

# Efficiency Sustainability Growth

HD Hyundai Electric Integrated Report 2022





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## Overview

Since our spin-off from Hyundai Heavy Industries in 2017, HD Hyundai Electric Co., Ltd. has published an integrated report annually. We release the report to transparently disclose our environmental, social, and governance (ESG) performance and actively communicate with our stakeholders. It comprehensively covers our financial performance as well as our principles, activities, and performance on economic, environmental, and social responsibilities. Moreover, this year's report includes the "ESG Story" section (pages 24~36 of the report) to introduce the story of HD Hyundai Electric's competitiveness, future direction, and corresponding future plans. We will continue to disclose management information transparently through the Integrated Report and actively collect opinions from various stakeholders to move forward to sustainable development and growth.

## Reporting Standards and Framework

This report follows the requirements of the 2021 Global Reporting Initiative (GRI) Standards, an international guideline for corporate sustainability management. It also complies with the Sustainability Accounting Standards Board (SASB) standards to reflect key issues relevant to the electric power industry and bases itself on the Integrated Reporting Framework of the International Integrated Reporting Council (IIRC).

## Reporting Period

This report covers activities from January to December 2022, and some results include data over three years, from 2020 to June 2023.

## Reporting Scope

The reporting scope of the financial results was prepared in accordance with the Korean International Financial Reporting Standards (K-IFRS), including HD Hyundai Electric and its subsidiaries, and the non-financial results were reported only for HD Hyundai Electric.

## Verification of the Report

In order to ensure the reliability and fairness of the report's content, HD Hyundai Electric conducted independent verifications by external third parties (overall sustainability management and greenhouse gas emissions separately), the results of which can be found on pages 95 ~ 98.

## Organizations Participated in the Report

ESG Management Team, Technology Management Department, Wind Business Department, Purchasing Department, Safety & Health & Environment Management Department, Coexisting Cooperation Team, Human Resources Team, People And Culture Section, General Affairs Team, Digital innovation Department, Financial Accounting Team, Legal Team, External Relations Department, Project & Production Planning Department, Material Management Department, New Growth Planning Department, Rotating Machinery Sales and Marketing Department, High Voltage Circuit Breaker Development Department, High Voltage Circuit Breaker Design Department, Solution Business Department, Business Ethics Team (HD Korea Shipbuilding & Offshore Engineering)

## Location of the Headquarters

477, Bundangsuseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

### Inquiries about the Report

For inquiries and comments on the 2022 HD Hyundai Electric Integrated Report, please contact the ESG Management Team of HD Hyundai Electric.

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### Interactive Guide

You may download the Integrated Report from the HD Hyundai Electric's website (<https://www.hd-hyundaelectric.com>), which is available in an Interactive PDF format for the users' convenience.

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# CEO MESSAGE



HD Hyundai Electric  
President & CEO,  
Seok Cho

We will continue to move forward to become “a trusted company that creates sustainable value.”

## Esteemed HD Hyundai Electric stakeholders,

2022 was a year of chaos due to unexpected variables such as the COVID-19 pandemic, the global economic recession from the prolonged Russia-Ukraine war, and the supply chain crisis. Despite these obstacles, HD Hyundai Electric achieved our greatest performance to date, marked by a 60% increase in orders compared to the previous year and sales exceeding KRW 2 trillion for the first time. In addition, 2022 was also a year that we further strengthened our ESG management by declaring to implement human rights management practices and RE100 for all domestic and overseas business sites by 2040.

As we move forward into 2023, We expect to continue the “pent-up recovery,” characterized by a combination of stagnation due to retrenchment and recovery from the endemic. We also recognize the high level of uncertainty concerning major global issues such as the US-China conflict and the reopening of China. Despite the prospect of an economic downturn, we anticipate that the investment in eco-friendly energy infrastructure for Action on Climate Change will be active, and the major market trends represented by carbon neutrality and electrification will remain unchanged. Under these circumstances, HD Hyundai Electric will strive to secure our sustainable competitiveness and contribute to solving humanity’s immediate challenge of Action on Climate Change.

## First, we will invest in R&D to secure promising technologies for the future.

Technology is required to secure sustainable competitiveness. For this, HD Hyundai Electric has established a new R&D vision: “Research for Future, Development for Business!” In addition, through the operation of the Future Technology Committee that serves as leaders of the future, we will identify new technology trends what the world needs before anyone else and spearhead the development and commercialization of technology via appropriate R&D investments in the right places to lay the foundation for market preeminence. We shall also do our best to secure and nurture excellent researchers so that the R&D organization can serve as a think tank for our company.

## Second, we will spur the offshore wind power business.

In December last year, HD Hyundai Electric announced to enter the domestic offshore wind power business in partnership with GE Renewable Energy. To start the business on a full scale, we established a new Wind Business Department and secured professional employees. Based on the agreement with GE, we will receive orders for domestic offshore wind projects to build generators and nacelle production plants in the short term. In the mid- to long-term, we plan to expand the scope of cooperation the entire business cycle to accelerate our efforts to target the domestic and international offshore wind power markets.

## Third, we will implement the RE100 and carbon neutrality targets and expand ESG management with our business partners.

We have declared to achieve RE100 at all our domestic and overseas sites by 2040 and set an additional goal of achieving carbon neutrality by 2050 through expanding eco-friendly products and optimizing facilities. In the future, we plan to gradually boost renewable energy use and accelerate the development of eco-friendly products to achieve the RE100 and carbon neutrality targets.

In addition, in response to the growing demand for “supply chain ESG management,” such as the EU’s Corporate Sustainability Due Diligence Directive, we are supporting our business partners (supply chain) to establish an ESG management system in order to equip them with the capabilities to respond to the global trend and to lay the foundation for solid shared growth.

2023 is the time for HD Hyundai Electric to integrate and expand our ESG management. Based on the capacity and infrastructure we have solidified so far, we are adding to the breadth and depth of our ESG management by establishing and implementing mid- and long-term goals of RE100 and carbon neutrality while supporting our partners in establishing ESG management systems. We look forward to your continued support and interest in HD Hyundai Electric as we take decisive steps toward becoming ‘a trusted company that creates sustainable value’. Thank you.



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# COMPANY PROFILE

## General

HD Hyundai Electric started its business in 1977 as Hyundai Heavy Industries' Electro Electric System Division, and over nearly 40 years, we have grown into a leading comprehensive electrical & electronic device and solution company in Korea and implemented various projects. On April 1, 2017, we spun off from Hyundai Heavy Industries and launched an independent company specializing in electrical & electronic devices and solutions. Since then, we have been growing into a "sustainable company", leading the carbon-neutral era.

Company Profile <sup>1</sup>	(As of December 2022, on a consolidated basis)
Company Name	HD Hyundai Electric
Business Areas	Electrical & Electronic devices and energy solution
HQ Address	477, Bundangsuseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, ROK
Date of Establishment	April 1, 2017 (spun off from Hyundai Heavy Industries)
CEO	Cho Seok
No. of Employees	2,084
Revenue	KRW 2.10 trillion
Operating Profit	KRW 133 billion

1. Changed the company name and headquarters address through the General Shareholders Meeting on March 22, 2023

## Business Overview

HD Hyundai Electric manufactures and supplies various electrical and electronic devices and energy solutions required in all stages of power supply.



### Power Solution

We are a provider of power systems required within the grid (electricity grid) for power generation, transmission, transformation, and power plants and substations are the areas of application. Our products include extra-high-voltage transformers, extra-high-voltage circuit breakers, medium & high voltage motors, and generators.



### MV/LV Solution

We supply power distribution and control systems to chemical plants and in various industries. Our products include switchgears, distribution transformers, low & medium voltage circuit breakers, and low voltage motors.



### Marine Solution

We provide electrical systems to ships and offshore facilities for general ships, warships, and offshore plants. Our marine products include switchgears, distribution transformers, and rotating machineries.



### Greenetric

Greenetric, a compound of "Green" and "Electric" features the main products that include SF<sub>6</sub>-Free GIS (Eco-friendly high-voltage circuit breaker) and ECO Transformer (Eco-friendly transformer). HD Hyundai Electric constantly develops eco-friendly products that consider the future of the earth and environment and strives to supply products that further benefit the environment and humanity and enhance future sustainability.



### Integric

Integric is an ICT solution that provides high energy efficiency and asset investment utility to clients and is divided into two areas: energy solutions and asset management solutions. It maintains and improves client assets in their best conditions so that clients can focus on their business growth while also providing insights that lead their businesses to success based on asset utilization analysis.

# COMPANY PROFILE

## Management Philosophy

HD Hyundai Group's Mission

"We bring the future closer to humanity by steering innovation and defying our limits."

HD Hyundai Group's Core value

**Innovation to lead**  
Transform the way we work with creative mindset. Shape the future of our industry through innovative and disruptive technology.

**Challenge without fear**  
Challenge ourselves relentlessly to create new values. Foster a culture of challenging without fear by embracing failure.

**Care with respect**  
Respect diversity and encourage open communication. Care for our people's personal and professional growth. Make a better world by upholding social responsibility.

**Safety for us and for all**  
Pursue the highest safety standards for our people and workplace. Contribute to the safety of customers, society and humanity with our products.

HD Hyundai Electric's Mission

Grown by leading the innovation in electricity and energy markets, HD Hyundai Electric has established the following missions to make the core value of "Empower Growth" come true.



**Strong Drive**  
HD Hyundai Electric's strong drive is leading the growth of our customer's businesses and industries.



**Integrated Energy Solutions**  
We provide integrated energy solutions to improve our customers' business productivity and lead the growth in their respective industries.



**Unlimited Potential**  
With sheer determination and strong drive, we will spearhead the global heavy electrical machinery market with unlimited potential.

HD Hyundai Electric's Core value

HD Hyundai Electric will do our utmost to achieve our mission based on the **C.R.E.D.I.A.** model.

**Creative**  
We provide products and solutions with creative foresight and unique technology that is faithful to the essence of our customers' business.

**Reliable**  
We build customer trust by implementing a proactive "Before Service" philosophy, which meets the needs of customers before they have been discovered.

**Efficient**  
We provide products and solutions based on energy efficiency to improve our customers' business efficiency and return on investment (ROI).

**Driven**  
We achieve our goal of spearheading the market with strong drive and determination, as well as proactively leading customer communication.

**Integrated**  
We advance as a total solution provider that offers integrated product and control technology.

**All values, we make the Electric & Energy for ALL**  
With all values, we make the Electric & Energy for All.

# COMPANY PROFILE

## Performance and Growth Strategies

### Achievements in 2022

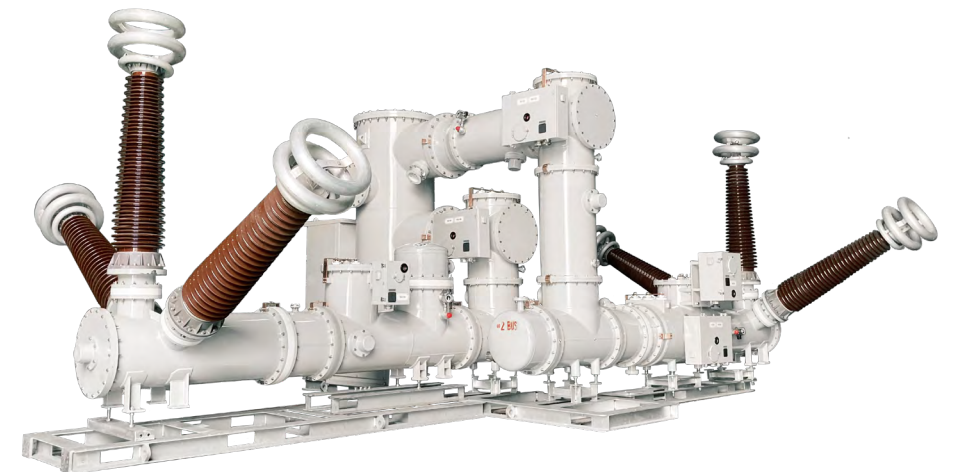
In December 2022, HD Hyundai Electric signed an ESS supply contract of KRW 209.7 billion, the largest amount for a single project with KEPCO. Under this contract, we provide a total energy solution for the Sinnamwon substation in Namwon, Jeollabuk-do, by supplying key equipment – e.g., Power Conditioning Systems (PCS), Local Power Management Systems (LPMS), Battery Monitoring Systems (BMS), and batteries that consist the ESS – and services including design, construction, and procurement. In particular, this latest achievement was largely thanks to the PCS technology gained through the acquisition of Hyundai Plaspo, a company specializing in Power conditioning system, in February 2022.

We also completed the development of an eco-friendly 170kV 50kA 4000A GIS (Gas Insulated Switchgear), providing alternatives to select eco-friendly GIS for clients and reducing greenhouse gas emissions by 99% compared to existing products.

Our Complex Energy Management System (CEMS) and the eco-friendly high-voltage circuit breaker ‘GREENTRIC ECO 170kV GIS’ were recognized globally for their advanced technology by winning the CES 2023 Innovation Awards. ‘GREENTRIC ECO 170kV GIS’ won the Smart City category, while the CEMS also won the Smart City as well as the Sustainability, Eco-Design & Smart Energy categories.

Category	Unit	2020	2021	2022
Revenue	KRW million	1,811,345	1,805,992	2,104,499
Power Equipment	KRW million	1,041,099	975,952	1,096,837
Rotating equipment	KRW million	371,188	379,034	404,798
Distribution Equipment, etc.	KRW million	399,058	451,006	602,864
Operating income	KRW million	72,699	9,736	133,041
Net profit	KRW million	-40,246	-33,687	162,018

[170KV GREENTRIC ECO 170kV GIS developed solely with HD Hyundai Electric's proprietary technology]



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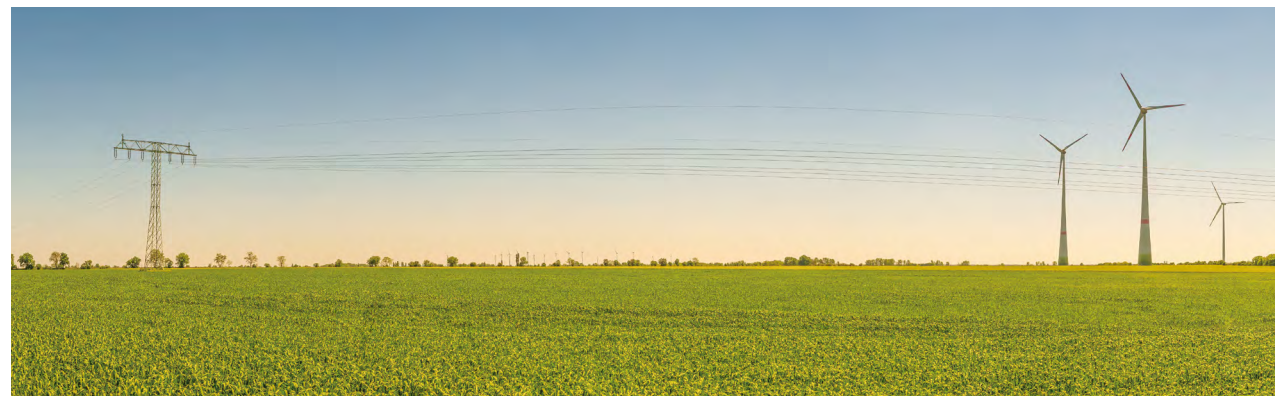
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### Outlook in 2023

HD Hyundai Electric had initially set operation targets of KRW 2.54 trillion in consolidated revenue and KRW 2.33 trillion in order values for 2023. However, in April 2023, we revised our annual order forecast to KRW 3.45 trillion to reflect the order performance that was better than initially expected. We have reset more aggressive targets in consideration of: 1. increasing demand for electricity due to the electrification trend in all industries, 2. the growth of the power conversion and ESS markets due to the expansion of renewable energy generation, and 3. the development of the smart grid market that efficiently manages energy by incorporating IT technology.

To examine the outlook by division, North America, which is the primary market for Power Equipment, is expected to grow in demand for new renewable energy – nuclear, solar, and wind power – to replace old facilities and respond to climate change. However, their trend of prioritizing domestic products

continues. In response, we plan to accelerate pioneering overseas markets by strengthening the use of manufacturing bases in North America and diversifying markets. Meanwhile, the Rotating Machinery business is growing its global market share of high-quality rotating machines for marine as the worldwide ship market is booming, leading to increased demand for Marine electrical equipment, mainly for large ships. In addition, as the increase in investment in new power distribution facilities is forecasted due to increased demands in data centers and supply chain diversification from the expansion of distributed energy, Distribution equipment business is responding to such market needs by developing DC breakers, large DC power distribution systems, and eco-friendly switchgear. Finally, HD Hyundai Electric installed about a cumulative 1GWh of ESS, we will strengthen our leadership in the domestic ESS market and advance into the international market including the United States.



### Growth Strategy in 2023

Since the turnaround in 2020, we have steadily expanded profit and stabilized our business. In 2022, in particular, we laid the foundation for future growth by securing new growth engines and exceeding our business plan in all areas, including KRW 3.4 trillion in orders, KRW 2.1 trillion in revenue, and KRW 130 billion in operating profits. We will continue building on this momentum in 2023 and improve our profitability, expand orders, and continue to secure new growth engines.



#### Accelerating Overseas Market Development

- Use a global market expansion strategy of securing overseas bases and diversifying markets to maintain and grow additional sales volume.
- Expand the business base in existing markets such as Southeast Asia and the Middle East



#### Redefining the R&D function

- Identify new technology trends with the lead of the Future Technology Committee and invest in appropriate R&D to lay the foundation to lead the market



#### Advancing the ESG Management

- Advance the ESG management through policies such as developing and supplying eco-friendly products, managing supply chain ESG, and creating an organizational culture geared toward Generation MZ.

# Key Products and Services

## Power Solution

Solutions that enable power generation and transmission within the grid



### Power Transformer

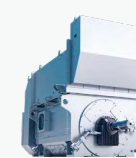
HD Hyundai Electric has supplied 1.2 million MVA power transformers to 70 countries worldwide on a cumulative basis. With the establishment of the latest equipment and production systems in line with international standards, we produce extra-high-voltage transformers with diverse specifications ranging to 800 kV, with a total production capacity of up to 100,000 MVA per year. Especially, one of our strengths lies in flexible design capabilities that enable customization that meets various needs of customers.



### Gas Insulated Switchgear

HD Hyundai Electric has supplied gas insulated switchgears to 40 countries worldwide. With the aim of sharpening quality competitiveness, we have been equipped with the state-of-the-art facilities and manufacturing systems in line with international standards, which enable us to have the capacity to manufacture gas insulated switchgear up to 800 kV, the maximum rated voltage in Korea. Our product boasts stable structure, compact size, convenient control & monitoring, low-level noise & electromagnetic emission, and long product longevity. In recognition of these outstanding features, we have received certifications from KEMA<sup>1</sup>, CESI<sup>2</sup>, and KERI<sup>3</sup>, and enjoyed a large market share in the Middle East, particularly Saudi Arabia.

1. KEMA: Keuring van Elektrotechnische Materialen te Arnhem, Dutch electrical safety standards
2. CESI: Centro Elettrotecnico Sperimentale Italiano, Italian Central Electricity Testing Institute
3. KERI: Korea Electrotechnology Research Institute



### Medium & High Voltage Motor

Our medium & high-voltage motors come in various specifications to supply models optimized for customers' operating environment and conditions. We manufacture the products under the thorough quality management, capitalizing on cutting-edge design technologies in compliance with international standards including IEC<sup>1</sup>, NEMA<sup>2</sup>, JIS<sup>3</sup>, ANSI<sup>4</sup>, and DIN<sup>5</sup>. Our medium & high-voltage motor boasts high efficiency, low vibration, and low noise level, which is supplied to various industries such as power generation, shipbuilding, offshore engineering, oil gas, water treatment, and nuclear power plants.

1. IEC: International Electrotechnical Commission
2. NEMA: National Electric Manufacturers' Association
3. JIS: Japanese Industrial Standards
4. ANSI: American National Standards Institute
5. DIN: Deutsche Industrie Normen, German Industrial Standards



### Generator

We are a provider of a wide range of generators ranging from ones tailored to the characteristics of each industry, such as generators for power plants, ships, general industrial use, and DPP<sup>1</sup> and PPS<sup>2</sup>, to special-purpose generators for nuclear facilities and other testing equipment. We apply our original design and manufacturing technologies to produce generators with high efficiency and high power density (lightweight), which ensure stability in extreme conditions.

1. DPP: Diesel Power Plant
2. PPS: Packaged Power Station

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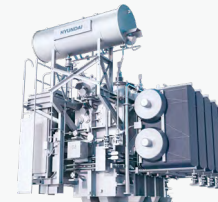
## MV/LV Solution

Solutions supplying power distribution systems and control systems to chemical plants and general businesses.



### Switchgear

HD Hyundai Electric manufactures high-performance and high-reliability switchgear certified with IEC and ANSI standards. The portfolio includes gas-insulated switchgear, high / low voltage switchgear, and electric motor control panels. Our switchgear has advantages, such as high compatibility, long product life, and minimal maintenance requirements due to customized and standardized designs. Based on high reliability in quality, we have a wide range of supply records in the domestic industrial plant market, encompassing various buildings to plants and nuclear power plants.



### Distribution Transformer

We produce oil-immersed and dry-type distribution transformers up to 35 kV, 50 MVA, supplying them to various places, including plants, apartments, and subways. Being recognized of the flexible design and manufacturing capabilities for the high degree of customization of oil-immersed distribution transformers, we are exporting them to around 70 countries in the world. Cast-resin transformer is fire retardant with excellent insulation and has the advantage of easy maintenance and inspection.



### Low & Medium Voltage Circuit Breaker

We offer a broad spectrum of low & medium voltage circuit breakers from MCCBs<sup>1</sup> for households to ACBs<sup>2</sup> and VCBs<sup>3</sup> for industrial plants. The remarkable feature and advantage of our low & medium voltage circuit breakers are that it safely protects the electrical equipment. In particular, our 'HG Series' won several design awards, including the 'IF Design Award 2016' for its compact and sophisticated design.

1. MCCB: A molded case circuit breaker that detects an abnormal current state and blocks the circuit before it is burned or damaged by heat
2. ACB: An air circuit breaker that detects overvoltage, overcurrent, and under-voltage and protects motors by blocking the circuit
3. VCB: A vacuum circuit breaker that detects overvoltage, overcurrent, under-voltage, and short circuit and protects the discharge of a transformer by evacuating the inside of the circuit breaker



### Low-Voltage Motor

We released the low-voltage motor as a premium new product with high efficiency with great pride. It has optimized structural design with low noise and low vibration, reducing power costs through premium efficiency operation. It is also effective in extending the motor life with class F (Ambient Temperature 155. C) insulation, winding temperature below class B (Ambient Temperature 130. C), and low bearing temperature. In addition, it allows inverter duty and high IP degree protection, certified in efficiency and safety from around the world.

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## Marine Solution

Solutions supplying electrical systems to ships and offshore facilities.

		
<p><b>Marine Switchgear</b></p> <p>The marine switchgears safely supply power to onboard electric equipment and protect systems<sup>1</sup> in the case of electrical accidents. On the foundation of our unrivaled quality and technology, we have supplied our products to HD Hyundai Heavy Industries as well as Samsung Heavy Industries, Hanhwa Ocean, and various other shipyards.</p> <p>1. A power transmission system that is widely connected with power plant, substation, transmission, and others</p>	<p><b>Marine Distribution Transformer</b></p> <p>Our marine distribution transformers have unparalleled advantage in stability, low loss, low noise, compactness, and lightweight. In addition, advanced molding technology eliminates the risk of explosion and fire. It also gives excellent crack resistance and insulation properties</p>	<p><b>Rotating Machines for Marine</b></p> <p>HD Hyundai Electric manufactures ship generators and motors that meet worldwide ship classification standards such as KR<sup>1</sup>, ABS<sup>2</sup>, and LRS<sup>3</sup>, and has supplied our products to HD Hyundai Heavy Industries, Wartsila, MAN, and many other engine manufacturing companies. We produce models not only for general merchant ships, but also for warships, FPSOs<sup>4</sup>, drill ships<sup>5</sup>, and other specialized ships. With our unrivaled technologies, we supply the optimized models for the characteristics of each ship. Our excellent corrosion resistance of the product and global after-sales service network, enabling swift customer service, raise the reliability of the quality.</p> <p>1. KR: Korea Register of Shipping                  2. ABS: American Bureau of Shipping                  3. LRS: Lloyd's Register of Shipping                  4. FPSO: Floating Production Storage and Off-roading                  5. Drill ship: A ship-type drilling facility specially designed to perform oil and gas drilling in the deep sea or in the middle of the ocean where fixed structures cannot be installed</p>

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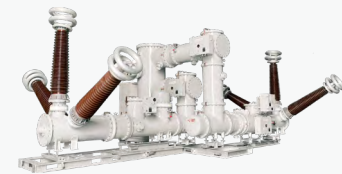
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# Key Products and Services

## GREENTRIC

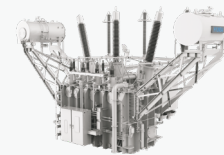
GREENTRIC is HD Hyundai Electric’s leading eco-friendly product brand. The term “GREENTRIC” is a compound of “Green” and “Electric,” and it reflects our commitment to provide products that benefit the environment and humanity and enhance future sustainability in the era of great energy

transformation. We will continue to develop eco-friendly products that care for the future of the earth and environment and become the standard for future power technologies.



### SF<sub>6</sub>-Free GIS (Eco-Friendly High-Voltage Circuit Breaker)

HD Hyundai Electric has developed the SF<sub>6</sub>-Free GIS (eco-friendly high-voltage circuit breaker), which is the first in Korea to apply purely propriety technology. The product uses C<sub>4</sub>F<sub>7</sub>N+CO<sub>2</sub> gas instead of SF<sub>6</sub> (Sulfur Hexafluoride), which has a Global Warming Potential that’s 23,900 times higher than CO<sub>2</sub>, allowing it to reduce greenhouse gas emissions by about 99% compared to existing products. We are currently developing a 72.5kV GIS with dry air and vacuum interrupter applied, and we plan to develop eco-friendly GIS in various voltages in the future to respond to market demands for carbon neutrality.



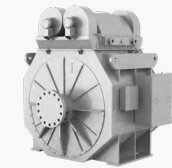
### ECO Transformer

HD Hyundai Electric has developed an eco-friendly transformer that prevents serious leakage environmental pollution by using eco-friendly insulating oil (vegetable/synthetic), which is flame retardant, biodegradable, and non-toxic. The product still boasts excellent performance with core technologies such as insulation and cooling designs and guarantees both stability and performance with DPRS (Dynamic Pressure Resistant System) technology.



### ECO Generator (Engine Mounted Generator)

HD Hyundai Electric’s Engine Mounted Generators (EMG) for propelling ships can use space more efficiently than existing shaft generators. In addition, installing EMG can reduce carbon emissions by 4-5%.



### ECO Generator (Large-Capacity Permanent Magnet Shaft Generator)

HD Hyundai Electric created the first ‘2MW-class large-capacity permanent magnet shaft generator’ developed with proprietary technology in Korea in November 2021 and succeeded in localizing parts that had been entirely imported. The generator improved power generation efficiency by up to 3% compared to the existing methods and secured high power density performance compared to the induction type by making the device smaller and lighter. Moreover, we applied the rotational power of large propulsion engines to generate electricity, achieving energy efficiency and fuel cost reduction simultaneously. These engines can also reduce carbon emissions by about 3% to improve EEDI<sup>1</sup> and proactively respond to many environmental regulations.

1. EEDI: Energy Efficiency Design Index; the amount of carbon dioxide emitted when a ship transports 1 ton of cargo for 1 nautical mile (1.852 km) (unit: g/ton. mile)

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## GREENTRIC



**IE4 LV Motor (Super Premium Efficiency Low Voltage Motor)**

The EU minimum efficiency regulation is expected to be upgraded from IE3 to IE4 in July 2023, and it will also be applied in Korea around 2025-2026. In response, HD Hyundai Electric has developed IE4 motors with a 1.1% increase in efficiency compared to IE3 to preemptively respond to the increase in the mandatory use of IE4 low-voltage motors in developed countries. At a time when products with higher power and efficiency are needed than existing electric motors, we will expand our eco-friendly product lineup based on technologies accumulated over the years to actively respond to market demand.

**DC ACB/MCCB (Direct Current Medium and Low Voltage Circuit Breaker)**

HD Hyundai Electric has established the highest breaking capacity (DC1500V) in Korea and a full lineup of products that respond to various client needs, delivering DC air circuit breakers and molded case circuit breakers (ACB/MCCB) that can protect systems under any load. The existing electric equipment market was a centralized thermal/nuclear energy system based on large-scale alternating current (AC) transmission and distribution headed by the national electric power administration. However, private-led eco-friendly renewable energy is expanding locally, and virtual power plants (VPP) – a collection of small- and medium-sized new renewable distributed power sources – are increasing recently, changing the electric equipment market structure to be focused on direct current (DC). We are committing ourselves to research and development to respond to the increasingly advancing market of new renewable distributed power DC transmission and distribution while continuously striving to expand business models that align with the eco-friendly paradigm.

**Dry-Air Eco-Friendly Switchgear**

In 2015, HD Hyundai Electric signed a business agreement with KEPCO to develop an eco-friendly switchgear with a global warming potential (GWP) of less than 1 using an insulating medium of dry-air instead of SF<sub>6</sub>, which is regulated by greenhouse gas regulations. In 2020, we successfully exported the eco-friendly switchgear overseas for the first time in Korea. We are also committed to secure and commercialize original technologies for various eco-friendly Insulation Medium to strengthen the competitiveness of our eco-friendly products.

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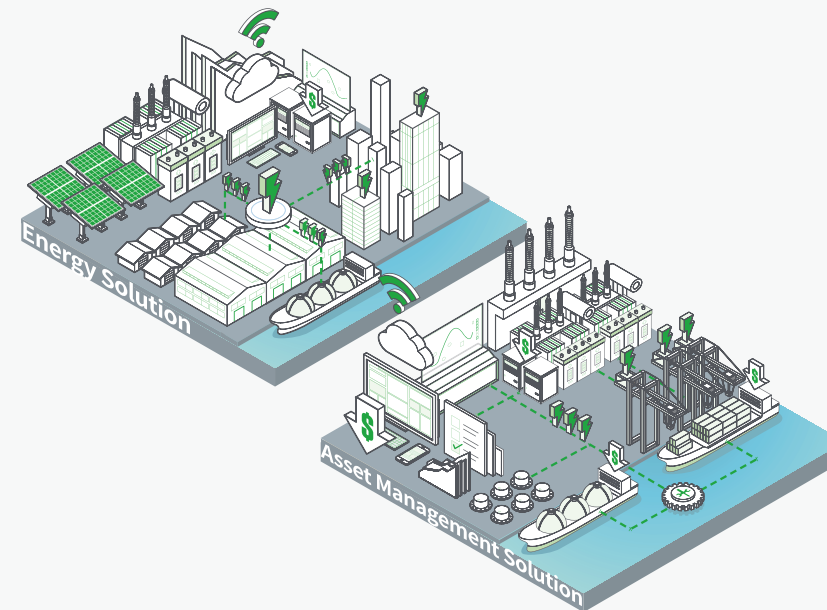
**INTEGRICT**

Integrict is an ICT solution that provides clients with high energy efficiency and asset investment utility and is divided into two areas: energy solution and asset management solution. It maintains

and improves clients' assets in the best condition so that clients can focus on business growth and provides insights based on asset utilization analysis to lead their businesses to success.

**Energy Solution**

INTEGRICT's energy solutions business builds systems that enable efficient use of electric power through the integrated management of energy production, consumption, sales, and operation. At this juncture when demand for renewable energy is increasing and the electric industry structure is changing, our INTEGRICT energy solution that help manage energy efficiently is particularly at the center of attention. Our Energy Storage System (ESS) is a customized system for energy production, efficiency, or management while the Building Energy Management System (BEMS) refers to a system that maximizes efficiency by integrating the analysis, operation, and management of energy used in buildings. The Factory Energy Management System (FEMS) provides an optimal energy efficient environment by combining the analysis, operation, and management of energy consumption in plants. The Microgrid solution is a next-generation power system that supports independent supply by building smart systems capable of self-sustaining power in small areas.

