannual scholarship to outstanding students from low-income households, chosen by principals of Eumseong High School and Maegoe High School. A total of eight students receive KRW 550,000 each—four from each school.

Support for Households with Minor Breadwinners in the Community

As part of our initiative to support vulnerable members of the local community, we at HD Hyundai Energy Solutions operate a support program for child-headed households in Eumseong-gun. Through Chungbuk Community Chest of Korea, we make designated cash donations to four child-headed households selected by the Eumseong-eup Office, providing KRW 100,000 for each beneficiary per month for 12 months, for a total of KRW 4.8 million.

Risk Management

Social Contribution Monitoring

Sponsorship Fund Execution Process

To prevent corruption and mitigate bribery risks, HD Hyundai Energy Solutions has established a fair and transparent sponsorship fund management process. The Human Resources and General Affairs Team receives sponsorship requests from various organizations, including local governments, schools, and charitable groups. The sponsorship program follows relevant procedures to assess the need for a sponsorship and eligibility. At present, most sponsorship programs are conducted through Happy Supporters, a donor-initiated project that is operated under the approval authority of the HD Hyundai 1% Nanum Foundation. For other sponsorship cases, sponsorship decisions are made based on a proposal by the Head of the Administration Team or approval by the CEO, strengthening objectivity and accountability in the sponsorship process.

Donation Execution Standards

To ensure the integrity of its sponsorships and donations, HD Hyundai Energy Solutions conducts preliminary reviews of each case for eligibility. In the selection process, recipient organizations are assessed to confirm that they are not involved in illegal, unethical, or controversial activities and remain politically and religiously neutral. In addition, we conduct a comprehensive evaluation to determine whether the activity aligns with our social contribution vision before making any donation. For the Happy Supporters project, we follow the internal standards defined by the HD Hyundai 1% Nanum Foundation.

Stakeholder Engagement Process

To promote stakeholder engagement and integrate their perspectives into our initiatives, HD Hyundai Energy Solutions facilitates ongoing communication through the Human Resources and General Affairs Team. The received feedback is reviewed internally and reflected in the planning of social contribution initiatives, as well as in the administration and execution of donations and sponsorships. We work closely with local authorities— including county and township offices—to determine the types of donation projects, timing and scale of donations or sponsorships, and the types of donated goods, thereby strengthening the foundation for cooperation with local communities.

Social Contribution

Metrics & Targets

Social Contribution Indicators and Goals

Performance Management and Short-term Goal Setting

HD Hyundai Energy Solutions has established short-term goals based on a structured governance framework for social contribution and is continuously managing progress toward achieving them. The social contribution goals are categorized into two quantifiable items: volunteer hours and social contribution project expenses.

Social Contribution Targets and Performance

Category		Unit	2025 Target	2025 Performance	2026 Target
HD Hyundai Energy Solutions	Volunteer hours	Hours	320	40	320
	Social contribution project expenses	KRW million	0.2	0.2	0.2

Category	Unit	HD Hyundai Energy Solutions
Total amount of community engagement activities	KRW million	20.9
Donation (Cash)	KRW million	13.6
Donation (In-kind)	KRW million	5.9
Monetary equivalent of employee volunteer hours	KRW million	1.4

Governance

Board of Directors

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Shareholders

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Ethics and Compliance

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Risk Management

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Board of Directors

Board Operation

Board Composition

HD Hyundai Energy Solutions has established a professional and independent board of directors to uphold our business philosophy and protect stakeholder interests in a balanced and transparent manner. As of March 2026, our board comprises two inside directors and three outside directors, all of whom possess essential expertise and industry experience in fields such as business management, economics, finance, accounting, and law.

Director Appointment Process

In accordance with the Commercial Act, directors are appointed at the general meeting of shareholders. Candidates are nominated by the Board of Directors and the Outside Director Candidate Recommendation Committee. To ensure transparency, information about each candidate—such as personal background, nominator, and any relationships with the largest shareholders—is disclosed in the notice convening the general meeting of shareholders.

Board Diversity

HD Hyundai Energy Solutions is dedicated to promoting board diversity to ensure that each agenda item is reviewed from various perspectives and to enhance operational efficiency. When selecting board candidates, we consider a range of factors including gender, race, religion, ethnicity, nationality, and cultural background. Our Corporate Governance Charter explicitly outlines the principle of board diversity in Article 5, and we adhere to it in the operation of the Board.

Board Tenure

Director terms are determined at the time of appointment, with a maximum term of three years. If a director’s term expires after the end of the fiscal year, but before the annual general meeting of shareholders for that fiscal year, it is extended until the conclusion of that meeting.

Board Independence

To ensure sound and transparent decision-making, more than half of HD Hyundai Energy Solutions’ board members are outside directors. In line with this, all board committees are chaired by outside directors. As stipulated in our Corporate Governance Charter, outside directors must not have any special relationships with major shareholders, executive management, or affiliates. Upon appointment, each outside director is required to submit a written declaration confirming the absence of any significant conflicts of interest with our company.

Status of Board Composition

(As of Mar. 31, 2026)

Category	Name	Gender	Career Highlights	Date of Appointment
Inside Directors	Park Jong Hwan	Male	Former) CEO of Changjuk Wind Energy Generation Former) CEO of Taebaek Wind Energy Generation Former) CEO, Taebaek Guinemi Wind Energy Generation Former) Head of Asset Planning Office, HD Korea Shipbuilding & Offshore Engineering Current) Chairman, Korea Photovoltaic Industry Association Current) CEO & President of HD Hyundai Energy Solutions	Aug. 2021
	Hyeong Seong Won	Male	Former) Head of HR Division, HD Hyundai Oil Bank Operational Support Office Former) Head of Planning Division, HD Hyundai Oil Bank Operational Support Office Former) Head of HR Division, HD Hyundai Oil Bank Operational Support Office Current) Head of Management Planning 1 Office, HD Hyundai	Mar. 2026
Outside Director	Yeo Hwan Seop	Male	Former) Chief Prosecutor, Gwangju District Prosecutor’s Office Former) Chief Prosecutor, Daejeon High Prosecutor’s Office Former) President, Legal Research and Training Institute Current) Outside Director, DS Dansuk Co., Ltd. Current) Attorney, Yeo Hwanseop Legal Office	Mar. 2024
	Kim Yong Won	Male	Former) Managing Director, Samil PwC Former) Senior Managing Director, Samil PwC Former) Vice President, Samil PwC Former) Advisor, Samil PwC Current) Auditor, Doowon Climate Control Co., Ltd.	Mar. 2025
	Lee Jeong Seop	Male	Former) Head of Environmental Policy, Ministry of Environment Former) 15th Vice Minister, Ministry of Environment Former) Advisory Member, Regulatory Innovation Task Force at the Office for Government Policy Coordination Current) Co-Chair of the Private Sector, Chungcheongnam-do Carbon Neutral Green Growth Committee Current) Advisor, Kim & Chang	Mar. 2025

Board Skills Matrix

Name	Leadership	CEO Experience	Risk Management	Finance & Accounting	Policy & Administration	Sales & Marketing	Legal & Regulatory	Qualifications
Park Jong Hwan	●	●	●		●	●	●	
Hyeong Seong Won	●		●		●			
Yeo Hwan Seop	●		●		●		●	Lawyer
Kim Yong Won	●		●	●				CPA
Lee Jeong Seop	●		●		●		●	

Board of Directors

Board Functions

The Board of Directors is responsible for establishing core business management policies, making decisions on key operational matters, and supervising directors in the performance of their duties. The board also reflects the diverse needs of both internal and external stakeholders in shaping management strategies and deliberating and resolving key matters. It uses an integrated risk management system to proactively respond to potential risks arising from a rapidly changing market environment, thereby enhancing corporate value and customer satisfaction.

Convening and Holding Board Meetings

In principle, the Board of Directors convenes at least once per quarter and may hold special meetings when urgent matters arise. To ensure efficient operations, board members are notified in advance and given adequate time to review agenda items. Resolutions are passed by a majority vote of directors present, unless otherwise specified in laws or the Articles of Incorporation. Minutes are prepared and retained for all Board meetings.

Board Operation Status

Resolution		Attendance	
No. of items resolved	No. of items reported	Inside Directors	Outside Directors
12 items	8 items	100%	100%

Board Training

Date	Description
Nov. 27, 2025	· Global economic forecast amid the changing global business environment - Global economic outlook and reorganization of the world economic order · Domestic and international trends requiring the Audit Committee's attention in 2026 - Amendment of the Commercial Act, measures to enhance accounting transparency

Board Training

HD Hyundai Energy Solutions conducts annual training sessions or meetings for outside directors, aligned with the board's meeting schedule. This helps promote independent decision-making and enhance their competencies, as well as ensure efficient performance of their duties. In 2025, we provided training on the reorganization of the economic order in the shifting global business environment and on domestic and international accounting and audit trends.

Board Support

To support effective board operations and enhance the expertise of outside directors, HD Hyundai Energy Solutions has established internal regulations that provide for professional assistance, including access to external experts at the company's expense when necessary. To strengthen the board's independence, regular meetings are held exclusively for outside directors, and the internal regulations were also revised to offer customized training programs upon request.

