HYUNDAI STEEL INTEGRATED REPORT 2024

BEYOND STEEL

HYUNDAI STEEL

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Interactive PDF User Guide
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HYUNDAI STEEL

For additional information about Hyundai Steel, please visit our website. For further details, please contact us at the following:

Phone: +82-31-510-2114
E-mail: sustainable@hyundai-steel.com
Website: https://www.hyundai-steel.com

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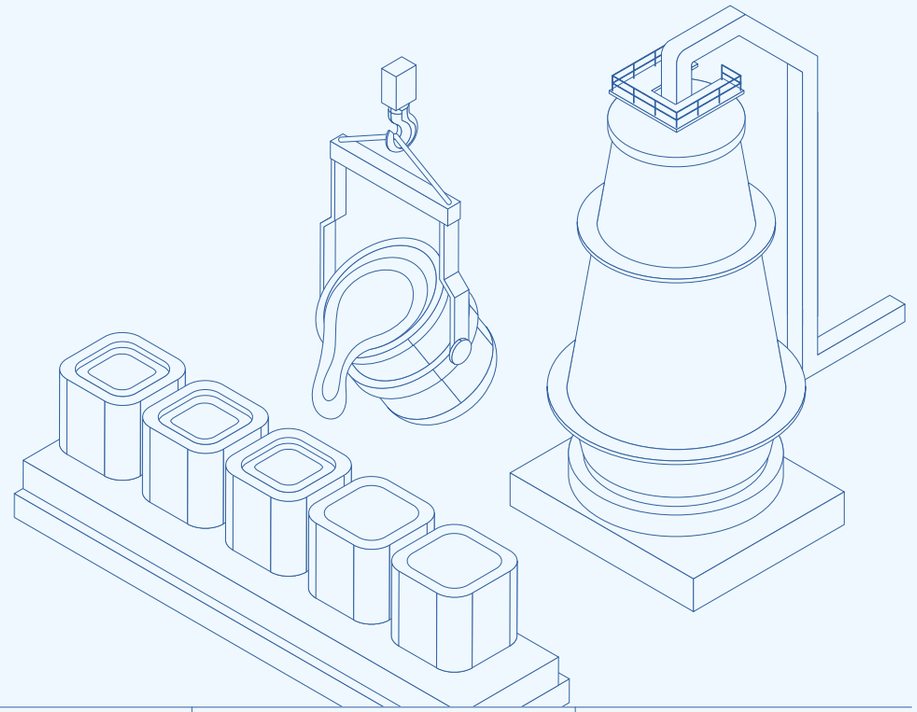
Overview

Hyundai Steel is pursuing sustainable growth through various activities aimed at enhancing the value of the company and society.



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1.1 About This Report

1.1.1 Reporting Outline

Since 2016, Hyundai Steel has been annually publishing an integrated report detailing its sustainability efforts and performance along with internal and external stakeholder opinions in accordance with global guidelines. The 2024 Integrated Report is divided into five categories: Overview, Material Topic, ESG Performance, Factbook, and Appendix, to provide an easy-to--understand overview of our commitment and achievements in sustainable management and economic values creation.

1.1.2 Reporting Principles

This report has been prepared in accordance with the Global Reporting Initiative (GRI) standards 2021 and referred the Integrated Reporting (IR) framework of the International Financial Reporting Standards Foundation (IFRS). It has also incorporated other metrics such as Sustainability Accounting Standards Board (SASB) standards and the United National Sustainable Development Goals (UN SDGs), and its financial results have been prepared in line with the Korean International Financial Reporting Standards (K-IFRS).

1.1.3 Reporting Scope

The reporting scope of this report is January 1, 2023, through December 31, 2023, and for timely reporting, some activities and achievements from the first half of 2024 are included. The boundary of this report is based on 75-100% of the total revenue. Quantitative data represents performance over the past three years and more to provide a view on yearly fluctuations. This report encompasses the Korean operations of Hyundai Steel, including the head office and steelworks, as the basic reporting scope. Some data also include information from joint ventures, such as domestic and overseas subsidiaries. Any discrepancies in scope from the previous year's report are specified within the report, along with the reasons.