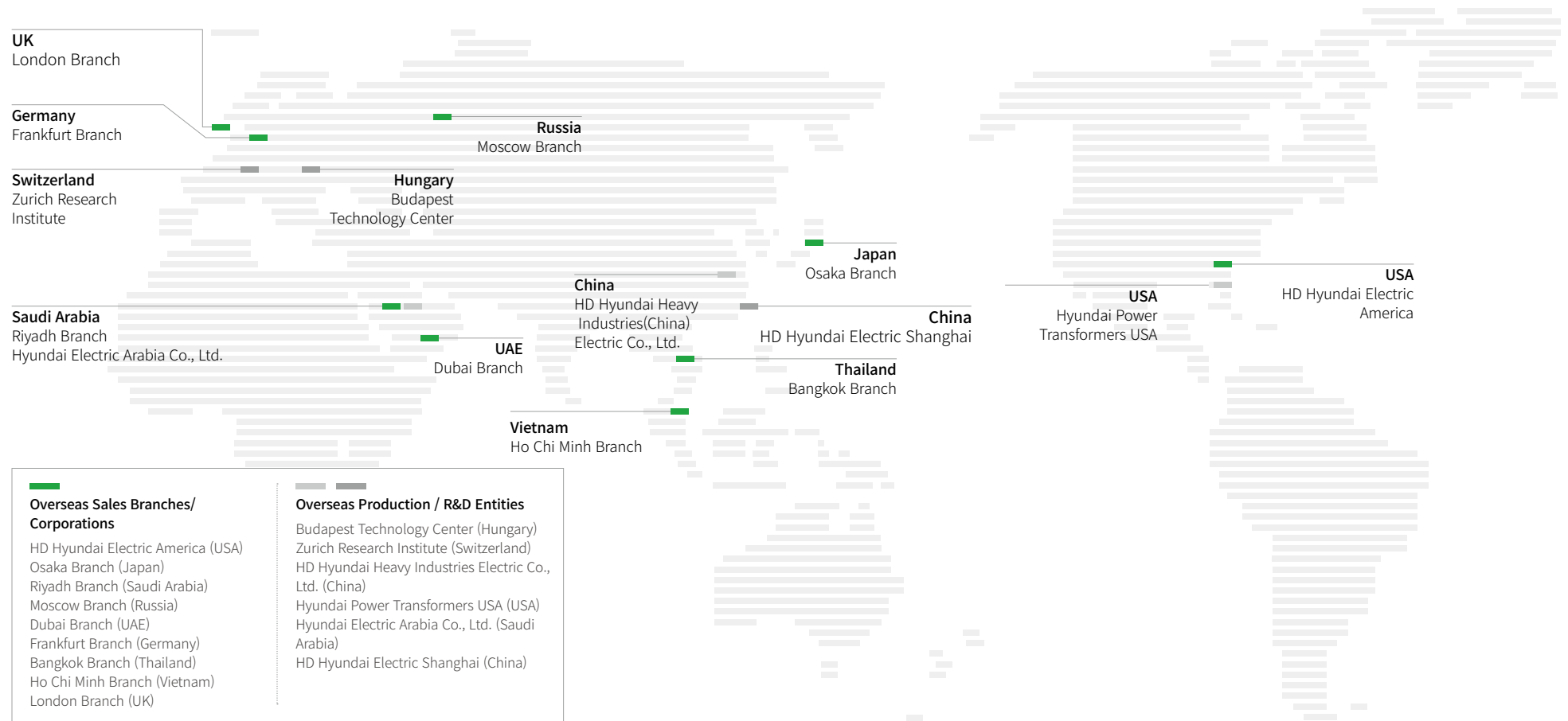


**Asset Management Solution**

Asset management solutions maximize overall business efficiency by systematically managing performance, risk, and maintenance costs according to the Product Life Cycle (PLC) of various products and providing customized asset management solutions tailored to customer needs. The product lifespan can be extended by managing operation performance according to failure prediction through acquiring and analyzing essential information after connecting the ICT platform to major power facilities. Therefore, through this connection, the overall facility performance is improved and problems such as breakdowns can be preemptively prepared.

# Global Network

HD Hyundai Electric has established overseas branches, corporations, and R&D hubs in key countries, including the U.S., China, and Germany. We produce and supply electrical / electronic devices and energy solutions that are required in every stage of electricity supply in the global market based on our world-wide global network.



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# ESG Management

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# ESG Vision System

HD Hyundai Electric has established an ESG management vision of “a trusted company that creates sustainable value” and a corresponding ESG slogan of “Efficiency, Sustainability and Growth.” We additionally established three ESG strategies – 1. Creating environmental impact, 2. Pursuing shared growth, and 3. Ensuring transparency & compliance. Based on these goals, we are strengthening our responses in each ESG area and continue to transparently disclose our activities and major achievements to stakeholders.

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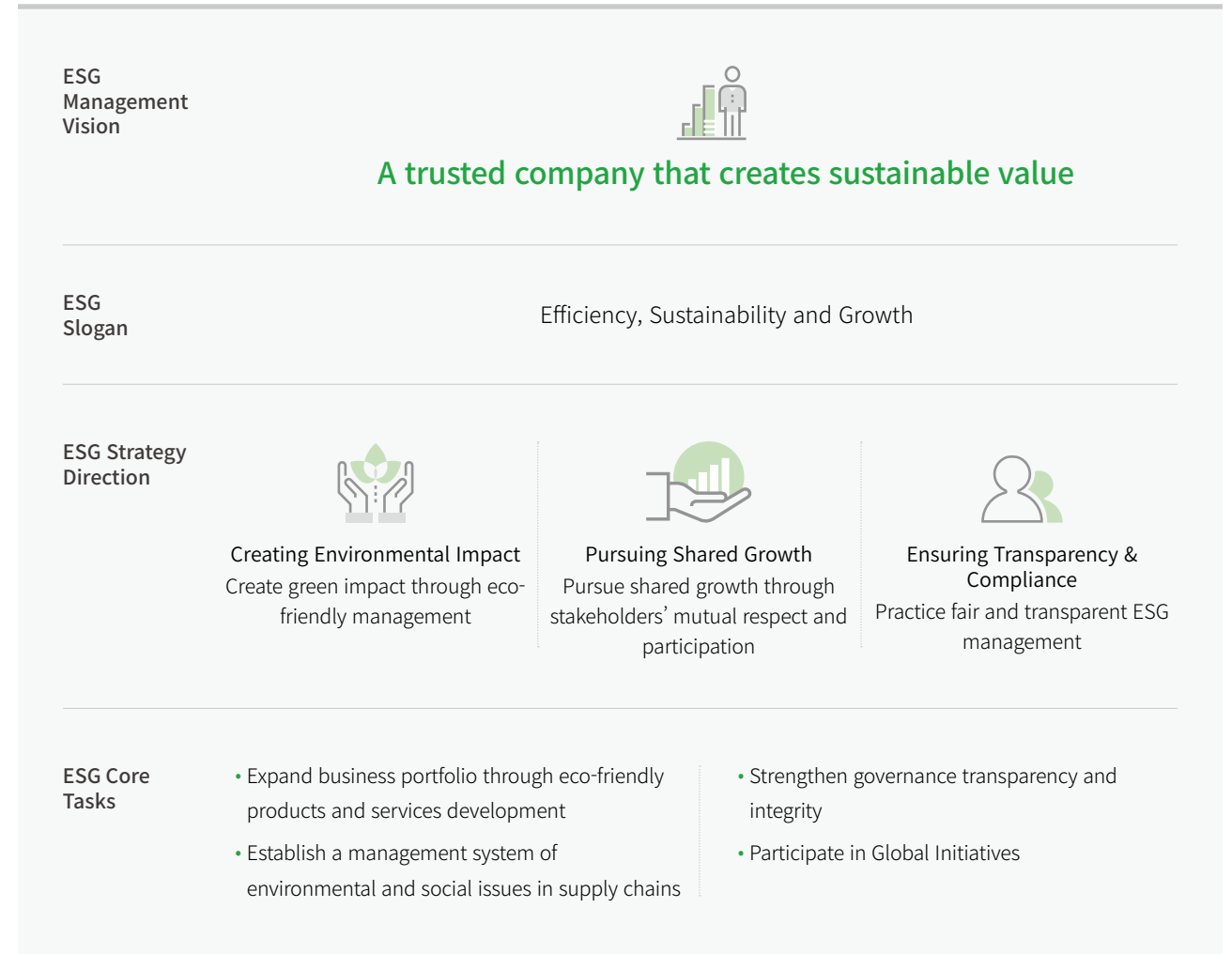
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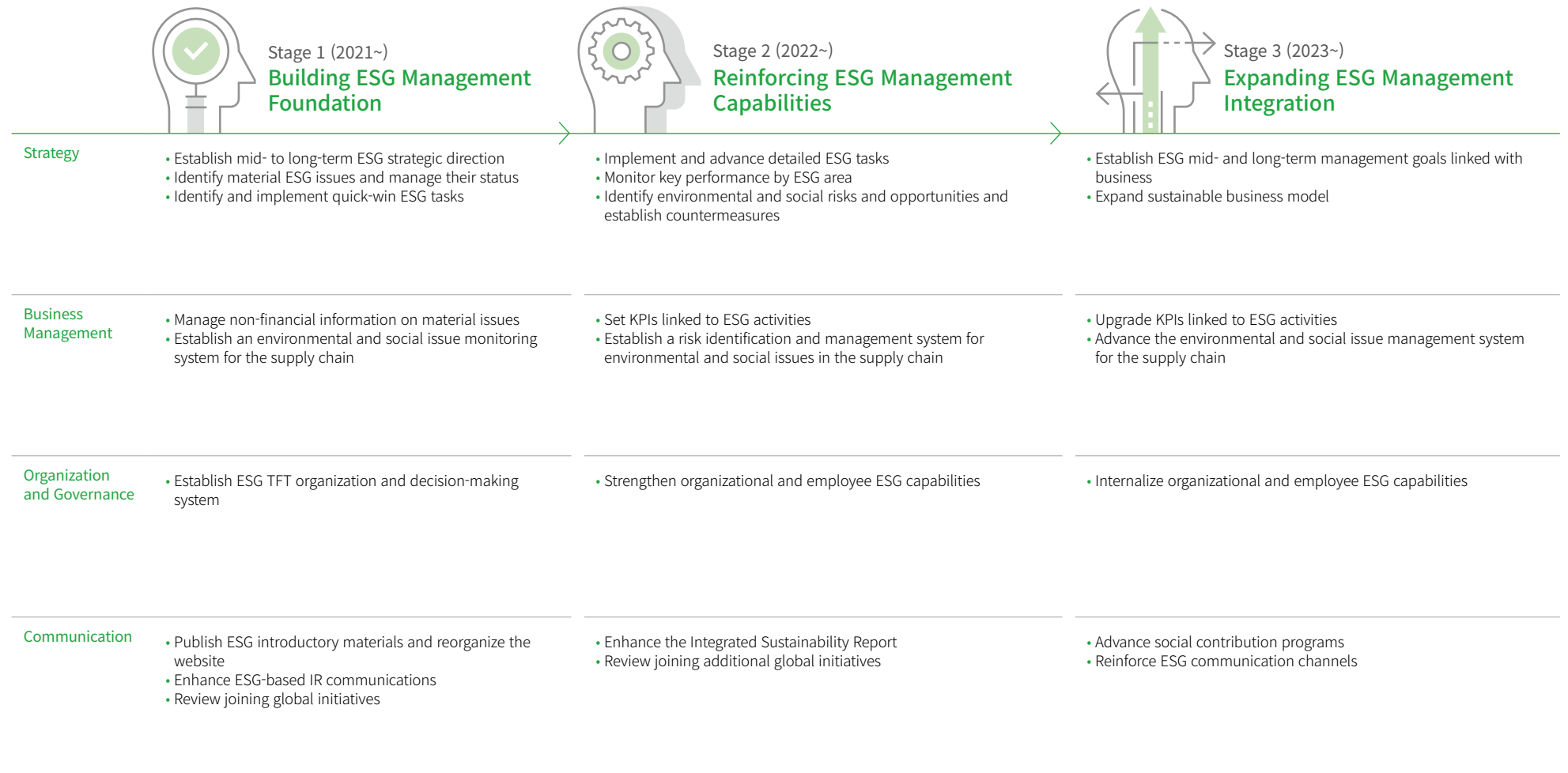
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# ESG Vision System

## HD Hyundai Electric's ESG Management Roadmap



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# ESG Initiatives

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**2040 RE100**

In 2022, HD Hyundai Electric declared 2040 RE100 and joined the Korean(K)-RE100 to respond to climate change risks and achieve sustainable growth. We have set a goal of converting 100% of the electricity used by all sites in Korea and overseas to renewable energy by 2040 and are actively implementing related policies. As a company that provides eco-friendly and renewable energy solutions, HD Hyundai Electric will actively accomplish various activities to achieve RE100, contribute to carbon neutrality, and strive to build a climate crisis response system.

More information on achieving RE100 can be found in Story#3. 

**2050 Carbon Neutrality**

HD Hyundai Electric has established a 2050 Carbon Neutrality Roadmap. We have set a goal of zero net emissions from Scopes 1 and 2 compared to 2021 and plan to achieve carbon neutrality by 2050 through implementing RE100 Roadmap, developing SF<sub>6</sub>-free products, and carrying out offsetting activities such as afforestation and carbon capture technology. We plan to introduce various reduction tasks in stages to fulfill our environmental responsibilities for future generations.

More information on 2050 carbon neutrality can be found in Story#3. 

**R&D Management that Leads Eco-Friendliness**


As the carbon neutrality trend spreads worldwide, the importance and interest in renewable energy is ever-growing. Under this trend, renewable energy power generation and new urban constructions in major overseas markets are also expanding the eco-friendly electric device market. HD Hyundai Electric is taking the lead in developing eco-friendly products to meet the market demand.

To enhance our eco-friendly R&D capabilities as part of the ESG initiative, we are strengthening functions in research planning and technology development and maintaining a balance between field support and new technology development. We will continue to strive to strengthen the R&D functions so that they can play a role as the company's think tank and the leaders of the future.

More information on eco-friendly R&D can be found in Story#1. 

**Supply Chain ESG Management and Partner Company ESG Management System Support**

HD Hyundai Electric is implementing ESG management support programs for partner companies to create a sustainable business ecosystem. We provide key partner companies with ESG training, ESG assessment and certification consulting, and action plan establishment to improve their ESG management capabilities. We will fulfill our responsibilities and define a roadmap for establishing partner company ESG management systems and field inspection systems for improvement management so that our partner companies can enhance their practical ESG management capabilities.

More information on supporting partner companies can be found in Story#4. 

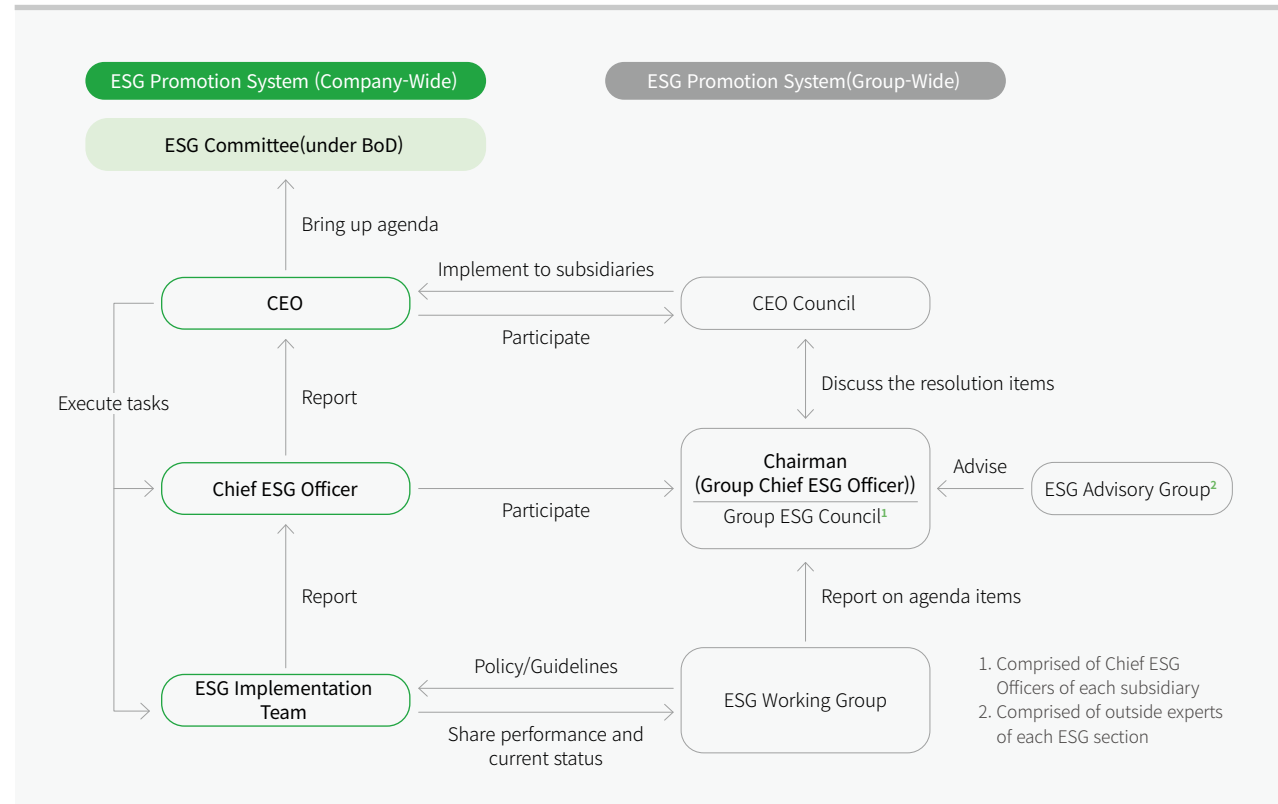


# ESG Governance

HD Hyundai Electric has the ESG Committee under the Board and formed a dedicated ESG organization to support the business and decision-making of the Committee, laying the foundation for companywide ESG activities to strengthen ESG management.

The ESG Committee reviews the ESG strategy direction, oversees the implementation results against ESG management goals, and presents milestones for HD Hyundai Electric's ESG management. The ESG Management Team is responsible for supporting the Committee's work, such as managing ESG data and reporting on major ESG-related decisions.

## ESG Governance



## 2022 Group ESG Council Operation Status

Category	No. of meetings	Key agenda
Group ESG Council	2	<ul style="list-style-type: none"> <li>Plan to promote the group's climate change response strategy</li> <li>Set and manage ESG KPIs</li> <li>Direction of the group's human rights management</li> </ul>
ESG Working Group	3	<ul style="list-style-type: none"> <li>Plan to promote carbon neutrality roadmap and RE100 declaration</li> <li>Status of promoting supply chain ESG management</li> <li>Plan to strengthen disclosing non-financial information</li> </ul>

## 2022 ESG Committee Operation Status

Meeting date	Attendance rate	Key agenda
2022.03.21	75%	<ul style="list-style-type: none"> <li>Appointing the Chairperson of the ESG Committee and determining the order of succession in the event of the Chairperson's absence</li> </ul>
2022.10.26	100%	<ul style="list-style-type: none"> <li>Report on ESG management status                             <ol style="list-style-type: none"> <li>1) Performance of major ESG management activities</li> <li>2) Project to establish a climate change response strategy</li> <li>3) Project to establish ESG KPI</li> <li>4) Human rights impact assessment</li> </ol> </li> </ul>

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# Double Materiality Assessment

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Every year, HD Hyundai Electric conducts a materiality assessment to identify essential topics related to sustainability. Our double materiality assessment reflects the approach suggested by the Global Reporting Initiative (GRI) Standards and the European Commission’s Corporate Sustainability Reporting Directive (CSRD). This takes into account not only the environmental and social impacts, but also the impact on corporate value and finance from an external perspective. We reflect the derived key topics on our ESG strategies and continuously monitor them.

Environmental and Social Impact (Impact Materiality)	Financial Impact (Financial Materiality)
Materiality that considers the impact a company’s business activities have on the environment and society from an inside-out perspective	Materiality that considers the impact environment and society have on a company value and finance from an outside-in perspective

## Double Materiality Assessment Process

Upon reviewing the key topics considered in sustainability guidelines such as GRI, SASB, and MSCI and analyzing the major domestic and international peer group’s benchmarking data and internal and external management data, we derived a set of 11 issues in consideration of our business and stakeholders. We reviewed related regulations, guidelines, controversial issues in the past three years, risks, and opportunities, identified the impact of each issue, and then conducted a survey to assess the economic, social, and environmental impact (Impact Materiality) and financial impact (Financial Materiality). The survey was conducted on a five-point scale assessing the impact of each topic; internal employees and other stakeholders evaluated the Impact Materiality in terms of likelihood of occurrence, the severity of impact (scale and scope), and irremediable character; external investors and internal financial experts assessed the Financial Materiality in five categories: 1. Financial impacts and risk, 2. Legal, regulatory and policy drivers, 3. Industry norms & competitive drivers, 4. Stakeholder concerns and social trends, and 5. Opportunities for innovation.

### Step 1. Select topic

1. Review the GRI, SASB, and MSCI topics
2. Analyze benchmarking (major domestic and international Peer Groups)
3. Analyze internal and external management data
4. Review important topics from the previous year



### Step 2. Identify the impact of each topic

1. Domestic and international regulations and guidelines
2. Review controversial issues in the past three years in the same industry
3. Review the risk/opportunity awareness level of the investment group



### Step 3. Impact assessment

- |  |   |
|--|---|
| <b>1. Environmental and social impact assessment (Inside-out)</b> <ol style="list-style-type: none"> <li>1) Likelihood of occurrence</li> <li>2) Impact scale and scope<br/>Scale: The scale of the impact<br/>Scope: The scope of the impact (Value-Chain, local community, etc.)</li> <li>3) Irremediable character<br/>Irremediable character: Possibility of recovery in case of the impact</li> </ol> | <b>2. Financial impact assessment (Outside-in)</b> <ol style="list-style-type: none"> <li>1) Financial impacts and risk</li> <li>2) Legal, regulatory and policy drivers</li> <li>3) Industry norms &amp; competitive drivers</li> <li>4) Stakeholder concerns and social trends</li> <li>5) Opportunities for innovation.</li> </ol> |
|--|---|



### Step 4. Prioritize

- Comprehensive analysis of the impact assessment results



### Step 5. Approve and review

- Conduct Third Party Verification
- Approval by senior management and the board
- Identify links with key risks

# Double Materiality Assessment



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**Results of the Double Materiality Assessment**

Based on the results of the double materiality assessment, we selected a total of five material topics from a set of 11 topics as follows: develop eco-friendly products and enhance energy efficiency, strengthen supply chain competitiveness and ESG, respond to climate crises, fortify occupational safety and health, and governance transparency.

Topic	Environmental and social impact	Financial impact	Priority in 2021	Page
1. Develop eco-friendly products and enhance energy efficiency	3.497	4.667	1	12-13, 19, 25-27, 47
2. Strengthen supply chain competitiveness and ESG	3.550	4.433	3	19, 34-36, 54, 57, 62-65
3. Respond to climate crises	3.620	4.300	7	19, 31-33, 38-39
4. Fortify occupational safety and health	3.322	4.167	10	54-58
5. Governance transparency	3.053	4.267	4	74-76
6. Strengthen business ethical management	3.158	4.133	6	77-78
7. Hiring and talent development	3.462	3.867	New	49-51, 53-54
8. Energy management	3.626	3.567	5	38-39, 47
9. Waste management	3.480	3.600	5	42-45, 46
10. Diversity and equal opportunities	3.181	3.500	New	49-52
11. Water management	2.959	3.533	12	40-41

**Analysis of the Double Materiality Assessment Results**

Material topics	Key impacts and reasons for selection	Management method	GRI
<b>Develop eco-friendly products and enhance energy efficiency</b>	Strengthening climate change regulations such as the Inflation Reduction Act (IRA) and the EU's Carbon Border Adjustment Mechanism (CBAM) require a proactive regulatory response by providing eco-friendly and energy-efficient products	<ul style="list-style-type: none"> <li>• Redefine R&amp;D vision and establish a Future Technology Committee to strengthen capabilities in analyzing industry/technology trends and developing products/technologies</li> <li>• Expand the product lineup and market share of the eco-friendly brand (GREENTRIC)</li> </ul>	302-5
<b>Strengthen supply chain competitiveness and ESG</b>	Strengthening regulations on supply chains, such as the EU's Corporate Sustainability Due Diligence Directive, require to identify and proactively manage ESG risks in the supply chain	<ul style="list-style-type: none"> <li>• Establish a supply chain ESG management system and strengthen partner companies' ESG management capabilities by implementing ESG management support projects</li> <li>• Expand management support for partner companies, including contribution to shared growth funds and shared growth agreement guarantees.</li> </ul>	308, 414
<b>Respond to climate crises</b>	Increased extreme climates due to climate change have led to a growing sense of crisis and strengthening of climate-related regulations across the international community, which leads to requiring systematic management, including expanding response capabilities and reducing greenhouse gases	<ul style="list-style-type: none"> <li>• Systematize greenhouse gas and energy management based on 2040 RE100 and 2050 carbon neutrality goals</li> <li>• Derive and manage response tasks by analyze risk and opportunity factors related to climate change and carbon neutrality</li> </ul>	305
<b>Fortify occupational safety and health</b>	Amendments to the Serious Accidents Punishment Act, etc. have led to a strengthening of responsibilities for occupational health and safety management, require improvements in operational efficiency and productivity through employee health management at workplaces	<ul style="list-style-type: none"> <li>• Identify the potential risk level of employee health and operate various health promotion programs such as lifestyle improvement and job stress reduction (certified as a health-friendly workplace in December 2022)</li> <li>• Utilize various risk assessment tools – identifying risks at worksites, lower probability of high-risk tasks, etc. – to minimize unmonitored risk spots and expand the risk assessment system</li> </ul>	403
<b>Governance transparency</b>	Strengthened regulations on governance – such as the revision of the Capital Markets Act and the EU's Gender Balance Directive for Non-Executive Directors – and demands for transparent disclosure of governance call for operating transparent governance to prevent reputational risks and losses caused from opaque governance.	<ul style="list-style-type: none"> <li>• Disclose the Corporate Governance Charter and differences from best practices</li> <li>• Disclose the Corporate Governance Report and rules of the Board of Directors and Committees within the Board</li> </ul>	Non-GRI

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**INTRO.**

# The Path Must be Taken for the Future



Recently, heat waves, floods, wars, and many other confusions caused by climate change have threatened our planet and human lives. In response, the international community has agreed to limit the increase in global average temperature to 1.5 degrees Celsius above the pre-industrial era; and 124 countries, including Korea, have declared carbon neutrality and are promoting the transition to a decarbonized economy. Along with this trend, the world's energy use behavior is also becoming more eco-friendly, and various policies are being implemented to promote renewable energy.

Renewable energy is a sustainable source of power generation with the lowest greenhouse gas emissions, and investments to diversify and stabilize the power supply chain are necessary for its production. Currently, the demand for renewable energy is multiplying across all industries, increasing orders to companies with competitive edges in electric equipment and other infrastructure. Such a trend is expected to continue, with the expectation that by 2030, the power generation and electrification market will more than triple to USD 1.6 trillion and USD 800 billion, respectively\*. Based on these observations, HD Hyundai Electric plans to use our capabilities and proactively address the climate change risks. We will develop new energy technologies, provide various eco-friendly electric services, and take the lead in supplying sustainable renewable energy.

\* Source: IEA(International Energy Agency) Report

# Story #01 Eco-friendly Energy Technology that Leads the Future



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**Future Technology Committee**  
Core of executing the R&D vision

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**KRW 209.7 billion**  
in ESS project orders

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**CES Innovation Award**  

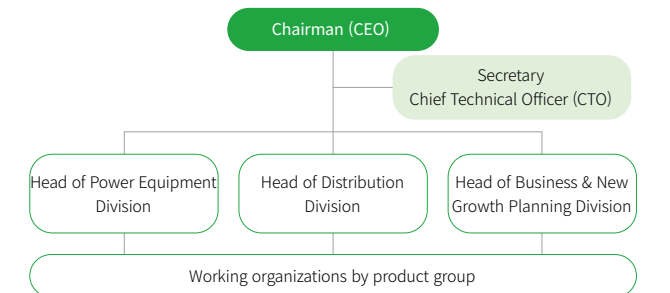
- An eco-friendly high voltage circuit breaker "GREENTRIC ECO 170kV GIS"
- A complex energy management system "CEMS"

**Think Tank R&D "Future Technology Committee"**

Research and development (R&D) are the sources of industrial development and technological innovation. In recent years, the role of R&D has become more important as ESG management because ESG management affects corporate value and sustainability from a long-term perspective away from judging only short-term financial performance. HD Hyundai Electric, which has been leading the power energy market with our superior technology, decided that the role and status of R&D must be redefined as we enter a new era of energy transformation. As such, we have established a new R&D vision of "Research for Future, Development for Business!" and are working to strengthen research planning and technology & product development functions.

To implement the R&D vision, we have created the "Future Technology Committee," which will serve as our "think tank" and "future leader." It is headed by the CEO as the chairman

**Organization Chart for the Future Technology Committee**



# Story #01 Eco-friendly Energy Technology that Leads the Future



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and composed of Head of Power Equipment Division, Head of Distribution Division, Head of Business & New Growth Planning Division; under them are the hands-on organizations composed of excellent R&D and sales employees for each product group. The Committee analyzes the future trends of products and technologies in the electrical power industry and selects new products and technologies for the short, mid, and long terms. It also reorganizes the existing PRM-TRM (Product Roadmap-Technology Roadmap) to prioritize urgent or critical tasks for future growth, striving to establish R&D strategies and improve efficiency.

**Eco-Friendly Technologies Proven with Orders**

As global environmental regulations to reduce greenhouse gas emissions tighten, eco-friendly electric power technologies rapidly develop in the power market. HD Hyundai Electric has been striving to strengthen our competitiveness in eco-friendly orders, and as a result, we have won the largest ESS\* project in Korea and supplied compressor motors for carbon capturing to the biggest CCUS\*\* project in the United States for the first time in Korea. We will continue actively participating in winning eco-friendly power projects to follow the global eco-friendly trend and lead the way to carbon neutrality in the electricity market.

\* ESS: Energy Storage System; an energy storage system that can store in advance and use new and renewable energy that's difficult to generate power at a desired time, like solar and wind power. It is garnering attention as a next-generation eco-friendly system as it improves energy use efficiency and new and renewable energy utilization.

\*\* CCUS: Carbon Capture Utilization & Storage; a technology to capture, utilize, and store carbon from not only carbon dioxide in the atmosphere but also that generated in industrial processes.

**Signed an ESS Supply Contract of KRW 209.7 Billion**

On December 12, 2022, HD Hyundai Electric successfully won an ESS project worth KRW 209.7 billion, the largest in our history. The project is KEPCO's public ESS project building 970 MW of ESSs at six substations in Korea. We will establish the largest ESSs of 336 MW in this project at the Sinnamwon substation at 47-1, Ganggi-ri, Ibaek-myeon, Namwon-si, Jeollabuk-do, while supplying key equipment – Power Conditioning Systems (PCS), Local Power Management Systems (LPMS), Battery Monitoring System (BMS), and batteries – as well as executing design, construction, and procurement.

The domestic ESS industry started in 2017, but its growth has been less than expected compared to overseas markets due to difficulties in securing expansive lands, numerous fire accidents, and a lack of relevant policies. However, with the recent acceleration of global carbon neutrality policies, the need for ESS is growing to supplement the shortcomings of renewable energy and stabilize electric power quality, and Korea is also making efforts to overcome the limitations and revitalize the ESS industry. In line with these domestic and international trends, we will lead this project to success and spread our already-proven superior technology to the domestic and international ESS markets.