2025 Board Operation Performance

(As of Dec.31, 2025)

Category	Date	Description	Resolution Status	Approval Rate (%)
1st	Feb. 5, 2025	Approval of the 9th Financial Statements	Approved as proposed	100%
		Approval of the 9th Business Report	Approved as proposed	100%
		Report on the operational status of the Internal Accounting Control System in 2024	-	-
2nd	Feb. 20, 2025	Approval of the convening of the 9th Annual General Meeting of Shareholders and its agenda items	Approved as proposed	100%
		Report on the operational status of the Fair Trade Compliance Program (CP)	-	-
		Report on the operational status evaluation of the Internal Accounting Control System in 2024	-	-
3rd	Mar. 24, 2025	Appointment of CEO	Approved as proposed	100%
		Resolution on the appointment of the chairman of the Board and the order of succession in case of the chairman's absence	Approved as proposed	100%
		Appointment of a member of the Outside Director Candidate Recommendation Committee	Approved as proposed	100%
		Appointment of a member of the ESG Committee	Approved as proposed	100%
		Appointment of a member of the Compensation Committee	Approved as proposed	100%
4th	Apr. 24, 2025	Report on Business Performance for Q1 2025	-	-
5th	Jul. 24, 2025	Appointment of Compliance Officer	Approved as proposed	100%
		Report on the review of the compliance control standards	-	-
6th	Oct. 27, 2025	Report on Business Performance for 2025 H1	-	-
		Report on Business Performance for 2025 Q3	-	-
7th	Dec. 11, 2025	Setting the record date for determining shareholders	Approved as proposed	100%
		Renewal of trademark use contract	Approved as proposed	100%
		Approval of transaction limits between the Company and directors, etc., for 2026	Approved as proposed	100%
		Report on the Business Plan 2026	-	-

Board of Directors

Committees under the Board

Composition and Roles of Audit Committee

In accordance with the Commercial Act, HD Hyundai Energy Solutions has established an Audit Committee under the Board of Directors. The committee is composed entirely of outside directors, none of whom have affiliations with major shareholders or have conducted business transactions with our company in the past three years. The members bring diverse expertise in accounting, finance, law, management, and risk oversight, enabling the committee to provide effective supervision over financial audits, management’s business execution, financial soundness, and accuracy in financial reporting. The chair of the committee is a certified public accountant, ensuring a high level of professional competence.

Composition of the Audit Committee

(As of Mar. 31, 2026)

Category	Name	Areas of Expertise
Outside Director	Yeo Hwan Seop	Legal & Regulatory
Outside Director	Kim Yong Won*	Finance & Accounting
Outside Director	Lee Jeong Seop	Environment, Policy & Administration

* Chair of the Audit Committee

Supporting Organization for Audit Committee

To support the effective and seamless operation of the Audit Committee, HD Hyundai Energy Solutions may establish a support organization by resolution of the Board, with the consent of the committee. Following a review of the proposed roles and responsibilities, the support team will be formally established and its leader appointed in consultation with the committee.

Approval of Non-audit Services

To maintain the independence of external auditors, HD Hyundai Energy Solutions conducts a thorough preliminary review of any proposed non-audit service agreement with them before finalization. Information related to non-audit services is transparently disclosed through business reports, and any significant matters identified during the provision of such services are reported to the Audit Committee and disclosed through regular filings to ensure full transparency.

Composition and Roles of Outside Director Candidate Recommendation Committee

To ensure fairness in the appointment of outside directors, candidates are nominated and selected through the Outside Director Candidate Recommendation Committee. In accordance with the Commercial Act, a majority of the committee members—three of its four members—are outside directors. The chairperson is also selected from among the outside directors to support fair and transparent operation. The Outside Director Candidate Recommendation Committee meetings are held before the General Shareholders’ Meeting to recommend candidates. The candidates’ capabilities and expertise, their alignment with shareholder interests, and any potential risk of impairing corporate value are closely reviewed during the meeting.

Composition of Outside Director Candidate Recommendation Committee

(As of Mar. 31, 2026)

Category	Name	Areas of Expertise
Inside Director	Park Jong Hwan	Leadership, Risk Management
Outside Director	Yeo Hwan Seop*	Legal & Regulatory
Outside Director	Kim Yong Won	Finance & Accounting, Risk Management
Outside Director	Lee Jeong Seop	Environment, Policy & Administration

* Chair of the Outside Director Candidate Recommendation Committee

Composition and Roles of ESG Committee

HD Hyundai Energy Solutions operates an ESG Committee composed of one inside director and three outside directors. Each member brings expertise in law, finance, accounting, and business administration, positioning the committee as the control tower for our sustainability management. The committee is responsible for defining the direction of our ESG initiatives and making key decisions required for effective planning and implementation, while it also addresses ESG-related issues in business operations, including environmental matters, occupational safety and health, ethics, and compliance. In 2025, we established carbon neutrality targets and a management system to proactively respond to ESG disclosure regulations and set quantitative KPIs for the improvement rate of GHG emissions intensity. In addition, we systematically promoted human rights management by conducting human rights impact assessments aimed at establishing a due diligence system in response to the EU CSDDD, analyzing the results, and identifying improvement tasks.

Composition of ESG Committee

(As of Mar. 31, 2026)

Category	Name	Areas of Expertise
Inside Director	Park Jong Hwan	Leadership, Risk Management
Outside Director	Lee Jeong Seop*	Environment, Policy & Administration
Outside Director	Yeo Hwan Seop	Legal & Regulatory
Outside Director	Kim Yong Won	Finance & Accounting, Risk Management

* Chair of the ESG Committee

Composition and Roles of Compensation Committee

To ensure objectivity in determining compensation, HD Hyundai Energy Solutions has established a Compensation Committee. To ensure a fair and transparent decision-making process, the committee is entirely made up of outside directors, in which they serve to review and approve the compensation cap for directors and the compensation standards for executives. These matters are then submitted to the general shareholders’ meeting for final approval.

Composition of Compensation Committee

(As of Mar. 31, 2026)

Category	Name	Areas of Expertise
Outside Director	Lee Jeong Seop*	Environment, Policy & Administration
Outside Director	Yeo Hwan Seop	Legal & Regulatory
Outside Director	Kim Yong Won	Finance & Accounting, Risk Management

* Chair of the Compensation Committee

Board of Directors

Board Evaluation

Board Evaluation

To assess the effectiveness of its board composition, HD Hyundai Energy Solutions implemented a performance evaluation system for the board and outside directors. The evaluation is conducted annually and covers the Board as a whole. The framework is divided into board performance and individual outside director performance. The board performance is further divided into the board evaluation and evaluations of committees within the Board. The board evaluation includes 15 items across four categories, assessing the board’s roles and responsibilities, structure, operations, and the incorporation of evaluation results. The evaluations of committees within the board comprise 17 items in five categories. Based on the results of the board evaluation and board committee evaluation for 2025, the board was found to be properly structured and operating effectively, fulfilling its duties and responsibilities.

Compensation Structure

Performance incentives for management are divided into management bonuses and long-term incentives. The management bonus is paid at the beginning of the following year and is based on both quantitative indicators—such as revenue, order volume, and profit—and qualitative indicators, including leadership and expertise. The long-term incentive was introduced to prevent management decisions from focusing solely on short-term performance and maximize long-term corporate value. It is paid based on evaluation over a deferral period of at least three years and is determined by indicators, such as organizational performance assessments and short-term net income over the relevant period. Outside directors and audit committee members receive a fixed base salary, without performance incentives, to ensure their independence.

Compensation Criteria and Methods

Category	Description
Base salary	· Paid in equal monthly payments - Base pay: Determined by job position (grade) - Role-based pay: Determined by assigned duties (role)
Performance salary	· Paid based on organizational and individual evaluations, the achievement rate against the target operating profit, and other factors - Quantitative indicators: Revenue, order volume, operating profit, etc. - Qualitative indicators: Leadership, expertise in performing assigned duties, accountability, etc.

Compensation for the Board

In 2025, HD Hyundai Energy Solutions reached KRW 492,660 million in total revenue and KRW 41,223 million in operating profit. Based on these results, at the 10th Annual General Meeting of Shareholders held in March 2026, the total compensation limit for five directors—including three outside directors—was approved at KRW 1,400 million, maintaining the same level as the previous year.

Compensation Overview

(Unit: KRW million)

Category	2023	2024	2025
Total board compensation	762	775	1,019
Average compensation per director*	152	155	255
Total CEO compensation	510	516	753
CEO-to-average-employee compensation ratio	6.8 times	7.2 times	8.4 times

* Average compensation per director was calculated based only on the four registered directors to whom HD Hyundai Energy Solutions paid salaries.

Shareholders

Exercising Shareholder Rights

Shareholder Return Policy

HD Hyundai Energy Solutions places the highest priority on protecting shareholder value and interests by actively reviewing policies that promote shareholder-friendly policies. Dividend decisions are made within the limits of distributable earnings, based on a comprehensive assessment of profit levels, investment plans for future growth, and financial plans. We are committed to maintaining a dividend payout ratio of at least 30%, based on net income in our separate financial statements. Our dividend policy is designed to enhance shareholder returns and is determined with consideration of capital expenditures, cash flow, financial soundness, and dividend stability. This policy is subject to change, depending on the market conditions and economic outlook.

Protection of Shareholder Rights

HD Hyundai Energy Solutions upholds transparency in related-party and self-dealing transactions by requiring prior approval from the Board of Directors for all transactions involving major shareholders and stakeholders. Transactions amounting to KRW 10 billion or more, or 5% or more of the company’s paid-in capital (or total equity), are classified as large-scale and require prior board resolution and disclosure. If there are any self-dealing transactions involving directors or major shareholders, they are reported to and approved by the board in advance. Board approval requires the consent of at least two-thirds of all directors.

Notification about General Meeting and Convening

HD Hyundai Energy Solutions holds an annual general meeting of shareholders within three months following the end of each fiscal year and convenes extraordinary general meetings as necessary. Shareholders are notified of the meeting date and time, venue, and agenda at least two weeks in advance, either in writing or electronically. For shareholders who hold 1% or less of the total issued shares with voting rights, notice is provided by publishing announcements at least twice in both The Korea Economic Daily and Maeil Business Newspaper, or through the electronic disclosure system, to ensure full access to information and protect shareholder rights.