1.1.4 Reporting Assurance

This report was verified by an independent assurance agency, BSI Group Korea, in order to ensure the fairness and credibility of its contents and data. Assurance statements can be found in the 'Third-Party Assurance Statement' section.

1.1.5 Global Initiative and Partnership

Hyundai Steel joined UN Global Compact (UNGC) as a member, launched in cooperation between the United Nations and corporate with the goal of enhancing ethics and protecting the environment around the globe. We are the first Korean company to join Responsible Steel and have participated in establishing global ESG Standard for the steel industry. We have been participating in numerous subcommittees as a member company of World Steel Association and have been recognized of our capabilities by being selected as the 'Sustainability Champion' by the association in 2023. In addition, we follow the global management system standard, ISO 26000, which embodies principles and requirements for corporate social responsibility, and participated in the Carbon Disclosure Project (CDP), which evaluates corporate responses to climate change.

Moreover, our efforts to enhance sustainability have been recognized internationally, leading to the inclusion in the "DJSI World" index of the Dow Jones Sustainability Indices (DJSI) assessment for six consecutive years since 2021. We also achieved inclusion in both the "DJSI Asia Pacific" index for the 15th consecutive year, "DJSI Korea" index for the 5th consecutive year and are maintaining an excellent grade of A in the evaluation of Korea Institute of Corporate Governance and Sustainability (KCGS).

Issuing Authority	Hyundai Steel Co., Ltd. (https://www.hyundai-steel.com/en/index.hds)
Issue Date	July 2024
Planning/Design	Hyundai Steel, Samjong KPMG, R&I
Contact us	Sustainability Management Team, Hyundai Steel (sustainable@hyundai-steel.com)

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1.1.6 Contributed by

Supervision

Cheul-hong Jang
Business Management Group,
General Manager

Hyung-chang Kim
Sustainability Management Team,
Team Leader

Ga-yun Kim
Sustainability Management Team,
Senior Manager

Dae-hyun Seo
Sustainability Management Team,
Senior Manager

Jung-ae Yoon
Sustainability Management Team,
Senior Manager

Seung-ju Lee
Sustainability Management Team,
Manager

Young-dong Cha
Sustainability Management Team,
Senior Manager

Environment

Hyun-ki Ko
Environment & Energy Planning Team,
Senior Manager

Jin-seong Kim
Air Conservation Team,
Senior Manager

Bom Shin
Carbon Neutrality Planning Team,
Senior Manager

An-jae Ok
Energy Engineering Team,
Senior Manager

Jun-ho Woo
Water Facilities Team,
Senior Manager

Yeong-hwan Lee
Resource Recycling Team,
Senior Manager

Je-shin Lee
Environment & Energy Research Team,
Senior Researcher

Hye-in Jeong
Water Conservation Team,
Manager

Bo-bae Hwang
Carbon Policy Cooperation Team,
Manager

Social

Tae-ho Ahn
Sustainability Management Team,
Manager

Seon-ji Oh
Human Talent Management Team,
Manager

Hyun-sik Oh
Safety Policy Team,
Manager

Jong-yoon Lee
Talent Growth Design Team,
Senior Manager

Chang-hyun Cho
Human Talent Support Team,
Senior Manager

Governance/Economy

Dong-hwan Kim
Information Security Operation Team,
Senior Manager

Hye-ji Lyu
Procurement Planning Team,
Manager

Tae-kwang Aum
Business Management Team,
Senior Manager

Hong-seok Yang
Tax Team,
Manager

Hyun-soo Yoon
Compliance Team,
Manager

Jin-young Jang
R&D Strategy Management Team,
Senior Researcher

Sang-woo Han
IR Team,
Manager

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1.2 CEO Message

Greetings, this is Gang-hyun Seo,
CEO and President, Hyundai Steel

Hyundai Steel is making changes by taking a step towards a future for everyone and a sustainable path every year, thanks to the interest and encouragement of our stakeholders. We intend to present our change progress in the 2024 Integrated Report "Beyond Steel." We sincerely hope this report provides our stakeholders a valuable opportunity to understand the company's key issues and achievements in sustainable management.