Aerial View of the Sinnamwon Substation's ESS Construction



# Story #01 Eco-friendly Energy Technology that Leads the Future



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**Signed Contract to Supply Electric Motors for the Largest CCUS Construction in the Americas**

As the international community moves toward carbon neutrality, regulations and policies on greenhouse gas emissions are becoming tighter. In response, leading companies worldwide are committed to developing carbon reduction technologies, and CCUS technology, in particular, is emerging as a core technology for carbon neutrality. Major countries such as the U.S. and Europe have established roadmaps for CCUS technology development and focus on strengthening their technological capabilities, while global companies are also increasing their R&D investments to gain a lead in the market. For example, the U.S. has already incorporated CCUS technology into some industries and is promoting commercialization, leading to a rapid increase in market demand.

The Midwest Carbon Express Project is the largest carbon-capturing project in the U.S. It will capture carbon dioxide from 13 bioethanol manufacturing facilities in five Midwestern states, transport it to North Dakota, and construct a permanent underground storage facility. For this project, HD Hyundai Electric signed a contract to supply at once a total of 59 large electric motors (3,500 HP & 2,250 HP) required for carbon capturing, transportation, and burial. This contract enabled us to enter the carbon capture compressor market beyond manufacturing compressor motors for oil and gas extraction facilities. In the future, we plan to actively pursue orders to pre-dominate the eco-friendly industrial market such as continuing to win orders for the largest DAC\*-type carbon capture project in the Americas which has a different carbon capturing method.

\* DAC: Direct Air Capture; a technology that directly captures carbon dioxide from the atmosphere.

**Innovative Technologies Proven with CES Awards**

Living up to our fame as a company representing Korea's electric power equipment, HD Hyundai Electric boasts unrivaled technology in the domestic and international electricity industry. In January 2023, our eco-friendly high-voltage circuit breaker GREENTRIC ECO 170kV GIS and complex energy management platform (CEMS) were awarded the CES Innovation Award\*. The winning enabled us to showcase our superior technology and advanced infrastructure to the world.

\* CES Innovation Award: Awarded annually before the Consumer Electronics Show (CES) to corporate products and services with excellent technology and innovation

**An Eco-Friendly High-Voltage Circuit Breaker, "GREENTRIC ECO 170kV GIS"**

The eco-friendly high-voltage circuit breaker, "GREENTRIC ECO 170kV GIS" is a 170kV eco-friendly gas-insulated switchgear (GIS) developed with Korea's first proprietary technology. It uses C<sub>4</sub>F<sub>7</sub>N + CO<sub>2</sub>\* gas instead of SF<sub>6</sub>, which has a very high warming index, reducing greenhouse gas emissions by 99% compared to commonly used products. We expect the circuit breaker, which won the Smart City category of the CES Innovation Awards, to be widely distributed as core equipment necessary for electric power facilities such as power plants and substations due to their advantages in contributing to carbon neutrality.

\* C<sub>4</sub>F<sub>7</sub>N insulation gas: Compared to SF<sub>6</sub> gas, it has a shorter residual time in the atmosphere (SF<sub>6</sub>: 3,200 years, C<sub>4</sub>F<sub>7</sub>N: 22 years), a lower global warming potential (GWP) (SF<sub>6</sub>: 23,900, C<sub>4</sub>F<sub>7</sub>N+CO<sub>2</sub>: 419), and high electrical insulation properties, maintaining the stability of electrical equipment and power facilities.

**Complex Energy Management System (CEMS)**

Complex Energy Management System (CEMS) is a cloud-based industrial complex energy management system that creates green industrial complexes and supports achieving carbon neutrality through efficient energy management based on information and communication technology (ICT). CEMS provides affordable and sustainable Energy as a Service (EaaS) to promote integrated energy management and efficiency by controlling energy resources of large industrial complexes, factories, and buildings in real-time and analyzing their energy usage. The system further gained attention by winning two CES Innovation Awards – one in the Smart City category and the other in the Sustainability, Eco-Design and Smart Energy category.



↑ 'GREENTRIC ECO 170kV GIS' won CES 2023 Innovation Award

# Story #02 A Clean Future Starting from the Ocean



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Wind turbine sales of **a total of 81 devices, 153.1 MW**

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- 


Developed a total of **6 wind power farms, 100MW**

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- 

**Strategic partnerships**  
Partnered with GE Renewable Energy to produce an extra-large offshore wind turbine

---

- 

**Achieve "Ocean Energy"**  
Utilize the ocean as a new space for sustainable energy

**Offshore Wind Power that Leads the Energy Transition**

As the clock for climate change ticks down more rapidly, so does the threat approaching us. The massive carbon footprint of human activities is sweeping the planet, causing unprecedented damage. Humanity can only lead sustainable life if we base our lives on carbon neutrality. The whole world is adopting measures to reduce carbon emissions and focusing on expanding renewable energy, and especially offshore wind power, which harnesses energy from the ocean, is garnering the most attention.

While onshore wind power is subject to land constraints and the potential for civil complaints, offshore wind power has fewer site constraints and complaints along with higher wind speeds than onshore wind power, making it more efficient. These advantages helped offshore wind to emerge as a future energy source to respond to the climate crisis, and the global offshore wind market is proliferating.

**The Global Wind Market Rapidly Moving Offshore**

The growth in the wind market is rapidly shifting from onshore to offshore due to relatively free siting conditions and the increasing size and efficiency of wind turbines\*. Per this trend, offshore wind's share of wind facilities worldwide is expected to grow at an average annual rate of 6.3% through 2026 and to 13.9% by 2031. Cumulative installed capacity is also expected to grow from 35GW in 2020 to 228GW by 2030, forecasted to reach approximately 1,000GW by 2050\*\*. Major European countries such as the United Kingdom and Germany have

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government subsidies dedicated to offshore wind power. The U.S. introduced an Inflation Reduction Act (IRA) according to the plans to expand offshore wind power capacity to 30GW by 2030, subsidizing the renewable energy industry.

\* Wind turbine: A power generation facility that converts the wind's kinetic energy into electrical energy  
\*\* Source: International Renewable Energy Agency (IRENA)

**Expanding Domestic Offshore Wind Power with Enlarging New Facility Capacity**

The ocean surrounds South Korea on three sides; with relatively shallow waters and solid ground, Korean seas are ideal for offshore wind power generation. Based on these geographical characteristics, the Korean government has set a target of 34GW of wind power capacity by 2036, which is more than 20 times higher than in 2021. Until 2030, which is middle of the target, we plan to expand the capacity to 19.3GW, of which offshore wind power accounts for 14.3GW, which is about three times higher than onshore wind power (5 GW)\*. For this goal, wind power installations will need to increase more than tenfold from today, requiring new facilities of 2.2GW capacity every year until 2030. For this goal, the government is improving policies related to offshore wind power, and corporations are working to develop technology and build infrastructure.

\* Source: Ministry of Trade, Industry and Energy, "10th Basic Plan for Electricity Supply and Demand"

**Sustainable Energy Coming from the Ocean**

HD Hyundai Electric has ability to design and produce core components of wind turbines – generators, transformers, power conversion systems, and circuit breakers. Based on this, HD Hyundai Electric has designed, produced, and installed a total of 81 wind turbines with a capacity of 153.1 MW. Moreover, we also secured technologies related to onshore and offshore substations that generate and transmit electricity from power generation complexes. With these capabilities, we developed 100MW of six wind farms internally or in the form of an SPC\*, continuing to provide operation and maintenance services for over ten years.

\* SPC: Special Purpose Company

**Strategic Collaboration with GE Renewable Energy to enhance Offshore Wind Power Business**

Based on our business history in producing high-quality wind turbines and power equipment, HD Hyundai Electric has decided to enhance the offshore wind power business in Korea. As the first step, on December 14, 2022, we signed a strategic partnership with GE Renewable Energy, a market leader in offshore wind turbines. GE Renewable Energy is GE's renewable energy corporation in the United States, producing the world's largest 14MW wind turbine and developing an 18MW turbine. With the latest agreement with GE Renewable Energy, we will use world-class technology to make nacelles and generators, two core components of extra-large wind turbines. We also plan to localize various equipment and parts to contribute to developing the domestic economy and creating jobs.

**Beyond Korea to Capture the Asia-Pacific Offshore Wind Power Market**

Due to its vast coastline, Korea has great potential for offshore wind power generation, but its domestic wind turbine technology is still in the 5-8 MW range, limiting market expansion. However, the latest strategic partnership between HD Hyundai Electric and GE Renewable Energy is anticipated to increase the competitiveness of the domestic offshore wind power industry in the global market. The two companies plan to establish a JV\* to expand the market by the second half of 2024, planning to actively pursue projects beyond Korea and target the Asia-Pacific region.

\* JV: joint venture, a collaborative venture established to conduct business together by supporting strategic project activities to expand the market.



CEO Cho Seok of HD Hyundai Electric (right) and the Chief Commercial Officer of GE Renewable Energy (left) signing a strategic partnership for offshore wind power business on December 14, 2022.

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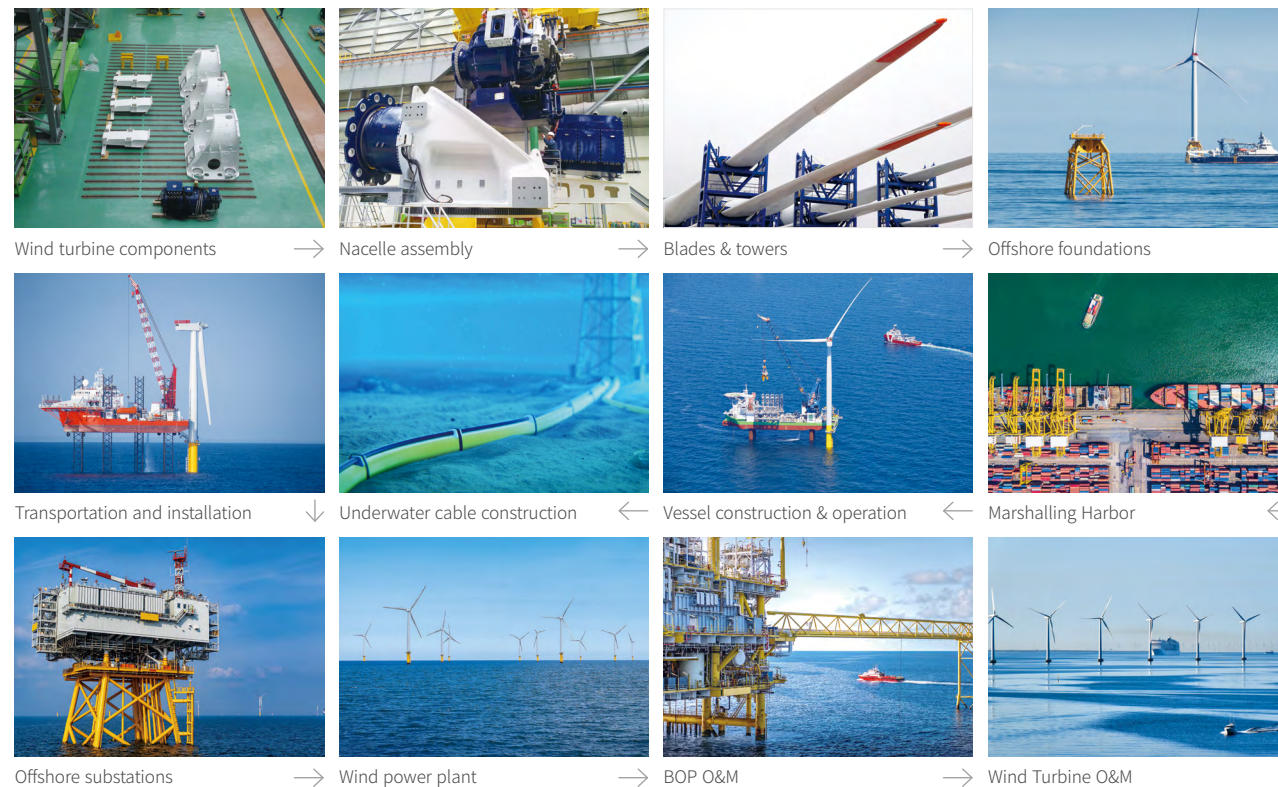
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Offshore Wind Power Value Chain



**Toward “Ocean Energy”**

At CES 2023, HD Hyundai Group presented our vision of “Ocean Transformation” and pledged to utilize the infinite potential of the ocean to create a sustainable future for humanity; we selected four key themes: Ocean Mobility, Ocean Wise, Ocean Life, and Ocean Energy. Ocean Energy refers to our resolution to utilize the ocean to supply more reliable and sustainable renewable energy. We vowed to lead our group’s growth by achieving Ocean Energy by expanding offshore wind power generation. For the action plan, we established a Wind Power Business division and secured experts capable of producing high-quality wind turbines while setting up mid- to long-term roadmaps, which include selecting optimal factory sites and full-scale mass production. Based on these strategies, we will fulfill our role as a solution for achieving the carbon neutrality goal in Korea and lead the Asia-Pacific offshore wind power market by actively increasing exports of offshore wind power’s key components.

# Story #03 Our Promises for Carbon Neutrality



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**Businesses Are Key Agents in the Climate Crisis**

After facing extreme weather and environmental problems (global warming, etc.) caused by greenhouse gases, the globe is heeding climate change warnings and has a keen interest in reducing greenhouse gas emissions to actively respond to the crisis. While major countries and corporations worldwide are exploring various ways to achieve carbon neutrality, several companies are joining the RE100\* program to achieve the goal. As a company that provides eco-friendly energy solutions, we also feel deeply responsible for managing the risks of climate change and are accelerating our efforts to achieve carbon neutrality by 2050. In 2021, we declared the companywide ESG management and established a climate crisis response system, and in December 2022, we joined the Korean (K)-RE100 and declared the RE100 to contribute to achieving carbon neutrality and fulfill our social responsibility.

\* RE100: A short for "100% Renewable Electricity", a voluntary initiative of corporations to source 100% of their electricity from renewable sources like solar and wind power to respond to climate change

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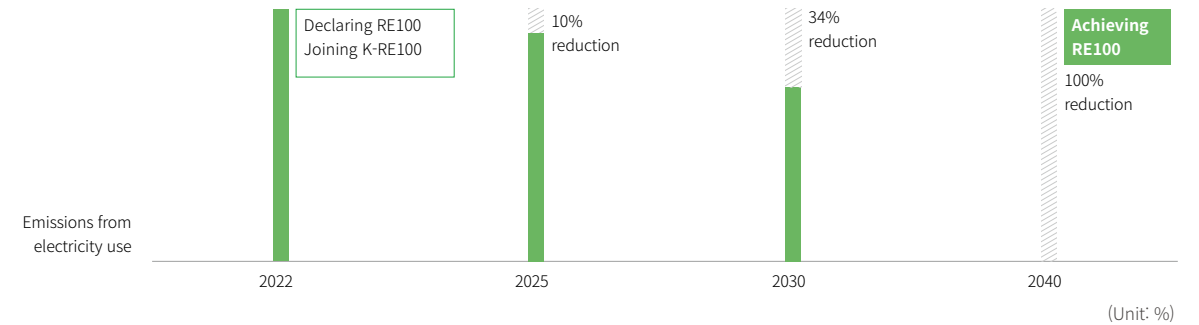
## The Strategy to Achieve Carbon Neutrality: RE100

### Achieving 2040 RE100

As a participant in K-RE100, HD Hyundai Electric has set a goal of converting 100% of the electricity used at all our domestic and overseas sites to renewable energy by 2040. We will first increase the renewable energy supply mainly by REC purchases, and from 2030, we plan to increase the proportion of the “Power Purchase Agreement” (PPA). PPA is a way for companies to purchase directly and use electricity generated from renewable energy, through this way, we aim to convert 100% of the electricity used at our major overseas sites in the U.S. and China to renewable energy.

We have installed solar panels at our Ulsan Seonam plant, one of our leading production facilities, generating 500 MWh of electricity annually. We also plan to secure idle sites at domestic and overseas production plants with high electricity usage and build power generation facilities to directly generate renewable energy. While more Korean companies have recently declared to join RE100, increasing the demand for renewable energy, the energy supply is unable to meet such needs. Under such circumstances, our strategy to achieve RE100 will become critical in increasing our corporate value. Through various means, we will gradually increase the share of renewable energy to achieve the RE100 goal by 2040.

## 2040 RE100 Roadmap



Work Site	Emission Ratio	RE10	Overseas RE100	Domestic & Overseas RE100
Domestic	68.6	REC 7.6	REC 2.6	Self-generation/PPA 66, REC 2.6
Alabama, U.S.	23.8	Self-generation/PPA 2.4	Self-generation/PPA 23.8	Same as the left
Yangzhong, China	7.6	-	Self-generation/PPA 7.6	Same as the left



# Story #03 Our Promises for Carbon Neutrality



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**“Internalizing the Practical Competence for RE100 Achievement,” a Key to Carbon Neutrality**

HD Hyundai Electric is strengthening our internal employee training to help the smooth execution of the carbon neutrality roadmap. The core task for 2023 is “preparing practical competence for implementing the RE100 roadmap,” and we have selected training items including “measuring climate risk,” “implementing and managing carbon neutrality targets,” and “carrying out key implementation tasks.” The hands-on employees from the departments – the ESG Management Team, Safety & Health & Environment Management Department, General Affairs Team, etc. – are the recipients of the training. The training aims to strengthen the capabilities of our employees in efficiently executing their tasks and coping with changes in the internal and external environments. We also provide training on calculating the Scope 1/2/3 emissions, managing ESG data, and establishing ESG Inventory system, with plans to offer more diverse and practical training in the future.

**A Journey to 2050 Carbon Neutrality**

HD Hyundai Electric began our journey of the 2050 carbon neutrality roadmap in 2022. First, until 2040, we will prioritize the reduction of Scope 2 (indirect emissions from electricity, etc.) while implementing the RE100 roadmap. In addition, we have set a goal to reduce emissions by 70% compared to the 2021 amount\*\*\* by expanding the SF<sub>6</sub>(sulfur hexafluoride)-free products and offsetting carbon emissions\*\*\*. After that, we will further enhance the facility efficiency at our sites, convert to eco-friendly vehicles, and offset activities to achieve a 100% reduction of carbon emissions by 2050.

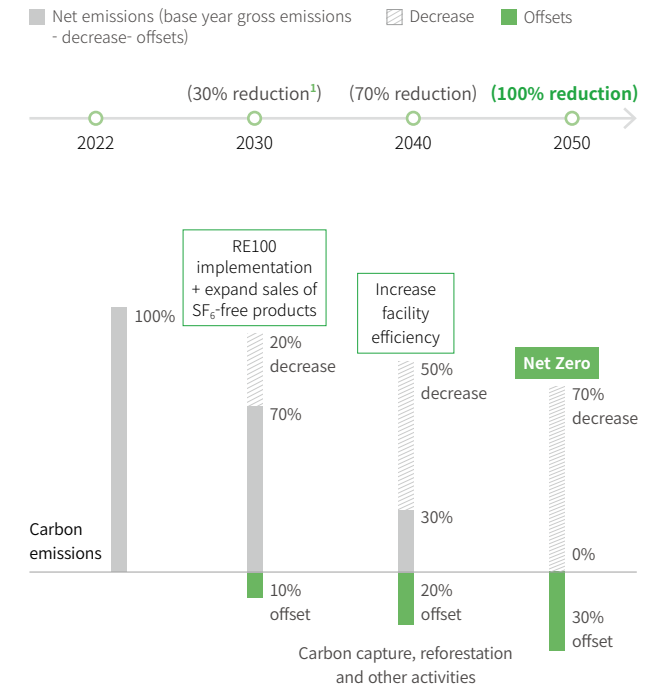
\* SF<sub>6</sub> (sulfur hexafluoride): An inert gas with high safety, SF<sub>6</sub> is non-toxic, odorless, colorless, and non-flammable, which gives it an excellent electrical insulation performance and thus makes it widely used as an insulator for electrical appliances and transformers. However, it is one of the representative greenhouse gases with an average global warming index of 23,900 times higher than carbon dioxide.

\*\* Offsetting carbon emissions: To offset greenhouse gas emissions by participating in afforestation activities or purchasing emission credits corresponding to the amount of emitted carbon dioxide from corporate actions, etc.

\*\*\* This target is based on the GHG Protocol (Guidelines for Greenhouse Gas Accounting and Reporting) and includes the headquarters, subsidiaries, and overseas sites.



**2050 Carbon Neutrality Roadmap**



1. Reduction: Decrease + Offsets

# Story #04 Partnership for Sustainable Growth



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**ESG Management Support Project**  
 40 partner companies
- 
**HD Hyundai Electric Partner Companies' Council**  
 For partner companies needing intensive development
- 
**KRW 49.5 billion**  
 Financial support program for partner companies

**The Path to “Shared Growth” that Must be Taken**

It’s no exaggeration to say that the value of today’s company depends on its ability to respond to ESG management. As their success depends on ESG, companies are quickly adopting ESG management systems and taking active actions. The low growth and polarization issues have intensified nowadays, and “supply chain management” from a shared growth perspective, among various ESG factors, has become a key topic of discussion. The European Union (EU) released a draft of the “Corporate Sustainability Due Diligence” in February 2022, and Korea also released the “K-ESG Guidelines for Supply Chain Due Diligence Response” in December 2022, tailoring to domestic conditions and requiring corporations to actively manage ESG in their supply chains.

In line with this trend, HD Hyundai Electric also focuses on supply chain management to create a sustainable business ecosystem. We have established an ESG supply chain system beyond the corporate level and for all supply chain units, focusing on strengthening ESG management capabilities through active communication with our partner companies. We believe that reducing the gap between companies and laying a foundation for mutual growth is the key to strengthening our corporate competitiveness. Thus, we plan to continue to make various efforts to spread ESG values across our partner companies.

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## Reinforcing a Win-Win Cooperation with the “ESG Management Support Project”

HD Hyundai Electric has launched the “ESG Management Support Project” to help our partner companies strengthen their ESG management capabilities. The project covers 40 of our major partner companies for about six months, from April to September 2023. We plan to collaborate with the Korean Standards Association to establish an ESG management system for the partner companies and prepare to respond to the EU’s Corporate Sustainability Due Diligence directive.

The support project consists of three areas: establishing and internalizing partner company ESG management system, developing ESG assessment indexes, and ESG capacity building training and consulting. To resolve each challenge, We will support partner companies by visiting them to conduct interviews and

### Scope of ESG Management Support Project for Partner companies

Establishing and internalizing partner company ESG management system	<ul style="list-style-type: none"> <li>• Sign joint ESG management agreements with the partner company</li> <li>• Establish an Supplier Code of Conduct</li> <li>• Define ESG management risks, identify processes, and evaluate and establish management measures for the partner company</li> <li>• Establish partner company ESG indices and establish evaluation guideline</li> <li>• Evaluate ESG and manage improvements and establish due diligence systems for the partner company</li> </ul>
ESG capacity building training and consulting	<ul style="list-style-type: none"> <li>• ESG training</li> <li>• ESG consulting, assessment, and certification</li> </ul>

### Key Dates for 2023 ESG Management Support Project for Partner companies

Date	Details
April 4	Kickoff and briefing for partner companies
April 28	Select three partner companies and conduct site visits and interviews
May 26	Based on the interview, develop ESG management indices and guidelines for the partner company
Late May	Create the ESG Management Joint Implementation Agreement and ESG Management Supplier Code of Conduct
June 15	Conduct in-person ESG collective training
June	Establish an ESG assessment plan
~ August	Conduct field assessment (Round 1 & 2)
September	Report on final results

establish a customized roadmap. Starting with this project, we will continue supporting responses to major ESG issues such as human rights, environment, fair trade, and ethical management.

### Creating a Culture of Shared Growth with Practical Help

It is apparent nowadays that ESG management dramatically impacts a company’s sustainability. However, small- and medium-sized enterprises (SMEs) face difficulties implementing ESG management, primarily because they cannot invest in dedicated personnel and funds and need support. HD Hyundai Electric sympathizes with such problems and has decided to play a practical role as a facilitator for our partner companies that we have been working together for a long time. Instead of simply delivering theoretical ESG management information, we visit them,

listen to their smallest opinions, and suggest solutions to their problems based on field visits. We will actively support our partner companies’ introducing ESG management through these practices.

### “Together Cafe,” a Window of Communication

As part of our shared growth activities, we visit our partner companies and open “Together Cafe” to offer them coffee and snacks. Its origin is the “Seok Cafe” program that started in 2021. Named after our CEO Cho Seok, the cafe was a communication event for our executives and employees. When the event proved to be a successful communication channel with employees, we expanded it to include our partner companies.

On April 22, 2022, we visited HET, a partner company in Ulju-gun, Ulsan. HET is a manufacturer and supplier specializing in transformer coils and iron cores, and they have been cooperating with us for more than ten years. At 8:00 a.m. on the day of our visit, CEO Cho and employees of HD Hyundai Electric presented coffee and sandwiches to about 50 employees of HET to show



HD Hyundai Electric’s CEO Cho Seok and employees offering coffee and sandwiches to the partner company HET

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our appreciation for their hard work. We also visited three other partner companies to listen to their pain points and make improvements. We plan to continue expanding the culture of shared growth via various communication events.

**“HD Hyundai Electric Partner Companies’ Council,”  
a Dedicated Council for Partner Companies**

We operate the HD Hyundai Electric Partner Companies’ Council to strengthen communication with our partner companies’ employees. The council was reorganized the existing partner companies’ council and is currently operating for 50 partner companies that need intensive incubation. To respond to the need to expand the number of supported partner companies in 2023, we have established criteria reinforcing fairness and equity and started supporting ten additional members. We will also update the list of members annually based on the established standards and per due process.

**New Support Plans for the Partner Companies’ Council in 2023**

- Provide prioritized project engagement opportunities
- Support ESG management
- Reward outstanding partner companies
- Immediate rewards for achievements in idea contests
- Support training
- Support finance
- Reinforce communication and encouragement activities with the partner company
- Contribute to the Win-Win Cooperation Fund (under review)
- Establish a quality and process support organization for the partner company (under review)



HD Hyundai Electric Partner Companies’ Council Activity

**“The Safety Training that Comes to You”  
– Prioritizing the Safety of Our Partner Companies**

HD Hyundai Electric has been conducting on-site safety training to strengthen our capabilities to respond to our partner companies’ safety and health issues. In particular, since the scope of the Serious Accident Punishment Act will be expanded to workplaces with fewer than 50 employees from January 2024, we will closely inspect our partner companies’ safety and health preparations throughout 2023 and strive to enhance their response capabilities. For two days on March 23 and 24, 2023, we visited four of our partner companies in Buk-gu, Ulsan, including LUXCO and Dongyang Sanjeon, and conducted the on-site safety training. During the training, we monitored compliance based on a checklist of obligations under the Serious Accident Punishment Act and guided improvements while we inspected the production sites ourselves. As we have been systematically conducting group



HD Hyundai Electric visiting a partner company LUXCO on site and giving them training on safety

training sessions for safety accident prevention for our partner companies, we plan to continue to implement measures to raise the safety awareness of our partner companies and strive to establish a shared growth system.

**Financial Support Program of KRW 49.5 billion**

HD Hyundai Electric operates a financial support program to ease the financial burden of our partner companies. The program comprises a KRW 30 billion “Shared Growth Fund” run in partnership with IBK (Industrial Bank of Korea) and a KRW 19.5 billion “Shared Growth Agreement Guarantee” that provides financial and non-financial guarantees. We also implemented the “Contractual Future Bond Collateral Loan,” which is funded through a contractual agreement with Hana Bank to support loans to our partner companies, so far providing loan benefits worth KRW 700 million.

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# Action on Climate Change

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**Policies**

In order to respond to the climate change issues, HD Hyundai Electric prioritizes eco-friendly management, including low-carbon energy strategies. We have established separate safety, health, and environmental management policies and set targets for greenhouse gases, wastes, and total pollutant amounts to manage them systematically.

**Declaring RE100 and Joining K-RE100**

As an eco-friendly and renewable energy solutions company, we have declared 2040 RE100 and 2050 carbon neutrality to actively respond to the climate crisis and the new climate system. For 2040 RE100, we first joined K-RE100, the Korean version of RE100, and aim to convert 100% of the electricity used at all domestic and overseas sites to renewable energy by 2040. To achieve the target, we monitor GHG emissions by business site through the companywide GHG Management System (HGMS) which is HD Hyundai Electric’s original system and assign energy use targets (KPI) for each plant based on intensity (consumption/unit) figure. We have installed solar panels at the Seonam Plant in Ulsan, one of our major production facilities, to generate 500 MWh of electricity internally every year, a program we plan to expand gradually.

**Governance**

HD Hyundai Electric manages climate change issues through the ESG Committee under the Board of Directors. The ESG Committee is making decisions on mid- to long-term business strategies and climate change response plans so that climate change issues can be integrated, and discussions were held on carbon neutrality and RE100 strategies in 2022.

We have a dedicated climate change organization, such as the Safety & Health & Environment Management Department, and our group company also operates an ESG Advisory Group composed of experts in each field. The dedicated organization reports climate change agenda and core issues to the CEO, and the CEO makes decisions through final consultations with the ESG Committee.

**Risks and opportunities**

To respond to climate change risks, we identify risks and opportunities and evaluate financial and strategic impacts through scenario analysis. Major risks include reinforcement of relevant regulations, rapid transition to low-carbon technologies, reputational risks, and typhoons, while

major opportunities include the development of low-carbon technologies and efficient use of resources. The key risks and opportunities were assessed based on the IEA 450 and RCP 8.5 scenarios; issues that emission price projections can be applied were analyzed quantitatively, while other matters were evaluated qualitatively in reference to peer companies and global literature. (See page 86-89 for detailed evaluation methods and response strategies.)

**Targets**

HD Hyundai Electric announces targets of the year for greenhouse gas emission reduction when establishing annual companywide environmental targets and tracks and manages annual emission performance. We also calculate energy usage concerning sales performance with goals to reduce energy consumption intensity, striving for efficient energy management.

	Base year	2023	2025	2030
<b>Greenhouse gas reduction target<sup>1</sup></b>	2018	10% or more	11% or more	14% or more
<b>Reduction target for energy consumption intensity<sup>2</sup></b>	2022	1%	-	-

1. 2018 emissions: 37,543 tCO<sub>2</sub>eq (Calculation scope: SCOPE1, 2; Calculation method used: ‘Act on the Allocation and Trading of Greenhouse-gas Emission Permits’ by the Ministry of Environment)  
2. Based on the company-level

**Certification and Due Diligence**

HD Hyundai Electric has met international standards to achieve our environmental management policies and goals, recognizing environmental risks early on and laying the foundation to improve environmental performance. We have obtained and maintained ISO 14001 certification<sup>1</sup>, an international standard environmental management system, and received renewal qualification verification from Lloyd’s Register in 2023. As for the companywide greenhouse gas emissions and energy use, we annually review the validity of the calculations through a third-party verification (DNV) and publicly disclose the confirmed data after final approval by the Ministry of Environment.