Resolutions and Voting Rights at the General Meeting

In principle, resolutions at the general meeting are adopted by the affirmative votes of a majority of the voting rights of shareholders present, representing at least one-fourth of the total number of issued shares, unless otherwise specified by law. Each shareholder is entitled to one vote per share in accordance with the Commercial Act and the Articles of Incorporation. Shareholders may exercise their voting rights by designating another shareholder as their proxy, provided that a proxy authorization letter is submitted to our company in advance.

Communication with Shareholders

HD Hyundai Energy Solutions is committed to transparent disclosure through corporate briefings and public disclosure systems. Quarterly business performance is disclosed in February, April, July, and October, and the earnings data is published on our official website for easy and convenient access by shareholders. Investor meetings with our IR team are also available by appointment. Key corporate information is transparently disclosed through our website and regulatory platforms such as DART and KIND.

Status of Issued Stocks

(As of Dec. 31, 2025)

Category	No. of authorized shares	No. of issued shares	Issuance ratio
Common stock*	30,000,000 shares	11,200,000 shares	37.3%

* We do not issue any classes of shares such as convertible preferred shares.

Major Shareholders

Shareholder	No. of shares	Percentage
HD Korea Shipbuilding & Offshore Engineering	6,000,000 shares	53.57%

10th General Meeting of Shareholders (Mar. 23, 2026)

Date of shareholder meeting	Agenda	Note
10th General Meeting of Shareholders (Mar. 23, 2026)	Approval of the 10th financial statements (Jan. 1, 2025 – Dec. 31, 2025)	Approved as proposed
	Partial amendment to the Articles of Incorporation	Approved as proposed
	Appointment of a director (1 inside director)	Appointment of inside director (1 director): Hyeong Seong Won
	Appointment of outside director as audit committee member (1 director)	Appointment of outside director (1 director): KIM YONG WON
	Approval of directors’ compensation cap	KRW 1.4 billion approved

Ethics and Compliance

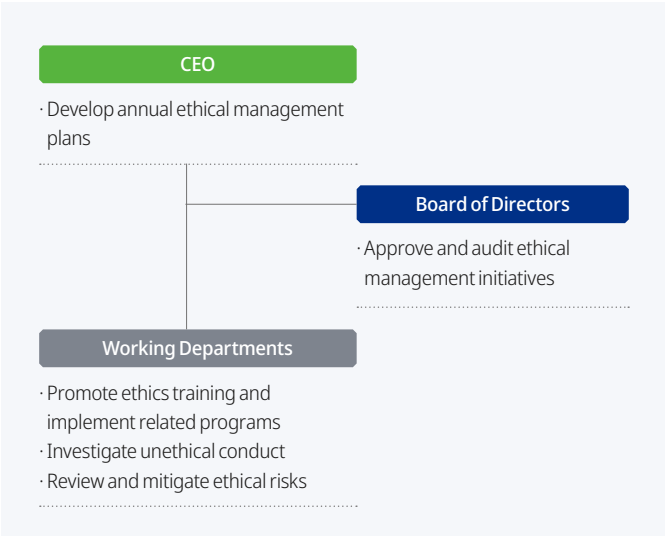
Governance

Ethics and Compliance Framework

Governance Body of Ethical and Compliance Management

HD Hyundai Energy Solutions has established ethical governance to foster a culture of integrity and fulfills its responsibilities as a corporate citizen. Based on HD Hyundai Group’s ethical management principles, the Board of Directors and the CEO develop annual ethical management plans, which are then implemented by relevant departments through initiatives.

Ethical Management Framework



Ethics Charter

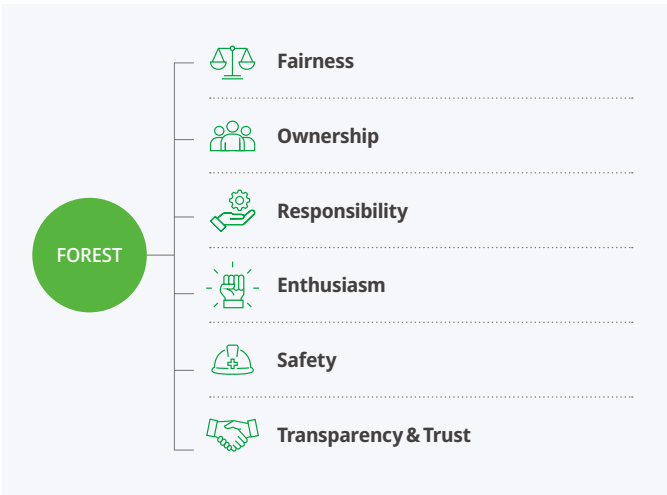
HD Hyundai Energy Solutions practices ethical management by applying the HD Hyundai Group Ethics Charter. Since declaring the charter in 2005 to encapsulate a management philosophy rooted in integrity, we have continued to comply with it. In December 2023, the charter was revised to reflect HD Hyundai’s updated core values, enabling us to pursue ethical management in a more systematic and effective manner.

Strategy

Core Ethical Management Values

In our pursuit to become a trusted company, HD Hyundai Energy Solutions applies HD Hyundai Group’s core ethical values to all aspects of its operations. Inspired by the forest that symbolizes coexistence and mutual prosperity, we uphold the values of Fairness, Ownership, Responsibility, Enthusiasm, Safety, and Transparency and Trust (FOREST). Based on these values, we are committed to creating an environment that supports the growth and advancement of all stakeholders.

Core Ethical Values



Ethics Training

To ensure consistent and effective implementation of ethical management strategies, HD Hyundai Energy Solutions organizes regular training on its ethical code for its employees. In 2025, we provided all employees with training on standards for integrity in the performance of their duties and conducted self-assessments for all executives, office and research employees, and employees at the team leader level or above in production and technical positions.

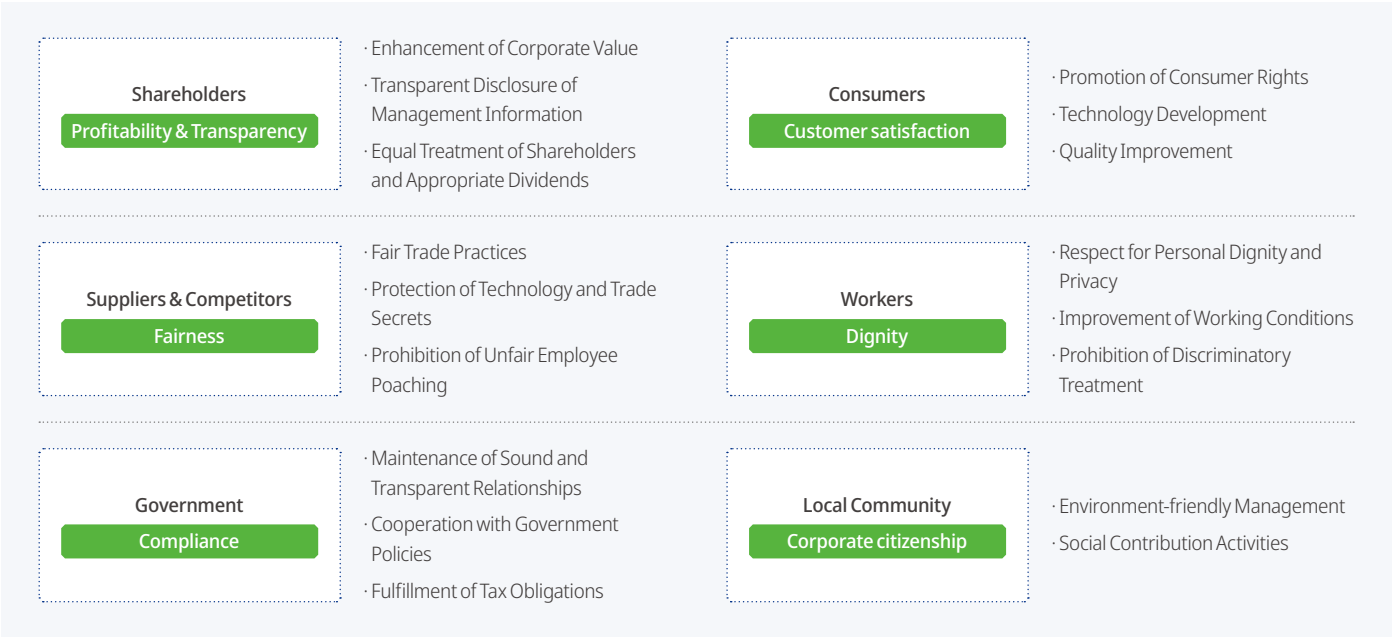
Compliance Training

HD Hyundai Energy Solutions offers regular compliance training programs for newly appointed executives, department heads, team leaders, key managers, and new hires. The training covers such topics as the Fair Trade Act, the Subcontracting Act, major legal advisory cases, and contract-related risks, and each program is tailored to reflect the roles and job characteristics of participants.

Direction of Ethical Management

Our commitment to ethical management drives us to become a company that customers and business partners choose to engage with, shareholders want to invest in, employees want to work for, and that fulfils its corporate responsibilities to the nation and society.

HD Hyundai Group’s Direction of Ethical Management



Compliance Officer and Compliance Control Standards

At HD Hyundai Energy Solutions, we have appointed a compliance officer to prevent and manage legal risks. This officer reviews compliance initiatives such as compliance training, the operation of the Fair Trade Voluntary Compliance Program, and carries out compliance control activities to ensure that we remain within the bounds of applicable laws.