Recent laws and regulations such as Carbon Border Adjustment Mechanism (CBAM) and Corporate Sustainability Due Diligence

We Do in Sustainable H-ways

We Do in Sustainable H-ways

Directive (CSDDD) increasingly specify demands on corporate social responsibility. The significance of high-level expertise in addressing environmental and ecosystem issues is coming to the forefront, alongside various social criteria containing human rights protection and supply chain management. In the current fluctuations of the business environment, we are well aware that our stakeholders are paying more attention to the sustainable development potential of companies, seeking substantial and objective outcomes rather than short-term performance. In response to our stakeholders' expectations, we are eagerly pursuing various initiatives to generate sustainable values to create opportunities for development and growth.

Hyundai Steel has announced the "2050 Hyundai Steel Net Zero Roadmap" last year and has been researching low-carbon production system solutions to actively address the global challenge of climate change response and contribute to the national GHG reduction goals. Research on the "electric arc furnace-blast furnace combined process" to reduce carbon emissions, as well as the development of a low-carbon raw material supply chain for factory operations, is currently underway. Additionally, leveraging our extensive business management expertise, improving our business structure, and focusing on new steel grade development based on our strengths, we are building a solid foundation for sustainable development. Our efforts have yielded positive results, thanks to the dedication of our employees across teams and departments, despite challenges such as geopolitical uncertainties in the global business environment.

Hyundai Steel will continue to strengthen our sustainable business competitiveness this year by establishing a stable business foundation, enhanced implementation of the carbon neutrality roadmap, and securing future growth momentum.

Most importantly, our sustainable management system will be constantly aligned with the evolving societal values, ensuring that sustainability spreads throughout the business ecosystem of Hyundai Steel, including our joint ventures and supply chains. As a first step, we will start by supporting our domestic and international subsidiaries in establishing and managing sustainable management systems, building on the sustainable management achievements and experiences Hyundai Steel has accumulated. Since last year, some of our subsidiaries have already established and operated sustainable management organizations, focusing on enhancing their sustainability capabilities in core areas such as ESG policy establishment, indicator assessment, and improvement.

The countless challenges Hyundai Steel has faced over the past 70 years since its foundation has been the cornerstone of our competitiveness. This year as well, despite various issues we might face due to the challenging business environment, our employees will overcome the challenges, protecting the principles and fundamentals of sustainable management, transcending them as the starting point for another 70 years of history to come.

Your affection and interest are the core momentum for Hyundai Steel's pursuit of sustainable development and future realization. We ask for your sincere encouragement and support, and I will also listen carefully to the opinions of all stakeholders.

Thank you.

Gang-hyun Seo
CEO and President, Hyundai Steel

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1.3 Global Network

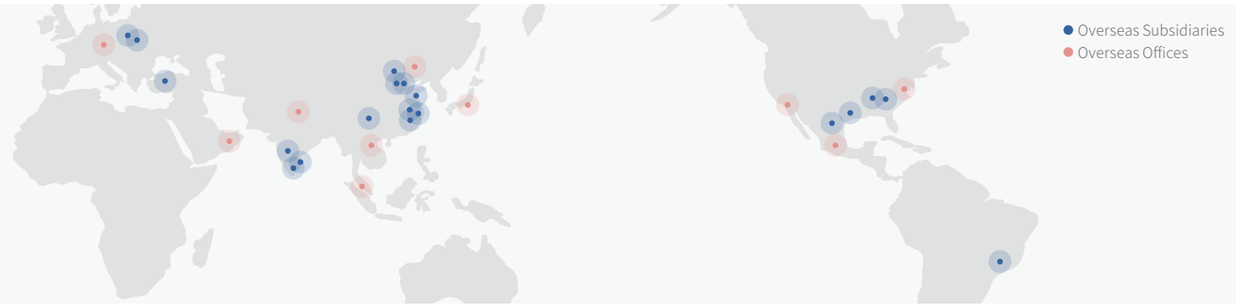
Hyundai Steel is at the forefront of driving the modernization of the steel industry by creating new possibilities and values of steel, contributing to the national economic development. We have grown into a global steelmaker with various product portfolio that includes reinforcing bars, sections, hot rolled sheets/coils, cold rolled sheets/coils, plates, special steel, and automotive parts. With the completion of the resource circulation model spans from electric arc furnaces to blast furnaces, we are creating greater sustainable corporate value together with our customers and society. In Korea, our offices include Pangyo Office (Bundangnaegok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do), the Incheon Works (Jungbongdae-ro Dong-gu, Incheon Metropolitan City), the Pohang Works (Donghaean-ro, Nam-gu, Pohang City, Gyeonsangbuk-do), the Dangjin Integrated Steelworks (Bukbusaneopno, Songak-eup, Dangjin City, Chungcheongnam-do), and the Suncheon Works (Indeok-no, Haeryong-myeon, Suncheon City, Jeollanam-do), and our headquarters is in Jungbongdae-ro Dong-gu, Incheon Metropolitan City. Globally, we have 19 overseas subsidiaries and 10 offices in 14 major countries, including the United States, China, and India. The overseas subsidiaries and offices located in various parts of the world serve as bridgeheads for Hyundai's global business.