1. ISO14001: 57% of certification coverage, excluding non-production sites (GRC, Gyeong, Yongin Research Center).

# Action on Climate Change

## Quantitative Performance

### Energy<sup>1</sup>

		Unit	2020	2021	2022
Total energy (Non-renewable + Renewable)	Total energy (Non-renewable + Renewable)	TJ	668	628	682
	Energy intensity (base unit) <sup>2</sup>	TJ/KRW billion	0.37	0.35	0.32
	Reduction rate (base unit)	%	5.6	5.4	6.9
	Achievement rate (compared to the target) <sup>3</sup>	%	564	543	690
Non-renewable energy	Total direct energy consumption (TJ)	TJ	115	119	133
	LNG	TJ	111.37	117.27	129.50
	Gasoline	TJ	0.48	0.42	0.49
	Diesel	TJ	3.36	2.72	2.97
	Kerosene	TJ	0.00	0.02	0
	LPG	TJ	0.03	0.03	0.01
	Total indirect energy consumption (TJ)	TJ	553	509	548
Renewable energy	Electricity	TJ	553	509	548
	Total production	MWh	566.0	544.2	538.9
	Total sales	MWh	566.0	544.2	538.9

1. Data calculation scope: Ulsan Plant, Seonam Plant, and Mechanical Electricity Research Institute in 2020; Ulsan Plant, Seonam Plant, Mechanical Electricity Research Institute, Anseong Plant, Bundang Office, GRC Bundang Office, and Gyeongdong Office in 2021 and 2022. (Calculation scope of GHG emission is the same of energy calculation scope)

2. Revenue: Based on consolidated financial statements in the annual report

3. 2022 target: Reduce by 1% compared to previous year (Energy intensity 0.345TJ/KRW billion)

### Greenhouse Gas

		Unit	2020	2021	2022
Emissions	Total emissions (Scope1+2)	tCO <sub>2</sub> eq	32,882	30,550	33,167
	Direct emissions (Scope1)	tCO <sub>2</sub> eq	6,020	6,205	6,915
	Indirect emissions (Scope 2)	tCO <sub>2</sub> eq	26,862	24,345	26,252
	Greenhouse gas intensity (Scope1) <sup>4</sup>	tCO <sub>2</sub> eq/ KRW billion	3.32	3.44	3.29
	Greenhouse gas intensity (Scope2) <sup>4</sup>	tCO <sub>2</sub> eq/ KRW billion	14.83	13.48	12.47
Reduction	Achievement rate (compared to the target) <sup>5</sup>	%	85.6	128.5	80.4

4. Greenhouse gas intensity: Based on consolidated financial statements in the annual report

5. 2022 target: Reduce by 14.5%(32,099 tCO<sub>2</sub>eq) compared to 2018 emission(37,543 tCO<sub>2</sub>eq), achieved 80.4% compared to target

## Major Activities and Plans

HD Hyundai Electric is planning company-wide energy saving and investment in aging plants to reduce energy consumption. In the case of electric energy, which accounts for the largest share of total energy consumption and greenhouse gas emissions, we have established voluntary reduction plans by each production division and continuously manage them by reflecting them in our organizational KPIs. We are also promoting daily energy-saving activities that employees can easily participate in, such as maintaining the ideal temperature for heating and cooling in offices, campaigns to turn off lights during lunch breaks, and powering off office equipment after work hours. These efforts reduced our energy consumption by 2,795,715 KWh and greenhouse gas emissions by 1,303,503 kg CO<sub>2</sub>eq in 2022 alone. In response to climate change, we are preparing logic to calculate Scope 3 greenhouse gas emissions, participating in the greenhouse gas reduction within the value chain, and ideating measures to increase energy efficiency. We will also reduce the use of greenhouse gas such as SF<sub>6</sub> (sulfur hexafluoride) and expand eco-friendly product lines such as GREENTRIC to contribute to carbon neutrality.



# Water

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**Policies**

**Managing Water Stress**

Climate change is causing damage from drought and heat wave worldwide, it has been more emphasizing the importance of water resource management. To reduce water stress at our domestic sites and manage water use and reuse, HD Hyundai Electric monitors monthly water usage and has built a cooling water reuse facility in the trial process to reuse cooling water. We are further coming up with measures to reuse discarded water.

**Risks and Opportunities**

For water risk management, HD Hyundai Electric refers to WRI's WATER RISK ATLAS to manage our water stress indicators. Ulsan, where one of our business sites is located, is a medium-high (20-40%) water stress region, and thus, we have determined the volatility of water supply there as a risk factor in the long term. To prevent the risk, we are monitoring and improving the amount of wastewater discharged to reduce the water wasted. In 2022, we generated 250 tons of sewage, which is 0.1% of the approximately 250,000 tons of water we were supplied with, resulting in a financial impact of KRW 16 million in wastewater treatment costs. We will continue actively reducing the amount of water used in daily operations and utility facilities and devise reuse measures to manage water risks and reduce financial impacts.

**Target**

HD Hyundai Electric is collecting annual water usage data to recognize the importance of water resources and respond to the water shortage risks at our business sites. We also establish revenue-based intensity targets to manage the water usage amount flexibly. We have set the mid- to long-term goal (2023-2025) to maintain the water consumption intensity below 120 by 2025 and compare and manage water consumption due to sales growth. As a small-scale wastewater generator, we are tracing and managing water use and wastewater generation to achieve a goal of 0.25% wastewater generation rate or less by 2025 to ensure that we generate a minimal amount of wastewater. The wastewater generation rate, our target index, refers to the amount of sewage generated to the amount of water taken. Wastewater treatment costs are also set as a secondary index so that we can systematically manage wastewater-related indices. HD Hyundai Electric will analyze the cause of excessive water use and wastewater generation based on the strategy (constant monitoring of water and wastewater) established for the achievement for water and wastewater related goals and will achieve the goal.

	Unit	2020	2021	2022
Wastewater generation rate <sup>1</sup>	%	0.257	0.138	0.109

1. Calculation scope : The Ulsan plant

**Certification and Due Diligence**

**Wastewater Monitoring**

HD Hyundai Electric entrusts 100% of the wastewater generated in the production process to an outsourced treatment company for treatment. The wastewater is safely stored in collection tanks for each process, and water pollutants are treated within legal standards by the treatment company. After the treatment, we receive the water pollutant treatment reports semi-annually to check for any excesses. We conduct self-inspections to prevent leakage accidents in the storing and discharging process and train relevant personnel to reduce risks further.

# Water

## Quantitative Performance

### Water

		Unit	2020 <sup>1</sup>	2021	2022
Water intake	Total water intake	ton	202,409	229,313	251,782
	Water supply	ton	202,409	229,313	251,782
	Groundwater	ton	0	0	0
	Surface water	ton	0	0	0
	Industrial water	ton	0	0	0
	Seawater	ton	0	0	0
	Freshwater	ton	0	0	0
Water consumption	Total consumption	ton	202,034	229,023	251,533
	Water intensity (base unit) <sup>2</sup>	ton/ KRW billion	111.56	126.81	119.52
	Achievement rate (compared to the target) <sup>3</sup>	%	107.03	94.33	100.40
Wastewater treatment	Total wastewater treatment	ton	375	290	249

1. 2020 'Total Water intake' and 'Total Water Consumption' data specified in the 2021 Integrated Report are limited to the Ulsan Plant
2. Revenue: Based on consolidated financial statements in the annual report
3. 2022 water consumption target: 'Lower than 120 ton/KRW billion of water intensity', achieved 100.4% (119.52ton/KRW billion) compared to the target

### Water Intake and Usage by Major Plant

		Unit	Ulsan plant			Seonam plant			Total		
			2020	2021	2022	2020	2021	2022	2020	2021	2022
Water intake	Total water intake	ton	146,073	209,949	228,917	56,336	19,364	22,865	202,409	229,313	251,782
	Water supply	ton	146,073	209,949	228,917	56,336	19,364	22,865	202,409	229,313	251,782
	Groundwater	ton	0	0	0	0	0	0	0	0	0
	Surface	ton	0	0	0	0	0	0	0	0	0
	Industrial water	ton	0	0	0	0	0	0	0	0	0
	Seawater	ton	0	0	0	0	0	0	0	0	0
	Freshwater	ton	0	0	0	0	0	0	0	0	0
Wastewater amount	Total amount <sup>4</sup>	ton	375	290	249	-	-	-	375	290	249
Water Consumption	Total water consumption	ton	145,698	209,659	228,668	56,336	19,364	22,865	202,034	229,023	251,533

4. Data calculation scope: The Ulsan plant (Other plants do not discharge wastewater)

### Pollution reduction<sup>5</sup>

		Unit	2020	2021	2022
Water pollutant discharge	TOC discharge	ton	-	0.0006	0.0004
	TOC discharge intensity	ton/KRW trillion	-	0.0003	0.0002
	COD discharge	ton	0.0007	-	-
	COD discharge intensity	ton/KRW trillion	0.0004	-	-
	BOD discharge	ton	0.0003	0.0002	0.0003
	BOD discharge intensity	ton/KRW trillion	0.0002	0.0001	0.0001
	SS discharge	ton	0	0.0015	0.0002
	SS discharge intensity	ton/KRW trillion	0	0.0008	0.0001

5. In accordance with the transition of wastewater organic matter management indices under the Water Environment Conservation Act, chemical oxygen demand (COD) was changed to total organic carbon (TOC) from 2021

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# Resource Use and Pollution Reduction

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## Policies

### Creating Chemical Management Policies

HD Hyundai Electric systematically manages its business sites to minimize health and environmental hazards that may occur at all stages from raw material purchase to disposal. In the procurement stage, we established a system to purchase through hazardous assessment of all domestic and foreign chemicals used in all business sites. In addition, there is no use of hazardous chemicals in products and production processes according to the Chemical Substances Control Act, and a system is in place to reduce the content or find alternatives when hazardous substances are generated or discovered. During the warehousing and use stage, we regularly monitor the use and handling of chemicals received at our sites to ensure safe and legal operation. At the disposal stage, we entrust waste treatment companies to dispose of the waste properly under relevant laws and regulations.

### Operating Chemical Hazard Assessment

Suppliers to HD Hyundai Electric are required to submit Material Safety Data Sheets (MSDS) for chemicals and their contents when registering for an assessment. We manage the Hazard Assessment to ensure that only chemicals assessed and approved of their environmental and health impacts are received in our sites considering the laws and regulations and the condition of the worksite. MSDS can be monitored through the HiSEs System chemical database, and we conduct periodic verification to ensure that MSDS is up to date and reflect any data changes. Materials containing major chemicals include paints and thinners, and we ran a total of 154 Hazard Assessments in 2022, during which we found one hazardous chemical and switched it to an alternative substance.

### Operating HiSEs System for Air Management

HD Hyundai Electric operates the HiSEs System to manage air pollution emission and prevention facilities efficiently. We constantly monitor 79 emission outlets and actively invest in outworn facilities and building prevention facilities to contain our emission concentrations strictly. If the emission concentration rises, we notify the relevant departments and take actions such as replacing activated carbon and inspecting prevention facilities. We also strive to minimize environmental impacts by applying internal standards over 70% stricter than the legally permitted emission.

## Waste Management

HD Hyundai Electric has established a monitoring system for waste generated at all our business sites, including its discharge and treatment. Some of the waste is incinerated at our own facilities, and all other is entrusted to a waste disposal contractor for proper disposal. We also strive to minimize waste discharge and recycle waste through recyclers per the Framework Act on Resources Circulation. Although we expect the amount of waste generated to increase due to the increase in orders and resulting production, we are planning separate waste collection campaigns and other various policies to circulate resources in line with government policies.

### Recycling Insulating Oil

We use a large amount of insulating oil due to the nature of transformers. To reuse insulating oil, we remove moisture and impurities through filtering facilities. If insulating oil cannot be reused due to the high concentration of contaminants, we process it in an eco-friendly manner through a waste oil collect and disposal contractor.

### Plastic Resource Recycling

HD Hyundai Electric continues to carry out eco-friendly resource recycling campaigns to revitalize recycling, recreating transparent plastics generated at workplaces as work clothes, and plans to expand resource recycling actively through various ideas from our employees.

### Recycled Materials Performance in 2022

Recycled raw material	Total usage
PET(polyethylene terephthalate)	677,397kg

# Resource Use and Pollution Reduction

## Risks and Opportunities

As domestic and foreign chemical substance regulations are strengthened, it is required to systematically manage the chemical databases. HD Hyundai Electric conducts Hazard Assessments from the purchasing stage and restrict regulated chemicals to reduce harm and risks in our workplaces. We also monitor the chemical database to prevent environmental and expense risks occur when a substance becomes regulated under domestic chemical laws<sup>1</sup>.

1. 19 Acts including the Occupational Safety and Health Act, Chemical Substances Control Act, Act on Registration and Evaluation of Chemical Substances, Act on the Safety Control of Hazardous Substances, etc.

## Targets

To reduce the environmental impact caused by pollutants generated at our business sites, HD Hyundai Electric analyzes our environmental performance every year and establishes and publishes environmental management goals.

## Recycling Waste Resource

Intending to consider even waste as a resource, we set a goal to recycle 55% or more of our waste output, and in 2022, we reached 57.2%, exceeding the target by 2%. We plan to continue reviewing recycling measures to recycle our waste.

## Managing Air Pollutant Emissions

To manage air pollutants, HD Hyundai Electric has strengthened our internal standards to limit nitrogen oxide emissions below 60% of the quota in conjunction with the government's regulation on total quantity. The total nitrogen oxide emission quota in 2022 was 7 tons, and we exceeded the target by emitting only 4.2 tons, which was 60% of the allocation.

## Certification and Due Diligence

### Air Pollutant Management

As of January 2022, we have added new measurement items to 13 emission outlets to keep track of air pollutants emitted.

### Chemical Substance Management

We conduct emission surveys (once a year) and statistical surveys (once every two years) on incoming chemicals and report their usage to the relevant authorities, while separately imported chemicals are managed through legal import declaration. We also have statutorily trained environmental engineers who periodically inspect the environmental facilities at our work sites, and we constantly monitor them to ensure that pollutants do not leak out due to preventive facilities malfunctioning or being damaged. We advise the site management to take immediate action with the improvements discovered during the regular inspections.

## Quantitative Performance

### Raw Materials<sup>1</sup>

		Unit	2020	2021	2022
Major raw materials	Electrical steel	ton	32,329	34,049	38,275
	Electrical steel base unit	ton/ KRW million	0.0206	0.0219	0.0209
	Copper wire (rectangular)	ton	4,157	3,639	4,678
	Copper wire (rectangular) base unit	ton/ KRW million	0.0027	0.0023	0.0026

1. Revenue: Based on revenue in the separate financial statements

# Resource Use and Pollution Reduction

## Waste<sup>2</sup>

		Unit	2020	2021	2022
Emissions	Total waste emissions	ton	2,923.2	2,593.3	2,803.3
	General	ton	2,561.3	2,232.9	2,456.2
	Designated	ton	361.9	360.4	347.1
	Waste intensity (base unit) <sup>3</sup>	ton/KRW 100 million	0.16	0.14	0.13
	Reduction rate (base unit)	%	6.3	10.6	7.6
	Achievement rate (compared to the target) <sup>4</sup>	%	-	118.6	106.50
Disposal	Total waste disposed	ton	2,923.2	2,593.3	2,803.4
	(General) Incineration	ton	1032.2	898.3	973.6
	(General) Landfill	ton	68.0	25.1	71.8
	(General) Recycling	ton	1461.1	1309.5	1410.9
	(General) Other	ton	0	0	0
	(Designated) Incineration	ton	108.9	122.5	109.0
	(Designated) Landfill	ton	1.6	0.2	0.4
	(Designated) Recycling	ton	248.2	237.7	237.7
	(Designated) Other	ton	3.2	0	0
Recycling	Waste recycling rate	%	58.0	60.0	58.8

2. Data calculation scope: The Ulsan plant, Seonam plant

3. Revenue: Based on consolidated financial statements in the annual report

4. As a participant of The Resource Recirculation Performance Management System, HD Hyundai Electric has been assigned to have a waste emission target, 2,719.99ton (Based on Ulsan plant). We established the 2022 target and achieved 106.5% by discharging 2,543.42ton of waste for a year.

## Pollution Reduction

		Unit	2020	2021	2022
Air pollutant emissions <sup>5</sup>	Nitrogen oxides (NOx) emissions	ton	3.21	2.36	2.92
	Nitrogen oxides (NOx) emission intensity	ton/KRW billion	0.0017	0.0013	0.0014
	Sulfur oxides (SOx) emissions	ton	0	0.19	0.08
	Sulfur oxide (SOx) emission intensity	ton/KRW billion	0	0.0001	0.0000 <sup>6</sup>
	VOCs emissions	ton	0.86	1.18	0.41
	VOCs emission intensity	ton/KRW billion	0.0005	0.0007	0.0002
	Fine dust (PM10) emissions	ton	0.81	0.83	0.80
	Fine dust (PM10) emission intensity	ton/KRW billion	0.0004	0.0004	0.0004

5. Data calculation scope: The Ulsan plant, Seonam plant; Revenue: Based on consolidated financial statements in the annual report

6. 0.00004

## Chemical Substances<sup>7</sup>

		Unit	2020	2021	2022
Chemical substance management	Chemical substance usage	ton	249.93	146.90	224.94
	Chemical substance emission	ton	2.265	0.689	0.239

7. Based on PRTR (Pollutant Release and Transfer Register, Chemical Emission and Transfer Information per the Chemical Substances Control Act) data; Information scope: Korea



# Resource Use and Pollution Reduction

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## Major Activities and Plans

### Establishing Eco-Friendly Insulating Oil Infrastructure

HD Hyundai Electric replaced insulating oil, one of the primary raw materials for our transformer products, with an eco-friendly insulating oil in 2022 to expand our eco-friendly product offering and reduce the pollutants generated during production. In particular, we grounded the insulating oil pipeline and applied enhanced oil-proof facility standards in the investment phase of the eco-friendly insulating oil facility, reducing the risk of additional chemical accidents and soil pollution during operation.

### Personnel Training

HD Hyundai Electric conducts training on environmental accident response and fire accident response annually for the divisions handling hazardous materials storage. Each member learns about the emergency response organization chart and their roles in advance and trains in actual scenarios to address emergencies quickly. Each storage facility's managers treating risky materials complete regular training per legal and regulatory standards, and they conduct on-site inspections to comply with their obligations to prevent chemical leakage accidents and manage pollutants.

### Waste Discharge Management Activities

As a participant of The Resource Circulation Performance Management System, HD Hyundai Electric selects treatment methods that meet the resource circulation goals when discharging and treating waste at our work sites. We classify and store the waste according to designated codes based on waste analysis and prioritize reviewing legitimate treatment companies and selecting recycling treatment methods. We have achieved all the targets for resource recycling performance management set in 2022; we plan to create an improved management system through continuous performance management.

## Regular On-Site Environmental Facility Inspections

For creating a clean workplace and pollutant emission management, environmental technicians who have completed statutory training regularly inspect the environmental facilities in our workplace. We are monitoring the implementation of operational standards and the on-site management for preventing environmental accidents, such as the operation and any damage to air pollution prevention facilities and the waste storage site management. In the case of air pollutants, we measure the concentration of each pollutant according to the statutory cycle and thoroughly manage it through the internal management system and government system reporting. In 2022, we conducted three regular inspections a month on average, and the corresponding site management department promptly addressed any improvements found.

Environmental Facility Inspection Performance in Major Plants in 2022

	Ulsan Plant	Seonam Plant		Ulsan Plant	Seonam Plant
January	1 time	1 time	July	2 times	1 time
February	1 time	1 time	August	1 time	1 time
March	3 times	1 time	September	1 time	1 time
April	2 times	1 time	October	4 times	1 time
May	3 times	1 time	November	1 time	1 time
June	2 times	1 time	December	1 time	1 time

We inspect the environmental facilities installed inside the plants at least once a month to minimize pollutants that may leak from operations. In 2023, additional new environmental facilities are planned to be installed, replacing the old facilities according to the Ulsan Factory Renovation Plan. We will pre-sort the waste at our factories to increase the recycling rate and consider investing in high-efficiency prevention facilities to improve pollutants.



# Environmental Engagement

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### Eco-Friendly Policies

HD Hyundai Electric develops eco-friendly products and services and establishes strategies for carbon emission management and energy efficiency through our safety, health, and environmental management policies, striving to create sustainable value through eco-friendly management. We have defined eco-friendly products and project and aggregated the performance of each to select them as indices we will manage. We also included them in the companywide management system through data linkage and are setting and managing goals connected to our KPIs. Moreover, LCA (Life Cycle Assessment) is conducted to minimize and improve the environmental impact of the entire product to identify, analyze, and manage the environmental impact of the entire product process.

#### Environmental Certifications

		Unit	2020	2021	2022
Environmental management certification	ISO 14001 <sup>1</sup>	%	100	100	100
	No. of third-party eco-friendly certifications <sup>2</sup>	ea	1	1	2

1. The scope of ISO 14001 is the rate of production plants (Ulsan Plant, Seonam Plant, Anseong Plant)  
 2. Earned ISO14001 and Green Technology Product (Eco-friendly Switchgear using high-pressure dry-air insulating technology) certifications in 2022

#### Environmental management organization chart



Safety & Health & Environment Management Department is an organization dedicated to implementing environmental management, and has established and is operating an environmental management system.

\*CSO(Chief Safety Officer)

### Environmental Programs

#### Biodiversity Conservation Activities

HD Hyundai Electric is striving to protect the ecosystem and preserve biodiversity through coastal cleanup activities in Ulsan to preserve national protected species and river and road management activities near the workplace. Ulsan, where HD Hyundai Electric's business is located, has a number of national protected species inhabiting, including southern large dolphins, ghost whales, fin whales, and blue sea turtles. Recently, when sea turtles and whales died after being caught in waste nets, and sea turtles mistook foreign substances such as plastic for food and ingested it, HD Hyundai Electric perceived that marine debris poses a potential risk to the conservation of species diversity. Accordingly, HD Hyundai Electric conducted species protection activities on the main coast in June 2022 to prevent the death of national protected species (Southern Big Dolphins, Ghost Whales, fin whales, Blue Sea Turtles, etc.) and to preserve the habitat environment. Through this activity, about 340 bags of 80 kg (27,200 kg) of waste nets and waste plastics were collected, and employees' awareness of biodiversity conservation was raised. In addition, river protection activities were carried out to preserve the biodiversity that inhabits the vicinity of business sites every quarter, and as part of making clean roads, employees carry out road management activities every month. We will continue to contribute to the restoration of the ecosystem by operating various environmental programs such as species diversity management and environmental cleanup volunteer activities.

#### Major Biodiversity Conservation Activities

Biodiversity Conservation Activities	No. of Participants and Results
River management activities near business sites	6 participants, approximately 150kg of waste collected
Road management activities near business sites	3 participants, approximately 100L of waste collected
Jujeon Beach protected species conservation activities	80 participants, approximately 27,200kg of waste collected

#### Responding to Environmental Incidents

		Unit	2020	2021	2022
Prevent environmental pollution incident	Purchased environmental liability insurance	Y/N	Y	Y	Y
	Environmental accident response training	Y/N	Y	Y	Y

# Environmental Engagement

## Investment in the Environment

We are continuously strengthening our investments in the environment to build an ESG management system. In 2023, we plan to continue reducing our environmental impact and expanding eco-friendly work sites with significant investments in outdated factories and environmental facilities.

### Reducing Greenhouse Gas Emissions through Power Energy Efficiency Enhancement

The Ulsan and Seonam Plants replaced ceiling lighting to LED lights in 2022 to improve energy efficiency and reduce greenhouse gas emissions.

	Ulsan Plant	Seonam Plant
Reduction	989.20 tCO <sub>2</sub> eq/year	264.4 tCO <sub>2</sub> eq/year

### Eco-friendly Insulating Oil with Low Environmental Impact

We have completed infrastructure investment in eco-friendly insulating oil facilities for manufacturing eco-friendly transformer products. The oil is a non-toxic vegetable/synthetic-based oil with a low environmental impact on air and water and can be recycled in an eco-friendly manner when disposed of. We will continue to strive to develop eco-friendly products in the future.

## Investment Review Process Considering Safety and Environmental Risks

HD Hyundai Electric considers safety and environmental risks in our facility investment review and decision-making before selecting. When deliberating an investment plan between KRW 1 billion and 10 billion, we review and present the results to the “Facility Investment Review Committee,” which comprehensively reviews the investment plan, feasibility, and economics before deciding on the investment. The deliberation committee’s facility investment checklist includes financial factors like the appropriateness of investment effectiveness as well as the safety and environmental standard compliance as evaluation items, ensuring comprehensive investment decision-making that considers both financial and environmental safety factors.

### Environmental Investments and Costs

		Unit	2020	2021	2022
Environmental investment	Facility Investment	KRW 100 million	5	18	31
	R&D Investment	KRW 100 million	38.9	41.1	43.0

### Eco-friendly product and technology

		Unit	2020	2021	2022
Eco-friendly product revenue	Total revenue in eco-friendly products and services	KRW 100 million	296.5	636.2	939.1
	Percentage of total revenue <sup>1</sup>	%	1.9	4.1	5.1

1. Revenue: Based on separate financial statements (head office) of the annual report(head office) of the annual report

# Environmental Engagement

## Environmental Training

HD Hyundai Electric provides environmental training to our employees, including environmental managers, new hires, and environmental facility personnel, to actively respond to tightening environmental regulations. We share the latest information gathered through external training and activities in the Environmental Engineers Association with them and enhance facility managers' understanding through repeated training on bylaws for environmental facilities and chemicals, inspection items for each facility, and tips for keeping daily operation records. We also train environmental engineers and ISO internal auditors so that they would share the value of ESG management – such as carbon neutrality for the corporation and renewable energy conversion – while leading our employees to actively participate in managing environmental risks and opportunities.

### Environmental Training

		Unit	2020	2021	2022
Environmental training	Total participants	person	35	35	38
	Total training hours	hour	35	35	140
	Training hours per person	hour	1	1	3.68

### Details of the Environmental Training in 2022

Training Targets	Training Content	No. of Trainees	Training Hours	Method of education used
Environmental engineers	Environmental Engineer Statutory Training	1 person	28 hours/person	face-to-face education
Environmental facility personnel	Emission and Prevention Facility Management Training	32 people	1 hour/person	non-face-to-face education of 16 people face-to-face education of 16 people
ISO internal auditor	ISO 14001 Internal Audit	5 people	16 hours/person	face-to-face education

## Environmental Compliance Violation

### Environmental Compliance Management System

To apply Environmental medium laws<sup>1</sup> to the entire company, HD Hyundai Electric has established and distributed standard documents for each medium and applies the revised statutes through semi-annual legal review and feasibility assessment, setting in-house management standards. Based on the standards, we prepare detailed response measures for continuous compliance with laws and regulations and internal standardization.

In 2022, we had one violation of environmental regulation by failing to notify the reason for canceling emissions below 50% of the workplace greenhouse gas quota, paying a fine of KRW 800,000. We disclosed the case to stakeholders (annual report), analyzed the cause, participated in relevant training, and supplemented our work system to prevent a recurrence. We will create a solid management system to prevent the same violations from occurring.

1. Environmental medium laws : Clean Air Conservation Act, Water Environment Conservation Act, Wastes Control Act, and other environment-related laws

### Violations

		Unit	2020	2021	2022
Environmental compliance violation	Violation case	case	0	1	1
	Fine and penalty	KRW million	0	0.4	0.8

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**Policies**

HD Hyundai Electric has established employment rules and personnel regulations that comply with domestic laws, including the Labor Standards Act, to ensure fair and transparent human resource management, and we designate matters related to personnel and recruitment through Collective Agreements. We do not discriminate on the basis of gender, age, race, ethnicity, religion, education, etc., in all stages, from recruitment to placement, training, performance evaluation, and retirement; we operate personnel management processes based on the principle of enhancing diversity. We are also striving to create an organizational culture that meets the eyes of Generation MZ, who will be the major drivers of our corporation in the future. To this end, we have established a dedicated team for organizational culture and are promoting systemic improvements to enhance employee satisfaction and prevent talent turnover.

HD Hyundai Electric is committed to establishing labor-management relations with a joint destiny based on labor-management cooperation and realizing a productive relationship contributing to corporate operations. Our management is demonstrating the strong will and continuous practice, while labor unions are expressing community awareness and voluntary participation and employees a strong sense of belonging and active support for labor-management relations. We operate Collective Bargaining (once a year, wage and collective bargaining agreement renewal) and Labor-Management Council (once a quarter, system improvement and welfare) with the labor union established at the end of last year, and the results of the negotiations are transparently disclosed to employees through the intranet. Our labor and management concluded the collective bargaining agreement in 2022 without any disputes and implemented 100% of the council’s resolutions. We plan to continue striving to improve our employees’ employment security and working conditions in the future.

**Governance**

As we recognize the importance of labor, HD Hyundai Electric has appointed Executive Director Jeon Soon-ok of the Jeon Taeil Foundation, an expert in labor and social issues, as the chairperson of our ESG Committee responsible for decision-making across ESG. The Committee receives reports, deliberates, and approves labor issues related to employment, employee diversity, labor relations, and talent acquisition and retention. In 2022, the ESG Committee reviewed the contents of the Human Rights Impact Assessment to identify companywide human rights risks, including labor, supply chain, etc.

**Targets**

We strive to create an engaging, health-friendly corporate environment. In 2023, we will improve our corporate health promotion index by over 80 points to advance our health-friendly culture.

**Certifications and Due Diligence**

HD Hyundai Electric was certified as a Family-Friendly Business in 2021 (valid for three years) as a company that offers harmony in work and family life by operating various work-life balance systems. We were also certified as a Health-Friendly workplace in 2022, a certification awarded to companies that create a health-friendly workplace culture and environment and support employee health management. We plan to continue operating various programs for our employees’ happiness and health and pave the way as a family-friendly and health-friendly workplace.

**Quantitative Performance**

**Labor Union**

		Unit	2020	2021	2022
<b>Labor union</b>	Union membership rate	%	93.5	91.2	83.6
<b>Collective bargaining</b>	Collective bargaining agreement application rate	%	100	100	100
<b>Strike</b>	No. of strikes	case	12	13	0
	Strike participants	person	203	264	0

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## Employees

		Unit	2020	2021	2022
By employment type	Total employees	person	2,100	2,122	2,084
	Full-time	person (%)	2,023(96.3)	2,064(97.3)	1,959(94.0)
	Temporary	person (%)	77(3.7)	58(2.7)	125(6.0)
By age	Under 30	person (%)	114(5.4)	112(5.3)	177(8.5)
	30 to under 50	person (%)	1,096(52.2)	1,064(50.1)	1,007(48.3)
	50 and above	person (%)	890(42.4)	946(44.6)	900(43.2)

## Employee Diversity

		Unit	2020	2021	2022
Female	Total no. of female	person (%)	144(6.9)	147(6.9)	192(9.2)
	Management positions <sup>1</sup>	person (%)	4(1.9)	5(2.2)	8(3.7)
	Senior managerial positions (executives) <sup>2</sup>	person (%)	0(0)	0(0)	0(0)
	Managerial positions in revenue-generating department	person (%)	4(1.9)	3(1.5)	4(2.1)
	New hires	person (%)	20(71.4)	37(57.8)	21(22.6)
Minorities	People with disabilities <sup>3</sup>	person (%)	28(1.3)	27(1.3)	28(1.3)
	Patriots and veterans <sup>4</sup>	person (%)	61(2.9)	58(2.7)	55(2.6)
Nationality	Foreign nationals <sup>5</sup>	person (%)	1(0.05)	1(0.05)	0(0)

1. Female in managerial positions: (for office organization) executives, heads of department ~ section leaders, part leaders (for production organization) executives, heads of department ~ senior foreman/assistant foreman

2. Female in executive positions: President ~ Vice President

3. Based on the Disability Employment Levy Report

4. Based on the Patriots and Veterans Status and Plan Report

5. Nationality of foreign employee in 2020 and 2021: Mexico

## Hiring

		Unit	2020	2021	2022
New hires	Total	person	28	64	93
	New (no experience)	person	26	50	71
	Experienced	person	2	14	22
Regional	Local hires	person	25	38	246

## Turnovers and Retention

		Unit	2020	2021	2022
Turnovers	Total turnovers	person	220	55	125
	Voluntary turnovers <sup>6</sup>	person(%)	176(8.4)	21(1.0)	103(4.9)
	Turnover rate	%	11.0	2.7	8.3
Years of Service <sup>7</sup>	Average years of service	year	2.8	3.7	4.3
	Male	year	2.9	3.8	4.4
	Female	year	2.1	2.6	2.9

6. Voluntary turnovers include turnovers and retirements by voluntarily (excluding retirees due to retirement, disciplinary action, dismissal, restructuring, etc.)