Appointment of Compliance Officer

Name	Date of Appointment	Career Highlights
KIM YUN HWA	2025.07.24	Former) HD Hyundai Electric (2020–2022) Current) HD Hyundai Energy Solutions (2022–Present)

Ethics and Compliance

Risk Management

Ethics and Compliance Risk Management

Fair Trade Compliance Program (CP)

To promote transparent and fair management, HD Hyundai Energy Solutions officially declared its commitment to fair trade compliance in 2022 and distributed the Fair Trade Compliance Handbook throughout the organization. The handbook covers information on the Fair Trade Act and the Subcontracting Act. In accordance with the Fair Trade Compliance Program regulations, we also review the program’s operational status and compliance at least once a year and report the results to the Board of Directors. To strengthen employees’ compliance awareness, we conducted fair trade compliance training in March, April, and October 2025.

Compliance Training Performance

Date	Target	Description
Mar. 2025	All employees	Regular online compliance training
Apr. 2025	Compliance Officer	Role and activities of Compliance Action Leader
Oct. 2025	Medium-risk departments	Compliance training for the second half of 2025

Anti-corruption Risk Assessment

To identify and prevent corruption risks, HD Hyundai Energy Solutions conducts an annual assessment focused on anti-corruption practices. This assessment involves identifying compliance and corruption risks related to the Fair Trade Act, the Subcontracting Act, and the Anti-corruption Act, and assessing the severity of these risks. Identified risks are then categorized into five levels: negligible, minor, moderate, major, and critical, and we implement appropriate measures to address them based on the urgency and severity of the findings.

Grievance Handling Committee

Our Grievance Handling Committee is committed to addressing unethical conduct in the workplace and assisting in the resolution of employee concerns. The committee reviews reported cases related to bullying, sexual harassment, and gender discrimination in the workplace. HD Hyundai Energy Solutions ensures that the voices of affected individuals are heard through counseling, and the committee monitors situations to prevent secondary victimization. The committee also reviews potential disciplinary measures for offenders and explores preventive actions to avoid the recurrence of similar incidents.

Grievance Handling Process



Grievance Handling Data

No. of cases reported	No. of cases handled	Percentage of handled cases (%)
0 cases	0 cases	-

Whistleblower Protection

To ensure the strict confidentiality of whistleblowers’ identities and report details, we at HD Hyundai Energy Solutions operate the Whistleblower Protection and Reward Program. Whistleblowers’ identities are not disclosed without their consent, and no retaliation or discrimination is allowed for legitimate reporting. If a report contributes to preventing financial loss, recovering revenue, or reducing costs, and meets the reward requirements, then the whistleblower is eligible for a reward of up to KRW 1 billion.

Internal Whistleblowing System and Process



Ethical Criteria in HR Evaluations

HD Hyundai Energy Solutions incorporates ethics and compliance standards into its employee evaluations. For managers in heads of team or higher positions, ESG ethical management criteria are required to account for 5% of their MBO evaluations. If any ethical violations are identified, points are deducted from their performance evaluation scores. During promotion reviews, a point-based system is applied, under which disciplinary actions for misconduct result in point deductions. This approach ensures that ethical management criteria are reflected in performance evaluations and promotion decisions.

Disciplinary System

HD Hyundai Energy Solutions convenes an HR (Disciplinary) Committee to take strict disciplinary action against employees who engage in unethical conduct, based on the nature and severity of each case. Our disciplinary system ranges from minor disciplinary measures—such as warnings and reprimands—to major disciplinary measures, including salary reductions and dismissal. Following a thorough review, we take action against unethical conduct in accordance with established principles.

Risk Management

Governance

Risk Management Framework

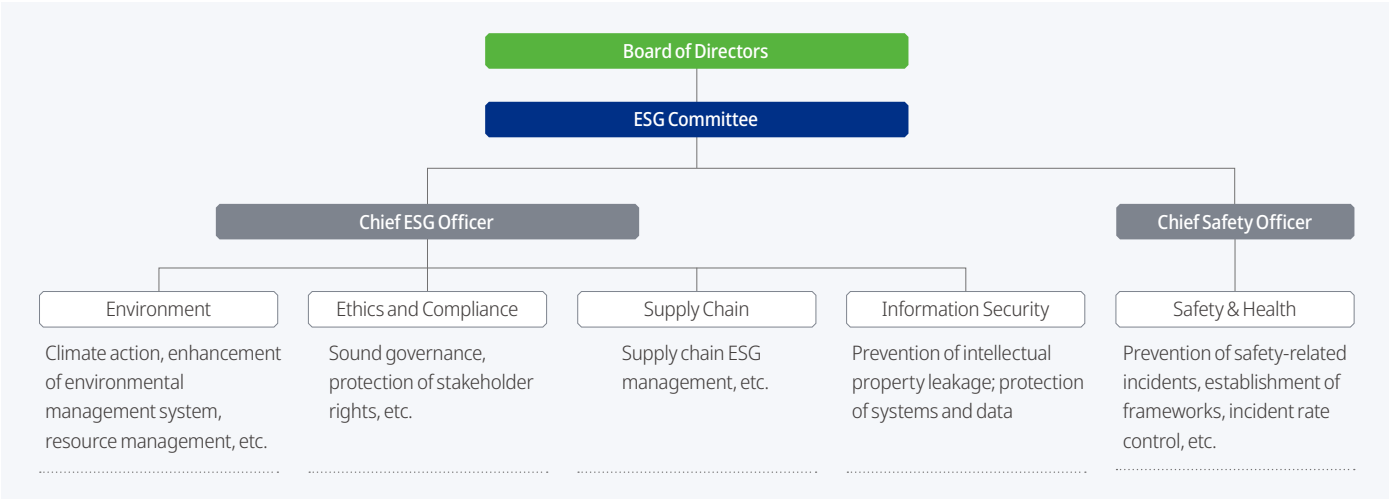
Company-wide Risk Management

HD Hyundai Energy Solutions has established a board-led risk management framework to ensure stable business operations by effectively managing both financial and non-financial risks.

Under the Board of Directors, the ESG Committee plays a pivotal role in reviewing ESG policies and issues, as well as supporting the execution of operational tasks. In our efforts to manage a wide range of ESG risks—including those related to environmental risks, occupational safety and health, ethics and compliance, supply chain, and information security—and assess opportunities, we have developed a sustainable management framework by which we can proactively respond to rapidly changing market conditions.

Risk management practices are regularly reported to the Board of Directors by the Chief ESG Officer, the executive in charge of Finance and Accounting, and we have appointed the executive officer responsible for production at the Eumseong Plant as the Chief Safety Officer (CSO) to oversee any risks that may arise during the production process.

Risk Management Framework



Strategy

Risk Management Strategy

Risk Identification and Assessment

Based on various data, including previous business performance, HD Hyundai Energy Solutions analyzes amendments to laws and regulations related to business operations, changes in the economic environment, and the expectations and requirements of stakeholders to identify risks. These identified risks are regularly reviewed to ensure that they remain within a range we are willing to accept in pursuing value creation, and we conduct a materiality assessment annually to determine our key risks.

Response to Risks

Our risk management strategies outline limits and standards for risks controls to prevent them from exceeding acceptable thresholds. These risk management policies and systems undergo regular reviews, reflecting changes in market conditions and the business environment. Training is offered to ensure that all employees understand risk management standards, procedures, roles, and responsibilities, thereby fostering a rigorous and structured control environment. In addition, the Audit Committee reviews management’s implementation of risk management policies and compliance with procedures, as well as the appropriateness of the risk management framework.

Risk Management

Risk Management

Credit Risk Management

Credit risks associated with our trade receivables, other receivables, and contract assets largely depend on the individual characteristics of our clients. Since most of our clients are financially sound companies in Korea and abroad, the impact of sovereign credit risks in the countries where they are located is considered limited. Nevertheless, HD Hyundai Energy Solutions maintains provisions against credit risks based on historical bad debt experience rates, following individual or collective assessments, to prepare for potential exposure.

Liquidity Risk Management

To prevent unacceptable financial losses or impairment of the financial soundness of our consolidated entity, HD Hyundai Energy Solutions manages liquidity risks. Our primary focus is to maintain sufficient liquidity to meet maturing liabilities as they fall due. To prevent liquidity risks associated with repayment of financial liabilities, we regularly monitor liquidity forecasts and manage to ensure that covenant breaches do not occur. Based on these forecasts, we efficiently manage surplus funds using a variety of financial instruments with appropriate maturity profiles and sufficient liquidity, including interest-bearing current accounts, time deposits, and demand deposits.

Market Risk Management

HD Hyundai Energy Solutions is exposed to foreign exchange risk arising from sales and purchases denominated in currencies other than the Korean won, our functional currency. To manage market risk arising from changes in the value of financial instruments or future cash flows due to market price fluctuations, we conduct quarterly reviews of our settlement currencies to manage exchange rate risks and optimize our income while keeping our risk within acceptable limits.

Potential Risk Management

HD Hyundai Energy Solutions identifies potential risks that may affect its business operations over the mid- to long-term and systematically establishes response strategies to address them. Led by the ESG Committee, we engage in in-depth discussions on identified risks, and formulate preemptive actions for prioritized issues through resolutions by the ESG Committee and the Board of Directors. In addition, all our employees, including the Chief ESG Officer, consistently monitor financial, non-financial, and potential risks to ensure the timely establishment of effective strategies and policies and implement risk mitigation activities.