OVERSEAS NETWORK (based on: 2023 Business Report)

Overseas Business Sites
19 subsidiaries and 10 offices in 14 countries

Revenue (Consolidated)
KRW 25,914.8 billion

Operating Profit (Consolidated)
KRW 798.3 billion



Overseas Subsidiaries				
Area		Name	Key Business	Headcount[1]
China	Tianjin	Tianjin HSCN, Hyundai Steel Investment Co., Ltd.	Overseas Steel Service Center and Investment Support	3/8 (8/0)
	Beijing	Beijing HSBJ, Hyundai Steel Beijing Process Co., Ltd.	Overseas Steel Service Center	0/1 (1/0)
	Tianjin	Tianjin HSTJ, Hyundai Steel Tianjin Co.,Ltd.	Overseas Steel Service Center	5/97 (45/52)
	Jiangsu	Jiangsu HSJS, Hyundai Steel Jiangsu Process Co., Ltd.	Overseas Steel Service Center	4/74 (34/40)
	Suzhou	Suzhou HSSZ, Hyundai Steel Suzhou Process Co., Ltd.	Overseas Steel Service Center	3/19 (19/0)
	Chongqing	Chongqing HSCQ, Hyundai Steel Chongqing Co., Ltd.	Overseas Steel Service Center	1/5 (5/0)
	Qingdao	Qingdao HSMC, Qingdao Hyundai Machinery Co.,Ltd.	Excavator (continuous track) Manufacturing and Sales	4/95 (23/72)
India	Chennai	Chennai HSCH, Hyundai Steel India Private, Ltd.	Overseas Steel Service Center	4/49 (35/14)
	Anantapur	Anantapur HSAN, Hyundai Steel Anantapur Private, Ltd.	Overseas Steel Service Center	4/59 (40/19)
	Chennai	Chennai HSPI[2], Hyundai Steel Pipe India Private, Ltd.	Steel Pipe Sales	4/173 (106/67)

Overseas Subsidiaries				
Area		Name	Key Business	Headcount[1]
Europe	Czech	Czech HSCZ, Hyundai Steel Czech s.r.o.	Overseas Steel Service Center	5/63 (27/36)
	Slovakia	Slovakia HSSK, Hyundai Steel Slovakia s.r.o.	Overseas Steel Service Center	3/62 (26/36)
	Rissoa	Russia HSRU, Hyundai Steel Rus LLC	Overseas Steel Service Center	3/26 (12/14)
	Turkey	Turkey HSTR, Hyundai Steel TR Automotive Steel Parts Co., Ltd.	Overseas Steel Service Center	3/68 (24/44)
USA	Alabama	Alabama HSAL, Hyundai Steel America, Inc.	Overseas Steel Service Center	5/115 (34/81)
	Georgia	Georgia HSGA, Hyundai Steel Georgia, Inc.	Overseas Steel Service Center	4/4 (4/0)
	Houston	Houston HSSA[2], Hyundai Steel USA, Inc.	Steel Products Sales	4/6 (6/0)
South America	Mexico	Mexico HSMX, Hyundai Steel Mexico S de R. L. de C. V	Overseas Steel Service Center	4/79 (27/52)
	Brazil	Brazil HSBR, Hyundai Steel Industry and Trade Brazil LLC	Overseas Steel Service Center	4/45 (19/26)