7. Calculation beginning date: After the spin-off from HD Hyundai Heavy Industries in April, 2017

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## Wage<sup>7</sup>

		Unit	2020	2021	2022
Salary	Average salary for all employees	KRW million	80	81	95
	Male	KRW million	82	85	97
	Female	KRW million	53	53	64
Equal pay	All employees	%	64.6	63.1	66.0
	Managerial position <sup>8</sup>	%	97.4	92.6	97.0
	Non-managerial position <sup>9</sup>	%	68.5	64.6	71.9
Wage gap between CEO and employee	Based on average value	%	10.95	12.33	8.16

7. Wage amount: based on annual report

8. Managerial positions: (for office organization) executives, heads of department ~ section leaders, part leaders (for production organization) executives, heads of department ~ senior foreman/assistant foreman, based on basic salary

9. Non-managerial positions: All employees except managerial positions, based on basic salary

## Training<sup>10</sup>

		Unit	2020	2021	2022
Training hours	Training hours per employee	hour	9.84	6.09	8.30
	Male	hour	10.46	6.24	8.27
	Female	hour	1.48	4.12	8.65
	Regular worker	hour	9.97	6.21	8.13
	Non-regular worker (Contract workers, part-time)	hour	6.55	1.17	10.92
	Below 30 age	hour	18.97	8.05	14.11
	30 to below 50 age	hour	9.55	6.09	8.17
50 and above age	hour	9.03	5.86	7.29	
Training cost	Training cost per employee	KRW thousand	195.65	366.60	280.60
Job capability training	Total engagement rate	%	57.0	53.2	60.1

10. Partially includes statutory training

## Performance Evaluation<sup>11</sup>

		Unit	2020	2021	2022
Competency Development Evaluation System	Application rate	%	3.7	3.8	3.5

11. Follows the Management by Objectives (MBO) evaluation method; Applicable for: department heads and above

## Welfare Benefits

		Unit	2020	2021	2022
Welfare benefits	Welfare benefit cost	KRW 100 million	118.7	117.0	119.3
	Welfare benefit cost per person	KRW million	5.65	5.51	5.73
	Welfare benefit cost to revenue <sup>12</sup>	%	0.66	0.65	0.57

12. Revenue: Based on consolidated financial statements in the annual report

## Parental Leave<sup>13</sup>

		Unit	2020	2021	2022
Taking parental leave	Male	person	9	20	16
	Female	person	4	5	2
Returning to work after parental leave ended	Male	person (%)	7(70.0)	10(90.9)	16(106.7) <sup>14</sup>
	Female	person (%)	2(100)	5(100)	2(100)
Working more than 12 months after return to work	Male	%	100	100	100
	Female	%	100	100	100

13. Number of people taking parental leave is calculated based on parental incentive payment

14. Exceeded 100% due to returning before the scheduled return date



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### Major Activities and Plans

#### Employee Evaluation System

To manage and evaluate our employees' performance, we conduct personnel evaluations for all employees twice a year in the first and second half of the year. We use the evaluation results in promotion, rewards, fostering, and selecting leaders to motivate employees. In particular, we link the evaluation with our core talent systems and use it in various ways beyond one-dimensional evaluation, striving to develop and foster our employees. Managers at the department head level and above are evaluated with the Management by Objectives (MBO) method, which measures their performance against individual goals.

#### Retirement Pension Program

HD Hyundai Electric operates a retirement pension program to ensure a stable retirement for all employees who have worked for more than one year. We provide a defined contribution (DC) retirement plan for salaried employees 56 and above.

#### Work-Life Balance

HD Hyundai Electric has established a PC-OFF system that automatically shuts down all work computers at the end of the workday, minimizing unnecessary overtime and providing employees with time to spend in the evening. We also operate a work-at-home system constantly at a 10% level and a staggered commute system that allows employees to come to work at their preferred time to support their work and life balance.

### Supporting Female Employees for Pregnancy and Childbirth

HD Hyundai Electric operates various programs to create a family-friendly environment where family and work coexist harmoniously. We support female employees who are pregnant and giving birth by offering welfare mall points worth 300,000 won to purchase necessary items during pregnancy through the "Happy Mom Package Plan" and a separate recovery grant after childbirth. Moreover, we provide designated employee identification necklaces for pregnant women even in the early stages of pregnancy while flexibly operating paid half-day leave for prenatal checkups. To support employees in balancing work and family, we also grant spouses parental leave and reduced work hours during the child-rearing period. We further operate workplace children's centers, support family leisure facilities, and provide subsidies for children's tuition, early childhood education, and education expenses for children with disabilities to help our employees' work-family balance.

### Employee Health-Friendly Program

HD Hyundai Electric shares hospitals, physical therapy facilities, and counseling and psychological facilities with our parent company, providing large-scale health-friendly facilities to our employees and encouraging them to care for their health. We offer physical health management as well as support programs for mental health management like mental health promotion programs in an effort to create a health-friendly corporate culture. These programs led us to be selected as a family-friendly company and receive the Korea Health Promotion Institute President's Award from the Ministry of Health and Welfare.

### Labor-Management Communication Program

HD Hyundai Electric provides organizational activation and labor relations education programs to managers and new hires to establish cooperative labor relations. We operate communication programs such as get-togethers by level and letters from the CEO (once a month) to improve labor-management relations. We also promote various activities such as joint blood donation events, small joint donations, regular representatives' meetings, and regular management status briefings to seek win-win solutions for both labor and management. Moreover, we operate a grievance handling program, an employee's stock ownership association, as well as a labor welfare fund for recreational facilities and funeral support, further building a win-win labor-management culture.

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## Providing Training Opportunities

HD Hyundai Electric recognizes that advancing our human resources is crucial in improving business performance and maintaining our market position and has established a human resource development strategy to attract and nurture outstanding talent. We have developed training programs suitable for each position, function, and job title, and the programs are structured so that all employees can receive training regardless of their employment type. To meet the needs of our employees, we provided various training opportunities, including fostering next-generation leaders, convergence talents, job-specific specialists, and global talents.

Education Curriculum	Content
Nurturing Leaders	To nurture next-generation leaders, HD Hyundai Electric provides group training courses for future leaders; the HLC (HD HYUNDAI group Leader Course) and the HTLC (HD HYUNDAI group Technical Leader Course). We seek practical education through Action Learning, which focuses on selecting and solving a current task of each business project, and through this, we strive to foster excellent leaders.
Nurturing Convergence Talents	To foster outstanding talents with business insights, we concentrate on fostering these talents by educating humanities / commerce talents on engineering basics and educating the talents of electricity / machinery on basic management, nurturing convergence talents.
Nurturing DT Talents	To provide excellent service by fostering digital talents, we operate a training program to foster DT talents to achieve early transition of employees' perspective of DT and to equip our talents with professional skills.
Nurturing Job Experts	To improve the work capabilities of our employees in the field departments, we provide training to foster job experts through the autonomous job training system and collective job training. After completion, we manage the performance indicators from the training program, striving to strengthen our employees' job capabilities.
ESG Training for Outside Directors	To strengthen the ESG management capabilities of our Board of Directors, we conducted ESG training for outside directors in October 2022. The education provided information on ESG management practices in other corporations and domestic and international regulatory trends to enhance the Board's understanding of ESG.
Retirement Plan Support Training	We operate a retirement plan support training program to support the healthy and stable retirement of our employees. The participants share information on post-retirement asset and health management, reemployment, and entrepreneurship and systematically plan for retirement. For their ability to actively cope with the rapidly changing social environment and lead a happy and stable retirement, we will organize experience and activity-oriented programs, including successful retirement case experiences and married couples' activities, reflecting the latest economic and IT trends.

## Detailed Curriculum for Technicians Working in the Office

Job Title	Nurturing Leaders	Nurturing Hybrid Talents	Education by Rank	DT Training	Job Training	Global Training	Others
Executive	Leader course Leadership coaching		Education for new executives	DT leadership special lecture			
Senior Manager	HLC IV HLC III HLC II Leadership improvement course New head of the department New head of the job	Hybrid course	Capacity building training	DT planner, agent course DT development expert course DT mindset training	Collaborative job self-training Consortium training Cyber training	Course for candidates of the entity head Training for candidates going overseas sites Short-term study abroad for degrees	Work-study system Retired life design Legally mandatory education expert course
Manager	HLC I				Professional job training		
Associate Manager			Training for employees at the second year of work Mentoring for new employees	DT beginner			
New Hire		Hybrid course for new employees	Orientation for new / experienced employees				

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Detailed Curriculum for Technicians

Job Title	Leadership Training	Technology Transfer Training	Common Training	Job Training	Corporate Culture Training	Legally Mandatory Training							
Executives													
Production Head													
Production Deputy Head	New department head	Core skill transfer program	General skill transfer program	Basic capacity and job capacity building	Technical capability nurturing system	Certification training	Safety management training	Collective professional training	Field autonomous job training	Organization facilitation training	Outstanding employee training	Retirement planning	Legally mandatory training
Production Manager													
Production Asst. Manager	HTLC II (officer) New officer												
4th Class Engineer	HTLC I (head of production team) New production team leader												
5th Class Engineer	HHI Meister University												
New Hires				Mentoring for new hires Orientation for new hires									

### In-House Venture Support Program

To create new value for the group and foster a creative and challenging corporate culture, we have introduced and implemented the “DREAM CUBE,” a group-companywide internal venture support program. Designed for employees at the manager, engineer, researcher level and above, the program connects external professional consulting in the selection process to support the advancement. The officially selected venture teams are provided with an independent working environment to focus on implementing their ideas away from their jobs. We provide startup support for the teams that spun off from us after the internal venture activities and compensation for teams that commercialize their project internally. Furthermore, we allow employees to rejoin our company within five years after spinning off so that they can take on new challenges without a fear of failure.

# Health and Safety

### Policies

Under the core value of a “safe and healthy work environment,” HD Hyundai Electric has set a safe and healthy environment as the top priority in management and strives to create a safe and healthy work environment for both labor and management. We have established a thorough safety and health management system to track and manage data, from discovering hazardous risk factors to improving them while minimizing risk spots through systematic risk assessment. We also conduct prevention-oriented health management activities to prevent infectious diseases from entering to closely manage occupational disease factors, evaluate and improve the working environment, and carry health promotion programs into effect.

### Accident Investigation Process

HD Hyundai Electric has designated an accident bylaw that defines accident prevention and handling standards that apply to all business sites, including partner companies’ employees. In the event of an accident, the supervisor shall notify the Safety & Health & Environment Management Department and prepares a safety accident report along with an investigation into the cause and immediate actions. For a serious accident, we convene an RCA (Root Cause Analysis) to investigate the underlying cause and establish countermeasures.

### Safety Management of Partners

When selecting partner companies, we conduct safety and health capability evaluations to select qualified suppliers. We also conduct monthly safety level implementation evaluations and pick and reward partners with excellent safety prevention evaluations semi-annually based on the assessments. To select competent safety managers for internal partner companies, we provide incentives based on qualification standards and conduct capability evaluations for them twice a year. Furthermore, we hold meetings to share safety information and raise safety awareness, as well as safety and health councils and joint safety and health inspections every month and quarter, respectively, striving to improve the safety and health of partner companies.



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## Conducting Safety and Health Education

HD Hyundai Electric conducted statutory safety and health training – supervisor training, new hire training, regular safety and health training, returning employee training, and equipment operation training – and job safety and health training – safety and health officer training and safety and health senior employee training – for safety and health managers.

## Responding to COVID-19

We have established internal preventive guidelines that are stronger than government ones to prevent the infection and spread of the coronavirus (COVID-19). We have also strengthened company access procedures, conducted special disinfection and prevention, provided masks, placed hand sanitizer and thermometers, and provided emergency medical kits for international business travelers, actively responding to prevent the spread of COVID-19.

## Health Management Center

We operate a Health Management Center to help our employees recover from injuries and health issues. We provide quality medical services, including treatment, medication, health counseling, health checks, and physical therapy.

## Health Promotion Center and Oriental Medical Center

Through a shared service with HD Hyundai Heavy Industries, we provide our employees with access to the Health Promotion Center staffed by an occupational health doctor for their medical treatment, physical therapy, and rehabilitation. We also support the treatment of musculoskeletal-related diseases with oriental medicine services.

## Obesity Management

Obesity is a major cause of cerebrovascular diseases such as hypertension, dyslipidemia, and diabetes. To reduce the obesity rate of our employees, HD Hyundai Electric designs and operates obesity programs including body composition analysis and walking exercises to manage our employees' health.

## Employee Health Management Program

HD Hyundai Electric checks the health status of our employees and takes appropriate measures to improve their health. We support their disease prevention through periodic general check-ups and provide mental health care through the “Mind Garden,” a psychological counseling center. We also operate a health promotion center with occupational health doctors to offer various health treatment services and promotion programs, such as medical examination, physical therapy, rehabilitation, and oriental medicine. We help our employees to manage their obesity through a mobile walking program (Walk On), offering health materials on eating habits and exercise walking and providing rewards to outstanding participants every month.

## Governance

### Health and Safety Operating System

Every year, the Board reviews the direction and improvements of the company's health and safety plan as its main agenda. By this fact we strengthen the management responsibilities of our executives and directors and expand our investments in safety and health. To reinforce the responsibilities, we hold safety management meetings led by the CEO and site safety inspections by CSO (Chief Safety Officer) once a month. We have also established a dedicated safety and health management organization to check the implementation of improvements to hazardous risk factors and compliance with safety and health standards.

### Occupational Safety and Health Committee

To create a safe and healthy work environment, HD Hyundai Electric holds a quarterly meeting for the Occupational Safety and Health Committee, comprised of six members from labor and management each, to monitor safety and health risks. We also organized an Occupational Safety Council with partner companies to communicate actively with employees and the partner company's workers. In 2022, a total of 43 cases were deliberated and resolved, 33 of which derived improvement proposals, and two are to be discussed between labor and management to conclude improvement proposals that satisfy both parties. We also introduced a QR code system to collect opinions from field workers and simplify the process of reporting risk factors on the site.



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# Health and Safety

## Risks and Opportunities

HD Hyundai Electric conducts safety management meetings every month and regular risk assessments every year to identify high-risk tasks by accident type and department. We also established a separate council to prevent and manage safety accidents of our partners and meet with them monthly to identify and address safety risks. For those identified as hazardous risk factors, we conduct special inspections to prevent the recurrence of similar accidents as well as improvement measure implementation monitoring, weekly safety inspections, safe work demanding rights, and on-site risk searches. In case of industrial or minor accidents, we frequently check the post-accident management status of the accident area and take improvement measures to prevent similar accidents from occurring again.

## Targets

HD Hyundai Electric has maintained zero serious accidents for the past three years and steadily decreased our accident rate. We have set a goal of zero serious accidents and a 0.107 accident rate (0.245 in converted accident rate), and we aim to reduce the rate by 10% year-on-year with the target of 0.107 (0.221 in converted accident rate) in 2024 and 0.107 (0.197 in converted accident rate) in 2025.

## Certification and Due Diligence

HD Hyundai Electric operates health and safety management system in accord with global standard by acquiring and maintaining occupational health and safety management system, ISO 45001. We commission LRQA, a third-party verification agency, for the follow-up audit to continue renewing and maintain the certification. We also conduct Work Environment Measurements twice a year or more to measure and evaluate how much harmful factors affect our on-site workers and take appropriate measures to create a desirable work environment. The result of the work environment measurement is notified to the relevant department, and if the exposure standard is exceeded, improvement measures are established and implemented.

## Quantitative Performance

### Accidents and Violations

		Unit	2020	2021	2022
Safety accidents	Serious occupational injuries	case	0	0	0
	Violation of laws and regulations	case	4	1	1
	Fines for light violation	KRW thousand	4,720	0	4,000
	Fines for violation	KRW thousand	3,000	2,000	0

### Occupational Accidents

		Unit	2020	2021	2022
Employees	Lost Time Injury (LTI) <sup>1</sup>	case	3	3	3
	Lost Time Injury Frequency Rate (LTIFR)	case per 1 million work hours	0.74	0.74	0.66
	Industrial accident rate	%	0.14	0.14	0.15
	disaster frequency rate	case per 1 million work hours	0.81	0.65	0.66
	Severity rate	case per 1,000 work hours	0.03	0.02	0.04
	Occupational Illness (OI) <sup>2</sup>	case	3	4	1
	Occupational Illness Frequency Rate (OIFR)	case per 1 million work hours	0.74	0.98	0.16
	Work-related fatalities	person	0	0	0
	Near miss rate	%	0	0.05	0.03
		Full-time	%	0	0.05
	Temporary	%	0	0	0
Partner companies	Work-related fatalities	person	0	0	0
	Lost Time Injury (LTI)	case	2	0	1
	Lost Time Injury Frequency Rate (LTIFR)	case per 1 million work hours	0.15	0	1.80
	Industrial accident rate	%	0.53	0.37	0.32
	disaster frequency rate	case per 1 million work hours	2.41	1.68	1.46

1. Based on the number of accidental injuries

2. Based on the number of industrial accidents approved by the Korea Worker's Compensation and Welfare Service

# Health and Safety

## Health and Safety Certification

		Unit	2020	2021	2022
Health and Safety Certification	ISO 45001 application rate <sup>3</sup>	%	100	100	100

3. ISO45001 certification scope: All production sites (Ulsan Plant, Seonam Plant, Anseong Plant)

## Health and Safety Education

		Unit	2020	2021	2022
General employees	Training hours per employee	hour	20	21	24
	Training participation rate <sup>4</sup>	%	100	100	100
Resident partner companies	Training implemented	Y/N	Y	Y	Y

4. Total number of employees completed Health and Safety education : 2,100, 2,122, 2,084 employees as the year of 2020, 2021, 2022

## Occupational Safety and Health Management

		Unit	2020	2021	2022
Safety accident prevention and management	Risk assessment	time per year	1	1	1
	Partner safety prevention management	Y/N	Y	Y	Y
Health support	Physical health support	Y/N	Y	Y	Y
	Mental health support	Y/N	Y	Y	Y
Application of Occupational Safety and Health System	Employees under the system	person	1,638	1,612	1,563

4. The number of employees under ISO 45001 internal audit system as of the end of the corresponding year

## Major Activities and Plans

### Expanding Safety and Health Inspections and Employee Participation

HD Hyundai Electric regularly checks safety and health through priority item and joint labor-management inspections and conducts semi-annual safety inspections on dangerous machinery and equipment such as cranes, pressure vessels, and conveyors. We also run a campaign to identify risks on work sites and actively support our employees and partners to discover and improve hazardous situations in the field voluntarily. Based on our internal evaluation standards, we select and award excellent cases that have prevented critical risk factors and apply such cases to other sites to improve the same risk factors in our workplace. We further acknowledge the right and encourage to demand safe work for our employees and partners to enhance their mindset as workers.

### Reinforcing Safety Capabilities of Partner companies and External Installation sites

We conduct safety and health assessments for our external business partners, and those with unsatisfactory results are visited by the Chief Safety Officer (CSO) and the headquarters' Safety & Health & Environment Management Department half-yearly to provide training and guidance on the matter. We also distribute safety and health management checklists to the external installation project sites, and the CSO and the Safety & Health & Environment Management Department visit major sites twice a quarter to inspect related legal documents and site safety management instruction.

### Safety and Health Evaluation Items for Partner companies

- Safety and Health Policy and Objectives
- Health and Safety Organization and Professional Personnel Status
- Hazardous Risk Assessment
- Health and Safety Education Plan and Performance
- Emergency Action Plan and Industrial Accident Status

# Health and Safety

## Implementing Disaster and Emergency Response Activities

HD Hyundai Electric conducted five fire and emergency drills at our rotating machines factory, high-voltage circuit breaker factory, transformer factory, and Seonam factory to minimize any damage caused by a fire.

## Expanding the Risk Assessment System

HD Hyundai Electric has expanded our risk assessment system by introducing various techniques to strengthen preventive safety management and capabilities. We have reinforced the implementation inspection of measures preventing major accidents – falls, falling objects, electric shocks, etc. – and fortified the inspection and management of major accidents through 4S activities (check and inspect compliance with Safety Work Procedures) for three high-risk tasks by department. We also have induced practical risk assessment by operating the Risk Assessment Committee where labor and management are all engaged and implemented a system to discover and improve on-site risks (potential accidents) for preemptive safety management. Lastly, we checked whether recurrence prevention measures were applied to our work processes with previous safety accidents and reviewed and updated risk assessments and standard work instructions related to safety, health, and environment, invigorating our on-site safety management.

## Safety Reward System

To raise the safety awareness of our employees, HD Hyundai Electric operated various safety reward systems, including the Disaster Prevention Achievement Award and the Zero Accident Award. In 2022, we awarded KRW 80.45 million in rewards for 2,029 cases.

# Human Rights

## Policies

As a global energy company, HD Hyundai Electric is committed to fulfilling our social responsibility of respecting the human rights of our employees as well as clients, stakeholders, and communities.

### Human Rights Policy

Human Rights Guidelines	Scope of Application	Content
Declaration of Human Rights	All stakeholders (employees, clients, shareholders, local community)	We support international organizations' human rights protection and labor standards – such as the UN Universal Declaration of Human Rights and the UN Guiding Principles on Business and Human Rights – and strive to implement them. We have established a systematic human rights management governance to prevent human rights violations in all our business operations, establishing a constant connection among the Board of Directors, the Chief ESG Officer, and related organizations.
Code of Practice	All domestic and international employees and shareholders	We designate the necessary matters to establish and implement policies promoting our employees' and stakeholders' human rights protection. We set forth principles related to human rights issues in management activities, such as working condition compliance, workplace bullying and sexual harassment prevention, safety and health, and environmental rights guarantees, striving to prevent human rights violations in advance and provide active remediations. The regulations require the relevant departments – human resources, general affairs, safety and environment – to identify human rights risks, make improvements, and implement human rights management practices, such as issue monitoring and reporting, internal and external reporting and disclosure, and human rights education.
Employee Code of Ethics	All domestic and international employees	The Group's Code of Ethics stipulates responsibilities to clients, respect for shareholders, shared prosperity with partner companies, and commitment to society and the country, and prohibits any behavior that may be deemed sexual harassment in the workplace. It specifies the obligation to protect and respect human rights and establishes a specific job ethics code to define the rules considering the characteristics of each position.
Human and Labor Rights Policy	All stakeholders (employees, clients, shareholders, local community)	We have established human rights labor policies in support of the human rights protection and labor standards of the following international organizations: the Universal Declaration of Human Rights (UDHR), the Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises (MNEs), the Ten Principles of the UN Global Compact (UNGC), the UN Convention on the Rights of the Child, and the International Labor Organization (ILO). HD Hyundai Electric's human rights and labor policy applies to all our business operations, including employees, clients, suppliers, joint ventures, and other companies in all transactions and cooperative relationships with us. To prevent and remedy human rights violations, we have established the Human Rights Damage Remedy Regulations, and particularly, the regulations related to the prohibition of workplace harassment and sexual harassment specify preventive education and measures.
Supplier Code of Conduct	Employees of partner companies	We have established and announced the Supplier Code of Conduct to secure transaction transparency and build mutual trust. We set the partner companies' performance principles and specify the measure against the violations to ensure clarity and confidence in our relationship.

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# Human Rights

## Human Rights Impact Assessment

We conduct Human Rights Impact Assessments once a year or more to identify issues affecting the human rights of our employees and stakeholders in company operations and key projects and take measures to improve them. The human rights management organization leads the Assessment, and its results get delivered to the CEO after committee deliberation for human rights management decisions considering human rights risks.

## Grievance Handling Program

HD Hyundai Electric runs a grievance channel on our intranet where employees can anonymously report human rights violations. The online channel is available in Korean, English, and other languages covering all regions where we operate, and we ensure that stakeholders at all business sites can access the channel. When a human rights violation case is reported, we verify and investigate its content and discuss the remediation. We guarantee the anonymity of all reports and informants and prohibit any retaliations such as penalties or discrimination. In 2022, we received three human rights-related reports, all of which were processed.

### STEP 1 Receipt of a grievance

- Receive all grievances related to the company from employees or external stakeholders
- Grievance reception desk: Employee representative body, intranet, hotline, offline, etc.
- Meetings for each position held at least once a quarter
- Participants: Team leaders, production managers, production team leaders, personnel without titles



### STEP 2. Check and review the grievance

- Receipt and Review by Grievance Handling Committee
- Check details and facts
- Listen to the informant's wishes
- Review the action plan according to the checked details



### STEP 4. Grievance handling completion

- When needed, implement education, disciplinary action against violators, provision of necessary help for victims, infrastructure improvement, and policy and procedural improvement related to grievance handling, as needed
- Establish and reflect the improvement measures to prevent the recurrence of the same issue



### STEP 3. Notify the review results

- Notify the review results and listen to the informant's opinions
- Re-examine the measures to be taken when the informant is dissatisfied with the review result

## Governance

HD Hyundai Electric has established the Human Rights Management Committee to plan, execute, and review the performance of our human rights management. The Committee comprises the Chief ESG Officer and executives from related departments; it deliberates on issues and reports related to human rights management, such as enacting the Human Rights Management Declaration and Human Rights Management Practice Regulations and establishing human rights management policies in each sector. We have also formed a dedicated human rights management organization to systematically implement policy development, execution, and education to promote human rights and carry out tasks related to implementing annual human rights promotion plans and education.

## Targets

We will be holding the Human Rights Management Committee semi-annually and reviewing follow-up measures on the results of the Human Rights Impact Assessment conducted in 2022. We also plan to establish supplementary regulations for defects in human rights management practices, taking one step further to identify specific human rights risks and operate objective human rights policies.

## Human Rights Impact Assessment

HD Hyundai Electric conducted a Human Rights Impact Assessment in 2022 to preemptively identify actual and potential human rights risks that may arise from our business activities and reflect them in improving our systems. The assessment consisted of a checklist-type questionnaire that reflected the latest trends and business status based on the standard assessment areas of the National Human Rights Commission. After the assessment, we prepared a result report including (1) the checklist assessment results and (2) improvements to actual and potential human rights risks and reported it to the Human Rights Management Committee for deliberation. Out of the nine categories in the assessment, we recorded full marks in self-diagnosis in the following areas: non-discrimination in employment, guaranteeing freedom of association and collective bargaining, and protecting the human rights of local community. We continuously strive to improve in other areas based on the results of identifying human rights impacts.

# Human Rights

## Results of the Human Rights Impact Assessment

Human Rights Issue	Performance	Mitigation Plan
Establishing human rights management system	<ul style="list-style-type: none"> <li>Implement human rights management declaration under the purview of the CEO</li> <li>Identify human rights risks in advance and derive improvements through Human Rights Impact Assessment</li> <li>Establish Human Rights Management Committee and human rights management system by selecting human resources management department and related departments by field</li> </ul>	<ul style="list-style-type: none"> <li>Need to add periodic supplementary procedure items to human rights management practice regulations to respond appropriately to the changing environment</li> <li>Continuously identify the improvements, implement the creating outcome process, through Human Rights Impact Assessments and strengthen the human rights management system</li> </ul>
Non-discrimination in employment	<ul style="list-style-type: none"> <li>The recruitment process shall be conducted fairly using objective and reasonable selection criteria and thoroughly recognized and implemented by training all stakeholders in advance. (Detailed Rules of recruitment 5.1.4 Fairness in Recruitment)</li> </ul>	
Guaranteeing freedom of association and collective bargaining	<ul style="list-style-type: none"> <li>Ensuring the legitimate union activities of its members per the Labor Union and Labor Relations Adjustment Act and collective agreements agreed upon between labor and management and faithfully implementing the agreements.</li> </ul>	
Guaranteeing occupational safety	<ul style="list-style-type: none"> <li>Provided workers with protective equipment per collective bargaining agreements and established and strive to comply with regulations creating a safe and hygienic work environment.</li> <li>Set forth and operated policies to prevent occupational accidents and immediately paid medical compensation when workers are injured or ill on the job.</li> </ul>	<ul style="list-style-type: none"> <li>Need to strengthen monitoring procedures to ensure that workplace safety equipment and facilities are kept safe and hygienic and ensure that ventilation, lighting, drinking water, etc., are always well-maintained</li> </ul>
Responsible supply chain management	<ul style="list-style-type: none"> <li>Establish and distribute the [Pledge of Social Responsibility], [Supplier Code of Conduct], and ESG standard guidelines to strengthen human rights violation prevention at partner companies</li> <li>Conduct quality management and ESG assessments of partner companies through LLOYD, a specialized certification organization, and request them to establish implementation plans for deficiencies</li> </ul>	<ul style="list-style-type: none"> <li>Need to establish standards and procedures for monitoring the implementation results for deficiencies for each partner planned to take place in 2023</li> </ul>

Human Rights Issue	Performance	Mitigation Plan
Protecting the human rights of local community	<ul style="list-style-type: none"> <li>We have established and are managing regulatory procedures to minimize negative impacts on residents' livelihoods and economic rights, and their intellectual property rights are properly managed.</li> </ul>	
Guaranteeing environmental rights	<ul style="list-style-type: none"> <li>The Safety &amp; Health &amp; Environment Management Department has established and operates the Environmental Management System, and we obtained the international standard ISO certification through active environmental management.</li> </ul>	<ul style="list-style-type: none"> <li>When developing environmental policies, need to disclose information and establish consultation procedures for relevant stakeholders</li> <li>When developing new products or establishing new businesses, need to conduct comprehensive environmental impact assessments and take measures to prevent or mitigate the potential for any serious environmental damage</li> </ul>
Remedies for human rights violations	<ul style="list-style-type: none"> <li>Required employees to take statutorily mandated "Disability Awareness Training" and "Workplace Sexual Harassment Prevention Training" as well as additional human-rights-related training, such as "Workplace Harassment Prevention" and "Human Rights Education," to strengthen human rights violation prevention activities</li> <li>Established a Grievance Committee to formalize the remediation process for cases of human rights violations and made it accessible to all employees.</li> </ul>	
Guaranteeing workplace labor rights	<ul style="list-style-type: none"> <li>Observes working hours and parental leave system per the Labor Standards Act and the Equal Employment Opportunity and Work-Family Balance Assistance Act</li> </ul>	<ul style="list-style-type: none"> <li>Need to establish a system for providing separate safety and hygiene measures and transportation to guarantee the labor rights of workers with disabilities</li> </ul>



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# Human Rights

## Quantitative Performance

### Human Rights Violation Report<sup>1</sup>

		Unit	2020	2021	2022
Human rights violation report	Reports on human-rights-related issue	case	-	-	3
	Process rate of human rights violation report	%	-	-	100

1. Separately aggregated human rights-related reports since the Declaration on Human Rights Management (July 2022)

### Human Rights Impact Assessment<sup>2</sup>

		Unit	2020	2021	2022
Evaluation subjects	Evaluation rate of business sites	%	-	-	100

2. Implemented Human Rights Impact Assessment starting in 2022

### Human Rights Education

		Unit	2020	2021	2022
Education hours	Education hours per employee	hours	2	2	2
	Sexual harassment prevention education	hours	1	1	1
	Disability awareness education	hours	1	1	1

## Major Activities and Plans

We are in the process of implementing follow-up measures per the results of the 2022 Human Rights Impact Assessment. We continuously implement improvement processes after identifying the human rights impacts, strengthening our human rights management system. We plan to conduct the assessments and human rights education every year, derive improvements through the result report, and implement the measures.





# Supply Chain Management

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## Policies

HD Hyundai Electric considers “just, fair, and lawful business conduct” as core value that companies must uphold and strives to establish fair trade practices and build a healthy corporate ecosystem where everyone can grow together.

We have enacted the “4 Keys of Shared Growth Policy” to support partner companies in fulfilling their social responsibilities, including expanding ESG management in the supply chain. We strive to spread a fair-trade culture and build trustful communication relationships.