Identifying and Managing Potential Risks

Risk Overview		Action Plan
Growing Global Uncertainty	· Energy price fluctuations, supply chain instability, shrinking global trade due to prolonged regional conflicts · Exchange-rate fluctuations and capital flows due to the changes in the interest rate policies of major nations · Changes in the global trade structure due to the strengthening of a domestic-focused supply chain strategy following the pandemic	· Drive sustainable growth by enhancing competitiveness through new product launches and improving productivity · Enhance financial risk management capabilities to address credit, liquidity, and other financial risks
Increase in Raw Material Prices	· Rapid increase of the critical minerals with the carbon neutrality and expansion of EV-renewable energy industries · Limited supply due to delay in mining development caused by stricter regulations · Strengthening of export restrictions or production control in major producing countries	· Launch products tailored for residential, commercial/utility, and floating solar markets · Increase demand for products using domestically produced cells with Grade 1 Certification for Carbon Emissions
Climate Action	· Disruptions to production, logistics delays, and facility damage caused by the increase in extreme weather events such as heatwaves, floods, droughts, and typhoons · Strengthened sanctions due to the expansion of global climate regulations · Strengthening of climate action standards of global investors and financial institutions	· Develop a roadmap to mid-to long-term strategies and targets for GHG emission reduction · Strengthen climate response strategies by participating in CDP and other global initiatives
Stricter Human Rights Regulations	· Expansion of mandatory human rights due diligence in supply chains · Strengthening of the international community's responsibility standards for human rights protection · Increased demand from stakeholders, including investors, consumers, and civil society, for human rights accountability	· Establish a human rights governance framework, including Human Rights Management Committee, Human Rights Management Declaration and Regulations · Reinforce human rights impact assessments and identify the impact on human rights across supply chain and conduct assessments
Supply Chain ESG Management	· Trend towards strengthening global supply chain due diligence and regulations, including corporate sustainability due diligence guidelines · Expansion of supplier ESG assessments by global companies and major customers · Expansion of corporate reputation and management impact due to environmental pollution, labor rights issues, and safety accidents within the supply chain	· Comply with HD Hyundai Group's supply chain management policies · Conduct ESG management assessments of domestic and overseas suppliers, establish a management framework, and support issue-specific risk mitigation

Risk Sensitivity Analysis

Financial Risk Sensitivity

HD Hyundai Energy Solutions analyzes the impact of key risks on core operating indicators—such as our revenue, profit and loss, and corporate value—and measures their sensitivity and incorporates the results into its financial planning. In cases where actuarial assumptions used in measuring defined benefit obligations, including those related to defined benefit obligations, change within a reasonable range at the end of the current and prior reporting periods, we assess their financial impact and disclose the results in our business report.

Non-financial Risk Sensitivity

The ESG Committee under the Board of Directors defines the strategic direction for our ESG strategy and makes decisions regarding planning and implementation. The committee also supports the execution of operational tasks while identifying and managing non-financial ESG risks associated with occupational safety and health, ethics and compliance, supply chain, and information security.

ESG Factbook

Consolidated Financial Data	Environmental Data	Social Data	Governance Data
64	65	67	69

Consolidated Financial Data

Summary of Consolidated Financial Statements

Category	Unit	2023 (8th)	2024 (9th)	2025 (10th)
Current assets	KRW million	361,110	318,190	386,078
Cash and cash equivalents	KRW million	104,930	140,390	36,512
Short-term financial assets	KRW million	0	0	110,000
Trade and other receivables	KRW million	84,490	77,403	130,721
Contract assets	KRW million	20	5,828	1,586
Inventories	KRW million	168,208	83,410	95,368
Other current assets	KRW million	3,461	10,622	11,891
Current tax assets	KRW million	1	537	-
Non-current assets	KRW million	140,947	135,584	144,352
Long-term financial assets	KRW million	2,266	2,271	2,311
Long-term trade and other receivables	KRW million	868	1,013	456
Tangible assets	KRW million	94,813	87,541	97,903
Right-of-use assets	KRW million	2,169	2,010	1,167
Intangible assets	KRW million	10,175	9,542	9,811
Other non-current assets	KRW million	890	732	971
Deferred tax assets	KRW million	29,766	32,475	31,733
Total assets	KRW million	502,057	453,774	530,430
Current liabilities	KRW million	105,253	70,005	95,540
Non-current liabilities	KRW million	25,247	14,085	17,106
Total liabilities	KRW million	130,500	84,090	112,646
Share capital	KRW million	56,000	56,000	56,000
Capital surplus	KRW million	105,855	105,855	105,855
Accumulated other comprehensive income	KRW million	4,728	2,643	8,869
Retained earnings	KRW million	204,974	205,186	247,060
Total equity	KRW million	371,557	369,684	417,784

Summary of Consolidated Profit & Loss Statement

Category	Unit	2023 (8th)	2024 (9th)	2025 (10th)
Revenue	KRW million	546,120	422,371	492,660
Operating profit (loss)	KRW million	17,543	3,503	41,223
Net income (loss) for the year	KRW million	(2,864)	114	41,677
Basic earnings (loss) per share	KRW	(256)	10	3,721

Environmental Data

GHG Emissions

Indicator	Unit	2023	2024	2025
Total GHG emissions (Scope 1+2)	tCO ₂ eq	41,779	19,982	29,555
Direct emissions (Scope 1)	tCO ₂ eq	6,162	1,851	3,122
Indirect emissions (Scope 2)	tCO ₂ eq	35,617	18,132	26,433
Emission intensity (per revenue)	tCO ₂ eq/KRW billion	80.0*	49.4*	61.0

* Data for 2023 and 2024 has been revised to reflect unit changes under the Group's indicator management system.

Water

Indicator	Unit	2023	2024	2025
Total water withdrawal	m ³	516,561	206,866	316,465
Municipal water withdrawal	m ³	516,561	206,866	316,465
Water withdrawal intensity (per revenue)	m ³ /KRW million	0.99*	0.51*	0.65
Water discharge	m ³	360,562	69,347	199,008
Water consumption	m ³	155,999	137,519	117,457
Water consumption intensity (per revenue)	m ³ /KRW billion	298.8	339.6	242.5

* Data for 2023 and 2024 has been revised to reflect unit changes under the Group's indicator management system.

Energy

Indicator	Unit	2023	2024	2025
Total energy consumption	TJ	780	401	578
Energy intensity (per revenue)	TJ/KRW billion	1.5*	1.0	1.2
Non-renewable energy consumption	TJ	780	401	579
Direct energy consumption	TJ	37.431	23.025	21.812
Indirect energy consumption	TJ	744.324	379.005	557.562
Electricity consumption	TJ	744.068	378.729	557.249
Steam/heat consumption	TJ	0.256	0.276	0.313
Renewable energy generation	MWh	4,712	4,120	5,034
Renewable energy sold	MWh	4,712	4,120	3,736
Renewable energy self-consumption	MWh	-	23	1,298

* Data for 2023 has been revised to reflect unit changes under the Group's indicator management system.

Air Pollutants

Indicator	Unit	2023	2024	2025
Nitrogen oxides (NOx) emissions	kg	1,146	682	2,208
Sulfur oxides (SOx) emissions	kg	60	46	3,209
Total suspended particles (TSP) emissions	kg	2,075	280	4,101

Water Pollutants

Indicator	Unit	2023	2024	2025
Total organic carbon (TOC) emissions	kg	505	116	531
Biochemical oxygen demand (BOD)	kg	82	40	692
Suspended solids (SS) emissions	kg	367	83	310
Total nitrogen (TN) emissions	kg	1,895	239	868
Total phosphorus (TP) emissions	kg	12	2	10

Environmental Data

Waste

Indicator	Unit	2023	2024	2025
Total waste generated	ton	7,281	3,348	5,991
Amount of waste reused or recycled	ton	7,261	3,343	5,950
Reuse and recycling rate	%	99.7	99.9	99.3
General waste generated	ton	4,979	2,724	3,223
Amount reused or recycled	ton	4,979	2,724	3,223
Landfilled	ton	0	0	0
Incinerated	ton	0	0	0
Designated waste generated	ton	2,303	624	2,768
Amount reused or recycled	ton	2,282	619	2,727
Landfilled	ton	0	0	0
Incinerated	ton	21	5	41
Construction waste generated	ton	0	0	0
Amount reused or recycled	ton	0	0	0
Landfilled	ton	0	0	0
Incinerated	ton	0	0	0

Green Procurement

Indicator	Unit	2023	2024	2025
Environmental investments	KRW 100 million	2.7	3.3	9.0
Green sales	KRW million	4,237	10,434	1,358
Green purchases	KRW 100 million	138	0	0
Percentage of green purchases	%	4.59	0	0

Social Data

Employees

Indicator	Unit	2023	2024	2025
Total number of employees	person	240	225	243
Total number of executives	person	5	5	5
Total number of non-executive employees	person	235	220	238
Number of permanent employees	person	201	197	217
Male	person	170	166	184
Female	person	31	31	33
Number of fixed-term employees	person	34	23	21
Male	person	23	14	17
Female	person	11	9	4
Age under 30	person	45	23	33
Age 30–50	person	146	157	166
Age 50 and over	person	44*	40*	39
Korean nationals	person	232	217	232
Mexican nationals	person	1	1	1
Chinese nationals	person	2	2	5

* Data for 2023 and 2024 has been revised due to changes in calculation criteria under the Group's indicator management system.