Overseas Offices	
Area	Name
China	Hyundai Steel Beijing Office
USA	Hyundai Steel L.A. Office
USA	Hyundai Steel Company Washington DC LLC Office
India	Hyundai Steel New Delhi Office
Germany	Hyundai Steel Frankfurt Office
Mexico	Hyundai Steel Mexico City Office
Japan	Hyundai Steel Company Tokyo Branch
UAE	Hyundai Steel Dubai Office
Singapore	Hyundai Steel Company Singapore Branch
Vietnam	Hyundai Steel Hanoi Office

1) Headcount: Expatriate/Local employees (Management positions / Technical positions)
2) Changes to subsidiary of Hyundai Steelpipe (subsidiary of Hyundai Steel) from 2024

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1.4 Business Model

Under our vision of "Engineering the Value Beyond Steel," Hyundai Steel is committed to engaging in meaningful communication with various stakeholders, including customers, shareholders, employees, suppliers, and local communities, and generating new values from a different approach beyond traditional approaches.

INPUT

Financial Capital[1)]

Total asset	KRW 35,218.8 billion
Total debt	KRW 15,722.8 billion
Total capital	KRW 19,496 billion

Productive Capital[2)]

Key raw materials cost	KRW 10,677.1 billion
Production capacity	21,840 thousand tonnes

Human Capital[3)]

Number of employees	11,835
Training hours	464,476 hours
Investment in education	KRW 6.5 billion

Intellectual Capital[4)]

R&D investment	KRW 254 billion
R&D investment to sales ratio	1.0%

Environmental Capital[5)]

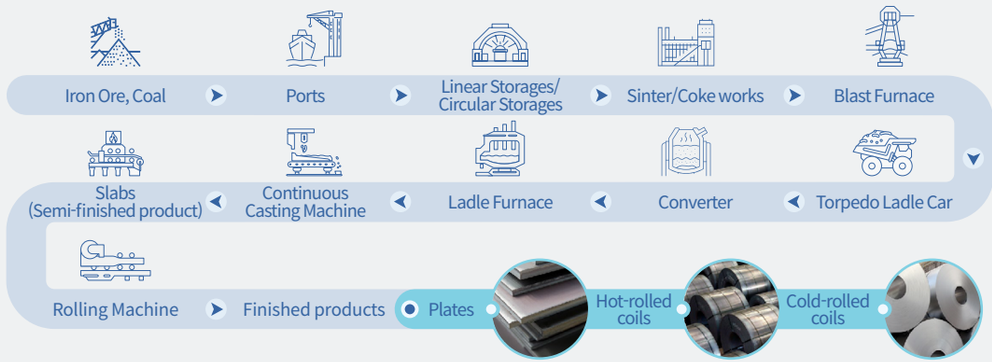
Energy consumption	167,803 TJ
Environmental management	KRW 420 billion
Environmental investment	KRW 143.8 billion

Social Capital[6)]

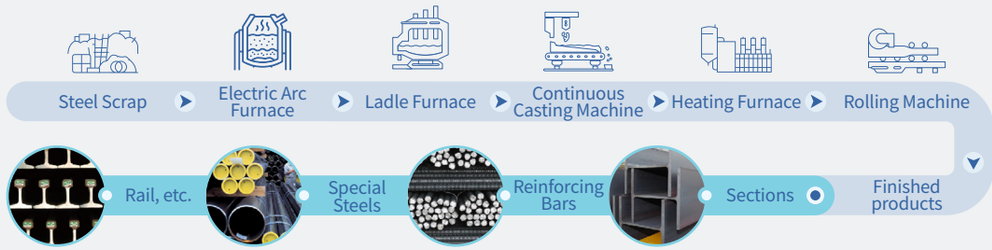
Social contribution	KRW 17.1 billion
Support for win-win growth	KRW 88.5 billion

VALUE CHAIN

Integrated Steelworks Processing



Electric Arc Furnace Processing



OUTPUT

Financial Capital

Sales revenue	KRW 25,914.8 billion
Operating income	KRW 798.3 billion
Net income	KRW 443 billion

Productive Capital

Production volume	20,493 thousand tonnes
Sales volume	20,626 thousand tonnes

Human Capital

Employee engagement	65.4 points
Female employee ratio	4.0%
Employee productivity	1,732 tonnes/persons