### 4 Keys of Shared Growth Policy

#### Complying with Fair Trade and Laws

- Complying with the Subcontract Act and settling and spreading the culture of fair trade
- Operating subcontractor internal deliberation committee
- Conducting regular monitoring on subcontract trades



#### Supporting enhancement of global competence

- Operating a ‘joint welfare fund’ to improve work conditions of partner company employees
- Improving payment conditions of subcontractors
- Supporting capacity-building training by job duty



#### Establishing communication and trust relations

- Establishing a dispute mediation committee
- Holding quarterly meetings to share achievements
- Enhancing communication with the management
- Facilitating communication among first and second partner companies
- Inspecting irrational and unfair transaction cases
- Establishing consultative body among HE and partner companies



#### Spreading a culture of shared growth

- Supporting management to strengthen competitiveness
- Promoting expansion of shared growth agreements
- Expanding ESG management of supply chain
- Facilitating corporate social responsibility (CSR)
- Supporting the purchase of partner companies (facility materials, IT investment, etc.)



## Supply Chain ESG Risk Assessment

### Managing Partner Companies ESG Risks through an Integrated Partner Assessment System

HD Hyundai Electric has introduced a partner assessment system that integrates the planning, operation, safety, and environmental management factors, as well as the ESG performance of the partner companies. In 2022, we evaluated our 98 partner companies in eight quality management areas: planning, operation, safety, environmental, ESG management, etc. Based on the assessment results, we select exemplary partner companies and granted incentives while suspending transactions with those who severely underperform. In 2023, we will establish ESG evaluation standards for new suppliers and will implement the evaluation, and improvements will be advised for companies that do not meet the standards.

In 2023, we are collaborating with the Korea Standards Association, a specialized ESG management organization, to provide ESG management support to 40 Partner companies’ Council members. To improve ESG management of partner companies, we plan to strengthen ESG evaluation indicators and guidelines, and promote ESG evaluations for all our partner companies in the future.

### Partner Companies Safety Risk Management

As many of our partner companies are manufacturing companies, we systematically categorize their risks to manage their safety. We include items related to safety and health in the assessment for selecting partner companies and conduct safety level performance assessments once a month to raise their awareness of safety management while providing rewards to excellent partner companies to encourage such management. We also accept improvement plans from those that need modification to make the enhancements and provide internal safety personnel with training and meetings on safety education to raise their safety awareness.

# Supply Chain Management

## Targets

### Establishing a Supply Chain (Partner) ESG Management System

- Conclude an agreement on joint ESG management implementation between HD Hyundai Electric and its partner companies
- Establish a Supplier Code of Conduct
- Define, identify, evaluate, and manage ESG management risks of partner companies
- Establish ESG indices and evaluation guidelines for partner companies
- Establish ESG assessment, improvement management, and due diligence system for partner companies

### Strengthening Partner ESG Management Capabilities

- Provide ESG indices and self-assessment checklists
- Provide ESG training
- On-site ESG consulting
- Support identifying issues and establishing action plans for strengthening ESG management capabilities

## Quantitative Performance

### Partner Companies

		Unit	2020	2021	2022
Support amount	Financial support and funding	KRW 100 million	-	100	165
	Shared growth fund	KRW 100 million	-	79.3	143.9
	Shared growth agreement guarantee (financial)	KRW 100 million	-	15.7	15.7
	Shared growth agreement guarantee (non-financial)	KRW 100 million	-	5	5
	Win-win cooperation fund (support amount)	KRW 100 million	-	-	33.3
	Training expense support <sup>1</sup>	KRW 10 thousand	-	-	576
Support projects	Recruited employees of in-house partner companies <sup>2</sup>	person	-	-	60

1,2. Support for training expenses and number of recruits through the 'in-house partner recruitment link project' implemented from 2022

## Partner Companies Management

		Unit	2020	2021	2022
Partner companies grievance process <sup>3</sup>	No. of safety and health grievances filed	case	115	105	100
	No. of safety and health grievances processed	case	115	105	100
	Rate of safety and health grievance processing	%	100	100	100
Supply chain ESG assessment <sup>4</sup>	Regularly assessed companies	company	-	-	116
	Assessed companies	company	-	-	98
	New partner companies	company	-	-	0
	Existing partner companies	company	-	-	98
	Assessed ratio	%	-	-	80
	New partner companies	%	-	-	0
	Existing partner companies	%	-	-	80
On-site inspections conducted	case	-	-	98	

3. The Safety and Health Council is receiving reports of complaints and related matters about the safety and health of partner companies' workers

4. Began Supply Chain ESG Assessment from 2022



# Supply Chain Management

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### Major Activities and Plans

#### ESG Management Support Program for Partner Companies

HD Hyundai Electric operates the ESG management support program for 40 partner companies in the Partner Company Council to establish the supply chain ESG management system and strengthen our partner companies' ESG management capabilities. Through this program, we will internalize 'Supply chain ESG management system' such as defining and identifying our partner companies' ESG management risks, managing partner companies' ESG improvement and building systems of due diligence. We also set up the supply chain ESG management system and support ESG training, ESG consulting, and evaluation and certification in an effort to reinforce our partner companies' ESG management capabilities.

#### Operating the Global Hyundai integrated Procurement System (G-HiPRO)

To establish a partnership based on mutual trust with our partner companies, we operate a Global Hyundai integrated Procurement System (G-HiPRO) so that companies that wish to be in business with us can freely apply for partnership. We register partner companies under fair and transparent standards and criteria and ensure impartial selection with an electronic bidding system process for quotation, technical review, bidding, and selection. We also conduct evaluations on our registered partner companies every year to reinforce our partner companies' competitiveness and minimize the risks in material procurement.

#### Strengthening Social Responsibility Practices

HD Hyundai Electric established the "Supplier Code of Conduct" to support our partner companies in implementing compliance and ethical management and fulfilling their social responsibilities. They are also encouraged to sign the "Social Responsibility Commitment" every year to implement the Code of Conduct, respect human and labor rights, and practice environmental responsibility and anti-corruption.

#### Partner Companies Participation Program

To establish a rational communication culture and win-win cooperation, HD Hyundai Electric holds New Year's events and management status briefings and sends out essential issues via email newsletter. In addition, when our partner companies suggest ideas and the resulting improvements generate profits, we return a portion of them to our partner companies.

#### Partner Companies Financial Support Program

HD Hyundai Electric continues building a win-win financial support model to grow with our partner companies. We have signed an agreement with Korea Credit Guarantee Fund to provide financial and non-financial guarantees worth KRW 19.5 billion to our partner companies. We have also established a KRW 30 billion Shared Growth Fund with IBK (Industrial Bank of Korea) to provide our partner companies with financial support.

# Supply Chain Management

## Complaint Handling Process for Partner Companies

To handle complaints from our partner companies, our relevant departments and personnel monitor the complaints at all times, and we visit our partner companies to receive and resolve VOCs directly when necessary. We also operate a channel on our website to listen to complaints and suggestions from our partner companies. (Number of complaints received in 2022: 0)

## Determining Material Unit Price per Market Conditions

HD Hyundai Electric strengthened our monitoring of market conditions for primary raw materials essential for production of our key products, such as power transformers and rotating Machinery, managing our risks. In particular, for major raw materials with high price volatility, such as Cu (electrolytic copper) and Ag (silver), we set the standard price for material transactions in connection with international market prices and exchange rates. Reflecting these factors, we operate a material unit price determination process according to the market conditions and regularly reflect the prices in our purchase from the partner companies.

## Responsible Procurement

HD Hyundai Electric established and implemented a green purchasing policy in which we purchase eco-friendly certified products as part of our efforts to fulfill our corporate social responsibility to address climate change. We have created a responsible mineral sourcing system to prohibit using conflict minerals. We will also continue purchasing materials from social enterprises, such as those employing people with disabilities, to maintain our active engagement in responsible procurement.

# Local Community Economy

## Policies

As a member of the local community, HD Hyundai Electric aims to create “a better world and a brighter future” by fulfilling our corporate responsibility and role. Based on the three core business areas of “caring for the underprivileged,” “co-prosperity with local communities,” and “self-reliant future generations,” we are promoting sustainable social contribution activities that the local community appreciates with the participation of all of our employees.

To solve the problems of local communities suffering from the prolonged COVID-19 pandemic, we have actively promoted direct sharing activities rather than simply donating money. We have also gradually strengthened social contribution activities in collaboration with various dedicated organizations – the HD Hyundai 1% Sharing Foundation and community welfare associations – to solve social problems and create social value.

## Management System

‘A Better World, A Brighter Future’			
<b>Basic Direction</b>	<ul style="list-style-type: none"> <li>• Participative contribution activities to involve all personnel in sharing</li> <li>• Sustainable contribution activities to shape the future together with the Group</li> <li>• Empathizing contribution activities to pursue the values of social responsibility and sincerity</li> </ul>		
<b>Key Activities</b>	<b>Caring for the Underprivileged</b> <ul style="list-style-type: none"> <li>• Taking part in sharing activities</li> <li>• Improving the quality of life for the underprivileged</li> </ul>	<b>Self-reliant Future Generation</b> <ul style="list-style-type: none"> <li>• Providing various educational opportunities</li> <li>• Laying the foundation for economic self-reliance</li> </ul>	<b>Co-prosperity with Local Communities</b> <ul style="list-style-type: none"> <li>• Promoting the founder’s philosophy</li> <li>• Co-prosperity of companies and local communities</li> </ul>
<b>Relevant UN SDGs</b>	 <p>Ending poverty in all its forms everywhere</p>	 <p>Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities</p>	 <p>Ensuring sustainable consumption and production patterns</p>



# Local Community Economy

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## Risks and Opportunities

HD Hyundai Electric has identified “industrial odor” as one of the negative impacts of our operations on the local community and is carrying out activities to solve the problem. As the residents live around our work sites located by the sea, odors from the painting process can affect the residents when sea breezes blow into the land. To reduce and manage odor complaints, we regularly conduct odor inspections in Dong-gu and Buk-gu with the Ulsan Environmental Engineers Association, our partner company in the region.

As we aim to fully recognize and minimize negative impacts on the local community, we have also established an internal response system and standards for environmental accidents and disaster emergencies while conducting our own environmental accident response training.

To reduce community risks during environmental resource disposal, we select our waste recycling vendors with strict standards and ensure that our waste and wastewater are recycled into resources. We are fulfilling our role in managing the local environment through active communication and collaboration with various stakeholders. We participate in regular nature cleanup activities of river management activities near the workplace with local governments and neighboring companies and protect local rivers and ecosystems, as well as in road management activities near the workplace to fulfill our responsibility for protecting the living environment of residents around our business sites.

## Targets

We do not remain satisfied with our existing social contribution performance; we are conducting more effective and impactful social contribution activities to solve social problems and create community value. We set a target of 650 volunteer hours and KRW 0.75 billion in donations for social contribution projects in 2023, and we will plan and implement sustainable and heartfelt social contribution activities.

## Quantitative Performance

### Social Investment

		Unit	2020	2021	2022
Investment amount	Total	KRW 100 million	7.67	7.14	10.49

### Employee Participation

		Unit	2020	2021	2022
Volunteering	Volunteer hours per employee	hour	0.19	0.30	0.38
	Salary sharing <sup>1</sup>				
Salary sharing <sup>1</sup>	Amount	KRW 100 million	0.57	0.78	1.04
	Participants	people	256	277	253

1. Salary sharing : Amount of HD Hyundai 1% Nanum Foundation sponsorship + Sisterhood sponsorship for local community welfare centers

# Local Community Economy

## Major Activities and Plans

### Caring for the Underprivileged

**HD Hyundai 1% Nanum Foundation Support** — Since January 2020, we have been contributing special funds to HD Hyundai’s 1% Nanum Foundation every year, and our employees are voluntarily participating in salary-sharing activities by donating 1% of their basic salary every month. In 2022, we contributed KRW 900 million in special funds (including KRW 200 million in special donations for forest fire damage), and 157 employees participated in salary sharing worth KRW 98,184,000. The special funds and salary-sharing donations were utilized for public service projects of the HD Hyundai 1% Nanum Foundation, and the details of the project and expenses are confirmed through monthly performance reports and publications

HD Hyundai 1% Nanum Foundation Public Services		Donation Details of HD Hyudai Electric Donations in 2022
Sharing Warmth	Heating Fuel of Love, 1% Soup Kitchen, support for the disabled	<ul style="list-style-type: none"> <li>• Provided heating oil vouchers to 455 vulnerable families nationwide</li> <li>• Supported free meals for the elderly at 12 welfare centers</li> </ul>
Sharing Co-prosperity	Contributor’s proposal, designated donation, SOS Fund	<ul style="list-style-type: none"> <li>• Offered scholarships for middle and high school students in need and vulnerable families</li> <li>• Donated to support victims of forest fires and damage after heavy rains in the central region</li> </ul>
Sharing Hope	Hope Sketch, All Together	<ul style="list-style-type: none"> <li>• Educational support program for children terminated from protection</li> <li>• Old facility repairing project and greening walls at 25 child protection centers</li> </ul>

**Group Blood Donation Event** — In 2021, we signed a long-term blood donation partnership with the Korean Red Cross in the region of our work sites (Ulsan Blood Center and Seoul Nambu Blood Center) and regularly hold group blood donation events every year since then. In 2022, 65 employees participated in quarterly and semi-annual blood drives. The driven blood was delivered to local medical institutions in need of blood through the Ulsan Blood Center, Gyeonggi Blood Center, and Seoul Nambu Blood Center of the Korean Red Cross.

**Supporting the Elderly with Walking Aids (Silver Cars)** — In November 2022, we launched a project to provide walking aids (Silver Car) to the elderly with limited mobility in Seongnam, Gyeonggi-do. In partnership with Seongnam City Hall, we delivered 50 Silver Cars worth KRW 8.5 million to the Seongnam City on Social Welfare.

**Improving the Living Condition of the Energy Vulnerable** — In collaboration with the Korea Energy Agency and through the Ulsan Council on Social Welfare, HD Hyundai Electric selected four households marginalized from energy use in Ulsan’s Dong-gu and Jung-gu districts; and we helped improve their living environment by replacing windows, repapering the walls, and changing lightbulbs to LED worth KRW 1.2 million. We will continue to improve the living environment and provide home appliances for the energy vulnerable so that many local community members can enjoy more diverse energy services.

### Co-prosperity with Local Communities

**Supporting White Rice for Local Senior Centers and Welfare Facilities** — Since 2000, we have donated white rice to welfare facilities in Dong-gu, Ulsan, every month through the Ulsan Community Chest of Korea. In 2022, we delivered 180 bags of white rice worth KRW 9.9 million were delivered to five welfare facilities, including the Hwajeong Social Welfare Center, to provide free meals to locals in need.

**Sisterhood Sponsorship for Local Community Welfare Centers** — We have partnered with the “House of Open Love” and “Seongnam City Arium,” two welfare organizations in Seongnam, Gyeonggi-do, and have continued our sponsorship activities since 2018. In 2022, 110 employees raised approximately KRW 6.2 million by sharing their salary, which was used to operate the facilities and welfare of the residents in the “House of Open Love,” a residential facility for those who have developmental disorders, and “Seongnam City Arium,” a residential facility for the elderly living alone.

**Joining and Collaborating with Community Councils** — In 2022, we joined the Community Security Council in Mabuk-dong, Giheung-gu, Yongin-si, Gyeonggi-do, where our business site is located, to discover social security recipients in the region and participate in establishing a local protection system in collaboration with public-private partnership organizations. In 2023, we will continue participating in the Community Security Council project while also seeking to discover social contributions through collaboration.



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**Purchasing Products and Services from Social Enterprises and Exemplary Companies** – To grow together with the community, HD Hyundai Electric continues to use products and services from social enterprises and donation organizations. In 2022, we used a plant care service worth KRW 5.28 million from “Brother’s Keeper,” a social enterprise that supports the independence of children with terminated care, and purchased cotton gloves worth KRW 19.7 million from the “Sanggae Sheltered Workshop,” a workshop for the disabled; we also purchased a wreath service for employees’ family events worth KRW 13.3 million from “The Hue,” a company that employs the disabled, and bought holiday gifts for employees worth KRW 6.14 million from the “Seongnam GOOD Foundation” sales revenue donation project, contributing to the welfare of employees and the development of local social enterprises. We will continue to actively utilize the products and services of local social enterprises and exemplary companies to contribute to the community’s economic development and solve social problems of financial independence of the underprivileged.

**Community Environmental Cleanup** – HD Hyundai Electric conducts environmental cleanup activities with our employees to preserve the ecological diversity of local communities and protect the sustainable environment. Starting January 2022, we have picked up roadside garbage and cleaned soil near our Ulsan plant every month, with a total of 210 employees participating in removing about 840kg of trash and weeds. Also, in May 2022, 79 employees participated in plogging along the Jujeon coastline in Ulsan, retrieving about 340 bags of 80kg seaweed and waste. We will continue our efforts to promote the ecosystem and biodiversity of our local communities.

#### Self-Reliance of Future Generation

**Support for Children and Youth of Families in Need** – Since 2016, HD Hyundai Electric has provided a certain amount of living expenses to families in crisis as part of our emergency welfare support program. In 2022, we offered a total of KRW 7.2 million in living expenses to children from six sheltered families in the Ulsan area selected by ChildFund Korea and KRW 10 million in scholarships to underprivileged students recommended by the principals of middle and high schools in relationship of sisterhood in Dong-gu, Ulsan. We will continue to implement support programs for socially vulnerable children and youth in the local community so that they can grow in a more stable environment to become future talents.

**Installing Traffic Accident Prevention Facilities (Yellow Carpet) for Children** – Together with the Korea Energy Agency, HD Hyundai Electric inspected roads around schools in Ulsan in collaboration with the Jung-gu Office of Ulsan to select three locations with poor pedestrian protection facilities and installed Yellow Carpets to prevent traffic and pedestrian accidents. We will continue our collaboration with local public and private organizations to solve social problems such as school zone accidents and create a safer community for children.

# Information Security and Personal Data Leakage

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**Policies**

HD Hyundai Electric has established and revised the Personal Information Protection and Security Management Regulations to safely protect and manage personal information so that it is not lost, stolen, leaked, altered, or damaged when processing it for business purposes. The regulations cover various types of data, including personal information collected and used through networks and those used, provided, and managed through other means, such as handwritten documents. We also apply the regulations to all employees and former employees of partner companies, hired foreigners (including foreign industrial trainees), and outsiders residing or visiting the company for comprehensive information security management. We post our privacy policy on our website, which details the purpose, items, and methods of collecting personal information, as well as the processing and retention periods, disclosing the policy so that our customers can easily understand the policy.

**Governance**

As the global market environment changes, HD Hyundai Electric recognizes the need for corporate responsibility and response to information protection; we have designated a Chief Information Security Officer (CISO) and a Chief Privacy Officer (CPO) and regularly review information security through the Security Management Council to strengthen the protection. In appointing these Chief Officers, we established standards for their expertise – experience in performing related tasks, experience as the head of the related organization, etc. – and are applying them to the appointment process.

**Certifications and Due Diligence**

HD Hyundai Electric has continuously renewed and maintained our ISO27001 certification after receiving it in 2020, conserving an externally recognized information security system. We operate a Security Operation Council every year to identify security vulnerabilities in design, general affairs, computing, and other sectors, sharing the status of operations for the year, discussing plans, and making continuous improvements to prevent information security and personal information leakage.

**Quantitative Performance**

**Information Leakage**

		Unit	2020	2021	2022
Leakage	Total leakages	case	0	0	0
Violations	Fines	KRW thousand	0	0	0

**Information Protection Training**

		Unit	2020	2021	2022
Dedicated personnel	Training hours per employee	hour	4	4	4
General employee	Training hours per employee	hour	4	4	4

**Investments**

		Unit	2020	2021	2022
Investments in information security	Percentage of investments in information security	%	19.3	12.2	2.5

# Information Security and Personal Data Leakage

## Major Activities and Plans

HD Hyundai Electric requires employees to complete security training to raise security awareness and actively prevent misuse and leakage of personal information. Conducted under the purview of the security managers, regular and occasional training sessions are for all employees. Regular collective training and frequent training also occur under the head of the department controlling security and the personal information protection personnel when it is necessary to disseminate facts of personal information protection violations, policy changes, or additional personal information protection training depending on the fields and business units. We strive to raise the security awareness of our partner companies as well, conducting regular security training or providing training materials to their departments.

### Information Security and Privacy Training by Employee

	All Employees		Security Personnel and Personal Information Personnel	
	Employees	Executives and Head of Departments	Departmental Security Personnel	Key Duties Personnel
Information security training	<ul style="list-style-type: none"> <li>• Security awareness</li> <li>• Security regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Security management</li> </ul>		<ul style="list-style-type: none"> <li>• Specialized security management training</li> </ul>
Personal information protection training	<ul style="list-style-type: none"> <li>• Personal information protection management regulations</li> <li>• Necessity to protect personal information</li> </ul>			<ul style="list-style-type: none"> <li>• Role as a personal information handler</li> <li>• Procedures for handling personal information</li> </ul>

# Research and Development

## Policies

HD Hyundai Electric improves product competitiveness through continuous technology development and creates new products and models to increase sales and respond to new markets. To address the global carbon neutrality trend and reinforce ESG management, we secured eco-friendly power equipment, smart devices and energy solutions, and DC power distribution products; we focus on technology development to improve our response capabilities to the next-generation electricity power market.

### Management System

Vision	Global technology leader in the electric power industry
Mission	Research for Future, Development for Business!
Strategies and Directions	<p><b>Power Equipment Division</b></p> <ul style="list-style-type: none"> <li>• Develop high-end and premium products to secure competitive advantage in the market</li> <li>• Secure a lineup of eco-friendly devices to respond to the carbon-neutral market</li> </ul> <p><b>Distribution Division</b></p> <ul style="list-style-type: none"> <li>• Develop high-value-added product to secure lineup</li> <li>• Develop new products and models to enter the American market</li> <li>• Enhance cost competitiveness of flagship products to secure competitive advantage</li> </ul> <p><b>Business &amp; New Growth Planning Division</b></p> <ul style="list-style-type: none"> <li>• Secure core technologies for ESS/MG solutions for system stabilization to respond to the next-generation electricity power market</li> <li>• Expand the lineup for preventive diagnosis / asset management solutions to enhance competitiveness</li> <li>• Advance and develop distributed resource operation technologies for industrial complexes (fuel cell / electric vehicle charging, etc.)</li> </ul>

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# Research and Development

## Governance

Executive in Charge	<b>Chief Technology Officer (Vice President)</b>
Main Decision-Making Body	Technology Development Committee, Technology Development Council, Future Technology Committee
Organization in Charge	<p>Head Quarter R&amp;D</p> <ul style="list-style-type: none"> <li>• Developing eco-friendly and high-efficiency products and technologies to establish ESG management</li> <li>• Finding future growth engines and developing new products and models</li> <li>• Strengthening the competitiveness of flagship products</li> <li>• Applying ICT to products</li> <li>• Conducting reliability assessment</li> </ul> <hr/> <p>Overseas R&amp;D (Switzerland, Hungary, China)</p> <ul style="list-style-type: none"> <li>• Securing core technologies for flagship products and eco-friendly electric power equipment and developing new products</li> <li>• Enhancing market responsiveness through enhanced cooperation and R&amp;D allocation with the headquarters for product development</li> <li>• Dividing R&amp;D areas with the headquarters for the designing/analysis process, and developing products for the global mid- to low-priced market</li> </ul>

## Target

### R&D Target

	Unit	2020	2021	2022	2023(계획)
No. of completed product development	case	24	29	21	27
No. of completed technology development	case	130	134	141	140
No. of research papers	case	28	24	55	43
No. of patents	case	14	33	50	66

## Quantitative Performance

### R&D Investments

		Unit	2020	2021	2022
R&D costs	Total R&D costs	KRW 100 million	375.26	446.88	485.48
	Compared to revenue <sup>1</sup>	%	2.1	2.5	2.3

1. Revenue: Based on consolidated financial statements in the annual report



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### Major Activities and Plans

#### Construction and Demonstration of Next-Generation LVDC Power Distribution System

In 2022, HD Hyundai Electric successfully completed the infrastructure construction project for the “Next-Generation LVDC (Low Voltage Direct Current) Power Distribution System.” The project began in August 2020 and was completed in about one and a half years, building an LVDC power distribution system at the Energy Valley Industry-University Convergence Agency in Naju Innovation Industrial Complex. Recently, DC-distributed power sources – solar power generation, ESS, and fuel cells – as well as various digital DC loads – data centers and electric vehicle charging – are widely distributed, garnering attention to DC power distribution as a next-generation power distribution system and vitalizing active technology development. Through our project, we built a DC distribution network with a total capacity of 350kW that connects the campus and the corporate research center buildings within the Convergence Agency and installed DC converters and switchboards that accept DC voltages of various ranges from  $\pm 48\text{Vdc}$  to  $\pm 750\text{Vdc}$ , complete with demonstration. We expect the infrastructure to be used for R&D and test analysis between industry, academia, and research institutes in LVDC in the region in the future and support the development and demonstration of various DC electrical and electronic products; we further plan to expand our advancement into new markets based on the secured track record.

#### Developing Korea’s First Three-Phase Gas-Insulated Transformer for KEPCO

HD Hyundai Electric has completed manufacturing a three-phase 154kV 60MVA gas-insulated transformer for supply to KEPCO and completed the Korea Laboratory Accreditation Scheme (KOLAS) certification test for the first time in Korea. In particular, the new transformer significantly reduces the installation area (about 25%) compared to the existing phase-separated single-phase transformer, which can now be applied to substations where gas transformers couldn’t be installed previously. The key to the latest development is the improvement of insulation and cooling design technologies and acquiring pressure vessel design technology. We established our unique insulation design technology through empirical tests and field analysis and achieved a compact transformer design by improving the cooling structure and heat flow analysis reliability, both of which maximized our cooling efficiency. We also gained strength analysis and structural design technology required for the enclosure of the three-phase transformer to withstand high gas pressure, and we successfully completed the following hydrostatic test of the Korea Electric Research Institute (KERI), which confirmed the quality and stability of the enclosure. Based on our accumulated technology and know-how, we will continue to develop gas-insulated transformers with natural convection cooling and eco-friendly transformers, leading the

power equipment market in the future.

#### Developing Integrated Power-Distribution Equipment Preventive Diagnosis System

HD Hyundai Electric has successfully developed an integrated preventive diagnosis system for power-distribution equipment. A preventive diagnosis system diagnoses and analyzes data measured by sensors in power and distribution equipment to help users identify and manage risk factors of equipment in advance from the higher-level software. The latest system integrates the previously separate power and distribution equipment into a single system to increase convenience for our clients to efficiently manage transformers, high-voltage circuit breakers, switchboards, distribution transformers, and cables in their work sites. In May 2022, we constructed the system for high-voltage circuit breakers, switchboards, and cables at Lotte Chemical’s Yeosu plant. This was the first project in which our integrated preventive diagnostic system was installed, and it is significant that it integrated preventive diagnostic software and communication functions to decrease system costs and enhance business competitiveness. As client demand for smart and diagnostic management of power and distribution equipment products is increasing, we expect the system to improve the competitiveness of our product line and help us effectively respond to the online uninterruptible power supply inspection system to be implemented by the Korea Electrical Safety Corporation after 2023. We plan to expand the preventive diagnosis system for all of our products.

#### Developing Solid State Circuit Breaker for Low-Voltage Direct Current Distribution

HD Hyundai Electric has developed a 1,000Vdc, 100A-class ultra-fast Solid State Circuit Breaker (SSCB)<sup>1</sup> to protect low-voltage direct current distribution systems and installed 49 units of the equipment in the DC panelboard at the Pangyo Global R&D Center (GRC). The DC system rapidly increases in short-circuit current when an accident occurs, which is difficult to shut off because there is no current zero. However, the application of SSCB enables ultra-high-speed disconnection within tens of microseconds without arcs, which allows the affected section to disconnect safely without burning DC power equipment. The Korea Testing Certification Institute (KTC) verified the device’s short-circuit-breaking performance, and our own Reliability Center completed electromagnetic compatibility and environmental tests. Starting with the commercial operation of the GRC high-reliability DC distribution system, we expect the latest circuit breaker to be applied to various LVDC distribution systems, such as ESS/EV/DC quick charging and DC building/factory.

1. SSCB: Solid State Circuit Breaker



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### Successful Commercialization of MW-Class LVDC System

The importance of DC power distribution technology is increasing due to expanding ICT digital loads and distributed power sources such as renewable energy sources, electric vehicles, and ships that consume direct current. DC power distribution technology is highly efficient, enabling direct power consumption without unnecessary power conversion processes. We have successfully commercialized the first MW-class low-voltage direct current (LVDC) system in Korea's HD Hyundai Group Global R&D Center (GRC) building. The system applied to the GRC consists of  $\pm 750\text{Vdc}$  and  $380\text{Vdc}$  systems and is equipped with new technologies such as AC/DC and DC/DC converters. We also installed ultra-high-speed DC SSCB that cut off fault currents at high speeds, protecting the building's power source and loads of DC-supplied energy. We expect the installation to reduce power consumption by 10% and greenhouse gas emissions by 36 tons per year compared to conventional AC distribution. We plan to actively commercialize the LVDC system for private businesses requiring high-quality DC power, such as electric vehicle fast charging stations, large buildings, and factory complexes.

### Earning Green Certification for SF<sub>6</sub>-Free Eco-friendly Switchgear

HD Hyundai Electric has obtained the Green Technology Certification and Green Technology Product Certification for our switchgear technology and products using eco-friendly insulation media. The certifications recognized the SF<sub>6</sub>-Free eco-friendly switchgear as a product that minimizes carbon emissions through efficient energy use under the Framework Act on Carbon Neutrality. Our switchgear technology uses dry air composed of 79% nitrogen (N<sub>2</sub>) and 21% oxygen (O<sub>2</sub>) as an insulator instead of SF<sub>6</sub> gas, reducing CO<sub>2</sub> emissions by about 10 tons per year compared to the conventional SF<sub>6</sub> switchgear based on one side of the switchgear. It also utilizes optimal design technology to secure insulation performance and structural durability while minimizing epoxy insulation inside the tank. At the same time, Confirmation of Green Technology Product was awarded for our Automatic Load Transfer Switch and Load Break Switch applied with this technology. These products were recognized for their ability to expand domestic and overseas sales with continuous mass production after going through the proprietary development process: gas tank design improving high-pressure dry air insulation performance, airtight welding technology, and reinforced insulation design of internal components. With the green certification, our eco-friendly switchgear, the first in Korea to win overseas orders in 2020, was recognized for its technology and provided an opportunity to enhance our implementing ESG management activities in reducing greenhouse gases.

In order to respond to the rapidly growing carbon-neutral market, HD Hyundai Electric is continuously developing products and technologies for eco-friendly vegetable oil/insulating oil transformers, eco-friendly GIS, and large-capacity permanent magnet shaft generators. We are focusing on the development of ultra low-temperature explosion-proof motor for internal pressure and next generation breaker for vessel protection to overcome growth limitations by going into high value and new market. In addition, we will achieve stable growth in new energy businesses and expand new businesses by expanding our lineup of preventive diagnosis and asset management solutions and advancing industrial complex distributed resource operation technology.



# Board of Directors

## Policies

HD Hyundai Electric operates the Board of Directors and subcommittees to ensure transparent and sound governance. As the company's highest permanent decision-making approval body, the Board supports management's decision-making and faithfully fulfills its role of supervising and checking. We transparently disclose the BOD's regulations, which include rules on the Board's diversity, independence, and responsibility, to protect the rights of shareholders and clients. We also purchased executive liability insurance against the risk of damages due to management negligence to create a management environment where executives can devote themselves to management activities with peace of mind. In addition, to enhance transparency and provide fair compensation, the remuneration limit for directors is determined after the Board's approval. We disclose the remuneration system and evaluation items for deciding the salary in detail in our business report.