Diversity in the Workplace

Indicator	Unit	2023	2024	2025
Female employees	person (%)	42 (17.5%)	40 (17.8%)	37 (15.2%)
Female managers	person (%)	1 (2.3%)	1 (2.6%)	1 (2.0%)
Female non-managers	person (%)	42 (22.6%)	39 (22.0%)	36 (19.0%)
Female employees in STEM fields	person (%)	9 (24.3%)	5 (13.9%)	5 (15.6%)

Recruitment and Retention

Indicator	Unit	2023	2024	2025
New hires	person	7	9	21
Turnover	person (%)	18 (9.5%)	20 (10.0%)	19 (10.0%)
Voluntary turnover	person (%)	15 (7.9%)	17 (8.5%)	18 (9.1%)
Average length of employment	year	9.1	10.2	10
Male	year	10.3	11.5	10.9
Female	year	3.6	4.4	5.2

Performance Evaluation and Compensation

Indicator	Unit	2023	2024	2025
Number of employees subject to regular performance evaluation	person	153	151	161
Number of employees evaluated for regular performance	person	145	146	147
Percentage of employees evaluated for regular performance	%	94.8	96.7	91.3
Average employee salary	KRW million	75	72	90
Male	KRW million	80	78	96
Female	KRW million	47	45	55

Parental Leave

Indicator	Unit	2023	2024	2025
Number of employees who took parental leave	person	3	3	1
Male	person	3	3	0
Female	person	0	0	1
Returned from parental leave and remained employed for at least 12 months	person	4	1	2
Male	person	4	1	2
Female	person	0	0	0

Social Data

Employee Training*

Indicator	Unit	2023	2024	2025
Total training hours	hour	594	740	699.1
Training hours per person	hour/person	2.475	3.289	2.877
Total training expenses	KRW million	101	50	100
Training expense per employee	KRW million/person	0.421	0.222	0.412
Employees who completed training	person (%)	198 (82.5%)	220 (97.8%)	226 (93.0%)

* Employee training data includes all legally mandated training and in-house training, excluding safety training. Employees who completed training were counted without duplication.

Occupational Health and Safety (Employees)

Indicator	Unit	2023	2024	2025
Total working hours	hour	478,240*	442,960*	445,176
Fatality rate	cases per 200,000 working hours	0	0	0
No. of fatal incidents	case	0	0	0
Lost time injury frequency rate (LTIFR)	cases per 1 million working hours	0	2.25	4.49
No. of lost time injuries	case	0	1	2
Total recordable injury frequency rate (TRIFR)	cases per 1 million working hours	12.55*	9.03*	4.49
No. of recordable injuries	case	6	4	2
Occupational illness frequency rate (OIFR)	cases per 200,000 working hours	0	0	0
No. of occupational illness cases	case	0	0	0
Near miss frequency rate (NMFR)	cases per 200,000 working hours	0	0	0
Number of near miss cases	case	0	0	0

* Data for 2023 and 2024 has been revised to reflect changes in criteria under the Group's indicator management system.

Occupational Health and Safety Management System (OHSMS)

Indicator	Unit	2023	2024	2025
Percentage of OHSMS certification	%	100	100	100
No. of work sites subject to OHSMS certification	site	1	1	1
No. of OHSMS-certified work sites	site	1	1	1

Occupational Health and Safety (Suppliers)

Indicator	Unit	2023	2024	2025
Total working hours*	hour	723,240*	413,560*	412,128
Fatality rate	cases per 200,000 working hours	0	0	0
No. of fatal incidents	case	0	0	0
Lost time injury frequency rate (LTIFR)	cases per 1 million working hours	0	0	9.71
No. of lost time injuries	case	0	0	4
Total recordable injury frequency rate (TRIFR)	cases per 1 million working hours	0	0	9.71
No. of recordable injuries	case	0	0	4
Occupational illness frequency rate (OIFR)	cases per 200,000 working hours	0	0	0
No. of occupational illness cases	case	0	0	0
Near miss frequency rate (NMFR)	cases per 200,000 working hours	0	0	0
Number of near miss cases	case	0	0	0

* Data for 2023 and 2024 has been revised to reflect changes in criteria under the Group's indicator management system.

ESG Evaluation in Supply Chain

Indicator	Unit	2023	2024	2025
1st-tier suppliers evaluated in documents	company	30	5	10
Key 1st-tier suppliers evaluated in documents	company	10	5	0
1st-tier suppliers evaluated on-site	company	5	5	3
Key 1st-tier suppliers evaluated on-site	company	4	5	0
Suppliers with identified risks	company	0	1	2

Social Contribution

Indicator	Unit	2023	2024	2025
Cash donations	KRW million	23.6	13.6	13.6
In-kind donations	KRW million	5.4	8.8	5.9
Amount equivalent to employee volunteer hours	hour	56	46	40

Governance Data

Board of Directors

Indicator	Unit	2023	2024	2025
Total no. of board members	person	5	5	5
No. of outside directors	person	3	3	3
No. of inside directors	person	2	2	2
No. of other non-executive directors	person	0	0	0
No. of male directors	person	5	5	5
No. of female directors	person	0	0	0
Age under 30	person	0	0	0
Age 30–49	person	2	0	0
Age 50 and over	person	3	5	5
No. of board meetings	meeting	8	7	7
No. of agenda items	item	13	15	12
Average attendance rate	%	98	100	100

Board Committees

Indicator	Unit	2023	2024	2025
No. of outside director recommendation committee members	person	4	4	4
Percentage of outside directors	%	75	75	75
No. of committee meetings	meeting	0	2	2
No. of audit committee members	person	3	3	3
Percentage of outside directors	%	100	100	100
No. of committee meetings	meeting	6	6	7
No. of ESG committee members	person	4	4	4
Percentage of outside directors	%	75	75	75
No. of committee meetings	meeting	2	2	3

Stock

Indicator	Unit	2023	2024	2025
Total no. of issued shares	share	11,200,000	11,200,000	11,200,000
Common shares	share	11,200,000	11,200,000	11,200,000
Non-voting shares	share	0	0	0
Advance notice period for general meeting location and agenda	day	33	33	30

Ethics and Compliance Training

Indicator	Unit	2023	2024	2025
Percentage of employees who completed ethics training	%	86.4	90.7*	88.9
No. of employees subject to ethics training	person	235	225*	243
No. of employees who completed ethics training	person	203	204	216

* The number of employees subject to ethics training has been revised under the Group's indicator management system, and the training completion rate has been corrected accordingly.

Ethics Risk Assessment

Indicator	Unit	2023	2024	2025
No. of legal consultations on anti-corruption and economic sanctions	case	0	0	0
No. of other legal consultations	case	80	85	139

Governance Data

Information Security and Privacy

Indicator	Unit	2023	2024	2025
No. of privacy violations	case	0	0	0
No. of customers affected by privacy violations	person	0	0	0
No. of information security violations	case	0	0	0
No. of customers affected by information security violations	person	0	0	0

Information Security Training

Indicator	Unit	2023	2024	2025
Total information security training hours	hour	198	216	192
Training hours per person	hour	1	1	1
No. of employees who completed information security training	person	198	216	192

Appendix

GRI Index	SASB Index	Independent Assurance Statement	Greenhouse Gas Assurance Statement	Membership and Online Disclosure
72	76	77	79	80

GRI Index

GRI 2: General Disclosure

Category	No.	GRI Disclosure	Location	Note
Organizational Details	2-1	Organizational details	p. 5	
	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	-	Marked with separate footnotes where applicable
	2-5	External assurance	p. 77-79	
Activities and Workers	2-6	Activities, value chain and other business relationships	p. 5-6	
	2-7	Employees	p. 34-37, 67	
	2-8	Workers who are not employees	p. 34-37, 67	
Governance	2-9	Governance structure and composition	p. 9, 54	
	2-10	Nomination and selection of the highest governance body	p. 54	
	2-11	Chair of the highest governance body	p. 54	
	2-12	Role of the highest governance body in overseeing the management of impacts	p. 55	
	2-13	Delegation of responsibility for managing impacts	p. 55	
	2-14	Role of the highest governance body in sustainability reporting	p. 9, 56, 61	
	2-15	Conflicts of interest	p. 54, 59	
	2-16	Communication of critical concerns	p. 55	
	2-17	Collective knowledge of the highest governance body	p. 54	
	2-18	Evaluation of the performance of the highest governance body	p. 57	
	2-19	Remuneration policies	p. 57	
	2-20	Process to determine remuneration	p. 57	
	2-21	Annual total compensation ratio	p. 57	

Category	No.	GRI Disclosure	Location	Note
Strategy, Policies and Practices	2-22	Statement from the highest governance body	p. 4	
	2-23	Policy commitments	p. 21, 38, 58-59	
	2-24	Embedding policy commitments	p. 21, 38, 58-59	
	2-25	Processes to remediate negative impacts	p. 60	
	2-26	Mechanisms for seeking advice and raising concerns	p. 60	
	2-27	Compliance with laws and regulations	p. 60, 70	
	2-28	Membership associations	p. 80	
Stakeholder Engagement	2-29	Approach to stakeholder engagement	p. 13	
	2-30	Collective bargaining agreements	p. 34	

GRI 3: Material Topic

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-1	Process to determine material topics	p. 12	
	3-2	List of material topics	p. 12	

Material issue ① Environmental Impact Reduction Technology

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	Non-GRI	Environmental Impact Reduction Technology	p. 18-21	

GRI Index

Material Issue ② Quality Management

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	416-1	Assessment of the health and safety impacts of product and service categories	p. 45-46	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	p. 45-46	

Material Issue ③ Climate Action

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	302-1	Energy consumption within the organization	p. 17, 65	
	302-2	Energy consumption outside of the organization	Information incomplete	To be calculated later
	302-3	Energy intensity	p. 65	
	302-4	Reduction of energy consumption	p. 17	
	302-5	Reductions in energy requirements of products and services	p. 18-21	
	305-1	Direct (Scope 1) GHG emissions	p. 17, 65	
	305-2	Energy indirect (Scope 2) GHG emissions	p. 17, 65	
	305-3	Other indirect (Scope 3) GHG emissions	Information incomplete	To be calculated later
	305-4	GHG emissions intensity	p. 17, 65	
	305-5	Reduction of GHG emissions	p. 17	
	305-6	Emissions of ozone-depleting substances (ODS)	-	No emissions
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	p. 25, 65	