Intellectual Capital

Number of patents owned	2,003
Number of trademark rights owned	647

Environmental Capital

GHG emissions[7)]	29,269 thousand tCO_2e
By-product recycling rate	99.2%
Environmental recovery cost	KRW 221.1 billion

Social Capital

Startup support cost	KRW 6.2 billion
Number of suppliers	539

1) Financial Capital: capital raised through financing, operation or investment to manufacture products or provide services.
2) Productive Capital: raw materials, production facilities, infrastructure, etc. necessary for manufacturing products or providing services
3) Human Capital: people's capabilities, abilities, experiences, commitment to innovation, loyalty, etc.
4) Intellectual Capital: intellectual property such as patents and copyrights and systems, which are knowledge-based intangible assets
5) Environmental Capital: all environmental resources, either renewable or non-renewable, and processes for manufacturing products or providing services
6) Social Capital: relationships with local communities and stakeholders, and institutions and activities to promote the welfare of individuals and groups
7) Total of Scope 1 and 2 emissions

Business model: Adapted from the business model in the International IR Framework, published by the International Integrated Reporting Council (IIRC) in 2013. Hyundai Steel does not own any mines, and none are currently under consideration for development.

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1.5 ESG Strategy System

1.5.1 Mid-to Long-term Sustainability Management Strategies

In 2022, Hyundai Steel revamped its mid-to long-term strategic system for sustainability management and established specific directions for action. Under the slogan "We Do in Sustainable H-ways for the Future of All," we announced our commitment to pursuing sustainability and outlined the direction of behavioral change, and unveiled H-ways (Heritage, Humanity, Harmony) as Hyundai Steel's three action directions for realizing our mission. In essence, with the company's goals to implement green management to protect and preserve our "natural heritage (Heritage)," win-win management that respects "human" and centers around the "people" who are the foundation of our business operations (Humanity), and right management for "harmonious growth" that benefits everyone (Harmony), Hyundai Steel will continuously strive to enhance the value of the environment and all stakeholders, including customers, shareholders, and local communities, as well as make a sustainable company and a sustainable society.

1.5.2 Six Sustainable Management Strategic Areas and Strategic Initiatives

Hyundai Steel has identified six key areas in ESG-related items for sustainability management and established mid-to-long-term goals for each area. To realize Net-Zero, we are promoting product decarbonization and process Net-Zero in phases, and we plan to continue our efforts to reduce environmental impacts together with contemplating various activities to protect environmental capital including biodiversity. We strive to create a safe workplace where all workers' human rights and safety are protected, and we are continuously putting efforts in developing local communities and creating social value with our stakeholders. Furthermore, we strive for balanced growth by enhancing the overall soundness and transparency of our management and promoting sustainability throughout the entire value chain, including customers and suppliers. Each year, we define and implement strategic initiatives for each ESG area to achieve the ESG goals. In 2023, we completed a total of 15 initiatives, and in 2024, we are undertaking 9 initiatives.

ESG Slogan

We Do in Sustainable H-ways

	Heritage		Humanity		Harmony	
3 Directions	Protect the natural environment for future generations, Pursue a sustainable resource circular economy		Establish a win-win culture that centers around and respects people, Implement social leadership		Create a healthy management ecosystem, Promote harmonious growth	
6 Strategic Areas	**Carbon Neutrality**	**Circular Ecosystem**	**Good Workplace**	**Sustainable Community**	**Responsible Business**	**Balanced Growth**
	Hyundai Steel is actively committed to implementing GHG reduction measures through the transition to a low-carbon steel production system to realize a Net-Zero society.	Hyundai Steel will pursue sustainable development to leave behind a clean natural environment for future generations.	Hyundai Steel is committed to promoting safety, health, and human rights so that all workers can pursue a happy life and work healthily and comfortably	Hyundai Steel will cooperate with stakeholders to develop local communities and generate social value.	Hyundai Steel will fulfill its responsibility for sustainable management by enhancing the overall soundness and transparency in our management.	Hyundai Steel will strive for sustainability throughout our entire value chain and establish a thriving industrial ecosystem.
	• Achieving decarbonization of products: Timely supply net-zero products to support customers in achieving their Net-Zero goals (by 2050) • Achieving process Net-Zero: Promote company-wide carbon emission reduction in line with the Korean NDC targets (Net-Zero in 2050)	• Reducing environmental impact: Reduce air pollutants (NOx) to 50% or less compared to the total allowable emissions of 2020 (by 2025) • Protecting natural ecosystems: Establish and implement plans to promote and preserve biodiversity and forest (by 2025)	• Establishing a safe workplace: Elevate the level of safety culture (Stage 3), implement a smart safety factory, and apply the safety and health management system 100% (by 2025) • Strengthening human rights: Address vulnerable areas of human rights and implement mid- to long-term human rights improvement programs (by 2025)	• Maximizing the creation of social values: Promote social contributions by engaging with local communities and creating values (by 2025)	• Board: Expand the representation of industry experts and gender diversity (30% or more, by 2027) • Strengthening compliance and ethical management: Obtain a compliance management system (ISO 37301) certification (by 2027)	• Strengthening supply chain ESG assessment and management: Identify suppliers with substantial negative impact, manage 100% of the associated risk, and incorporate them into procurement management policies (by 2025)
2023 Strategic Initiatives	Environment: 3 initiatives		Social: 6 initiatives		Governance: 6 initiatives	