## Composition of the Board of Directors

HD Hyundai Electric is abiding by the Code of Best Practices for Corporate Governance recommendations to enhance the independence, expertise, and diversity of the Board of Directors. Currently, the CEO and the chairman of the board are not separated because the proportion of outside directors is high, ensuring sufficient independent decision-making. For the sake of the Board's independence, a majority (60%) is comprised of outside directors so that the members can freely express their opinion untinged by the company, the management, and controlling shareholders. The Board is composed of professionals with job expertise in each field – finance, labor and social affairs, management, etc. – to ensure expertise and maintain a majority ratio; we do not discriminate or limit the appointment and evaluation of directors based on age, gender, education, region of origin, etc. to secure diversity on the Board. In 2022, we appointed one female outside director at the March General Meeting of Shareholders to enhance the Board's diversity and reflect opinions from various stakeholders.

## Composition of the Board of Directors<sup>1</sup>

Category	Name	Gender	Position	Career Highlights	Subcommittee
Internal Director	Cho Seok	Male	Chair	Current) CEO of HD Hyundai Electric	Outside Director Recommendation Committee ESG Committee
Internal Director	Keum Seok-ho	Male	Director	Head of HR Support Division, HD Hyundai	Internal Trade Committee
Outside Director	Han Chan-sik	Male	Director	Current) Lawyer of Kim & Chang	Internal Trade Committee Outside Director Recommendation Committee ESG Committee Audit Committee
Outside Director	Park Soo-hwan	Male	Director	Former) CEO of Samil PwC	Internal Trade Committee Outside Director Recommendation Committee ESG Committee Audit Committee
Outside Director	Jeon Soon-ok	Female	Director	Current) Executive Director of Jeon Taeil Foundation	Internal Trade Committee Outside Director Recommendation Committee ESG Committee Audit Committee

1. As of the general meeting of shareholders in March 2023

## Board Skills Matrix

	Cho Seok (Internal Director)	Keum Seok-ho (Internal Director)	Han Chan-sik (Outside Director)	Park Soo-hwan (Outside Director)	Jeon Soon-ok (Outside Director)
Management	●				
Human Resources		●			
Legal			●		
Accounting & Finance				●	
Social					●
Industry Experience	●	●			

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# Board of Directors

## Committees

### Outside Director Recommendation Committee

The Outside Director Recommendation Committee is responsible for nominating the candidates for outside directors to the general meeting of shareholders as well as managing and verifying them. To ensure independence, as of the end of March 2023, Outside Director Han Chan-sik is chairing the Committee, while 75% of the members are outside directors.

### Audit Committee

As the company's trustees, the Audit Committee is composed entirely of outside directors who monitor the company's management to ensure sound management, protect the rights and interests of shareholders, and maintain and enhance the corporate social trust. To strengthen their expertise, the Committee members have completed auditing training conducted by specialized organizations on "recent trends in audit committees and implications for audit committee/executives on fraudulent events."

### ESG Committee

The ESG Committee establishes the company's ESG strategies and policies and performs the role of managers and supervisors for the ESG activity performances. The Committee is chaired by Outside Director Jeon Sun-ok, a labor and social expert, and deliberates and approves our company's ESG strategy direction, planning, and implementation. It has reviewed items on climate change response strategies and ESG-related KPIs and reviewed and approved the materiality assessment results, RE100 roadmap, and carbon neutrality roadmap for 2023.

### Internal Trade Committee

Established to improve transparency on internal transactions with our affiliates, the Internal Trade Committee reviews, deliberates, and resolves internal transactions and corrective actions, with outside directors as 75% of its members.

## Quantitative Performance

### Composition

		Unit	2020	2021	2022
<b>Composition</b>	Outside director ratio	%	60	60	60
<b>Diversity</b>	Female directors	person (%)	0(0)	0(0)	1(20)
<b>Expertise</b>	Directors with industry experience	person (%)	2(40)	2(40)	2(40)
	No. of financial experts	person (%)	1(20)	1(20)	1(20)
	No. of ESG experts	person (%)	0(0)	0(0)	1(20)
<b>Liability</b>	Obtained liability insurance	Y/N	Y	Y	Y

### Operation

		Unit	2020	2021	2022
<b>Meetings held and attendance</b>	No. of meetings	time	7	8	8
	Attendance rate	%	94.3	90.2	92.5
<b>Opinions by agenda</b>	Reported agenda	case	9	10	8
	Resolved agenda	case	21	16	25
	Agree	case	21	16	25
	Disagree	case	0	0	0
	Amendments	case	0	0	0

### Shareholder Value

		Unit	2020	2021	2022
<b>Shareholder participation</b>	Electronic voting	Y/N	N	Y	Y
	Propose proxy voting for all shareholders	Y/N	Y	Y	Y
	Notify of agenda in advance	Y/N	Y	Y	Y
	Disclose Auditor's Report before convening the general meeting	Y/N	N	N	N
<b>Dividends</b>	Establish and disclose mid- and long-term dividend policies	Y/N	N	Y	Y

# Board of Directors

## Committees

		Unit	2020	2021	2022
Outside Director Recommendation Committee	Ratio of outside directors	%	75	75	75
	No. of meetings	time	2	1	1
	Attendance rate	%	87.5	100	100
	No. of resolved agendas	case	2	1	1
Audit Committee	Ratio of outside directors	%	100	100	100
	Financial expertise of the chairman	Y/N	Y	Y	Y
	Financial experts	person	1	1	1
	No. of meetings	time	6	6	7
	Attendance rate	%	100	89.5	90.5
ESG Committee	No. of meetings	time	-	2	2
	No. of resolved agendas	case	-	1	1

## Evaluation and Remuneration

		Unit	2020	2021	2022
Board of Directors evaluation	Self-evaluation	Y/N	N	N	N
	Independent evaluation by third parties	Y/N	N	N	N
Remuneration	Have non-executive director remuneration system	Y/N	Y	Y	Y
	Disclose annual remuneration for each director	Y/N	N	N	N
	Reflect ESG in CEO performance	Y/N	N	N	Y
Shareholding	Directors and CEO shareholding <sup>1</sup>	%	0	0.01	0.01
	Government shareholding <sup>2</sup>	%	3.6	6.2	12.4

1. CEO's share

2. National Pension Fund's share

## Key Activities and Plans

### Protecting Shareholder Rights

To actively reflect the shareholders' opinions at the general meeting, HD Hyundai Electric implements a proxy voting system and sets forth related regulations in the articles of association. We notify shareholders of the meeting convening and the venue, agenda, etc., before holding the meeting in advance and implement an electronic voting system that allows shareholders to exercise their voting rights electronically even if they do not attend the general meeting in person.

We transparently disclose our dividend policy on our website to build shareholder trust and protect shareholder rights, and in 2022, we issued our first dividend since our establishment based on sound operating results. Dividends of money and stock profits become available after the resolutions of the Board of Directors and approval of the general meeting of shareholders. Considering our investment for sustainable growth and financial structure, we distributed KRW 500 per common share, totaling KRW 18 billion. We will continue to do our best to enhance shareholder value.

### Outside Director Training

HD Hyundai Electric conducts training for outside directors so that they can faithfully fulfill their duties. In 2022, we provided them with education on overall ESG management, including the emergence of ESG management and countermeasures, through an external specialized organization to enhance the ESG understanding of our outside directors. We also provided education on the recent trends of the Audit Committees and the implications for the Committee and executives concerning fraud cases to improve their expertise.

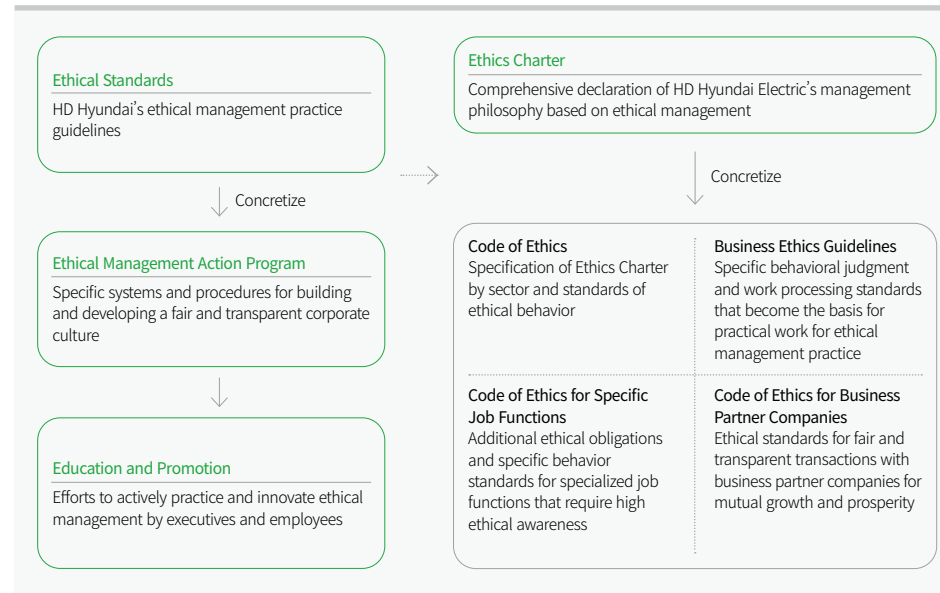
# Ethical Management

## Policy

HD Hyundai Electric will create an environment where we can realize the values of the “FOREST” – Fairness, Ownership, Responsibility, Enthusiasm, Safety, and Transparency and Trust – contributing to the coexistence of living things. We will adhere to the values of FOREST and become a company that our clients and partners want to do business with, shareholders want to invest in, and employees want to work for, while fulfilling our responsibilities to the country and society.

We have established ethical standards such as the Charter of Ethics, Code of Ethics, and Business Ethics Guidelines to provide specific judgment and behavior standards for employees and related stakeholders in fulfilling their corporate social responsibility, and we operate education, public relations, and other various practice programs based on these standards. In addition, we apply specific job ethics codes to six positions that require stricter ethical awareness: Purchasing, Human Resources, Sales, Finance and Accounting, Design, and Computing.

### Ethical Management Promotion System



## Reporting System and Protecting Informants

HD Hyundai Electric operates a channel to report ethical violations in real names or anonymously and conduct improvement activities for irregularities, corruption, and unreasonable systems discovered. We strictly manage the information to protect the identity of the informants and immediately destroy the reporting information after the outcome has been notified. We also operate a separate unfair trade consultation channel for partners to report violations in subcontracting transactions with our company in their real names or anonymously, thereby striving to eradicate unfair trade and unethical behavior.

To protect our informants, we prohibit disclosing and guarantee confidentiality in principle while ensuring that legitimate informants and reports won't be disadvantaged or discriminated against. In addition, we operate a reward system for informants to encourage reporting ethical violations; we pay rewards of up to KRW 1 billion to those who contribute to preventing property losses, recovering profits, and reducing costs or those who report unethical behavior, such as accepting money or entertainment of executives and employees.

## Quantitative Performance

### Ethical Education

		Unit	2020	2021	2022
Employees	Training hours per employee	hour	0.36	0.20	0.58
	Rate of participation	%	71.38	38.74	67.95

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### Major Activities and Plans

#### Business Ethics Pledge

All HD Hyundai Electric employees (leaders and managers for production technicians) and partner companies are required to annually submit a pledge of commitment to business ethics. We ensure to not engage in unfair trade, fraudulent or irregular activities, illegal solicitations, or bribery prohibited by relevant laws according to the Ethical Management Regulations and the Compliance with Anti-Corruption Laws Guidelines.

#### Ethical Management Training and Promotion

To ensure that our stakeholders are aware of ethical management and that the principle is embedded in the organizational culture, HD Hyundai Electric trains our and our partners' employees on ethical management business procedures, the Group Code of Ethics, and legal and regulatory trends. We require all new hires to take mandatory ethical management training as well as create and distribute ethical training materials based on unethical cases that employees may encounter, such as anti-corruption and discrimination, improving their understanding of ethical management.

#### Ethics Level Diagnosis and Risk Management

HD Hyundai Electric checks the level of ethical management through employees' self-diagnosis of ethical management compliance annually to enhance their understanding of relevant regulations and seek improvements. Through continuous monitoring, we proactively analyze unethical acts and risks and take improvement measures for inefficient processes. We also listen to opinions from employees and partner companies to diagnose the level of ethical management practices and collect opinions on improvement needs to ensure implementation.

#### Reports and Violations

We received a total of ten reports in 2022 and investigated seven of them. Five of them were found to be ethical management violations, and the corresponding members were sanctioned following the relevant regulations. The other three complaints were transferred to the appropriate departments to solve the matter and were confirmed of the outcomes.

# Compliance

### Policies

In April 2017, HD Hyundai Electric appointed a compliance officer and established compliance guidelines to establish a companywide systematic compliance system and culture. We enacted the Guidelines for Compliance with Anti-Corruption Laws in April 2018 to prohibit all employees from corruption and bribery. And in April 2019, we introduced and implemented the Fair Trade Compliance Program and the Economic Sanctions Compliance Guidelines to renovate our internal system and voluntarily comply with fair trade laws and regulations. Through these programs, we strive to practice compliant and anti-corruption management. We disclose policies, guidelines (Fair Trade Compliance Program), and implementation measures (obligations) reflecting major risks on our website.

#### Fair Trade Compliance Program (CP)

HD Hyundai Electric introduced the Fair Trade Compliance Program (CP) in 2019 and operated it since to honor the market competition order and establish a compliance management system. The Program applies to all employees, and they must comply with the fair trade compliance operating regulations in their daily work and report any violations of competition laws to a compliance manager if they witness or experience such breaches. They also must review the possibility of competition law violation in performing their duties and request advice and consultation from the compliance manager. We regularly review our ethical standards and have the compliance manager audit our activities to improve any problems.

#### Certifications and Due Diligence

HD Hyundai Electric at all times operates anti-corruption programs such as "Approval of providing Economic Benefits" and "Stakeholder Due Diligence" in our legal support system and has conducted a total of four reviews in 2022. We also periodically review the operation of the Fair Trade Compliance Program and identify any corruption risks. The "Approval of providing Economic Benefits" program informs that public officials are prohibited from accepting money except for exceptional reasons under Subparagraphs 1 through 8 of Article 8 Paragraph 3 of the Improper Solicitation and Graft Act (Anti-Graft Act) and confirms cases on a case-by-case basis. Also, with the "Stakeholder Due Diligence" program, we review the country we received the request for against the Specially Designated Nationals List (SDN List) published by the U.S. Treasury Department's Office

# Compliance

of Foreign Assets Control (OFAC) and the Corruption Perception Index released by the Transparency International (TI) to determine whether transactions with those countries are appropriate. The results and performances of the legal support system and Fair Trade Compliance Program and operation status inspection of the compliance guidelines are reported to the Board of Directors, which continuously manages and supervises the outcomes.

## Quantitative Performance

### Violations of Laws and Regulations

		Unit	2020	2021	2022
Violations of laws and regulations	Unfair trade practices, including anti-competitive behavior and monopoly	case	0	0	0
	Violations of subcontracting laws and regulations	case	1	0	0

### Compliance Training

		Unit	2020	2021	2022
Employees	Training hours per employee	hour	0.97	0.60	0.59
	Rate of participation	%	69	57	89

## Major Activities and Plans

### Compliance Training for Employees

HD Hyundai Electric identifies high- and medium-risk departments through our internal compliance assessments (collusion, unfair support, subcontracting, Temporary Agency Workers Act, corruption, economic sanctions) and conducts training on key competition laws for the departments.

To prevent problems in corruption, subcontracting, etc., we conducted training for each department in 2022 according to the job relevance to compliance laws; we established a separate compliance training plan for new managers for awareness of the importance of complying with the regulations. We distributed evaluation sheets to each department twice in the first and second half of the year

and identified departments with high and medium risks, leading to about 89% of executives and employees receiving non-face-to-face or in-department training and submitting training checklists. In addition, for newly appointed Heads of department and production team leaders, as well as for employees from the group company who are obligated to training per the Temporary Agency Workers Act, we provide one to two hours of training each on legal issues, precedents, and major advisory cases so that they can discover the implications of compliance and apply them to their work. In 2023, we have planned to conduct compliance assessments and training sessions (anti-corruption, fair trade, economic sanctions, illegal dispatch, etc.) according to the degree of relevance for each department (job function).

### Compliance Training History

Date	Training Name	Trained Employees (person)	Training Hours (hour)
March 16, 2022	Fair trade / subcontracting training for new department heads	1	2
March 17, 2022	Subcontracting / illegal dispatch training for new production team leaders	2	2
March 18, 2022	Fair trade / subcontracting training for new section leaders	2	2
May 23 – June 3, 2022	Compliance training for the first half of the year (compliance / anti-corruption / fair trade / economic sanctions)	1107	0.25
September 19 & 23, 2022	Group company dispatching training	4	1
October 24 – November 8, 2022	Compliance training for the second half of the year (compliance / anti-corruption / fair trade / economic sanctions)	751	0.25 (per session)

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# Compliance

## Legal Violation Risk Management

HD Hyundai Electric provides companywide guidance to protect trade secrets and ensure that our employees are familiar with the contents and precautions per the Fair Trade and Subcontracting Acts. We also announce essential laws, cases, and work guidelines for employees to review to perform their duties and support them in reviewing related laws. In 2022, we established a management plan for compliance regulations tailored to our company, including anti-corruption, economic sanctions, Fair Trade Compliance Program, and compliance guidelines, keeping pace with compliance laws and government systems. We informed all departments once again of the status of posting such compliance regulations on our intranet website and reviewed them for any violations. In 2023, we will review each case through the legal support system, distribute the major issues on domestic compliance and internal matters to all departments, and report them to the Board of Directors.

## Employee Self-Compliance Checks

We distribute Fair Trade Compliance Checklist to departments with high compliance risks to check their status. The checklist consists of items that determine whether there are potential risks related to unfair trade practices or violations of economic sanctions under domestic laws. In 2022, we distributed the Fair Trade Compliance Checklist to each department to more accurately identify the risks (work relevance) of unfair trade, economic sanctions, and corruption prevention. Also, in the first and second half of 2022, we distributed evaluation sheets to each department and completed them regarding the status of transactions (sales transactions with clients, agents, partner companies, and affiliates) and business status (meetings with competitors' employees, entrustment to SMEs, internal partners, and whether public officials are involved in the business). In 2023, we will continue distributing the evaluation sheets to each department in the first and second half of the year to review the degree of business relevance and provide appropriate training.

# Risk Management System

## Policies

HD Hyundai Electric identifies financial and non-financial risks to manage risks comprehensively and analyzes impacts, and sets up preemptive response measures, establishing a systematic operational foundation for sustainable growth.

## Financial Risks

The Audit Committee is responsible for overseeing how executives manage compliance per the risk management policies and procedures, as well as for reviewing the adequacy of the risk management system. The internal auditor assists the Audit Committee in its oversight, conducts periodic and ad hoc reviews of risk management controls and procedures, and reports their findings to the Audit Committee. In addition to risk management at the Board level, we have a dedicated risk management organization (Finance Team) and established risk management principles and procedures to prevent operating income reduction due to exchange rate fluctuations. The main risk is the uncertainty in operating income due to exchange rate fluctuations between the time of signing foreign currency transaction contracts and that of the actual collection, and we periodically seek efficient exchange rate management measures. We have taken active risk management measures, such as confirming the KRW conversion amount of foreign currency export payments through currency forward contracts (forward exchange). We also exclude speculative transactions based on the subjective judgment through hedge<sup>1</sup> transactions tailored to actual demand.

1. Hedge: To fix the amount of transaction at the exchange rate of the current moment to avoid the exchange rate fluctuation risks

## Non-Financial Risks

HD Hyundai Electric has established an ESG Committee to deliberate and approve matters related to the direction, planning, and implementation of our ESG strategy. We also have a dedicated ESG organization that manages ESG data and reports on key decision-making tasks related to ESG, minimizing our non-financial risks. In 2022, we declared RE100 to address climate risks and established a roadmap and strategies.

In addition, we manage compliance risks such as compliance support, anti-corruption, and fair trade under the management and supervision of legal team and compliance officers with legal expertise, and deal with trade risks like anti-dumping.

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# Summary of Consolidated Financial Statements

## Summary of Consolidated Financial Statements

(Unit: KRW million)

Category	2022	2021	2020
Current assets	1,548,306	1,398,338	1,474,375
Cash & cash equivalents	172,686	354,809	524,257
Short-term financial assets	22,092	21,057	10,511
Trade & other receivables	506,399	456,484	385,082
Contract assets	170,224	190,700	173,161
Inventories	627,806	357,079	358,594
Other current assets	49,099	18,208	22,770
Non-current assets	886,724	816,632	798,245
Long-term financial assets	4,935	6,170	6,665
Long-term trade & other receivables	5,069	3,473	3,405
Property, plant & equipment	536,868	516,254	510,470
Intangible assets	65,511	52,678	51,119
Other non-current assets	274,342	238,057	226,587
<b>Total assets</b>	<b>2,435,030</b>	<b>2,214,970</b>	<b>2,272,620</b>
Current liabilities	1,411,145	1,252,496	1,275,329
Non-current liabilities	192,717	316,252	318,118
<b>Total liabilities</b>	<b>1,603,861</b>	<b>1,568,748</b>	<b>1,593,447</b>
Capital stock	180,236	180,236	180,236
Capital surplus	401,833	901,707	901,707
Capital adjustment	(15,241)	(15,241)	(15,241)
Accumulated other comprehensive income	83,844	79,334	73,951
Retained earnings (deficit)	171,908	(499,814)	(461,480)
Non-controlling interests	8,589	-	-
<b>Total equity</b>	<b>831,169</b>	<b>646,222</b>	<b>679,174</b>

## Summary of Consolidated Statement of Comprehensive Income

(Unit: KRW million)

Category	2022	2021	2020
Revenue	2,104,499	1,805,992	1,811,345
Operating profit (loss)	133,041	9,736	72,699
Net profit (loss)	162,018	(33,687)	(40,246)
Equity attributable to owners of the parent	162,486	(33,687)	(40,247)
Non-controlling interest	(468)	-	0.8
<b>Total comprehensive income (loss)</b>	<b>175,764</b>	<b>(32,951)</b>	<b>(20,292)</b>
Equity attributable to owners of the parent	176,232	(32,951)	(20,293)
Non-controlling interest	(468)	-	0.8
<b>Earnings per parent share (loss)</b>	<b>4,514</b>	<b>(936)</b>	<b>(1,118)</b>



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# Stakeholder Engagement

HD Hyundai Electric defines our shareholders and investors, employees, partner companies, and the government as our key stakeholder groups and manages and responds to ESG issues by each stakeholder.

Groups that share several values and ESG influences with us are selected as key stakeholders. We recognize the importance of communication with stakeholders and operate specialized

communication channels for each stakeholder. We also specified the rights of the stakeholders in our Corporate Governance Charter and are emphasizing to all members of HD Hyundai Electric the responsibilities as stakeholders, including consumer protection, fair trade, and participation in management monitoring. We strive to identify stakeholders' interests in corporate activities and operate specialized communication channels to communicate with them sincerely.

Stakeholders	Key Issues and Interests	Main Communication Channels	HD Hyundai Electric Key Activities
<b>Client</b>	<ul style="list-style-type: none"> <li>Strengthening the competitiveness of products and technologies</li> <li>Developing Eco-friendly and high-value-added product</li> <li>Improving product stability</li> <li>Enhancing communication</li> </ul>	<ul style="list-style-type: none"> <li>Customer satisfaction survey</li> <li>Customer service center</li> </ul>	<ul style="list-style-type: none"> <li>Training on quality improvement for employees</li> <li>Acquiring eco-friendly patent</li> <li>Continuous product R&amp;D</li> </ul>
<b>Shareholders and investors</b>	<ul style="list-style-type: none"> <li>Reinforcing shareholder value</li> <li>Generating stable business performance</li> <li>Managing business opportunities and risks</li> <li>Sustainable management</li> <li>Transparent governance</li> </ul>	<ul style="list-style-type: none"> <li>Investment briefing session</li> <li>General meeting of shareholders</li> <li>Annual report</li> <li>Website</li> </ul>	<ul style="list-style-type: none"> <li>Disclosing decisions made by the Board of Directors</li> <li>Establishing ESG committee</li> <li>Introducing e-voting system</li> <li>Notifying agendas before general meeting</li> <li>Implementing proxy voting system and stipulating the rules</li> <li>Increasing dividend per share</li> </ul>
<b>Employees</b>	<ul style="list-style-type: none"> <li>Fair evaluation and compensation</li> <li>Improving welfare benefits and capacity building</li> <li>Invigorating labor-management relations and communications</li> <li>Sharing management status</li> <li>Operating safe work place</li> <li>Non-discriminatory and fair employment and hiring</li> <li>Preventing and relieving human rights violation</li> </ul>	<ul style="list-style-type: none"> <li>Labor-management council</li> <li>Grievance handling and reporting system</li> <li>Intranet and internal newsletter</li> <li>Conversation with the leadership</li> <li>Management status briefing session</li> <li>Safety environment meeting</li> </ul>	<ul style="list-style-type: none"> <li>Operating labor-management council</li> <li>Providing various training programs and human rights education</li> <li>Providing retirement training</li> <li>Acquiring family-friendly company certification</li> <li>Establishing PC-OFF system</li> <li>Installed Human Rights Management Committee</li> <li>Conducting the Human Rights Impact Assessment</li> </ul>
<b>Partner Companies</b>	<ul style="list-style-type: none"> <li>Promoting shared growth</li> <li>Reinforcing fair trade</li> <li>Supporting capacity building</li> <li>Safety and health</li> <li>Responsible supply chain management</li> </ul>	<ul style="list-style-type: none"> <li>Partner Companies' Council regular meeting</li> <li>Counseling channel for unfair trade</li> <li>Dispute Mediation Committee</li> <li>Partner Companies Council</li> </ul>	<ul style="list-style-type: none"> <li>Financial support and ESG management support</li> <li>Operating fair trade system</li> <li>Establishing eco-friendly supply chain goals and policies</li> <li>Training and technical support program</li> <li>Operating grievance handling and reporting channel related to partner company's safety and health</li> </ul>

Stakeholders	Key Issues and Interests	Main Communication Channels	HD Hyundai Electric Key Activities
<b>Government</b>	<ul style="list-style-type: none"> <li>Taking part in government policy</li> <li>Participating in and supporting government events</li> <li>Sharing industrial and corporate information</li> <li>Revitalizing the local economy</li> <li>Safety and labor related issues</li> </ul>	<ul style="list-style-type: none"> <li>Policy advisory body</li> <li>Policy meetings</li> <li>Visiting the National Assembly and government ministries</li> </ul>	<ul style="list-style-type: none"> <li>Operating compliance program</li> <li>Investing in R&amp;D of green energy conversion</li> <li>Establishing a consultative body for communication with the local community</li> <li>Membership and activities in major associations</li> </ul>
<b>Local community</b>	<ul style="list-style-type: none"> <li>Invigorating local community</li> <li>Bringing industries and jobs in the region</li> <li>Environmental preservation and improvement</li> <li>Social contribution activities centered on local community</li> <li>Communication with local community</li> <li>Protecting human rights in local community</li> </ul>	<ul style="list-style-type: none"> <li>Local governmental council</li> <li>Civil groups in local community</li> <li>Volunteer groups in local community</li> </ul>	<ul style="list-style-type: none"> <li>Operating talent program in local community</li> <li>Supportive policy for the socially vulnerable</li> <li>Investment for community development</li> <li>Employee's participation in salary sharing campaign</li> <li>Social contribution engaging employees including volunteer work</li> </ul>
<b>Press and media</b>	<ul style="list-style-type: none"> <li>Business performance and industrial issues</li> <li>Major issues across the company</li> <li>Direction of key business</li> </ul>	<ul style="list-style-type: none"> <li>Press release</li> <li>Media center on website</li> <li>Press meeting</li> </ul>	<ul style="list-style-type: none"> <li>Distributing press release</li> <li>Posting news on website</li> <li>Supporting news coverage of reporters</li> <li>Holding press conferences</li> </ul>
<b>Common</b>	<ul style="list-style-type: none"> <li>ESG strategy and direction</li> <li>Status of ESG management and performance</li> <li>ESG evaluation grade</li> <li>ESG issues</li> </ul>	<ul style="list-style-type: none"> <li>Integrated report</li> <li>ESG website</li> <li>Operating open mail</li> </ul>	<ul style="list-style-type: none"> <li>Publishing integrated report</li> <li>Posting information on ESG website</li> <li>Responding to inquiries received through representative mail</li> </ul>



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# Sustainability Guideline

## GRI Index

Topic	Reason of Non-disclosure
Statement of use	HD Hyundai Electric reports Integrated report 2022 according to GRI Standards
GRI 1 used	GRI 1 : Foundation 2021
Applicable GRI Sector Standard(s)	machinery and equipment (unreleased)

## GRI Index

### Universal Standard

Topic	No.	Disclosure	Reported Page
<b>GRI 2 : General Disclosures 2021</b>			
Organization and its reporting practices	2-1	Organizational details	05, 15
	2-2	Entities included in the organization's sustainability reporting	05
	2-3	Reporting period, frequency and contact point	01
	2-4	Restatements of information	Append footnotes
	2-5	External assurance	95-98
Activities and workers	2-6	Activities, value chain and other business relationships	05, 09-14
	2-7	Employees	50
	2-8	Workers who are not employees	Annual Report <sup>1</sup>
Governance	2-9	Governance structure and composition	74-76
	2-10	Nomination and selection of the highest governance body	74-75 <sup>2</sup>
	2-11	Chair of the highest governance body	74
	2-12	Role of the highest governance body in overseeing the management of impacts	20, 74
	2-13	Delegation of responsibility for managing impacts	20, 75-76

Topic	No.	Disclosure	Reported Page
	2-14	Role of the highest governance body in sustainability reporting	75
	2-15	Conflicts of interest	75 <sup>3</sup>
	2-16	Communication of critical concerns	20, 80
	2-17	Collective knowledge of the highest governance body	53, 74, 76
	2-18	Evaluation of the performance of the highest governance body	76 <sup>4</sup>
	2-19	Remuneration policies	74 <sup>5</sup>
	2-20	Process to determine remuneration	74 <sup>6</sup>
	2-21	Annual total compensation ratio	51
Strategy, policies and practices	2-22	Statement on sustainable development strategy	04
	2-23	Policy commitments	05-06, 08, 58-59
	2-24	Embedding policy commitments	58-61, 77-78
	2-25	Processes to remediate negative impacts	80
	2-26	Mechanisms for seeking advice and raising concerns	59, 77
	2-27	Compliance with laws and regulations	78-80 <sup>7</sup>
	2-28	Membership associations	99
Stakeholder engagement	2-29	Approach to stakeholder engagement	83
	2-30	Collective bargaining agreements	49
<b>GRI 3: Material Topics 2021</b>			
Disclosure Material Topics	3-1	Process to determine material topics	21
	3-2	List of material topics	22

1. Details are disclosed in The 6th Annual report(p358)

2. Details are disclosed in 2022 the Corporate Governance Report(p34-35, 42-49)

3. Details are disclosed in 2022 the Corporate Governance Report(p7, 45, p57)

4. Details are disclosed in 2022 the Corporate Governance Report(p60, 68)

5. Details are disclosed in The 6th Annual report(p361-372)

6. Details are disclosed in The 6th Annual report(p361-372)

7. Details are disclosed in The 6th Annual report(p376, 385)



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## Topic Standards

Topic	No.	Disclosure	Reported Page	Reason of Non-disclosure
Develop eco-friendly products and increasing energy efficiency	3-3	Management of material topics	22	
GRI 302 : Energy	302-5	Reductions in energy requirements of products and services	Incomplete information	To be managed in the future
Strengthen supply chain competitiveness and ESG	3-3	Management of material topics	22	
GRI 308: Supplier Environmental Assessment	308-1	New suppliers that were screened using environmental criteria	63	
	308-2	Negative environmental impacts in the supply chain and actions taken	62-65	
GRI 414: Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	63	
	414-2	Negative social impacts in the supply chain and actions taken	62-65	
Respond to climate crisis	3-3	Management of material topics	22	
GRI 305: Emissions	305-1	Direct (Scope 1) GHG emissions	38-39	
	305-2	Energy indirect (Scope 2) GHG emissions	38-39	
	305-4	GHG emissions intensity	39	
	305-5	Reduction of GHG emissions	38-39	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	44	

Topic	No.	Disclosure	Reported Page	Reason of Non-disclosure
Fortify occupational safety and health	3-3	Management of material topics	22	
GRI 403: Occupational health and safety	403-1	Occupational health and safety management system	54-56	
	403-2	Hazard identification, risk assessment, and incident investigation	54-58	
	403-3	Occupational health services	54-58	
	403-4	Worker participation, consultation, and communication on occupational health and safety	55	
	403-5	Worker training on occupational health and safety	57	
	403-6	Promotion of worker health	55	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	54	
	403-8	Workers covered by an occupational health and safety management system	57	
	403-9	Work-related injuries	56	
	403-10	Work-related ill health	56	
Governance transparency	3-3	Management of material topics	22	
Non-GRI			74-76, 78-80	

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## TCFD

### Task Force on Climate related Financial Disclosure

HD Hyundai Electric participated in Korea TCFD Alliance in June 2022 and declared TCFD support in October of the same year to disclose information responding to climate change and strength measures relating eco-friendly technology development and GHG reduction target etc.