Material Issue ④ Supply Chain Management

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	308-1	New suppliers that were screened using environmental criteria	p. 44	
	308-2	Negative environmental impacts in the supply chain and actions taken	p. 44	
	414-1	New suppliers that were screened using social criteria	p. 44	
	414-2	Negative social impacts in the supply chain and actions taken	p. 44	

Material Issue ⑤ Human Resource Management

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	2-7	Employees	p. 34-37, 67	
	2-8	Workers who are not employees	p. 34-37, 67	
	401-1	New employee hires and employee turnover	p. 67	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	p. 36	
	401-3	Parental leave	p. 67	

Material Issue ⑥ Shareholder Protection

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	201-1	Direct economic value generated and distributed	p. 5, 58, 64	
	201-2	Financial implications and other risks and opportunities due to climate change	p. 62	
	201-3	Defined benefit plan obligations and other retirement plans	p. 35	

Material Issue ⑦ Social Contribution

Category	No.	GRI Disclosure	Location	Note
Material Topic Disclosures	3-3	Management of material topics	p. 12	
	413-1	Operations with local community engagement, impact assessments, and development programs	p. 51	
	413-2	Operations with significant actual and potential negative impacts on local communities	Not applicable	

GRI Index

Economic Performance

Category	No.	GRI Disclosure	Location	Note
Economic Performance	201-1	Direct economic value generated and distributed	p. 5, 58, 64	
	201-2	Financial implications and other risks and opportunities due to climate change	p. 62	
	201-3	Defined benefit plan obligations and other retirement plans	p. 35	
Indirect Economic Impacts	203-1	Infrastructure investments and services supported	p. 49-52, 68	
	203-2	Significant indirect economic impacts	p. 49-52	
Anti-corruption	205-1	Operations assessed for risks related to corruption	p. 60, 69	
	205-2	Communication and training about anti-corruption policies and procedures	p. 60	
	205-3	Confirmed incidents of corruption and actions taken	p. 60	
Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	

Environmental Performance

Category	No.	GRI Disclosure	Location	Location
Biodiversity	101-1	Policies to halt and reverse biodiversity loss	p. 27	
	101-2	Management of biodiversity impacts	p. 27	
Energy	302-1	Energy consumption within the organization	p. 17, 65	
	302-2	Energy consumption outside of the organization	Information incomplete	To be calculated later
	302-3	Energy intensity	p. 65	
	302-4	Reduction of energy consumption	p. 17	
	302-5	Reductions in energy requirements of products and services	p. 18-21	
Water and Wastewater	303-1	Interactions with water as a shared resource	p. 24-25, 65	
	303-2	Management of water discharge-related impacts	p. 24-25	
	303-3	Water withdrawal	p. 24, 65	
	303-4	Water discharge	p. 24, 65	
Emissions	305-1	Direct (Scope 1) GHG emissions	p. 17, 65	
	305-2	Energy indirect (Scope 2) GHG emissions	p. 17, 65	
	305-3	Other indirect (Scope 3) GHG emissions	Information incomplete	To be calculated later
	305-4	GHG emissions intensity	p. 17, 65	
	305-5	Reduction of GHG emissions	p. 17	
	305-6	Emissions of ozone-depleting substances (ODS)	No emissions	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	p. 25, 65	
Waste	306-1	Waste generation and significant waste-related impacts	p. 25	
	306-2	Management of significant waste-related impacts	p. 25-26	
	306-3	Waste generated	p. 25-26	
	306-4	Waste diverted from disposal	p. 25, 66	
	306-5	Waste directed to disposal	p. 25, 66	
Supplier Environmental Assessment	308-1	New suppliers that were screened using environmental criteria	p. 44	
	308-2	Negative environmental impacts in the supply chain and actions taken	p. 44	

GRI Index

Social Performance

Category	No.	GRI Disclosure	Location	Note
Employment	401-1	New employee hires and employee turnover	p. 67	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	p. 36	
	401-3	Parental leave	p. 67	
Labor/Management Relations	402-1	Minimum notice periods regarding operational changes	p. 34	
Occupational Health and Safety	403-1	Occupational health and safety management system	p. 32	
	403-2	Hazard identification, risk assessment, and incident investigation	p. 32	
	403-3	Occupational health services	p. 32-33	
	403-4	Worker participation, consultation, and communication on occupational health and safety	p. 30-33	
	403-5	Worker training on occupational health and safety	p. 31	
	403-6	Promotion of worker health	p. 32	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p. 33	
	403-8	Workers covered by an occupational health and safety management system	p. 31-32	
	403-9	Work-related injuries	p. 68	
	403-10	Work-related ill health	p. 68	
Training and Education	404-1	Average hours of training per year per employee	p. 68	
	404-2	Programs for upgrading employee skills and transition assistance programs	p. 34-35	
	404-3	Percentage of employees receiving regular performance and career development reviews	p. 35	
Diversity and Equal opportunity	405-1	Diversity of governance bodies and employees	p. 37, 67	
	405-2	Ratio of basic salary and remuneration of women to men	p. 67	
Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	p. 40	

Category	No.	GRI Disclosure	Location	Note
Freedom of Association and Collective Bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	p. 44	
Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	Not applicable	
Forced Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Not applicable	
Security Practices	410-1	Security personnel trained in human rights policies or procedures	Not applicable	
Rights of Indigenous Peoples	411-1	Incidents of violations involving rights of indigenous peoples	Not applicable	
Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	p. 51	
	413-2	Operations with significant actual and potential negative impacts on local communities	Not applicable	
Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	p. 44	
	414-2	Negative social impacts in the supply chain and actions taken	p. 44	
Public Policy	415-1	Political contributions	Not applicable	
Customer Health and Safety	416-1	Assessment of the health and safety impacts of product and service categories	p. 45-46	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	p. 45-46	
Marketing and Labeling	417-1	Requirements for product and service information and labeling	Not applicable	
	417-2	Incidents of non-compliance concerning product and service information and labeling	Not applicable	
	417-3	Incidents of non-compliance concerning marketing communications	Not applicable	
Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	p. 70	

SASB Index

Technology & Communication (Semiconductors)

Category	Code	Accounting Metrics	HD Hyundai Energy Solutions
GHG Emissions	TC-SC-110a.1	Gross global Scope 1 emissions	3,122 tCO ₂ eq
		Amount of total emissions from perfluorinated compounds	Not applicable
	TC-SC-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. 15-17
Energy Management in Manufacturing	TC-SC-130a.1	Total energy consumed	578 TJ
		Percentage grid electricity	96.4%
		Percentage renewable energy	Not applicable
Water Management	TC-SC-140a.1	Total water withdrawn	316,465 m ³
		Percentage of total water withdrawn and consumed in regions with High or Extremely High Baseline Water Stress	No region with high water stress
Waste Management	TC-SC-150a.1	Amount of hazardous waste from manufacturing; percentage recycled	2,768 t (98.5%)
Employee Health and Safety	TC-SC-320a.1	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	p. 31-32
	TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	Not applicable
Recruiting and Managing a Global, Diverse and Skilled Workforce	TC-SC-330a.1	Percentage of employees who are foreign nationals	2.3%
		Percentage of employees who are located offshore	2.3%
Product Lifecycle Management	TC-SC-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	Not applicable
	TC-SC-410a.2	Processor energy efficiency at a system level for servers, desktops, and laptops	Not applicable
Materials Sourcing	TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	p. 41-44
Intellectual Property Protection and Competitive Behavior	TC-SC-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	Not applicable
Activity Metrics	TC-SC-000.A	Total production	20,916,300 cells
			1,277,089 modules
	TC-SC-000.B	Percentage of production from owned facilities	Eumseong Plant 100%

Independent Assurance Statement

To readers of HD Hyundai Energy Solutions Sustainability Report 2025

Introduction

Korea Management Registrar (KMR) was engaged to conduct an independent assurance of HD Hyundai Energy Solutions Sustainability Report 2025 for the year ending December 31, 2025. The preparation, information and internal control of the report are the sole responsibility of HD Hyundai Energy Solutions’s the management. KMR’s responsibility is to comply with the agreed engagement and express an opinion to HD Hyundai Energy Solutions’s management.

Subject Matter

The reporting boundaries included the performance and activities of sustainability-related organizations as described in HD Hyundai Energy Solutions’s report:

- HD Hyundai Energy Solutions Sustainability Report 2025

Reference Standard

- GRI Standards 2021

Assurance criteria

KMR applied the quality management system in accordance with ISO 17029 and KMR EDV 01, and carried out the verification in accordance with the assurance criteria of AA1000AS v3 and KMR’s proprietary SRV1000. Under AA1000AS v3, we assessed the adherence to the four principles presented in AA1000AP:2018—Inclusivity, Materiality, Responsiveness, and Impact—and evaluated the reliability and quality of the data and information using. Under SRV1000, we conducted a multidimensional review aimed at zero data errors, applying expert judgment to determine the materiality criteria.

- ISO 17029 : 2019, ISO 14065 : 2020, AA1000AS v3 : 2020 (AccountAbility), AA1000AP : 2018 (AccountAbility), SRV 1000 : 2022 (KMR), KMR EDV 01 : 2024 (KMR)
- Levels of assurance/materiality: AA1000AS v3 – Type 2/moderate, limited/ not set

Scope of assurance

The information subject to verification in the sustainability report is as follows.