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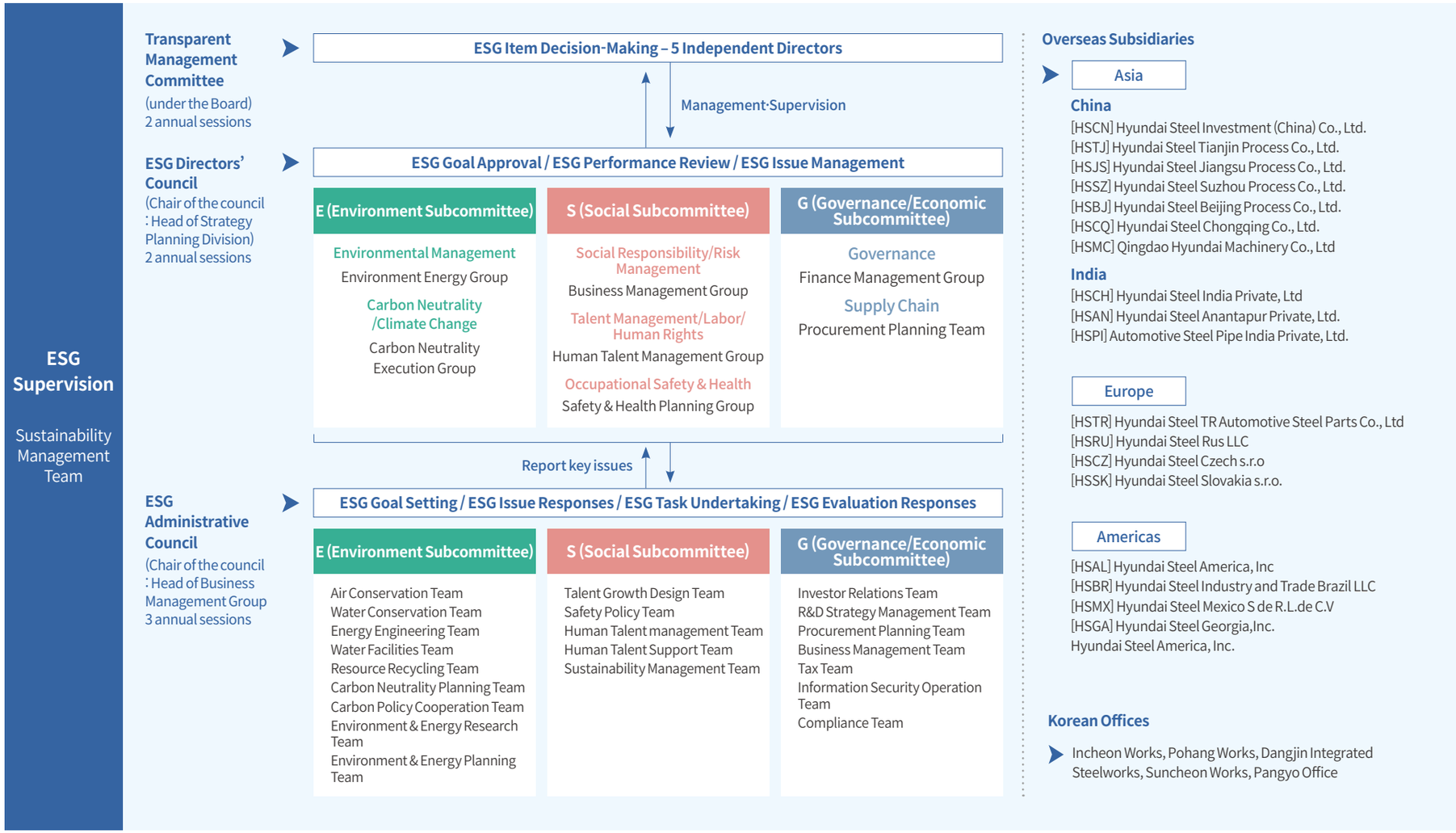
1.5.3 ESG Governance System