Recommendations	2022																																								
<b>Governance</b>																																									
a Describe the board's oversight of climate-related risks and opportunities	HD Hyundai Electric manages and supervises ESG and climate change issues at the Board of Directors, our highest decision-making body. The ESG Committee, a subcommittee of the Board, deliberates and approves ESG strategy directions, plans, implementation-related issues, risks, and opportunities, thoroughly managing and supervising whether climate change response strategies are reflected in an integrated manner across all business areas. Chaired by an outside director, the Committee explores domestic and international ESG regulatory trends, examples of other companies' responses, and countermeasures, ensuring both independence and expertise. In 2023, the ESG Committee approved a carbon neutrality and RE100 strategy proposal to strengthen our ESG strategy, enhancing corporate and shareholder value.																																								
b Describe management's role in assessing and managing climate-related risks and opportunities	To quickly identify and manage climate change risks and opportunities, HD Hyundai Electric has established an organic climate change response system among our executives, working groups, and experts. We have dedicated organizations for climate change, including the Chief ESG Officer and the Safety & Health & Environment Management Department, and operate an ESG Advisory Group composed of experts in each field at our group company level. Related departments regularly review relevant issues like climate change risks and opportunities and report them to the CEO, who submits them to the ESG Committee for final decisions. The relevant departments implement the items discussed and resolved by the Board of Directors, and the management oversees the organization's climate change goals and performance during the process.																																								
<b>Strategy</b>																																									
a Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	HD Hyundai Electric has identified major risks and opportunities to over the short, medium and long term and established response strategies. Based on industry characteristics and domestic and international literature, we organized a pool of risks and opportunities we may face and evaluated their scale, likelihood of occurrence, and expected timing of impacts to identify key risks and opportunities.																																								
	<table border="1"> <thead> <tr> <th>Category</th> <th>Major Risks/Opportunities</th> <th>Short-Term (2023~2025)</th> <th>Mid-Term (2026~2032)</th> <th>Long-Term (2033~)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Transition risk</td> <td>Implementation / Strengthening of climate change policies</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Transition to low-carbon products or services</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Converting generation processes / facilities into low-carbon technology</td> <td></td> <td>0</td> <td>0</td> </tr> <tr> <td>Reputational risk</td> <td></td> <td>0</td> <td>0</td> </tr> <tr> <td>Physical risk</td> <td>Typhoons</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td rowspan="3">Opportunities</td> <td>Developing low-carbon technology / product / service</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Responding to climate change issues</td> <td></td> <td>0</td> <td>0</td> </tr> <tr> <td>Efficient use of resources</td> <td></td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Category	Major Risks/Opportunities	Short-Term (2023~2025)	Mid-Term (2026~2032)	Long-Term (2033~)	Transition risk	Implementation / Strengthening of climate change policies	0	0	0	Transition to low-carbon products or services	0	0	0	Converting generation processes / facilities into low-carbon technology		0	0	Reputational risk		0	0	Physical risk	Typhoons	0	0	0	Opportunities	Developing low-carbon technology / product / service	0	0	0	Responding to climate change issues		0	0	Efficient use of resources		0	0
Category	Major Risks/Opportunities	Short-Term (2023~2025)	Mid-Term (2026~2032)	Long-Term (2033~)																																					
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Recommendations		2022						
Strategy								
b	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	Category	Key Risks/ Opportunities	Financial Impact Evaluation (Qualitative)	Financial Impact Evaluation (Quantitative)			
		Opportunities	Developing low-carbon technology / product / service	<ul style="list-style-type: none"> <li>Increase in demand and revenue for our low-carbon and SF<sub>6</sub>-free products due to increased demand for low-carbon products</li> </ul>	Financial Impact Due to Emission Reduction Assuming a Complete Transition to SF <sub>6</sub> -Free (Unit : KRW 100 million)			
						Mid-Term (2030)	Long-term (2040)	Long-term (2050)
					Domestic	96.2	156.3	210.4
China	19.1	61.4	103.0					
		Responding to climate change issues	<ul style="list-style-type: none"> <li>Secure capital and investment through grants and incentives</li> <li>Reduction in carbon costs when transitioning to low-carbon products and technologies</li> </ul>	Carbon Cost Savings Based on RE100 Achievements (Unit : KRW 100 million)				
					Mid-Term (2030)	Long-term (2040)	Long-term (2050)	
				Domestic	1.48	0.74	87.26	
				China	1.72	4.15	6.18	
				U.S.	-	28.67	33.58	
		Efficient use of resources	<ul style="list-style-type: none"> <li>Reduction in cost by procuring renewable electricity when implementing RE100</li> </ul>					
c	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	HD Hyundai Electric has identified risks and opportunities related to climate change and established a strategy to respond climate change based on the results derived from scenario analysis. We have selected the following as the main response tasks: 1) greenhouse gas emission calculation and reduction, 2) low-carbon products and services development, and 3) climate risk management, and selected the lead department to implement them. We have also established and are implementing the implementation plans in short-, medium-, and long-term stages.						

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Recommendations	2022
<b>Risk Management</b>	
a Describe the organization’s processes for identifying and assessing climate-related risks	HD Hyundai Electric’s ESG management team identifies climate change risks through peer industry trends and domestic and international literature. We organized a pool based on physical and transition risks recommended by the TCFD and evaluated the likelihood of occurrence and the impact scale of those risks based on domestic and international benchmarking companies and worldwide trends and regulations.
b Describe the organization’s processes for managing climate-related risks	HD Hyundai Electric’s ESG Management Team continuously enhances the process of quantifying the countermeasure performance and risk identification and assessment. Based on the identified major risks and financial impacts, we establish response strategies by step and area, then identify and implement tasks in each relevant department. We also report the status of major tasks to the CEO and the ESG Committee and continuously monitor improvements.
c Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management	HD Hyundai Electric reports the identified and assessed climate change risks to the CEO and the ESG Committee, and the latter manages and oversees the strategic direction, plans, and actions to address the risks from a companywide perspective. We define climate change as the core risk that significantly impacts our mid- to long-term business strategy, and we will proactively manage it to enhance our corporate value further.
<b>Metrics and Targets</b>	
a Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	HD Hyundai Electric uses the HHI GHG management System (HGMS) to identify companywide greenhouse gas emissions and emission intensity, while the Factory Energy Management System (FEMS) manages energy usage and energy-saving performance.
b Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	HD Hyundai Electric calculates our greenhouse gas emissions every year and transparently discloses them. <ul style="list-style-type: none"> <li>• Scope 1: 6,915 tCO<sub>2</sub>eq</li> <li>• Scope 2: 26,251 tCO<sub>2</sub>eq</li> </ul>
c Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	HD Hyundai Electric has been announcing greenhouse gas emission reduction targets every year since 2017 and managing performance across the company. According to the Nationally Determined Contribution (NDC), we have established medium-term reduction targets of 10 % or more in 2023, 11% or more in 2025, 14% or more in 2030 compared to 2018. We also manage greenhouse gas emissions from energy consumption with the goal of reducing companywide energy consumption intensity by 1% compared to 2022.



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## SASB

Topic	SASB Code	Accounting Metric	Unit	2022
Energy Management	RT-EE-130a.1	Total energy consumed	GJ	682,000
		percentage grid electricity	%	80.35%
		percentage renewable	%	0
Hazardous Waste Management	RT-EE-150a.1	Amount of hazardous waste from manufacturing	ton	347.1
		percentage recycled	%	68.47%
	RT-EE-150a.2	Number and aggregate quantity of reportable spills, quantity recovered	Number, kg	Preemptively block hazardous chemicals with Chemical Hazard Assessment
Product Safety	RT-EE-250a.1	Number of recalls issued, total units recalled	Number	None
	RT-EE-250a.2	Total amount of monetary losses as a result of legal proceedings associated with product safety	KRW	None
Product Lifecycle Management	RT-EE-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	%	Not Applicable
	RT-EE-410a.2	Percentage of eligible products, by revenue, that meet ENERGY STAR® criteria	%	Not Applicable
	RT-EE-410a.3	Revenue from renewable energy-related and energy efficiency-related products	%	6.66%
Materials Sourcing	RT-EE-440a.1	Description of the management of risks associated with the use of critical materials	-	65p

Topic	SASB Code	Accounting Metric	Unit	2022
Business Ethics	RT-EE-510a.1	Description of policies and practices for prevention of: (1) corruption and bribery	-	77p
		Description of policies and practices for prevention of: (2) anti-competitive behavior	-	78p
	RT-EE-510a.2	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	KRW	0
Activity Metrics	RT-EE-000.A	Number of units produced by product category	-	Transformers: 329 units Gas insulated switchgear : 632BAY
	RT-EE-000.B	Number of employees	Persons	2,084



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## UN SDGs

The Sustainable Development Goals (SDGs) are the goals to be achieved by the United Nations and the international community from 2016 to 2030 to address global poverty and achieve sustainable development. HD Hyundai Electric strives to achieve the SDGs based on the top three areas: social

inclusion, economic growth, and a sustainable environment. We have identified global trends through the SDGs and developed strategies necessary for our mid- to long-term growth, and we are carrying out activities to contribute to 17 SDG goals.

Key SDGs Goal	Detailed Targets	Our Contribution
 <p>End poverty in all its forms everywhere</p>	<p>1.5 Build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters</p>	<ul style="list-style-type: none"> <li>• Provide monthly living expenses to families in need in Dong-gu, Ulsan</li> </ul>
 <p>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p>	<p>2.2. End all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons</p>	<ul style="list-style-type: none"> <li>• In collaboration with HD Hyundai Group's 1% Sharing Foundation, participate in 1% Soup Kitchen that delivers side dishes and food items to the elderly living alone, and provide white rice to local senior centers and welfare facilities</li> </ul>
 <p>Ensure healthy lives and promote well-being for all at all ages</p>	<p>3.4 Reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and wellbeing</p> <p>3.8 Achieve universal health coverage (UHC), including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all</p> <p>3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination</p>	<ul style="list-style-type: none"> <li>• Support medical expenses to improve employee health, support medical checkups, operate oriental medicine clinics, and conduct occupational disease examinations for employees</li> <li>• Operate employee health management programs, such as smoking and obesity clinics</li> <li>• Actively prevent COVID-19 by strengthening company access procedures, conducting special disinfection and prevention measures, and providing emergency medical kits for overseas business travelers</li> </ul>
 <p>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	<p>4.4 Increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</p> <p>4.5 Eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations</p> <p>4.7. Ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development</p>	<ul style="list-style-type: none"> <li>• Nurture highly skilled professionals through various technical training infrastructures and systematic training programs</li> <li>• Operate Core Skill Transfer Program</li> <li>• Job professionals training through the voluntary job training system</li> <li>• Conduct human rights education such as sexual harassment prevention and disability awareness training</li> <li>• Education on environmental trends – carbon neutrality, renewable energy conversion, etc. – and education on overall ESG management – emergence and countermeasures of ESG management, etc. – for outside directors</li> </ul>
 <p>Achieve gender equality and empower all women and girls</p>	<p>5.1. End all forms of discrimination against all women and girls everywhere</p> <p>5.5. Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life</p>	<ul style="list-style-type: none"> <li>• Define regulations regarding sexual harassment in the workplace through the group company's Code of Conduct</li> <li>• Conduct sexual harassment prevention education</li> <li>• Appoint a female outside director</li> </ul>

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Key SDGs Goal	Detailed Targets	Our Contribution
 <p>Ensure availability and sustainable management of water and sanitation for all</p>	<p>6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse</p> <p>6.6 Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes</p>	<ul style="list-style-type: none"> <li>• Install an insulating oil filter and equipment to remove impurities and storing waste insulating oil in outdoor tanks, and recycling it through a waste oil treatment company</li> <li>• Monitor water usage at domestic and overseas sites every month</li> <li>• Establish a recycling facility for cooling water used in test processes and reduce water consumption</li> <li>• Preserve the environment of local rivers through company activities managing rivers near operations quarterly</li> </ul>
 <p>Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<p>7.2 Increase substantially the share of renewable energy in the global energy mix</p> <p>7.3 Double the global rate of improvement in energy efficiency</p>	<ul style="list-style-type: none"> <li>• Provide KEPCO's Sinnamwon Substation a total solution of designing, constructing, and procuring major equipment, including Power Conditioning System (PCS), Battery Management System (BMS), and batteries.</li> <li>• Establish 2040 RE100 Plan</li> </ul>
 <p>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<p>8.2 Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labour-intensive sectors</p> <p>8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage formalization and growth of micro-, small-and medium-sized enterprises including through access to financial services</p> <p>8.5 Achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</p> <p>8.6 Reduce the proportion of youth not in employment, education or training</p> <p>8.7 Secure the prohibition and elimination of the worst forms of child labour, eradicate forced labour, and end child labour in all its forms including recruitment and use of child soldiers</p>	<ul style="list-style-type: none"> <li>• Develop power converters, which is the core technology of ESS, and expand manufacturing business to improve economic productivity and create jobs</li> <li>• Invest in facilities such as machinery in factories to improve productivity</li> <li>• Develop for the first time KEPCO's first three-phase gas transformer and establish next-generation LVDC distribution systems</li> <li>• Equal pay for 97.0% of management positions and 71.9% in non-management positions</li> <li>• Implement fair and objective evaluations and compensation system for all employees</li> <li>• Implement ESG management support programs for partner companies, including ESG training support, consulting, evaluation, and certification</li> </ul>
 <p>Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<p>9.3 increase the access of small-scale industrial and other enterprises to financial services including affordable credit and their integration into value chains and markets</p> <p>9.4 Increase resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes</p>	<ul style="list-style-type: none"> <li>• Operate finance support programs for partner companies</li> <li>• Develop eco-friendly SF<sub>6</sub>-free Gas Insulated Switchgear</li> <li>• Raise the efficiency of energy generation through the development of large-scale permanent magnet shaft generator</li> <li>• Develop small-scale transformers with high efficiency, contributing to carbon emissions mitigation and minimizing electricity loss through the development</li> </ul>
 <p>Reduce inequality within and among countries</p>	<p>10.4 Adopt policies especially fiscal, wage, and social protection policies and progressively achieve greater equality</p>	<ul style="list-style-type: none"> <li>• Care for the underprivileged, pursue co-prosperity with local communities, and support independence for the future generations</li> </ul>
 <p>Make cities and human settlements inclusive, safe, resilient and sustainable</p>	<p>11.6. Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, municipal and other waste management</p>	<ul style="list-style-type: none"> <li>• Establish and maintain internal standards that are stricter than legally permitted air pollutant concentrations</li> <li>• Replace old equipment and invest in prevention facilities to reduce air pollutant emissions</li> <li>• Set waste reduction targets and monitor them continuously</li> </ul>

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Key SDGs Goal	Detailed Targets	Our Contribution
 <p>Ensure sustainable consumption and production patterns</p>	<p>12.2 Achieve sustainable management and efficient use of natural resources</p> <p>12.4 Achieve environmentally sound management of chemicals and all wastes and reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment</p> <p>12.5 Reduce waste generation through prevention, reduction, recycling, and reuse</p> <p>12.6 Encourage companies, especially large and trans-national companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>	<ul style="list-style-type: none"> <li>• International certification for environmental management system</li> <li>• Conduct mock tests to strengthen response capabilities in case of a chemical accident</li> <li>• Conduct chemical hazard assessment from the purchase stage of raw materials</li> <li>• Conduct emission surveys (annually) and statistical surveys (biennially) on incoming chemicals and report their usage to relevant authorities</li> <li>• Environmental cleanups near business sites</li> <li>• Actively invest in replacing old facilities and preventive facilities</li> </ul>
 <p>Take urgent action to combat climate change and its impacts</p>	<p>13.2 Integrate climate change measures into national policies, strategies, and planning</p> <p>13.3 Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning</p>	<ul style="list-style-type: none"> <li>• Establish greenhouse gas emissions reduction targets based on Nationally Determined Contributions (NDC)</li> <li>• Establish a 2050 carbon neutrality plan</li> <li>• Conduct annual environmental training for environmental facility personnel</li> </ul>
 <p>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	<p>14.1 Prevent and significantly reduce marine pollution of all kinds</p> <p>14.2 Manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration, to achieve healthy and productive oceans</p>	<ul style="list-style-type: none"> <li>• Plogging at Jujeon Beach in Dong-gu, Ulsan, to contribute to biodiversity conservation</li> </ul>
 <p>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p>	<p>15.1 Ensure conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements</p>	<ul style="list-style-type: none"> <li>• Environmental cleanup activities to preserve the land ecosystem, such as removing dust and collecting garbage near the Seonam Plant once a month</li> </ul>
 <p>Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</p>	<p>16.3 Promote the rule of law at the national and international levels, and ensure equal access to justice for all</p> <p>16.5 Reduce corruption and bribery in all its forms</p> <p>16.6 Develop effective, accountable and transparent institutions at all levels</p> <p>16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels</p>	<ul style="list-style-type: none"> <li>• Establish an ESG committee to lay the foundation for sustainable management</li> <li>• Implement an e-voting system for transparent and reasonable exercising of voting rights</li> <li>• Establish communication channels with local communities to support stakeholder engagement decision-making</li> <li>• Establish a compliant material procurement system</li> <li>• Operate the Fair Trade Compliance Program (CP)</li> <li>• Assess compliance risks for all departments</li> </ul>
 <p>Strengthen the means of implementation and revitalize the global partnership for sustainable development</p>	<p>17.16. Enhance the global partnership for sustainable development complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technologies and financial resources to support the achievement of sustainable development goals in all countries, particularly developing countries</p> <p>17.17. Encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships</p>	<ul style="list-style-type: none"> <li>• Sign with GE offshore wind MOU to collaborate on wind machine technology</li> <li>• Join the K-RE100 initiative</li> <li>• Join associations and organizations such as the Conseil International des Grands Reseaux Electriques (CIGRE)</li> </ul>

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## UN Global Compact

In September 2021, HD Hyundai Electric joined the UN Global Compact (UNGC), a voluntary initiative that calls for corporate social responsibilities, and expressed our commitment to the Ten Principles in the Four Categories of the UNGC, including human rights, labor, environment, and

anti-corruption. We will implement the universal sustainability principles and support the UN's goals to become a company that creates social value.

Category	Principle	Our Activities
Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights; and	<ul style="list-style-type: none"> <li>• Establish human rights labor policies and human rights management practices</li> <li>• Operate a grievance handling system</li> <li>• Conduct human rights education for employees</li> <li>• Conduct Human Rights Impact Assessment</li> <li>• Operate Human Rights Management Committee</li> </ul>
	2. make sure that they are not complicit in human rights abuses.	
Labour	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	<ul style="list-style-type: none"> <li>• Comply with domestic labor laws and regulations</li> <li>• Conduct collective bargaining and operate Labor-Management Councils</li> <li>• Operate various work-life balance systems and get certified as a family-friendly company</li> <li>• Operate a fair performance evaluation and compensation system</li> </ul>
	4. the elimination of all forms of forced and compulsory labour;	
	5. the effective abolition of child labour; and	
	6. the elimination of discrimination in respect of employment and occupation.	
Environment	7. Businesses should support a precautionary approach to environmental challenges;	<ul style="list-style-type: none"> <li>• Achieve and maintain Environmental Management System (ISO14001) certification</li> <li>• Establish and implement RE100 and carbon neutrality plans</li> <li>• Establish energy saving targets for each department and implement saving initiatives</li> <li>• Manage resource recycling targets</li> <li>• Strengthen eco-friendly business and obtain eco-friendly patents</li> </ul>
	8. undertake initiatives to promote greater environmental responsibility; and	
	9. encourage the development and diffusion of environmentally friendly technologies.	
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery.	<ul style="list-style-type: none"> <li>• Enact the Ethics Charter and Code of Conduct</li> <li>• Adopt the Code of Business Ethics</li> <li>• Operate a Fair-Trade Compliance Program</li> <li>• Educate and promote ethical management and anti-corruption</li> <li>• Operate channels for reporting ethics violations (anonymous/in real name)</li> </ul>

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MEMBERSHIP IN MAJOR ORGANIZATIONS & PUBLIC INFORMATION

EFFICIENCY  
SUSTAINABILITY  
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### To: The Stakeholders of HD Hyundai Electric Co., Ltd.

#### Introduction and Objectives of Work

BSI Group Korea (hereinafter "the Assurer") was requested to verify HD Hyundai Electric Integrated Report 2022 (hereinafter "the Report"). This assurance statement applies only to the relevant information included in the scope of the assurance. HD Hyundai Electric is solely responsible for all information and assertion contained in the Report. The responsibility of the Assurer is to provide HD Hyundai Electric Management with independent assurance statement based on its expert opinions by applying the verification methodology for the specified assurance scope. It is also to provide the information to all stakeholders of HD Hyundai Electric.

#### Standards and Levels

This assurance was based on the AA1000AS (Assurance Standard) v3 (2020) Assurance Standard and confirmed that the Report was prepared in accordance with the GRI Standards, the international standards guidelines of sustainability reports. In accordance with the AA1000 AS, the assurance level was Moderate Level, and conducted against Type 1 to confirm compliance with the four principles of the AA1000 AP (AccountAbility Principles) 2018 and the Type 2 assurance that verified the quality and reliability of the information disclosed in the report. Type 2 was limitedly verified against the topic standards below, based on the data and information provided by the reporting organization.

- GRI Topic standards: 305-1~2, 305-4~5, 305-7, 308-1~2, 403-1~10, 414-1~2

#### Scope

The scope of assurance applied to the Report is as follows;

- Report contents during the period from January 1st to December 31st 2022 included in the report, some data included 2023.
- Major assesstion included in the report, such as sustainability management policies and strategies, goals, projects, and performance, and the report contents related to material issues determined as a result of materiality assessment.
- Appropriateness and consistency of processes and systems for data collection, analysis and review

The following contents were not included in the scope of assurance.

- Financial information in Appendix
- Index items related to other international standards and initiatives other than the GRI
- Other related additional information such as the website, business annual report.

#### Methodology

As a part of its independent assurance, the Assurer has used the methodology developed for relevant evidence collection in order to comply with the verification criteria and to reduce errors in reporting. The Assurer has performed the following activities;

- Review of the system for sustainability management strategy process and implementation
- Review of materiality issue analysis process and prioritization by reviewing materiality issue analysis process and verifying the results
- Review of the evidence to support the material issues through interviews with senior managers with responsibility for them
- Verification of data generation, collection and reporting for each performance index

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## Limitation

The Assurer performed limited verification for a limited period based on the data provided by the reporting organization. It implies that no significant errors were found during the verification process, and that there are limitations related to the inevitable risks that may exist. The Assurer does not provide assurance for possible future impacts that cannot be predicted or verified during the verification process and any additional aspects related thereto.

## Assurance Opinion

On the basis of our methodology and the activities described above, it is our opinion that

- The information and data included in the Report are accurate and reliable and the Assurer cannot point out any substantial aspects of material with mistake or misstatement.
- The report is prepared in accordance with the GRI Standards. (Reporting in accordance with the GRI standards)
- The assurance opinions on the four principles presented in the AA1000 AP (2018) are as follows.

## AA1000 AP (2018)

### Inclusivity: Stakeholder Engagement and Opinion

HD Hyundai Electric defined client, shareholders/investors, employees, partner companies, government, local community, press/media and common as key stakeholders groups, and operated communication channels for each stakeholder group for engagement. HD Hyundai Electric reflected key issues drawn through stakeholder channels in sustainability management decisions and disclosed the process in the Report.

### Materiality: Identification and reporting of material sustainability topics

HD Hyundai Electric established the strategy related to sustainability management and established the process to derive reporting issues. HD Hyundai Electric identified financial and social/environmental impacts and derived 5 material topics based on the analysis of media research, benchmarking global advanced companies in its field, and analysis of major global initiatives related to sustainability.

### Responsiveness: Responding to material sustainability topics and related impacts

HD Hyundai Electric established the management process for material topics determined by the materiality assessment, implemented a response plan for each topic to appropriately respond to the derived topics that reflects the expectations of stakeholders. HD Hyundai Electric disclosed the process including policy, indicator, activity and response performance on material issues in the Report.

### Impact: Impact of an organization's activities and material sustainability topics on the organization and stakeholders

HD Hyundai Electric established the process to identify and evaluate the impact on organizations and stakeholders related to material topics. HD Hyundai Electric used impacts, risk and opportunity factor analysis results for material topics to make decisions to develop response strategies for each topic, and disclosed the process in the Report.



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## Key areas for ongoing development

- It may be helpful to advance sustainability management system by internalizing the indirect economic effectiveness metrics of each business sector, such as technology development and energy solution business, and disclosing the performance and future strategies of each indirect economic effect.

## Statement of independence and competence

The Assurer is an independent professional institution that specializes in quality, health, safety, social and environmental management with almost 120 years history in providing independent assurance services. No member of the assurance team has a business relationship with HD Hyundai Electric. The Assurer has conducted this verification independently, and there has been no conflict of interest. All assurers who participated in the assurance have qualifications as an AA1000AS assurer, have a lot of assurance experience, and have in-depth understanding of the BSI Group's assurance standard methodology.

## Evaluation against GRI 'In Accordance' Criteria

The Assurer confirmed that the Report was prepared in accordance with the GRI Standards and the disclosures related to the following Universal Standards and Topic Standards Indicators based on the data provided by HD Hyundai Electric, the sector standard was not applied.

### [Universal Standards]

2-1 to 2-5 (The organization and its reporting practices), 2-6 to 2-8 (Activities and workers), 2-9 to 2-21 (Governance), 2-22 to 2-28 (Strategy, policies and practices), 2-29 to 2-30 (Stakeholder engagement), 3-1 to 3-3 (Material Topics Disclosures)

### [Topic Standards]

302-5, 305-1~2, 305-4, 305-5, 305-7, 308-1~2, 403-1~10, 414-1~2

27th June 2023

S. H. Lim / BSI Group Korea, Managing Director






# Greenhouse Gas·Energy Assurance Statement

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### Introduction

DNV Business Assurance Korea Ltd. (“DNV”) was commissioned by HD HYUNDAI ELECTRIC (“Company”) to verify the Company’s Greenhouse Gas Inventory Report for the calendar year 2022 (“the report”) based upon a reasonable level of assurance. The Company is responsible for the preparation of the GHG emissions and Energy consumption data on the basis set out within the guidelines on the operation of GHG emission trading scheme (“ETS) (Notification No. 2022-279 of Ministry of Environment)’. Our responsibility in performing this work is to the management of the Company only and in accordance with terms of reference agreed with them. DNV expressly disclaims any liability or responsibility for any decisions, whether investment or otherwise, based upon this assurance statement.

### Scope of Assurance

The GHG emissions data covered by our examination comprise Direct emissions (Scope 1 emissions) and Energy indirect emissions (Scope 2 emissions) from the Company’s boundary of the report ;

- Organizational boundary for reporting : Domestic business sites of the Company

### Verification Approach

The verification has been conducted by DNV on February to March 2023 and performed in accordance with the verification principles and tasks outlined in the guidelines on the operation of GHG ETS (Notification No. 2022-279, Korean Ministry of Environment) and the verification guideline for GHG ETS (Notification No. 2021-112, Korean Ministry of Environment). We planned and performed our work to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a reasonable verification opinion concerning the completeness of the emission inventory as well as the reported emission figures in ton CO<sub>2</sub> equivalent. As part of the verification process;

- We have reviewed and verified the GHG emissions and energy consumption report for the calendar year 2022
- We have reviewed and verified the process to generate, aggregate and report the emissions and energy data

### Conclusions

As a result of the work described above, in our opinion nothing has come to our attention that would cause us to believe that the GHG emissions and energy consumption set out in the Company’s report are not fairly stated. The GHG emissions and energy consumption of the Company’s for the year 2022 were confirmed as below;

#### Greenhouse Gas Emissions of HD HYUNDAI ELECTRIC’s Domestic business site for Yr 2022

(Unit: ton CO<sub>2</sub> equivalent)

HD HYUNDAI ELECTRIC	Direct emissions (Scope 1)	Indirect emissions (Scope 2)	Total emissions
Domestic (in KOREA)	6,915	26,252	33,167

\* Total emissions is the sum of direct and indirect emissions.

May 2023

Seoul, Korea

Jang-Sub Lee Country Manager  
DNV Business Assurance Korea Ltd

# Membership in Major Organizations & Public Information

## Association and Organization membership

Korea Intellectual Property Association (KINPA)	Conseil International des Grands Reseaux Electriques Korea
Korea Electrical Contractors Association (KECA)	Congres International des Reseaux Electriques de Distribution Korea
Korea Fire Safety Association (KFSA)	UN Global Compact Korea
Korea Electric Association (KEA)	Korea International Trade Association (KITA)
Korea Electrical Manufacturers Association (KOEMA)	Korean Society for Quality Management (KSQM)
Korea Smart Grid Association (KSGA)	Korean Standards Association (KSA)
Korea Wind Energy Industry Association (KWEIA)	Ulsan Chamber of Commerce and Industry
Korea Industrial Technology Association (KOITA)	Seoul Chamber of Commerce and Industry

## Public Information

Disclosure Channels for Management Information	URL	Key Details
HD Hyundai Electric website	<a href="https://www.hd-hyundaelectric.com/elect/en/index.jsp">https://www.hd-hyundaelectric.com/elect/en/index.jsp</a>	Company introduction, IR, products & dealerships, online customer service
HD Hyundai Electric LinkedIn	<a href="https://kr.linkedin.com/company/hd-hyundaelectric">https://kr.linkedin.com/company/hd-hyundaelectric</a>	Introduces HD Hyundai Electric's products and news
HD Hyundai Electric Instagram	<a href="https://www.instagram.com/hd.hyundaelectric/">https://www.instagram.com/hd.hyundaelectric/</a>	Introduces HD Hyundai Electric's products and news
HD Hyundai Electric YouTube	<a href="https://www.youtube.com/@HDHYUNDAIELECTRIC">https://www.youtube.com/@HDHYUNDAIELECTRIC</a>	Introduces HD Hyundai Electric's products and news
HD Hyundai Business Ethics Website	<a href="http://ethics.hdhyundai.co.kr/HtmlE/main.html">http://ethics.hdhyundai.co.kr/HtmlE/main.html</a>	Group ethics management direction, ethics regulations, online report and consultation
HD Hyundai Webzine "Magazine H"	<a href="http://www.hdhyundai.co.kr/magazine-h">http://www.hdhyundai.co.kr/magazine-h</a>	HD Hyundai's monthly communication channel
Financial Supervisory Service DART	<a href="https://englishdart.fss.or.kr/">https://englishdart.fss.or.kr/</a>	Various mandatory and voluntary disclosures as a listed company
Corporate Presentation	<a href="https://www.hd-hyundaelectric.com/elect/en/IR/IRdata1.jsp">https://www.hd-hyundaelectric.com/elect/en/IR/IRdata1.jsp</a>	Regular announcement of business performance and outlook



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