- GRI Standards 2021 reporting principles
- Universal Standards
 - GRI 2 General Disclosures 2021
 - GRI 3 Material Topics 2021
- Topic Specific Standards
 - GRI 101: Biodiversity(101-1, 101-2),

- GRI 201: Economic Performance(201-1, 201-2, 201-3), GRI 203: Indirect Economic Impacts, GRI 205: Anti-corruption, GRI 206: Anti-competitive Behavior,
- GRI 302: Energy, GRI 303: Water and Effluents(303-1, 303-2, 303-3, 303-4), GRI 305: Emissions, GRI 306: Waste, GRI 308: Supplier Environmental Assessment,
- GRI 401: Employment, GRI 402: Labor/Management Relations, GRI 403: Occupational Health and Safety, GRI 404: Training and Education, GRI 405: Diversity and Equal Opportunity, GRI 406: Non-discrimination, GRI 407: Freedom of Association and Collective Bargaining, GRI 408: Child Labor, GRI 409: Forced or Compulsory Labor, GRI 410: Security Practices, GRI 411: Rights of Indigenous Peoples, GRI 413: Local Communities, GRI 414: Supplier Social Assessment, GRI 415: Public Policy, GRI 416: Customer Health and Safety, GRI 417: Marketing and Labeling, GRI 418: Customer Privacy

As for the reporting boundary, information external to the organization was excluded from the scope of assurance.

KMR’s Approach

Our Assurance Team undertook the following activities for the agreed scope of assurance using the standard outlined above:

- Evaluating the appropriateness of the reference standard used as a basis for preparing sustainability information and the reliability of the materiality assessment process and its findings;
- Conducting inquiries to understand the data management and control environment, processes, and information systems (the effectiveness of controls was not tested);
- Evaluating the appropriateness and consistency of the methodology for estimation (note that the underlying data was not tested and KMR has not made any estimates);
- Visiting the headquarters, determining visit sites based on the site’s contribution to sustainability and the possibility of unexpected changes since the previous period and sampling data, and carrying out due diligence on a limited number of source records at the sites visited;
- Interviewing people in charge of preparing the report;
- Considering whether the presentation and disclosures of sustainability information are accurate and clearly defined;
- Identifying errors through comparison and check against underlying information, recalculation, analyses, and backtracking; and
- Evaluating the reliability and balance of information based on independent external sources, public databases, and press releases.

Independent Assurance Statement

Limitations and Recommendations

The absence of generally accepted reporting frameworks or well-established practices on which to draw to evaluate and measure non-financial information allows for different measures and measuring techniques, which can affect comparability between entities. Therefore, our assurance team relied on professional judgment. In a limited assurance engagement, the scope of the risk assessment procedures and the subsequent procedures performed in response to the assessed risks are limited than in a reasonable assurance engagement. Our assurance team conducted our work to a limited extent through inquiries, analysis, and limited sampling based on the assumption that the data and information provided by HD Hyundai Energy Solutions are complete and sufficient. To overcome these limitations, we confirmed the quality and reliability of the information by referring to independent external sources and public databases, such as DART and the National GHGs Management System (NGMS).

Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with HD Hyundai Energy Solutions on the revision of the Report. We reviewed the Report’s final version in order to make sure that our recommendations for improvement and revision have been reflected. We found that the report was prepared in accordance with the criteria presented by HD Hyundai Energy Solutions, and nothing comes to our attention to suggest that the evidence obtained regarding its content is insufficient to provide a basis for our opinion. Our opinion on the principles is as follows:

Inclusivity

HD Hyundai Energy Solutions has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

Materiality

HD Hyundai Energy Solutions has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

Responsiveness

HD Hyundai Energy Solutions prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of HD Hyundai Energy Solutions’s actions.

Impact

HD Hyundai Energy Solutions identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

Reliability of Specific Sustainability Performance Information

In addition to the adherence to AA1000AP (2018) principles, we have assessed the reliability of sustainability performance data, including economic, environmental, and social performance data. We interviewed the in-charge persons and reviewed information on a sampling basis and supporting documents as well as external sources and public databases to confirm that the disclosed data is reliable. Any intentional error or misstatement is not noted from the data and information disclosed in the Report.

KMR’s Competence, Independence, and Quality Control

Korea Management Registrar (KMR) is a verification body for the Republic of Korea Emissions Trading Scheme (K-ETS), accredited to ISO/IEC 17029:2019 (Conformity Assessment - General principles and requirements for validation and verification bodies), ISO 14067, the additional accreditation criteria ISO 14065, and ISO/IEC 17021:2015 (Requirements for bodies providing audit and certification of management systems). Additionally, KMR maintains a comprehensive quality control system that includes documented policies and procedures of the KMR EDV 01:2024 (ESG Disclosure Assurance System) based on ISO/IEC 17029 requirements and compliant with IAASB ISQM1:2022 (International Standard on Quality Management 1 by the International Auditing and Assurance Standards Board). Furthermore, KMR adheres to the ethical requirements of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior in accordance with the IESBA Code:2023 (International Code of Ethics for Professional Accountants). Our assurance team consists of sustainability experts. Other than providing an independent assurance, KMR has no other contract with HD Hyundai Energy Solutions and did not provide any services to HD Hyundai Energy Solutions that could compromise the independence of our work.

Limitations of Use

This assurance statement is made solely for the management of HD Hyundai Energy Solutions for the purpose of enhancing an understanding of the organization’s sustainability performance and activities. We assume no liability or responsibility for its use by third parties other than the management of HD Hyundai Energy Solutions. As this assurance statement may be subject to revision after the assurance date below, we recommend verifying whether this is the latest version.

June 23, 2026



CEO E. J. Hwang

Greenhouse Gas Assurance Statement

HD Hyundai Energy Solutions CO., LTD.

The Korea Management Registrar Inc. (hereinafter “KMR”) has conducted the verification on the greenhouse gas(hereinafter “GHG”) emission(Scope 1,2) in 2025 of HD Hyundai Energy Solutions CO., LTD.(hereinafter “the company”).

PURPOSE & SCOPE

The purpose of this verification is to independently assess the following based on objective evidence.

- Conformity with the verification criteria
- The accuracy of the GHG emissions and removals reported by the company

The scope of this verification covers the GHG emissions report provided by the company, as well as all facilities and emission sources under the operational control of the company.

STANDARDS

- Guidelines on Emission Reporting and Certification under the Greenhouse Gas Emissions Trading Scheme (Ministry of Environment Notice No.2025-64)
- Verification Guidelines for the Operation of the GHG Emissions Trading Scheme (Ministry of Environment Notice No.2025-165)
- Guidelines on the Operation of Greenhouse Gas and Energy Target Management System (Ministry of Environment Notice No.2025-165)
- IPCC Guidelines for National Greenhouse Gas Inventories (2006)

PROCEDURE

KMR conducted on-site verification based on a risk analysis approach and data evaluation, and assessed the appropriateness of the data and parameters applied in the calculation of GHG emissions based on objective evidence. KMR verified the GHG emissions for the reporting period using reasonable methods in accordance with the verification guidelines.

INDEPENDENCE

KMR has no conflict of interest with the company and does not perform verification with biased opinions or perspectives. KMR derived an independent and objective verification conclusion based on the verification criteria, and reviewed the entire verification process through an independent review.

LIMITATION

KMR verified the relevant reports, information, and data provided by the company through sampling and, where applicable, full inspection methods. However, there are inherent limitations, and differences in interpretation regarding conformity may exist. Although efforts were made to conduct a thorough verification in accordance with the verification criteria, undetected errors, omissions, or misstatements may still exist, which are presented as limitations of the verification.

GHG emissions and Energy Consumption

Unit : GHG (ton CO₂-eq) / Energy (TJ)

Year	Scope 1	Scope 2	Total
2025	3,122.238	26,433.733	29,555

Year	Fuel	Electricity	Steam	Total
2025	21.812	557.249	0.313	578

* The total emissions value may differ by ±1 ton CO₂-eq due to rounding during the aggregation process.

RESULTS

KMR prepared the GHG report in accordance with the agreed verification criteria.

- The verification of GHG emissions was conducted to achieve a reasonable level of assurance in accordance with the verification criteria.
- It has been verified that the data were properly collected, prepared, and reported in accordance with the verification criteria, and that emissions from key emission sources (accounting for 95% of total GHG emissions) have been calculated and reported without omission.
- Materiality: Meets the threshold of less than 5%

It has been verified that emissions from key emission sources have been calculated and reported without omission.
The verification confirms conformity with the verification objectives, scope, and criteria, and an “unmodified” opinion is expressed.

- ※ The company is responsible for preparing verification data in accordance with relevant laws and standards, and KMR's responsibility is limited to the company under the agreed contractual terms. KMR does not assume responsibility for any other decisions, such as investment decisions, made based on this verification statement.
- ※ The company shall comply with the use of certification marks and logos in accordance with the agreement with KMR.

April 16, 2026

CEO *E. J. Hwang*



Membership and Online Disclosure

Memberships

Korea Photovoltaic Industry Association (KOPIA)

Korea New & Renewable Energy Association (KNREA)

Korea Environmental Engineers Association – Chungbuk Office

Korea Electrical Contractors Association (KECA)

Information Disclosure Channels

Category	Description
HD Hyundai Energy Solutions Website ↗	Company introduction, investment information, product and distributor information, and online customer service information
HD Hyundai Group Ethical Management ↗	HD Hyundai Group's ethical management approach, Code of Ethics, and online reporting/consultation channels
DART (Electronic Disclosure System, Financial Supervisory Service) ↗	Mandatory and voluntary disclosures submitted as a listed company
Corporate Briefing ↗	Regular materials on business performance and business outlook

Click to visit the relevant website.