Hyundai Steel establishes goals and strategic initiatives for key ESG items and monitors their progress through our ESG governance that leads to the ESG Administrative Council, ESG Directors' Council, and the Board of Directors (Transparent Management Committee). To ensure the internalization of sustainable management and the responsible implementation of initiatives, we have made it mandatory for at least 5% of the sustainability management goals to be included in management performance evaluations. We clearly define the roles and responsibilities of the entire organization for sustainable management and have mandated the setting of performance targets for team leaders and members within ESG-related teams to foster a company-wide sense of responsibility for ESG management performance.



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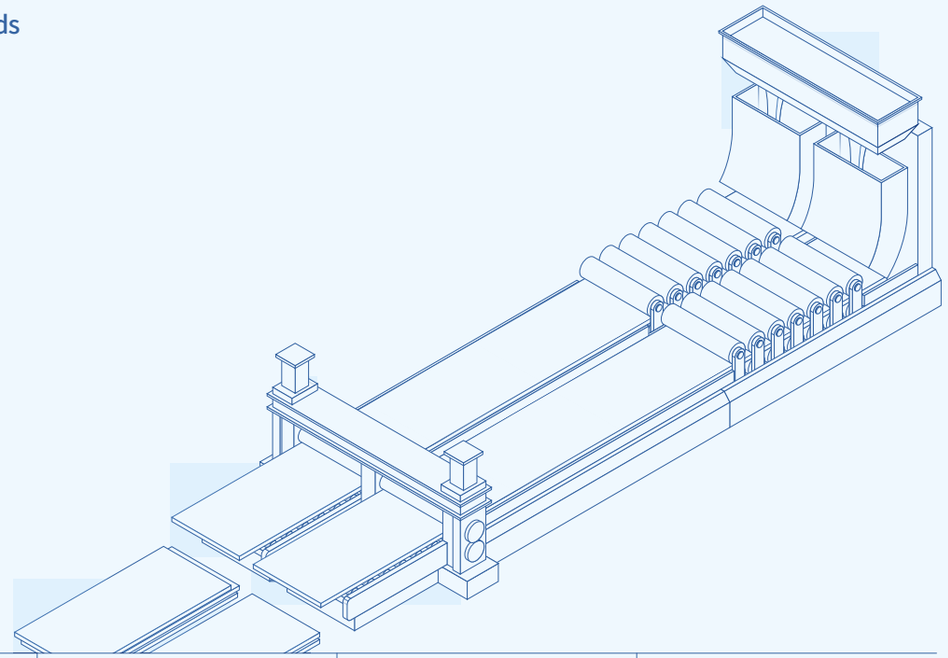
Phone: +82-31-510-2114
E-mail: sustainable@hyundai-steel.com
Website: https://www.hyundai-steel.com

Material Topic

Hyundai Steel will improve the value of various stakeholders, including customers, shareholders, and local communities, and create a sustainable company and society by reflecting domestic and overseas sustainability trends and stakeholder requirements.



12 **2.1** Double Materiality Assessment

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2.1 Double Materiality Assessment

Hyundai Steel conducts a materiality assessment annually to identify key issues for promoting sustainable management and incorporates them to management purposes. A pool of 27 issues were identified by synthesizing the company's ESG risks and the unique considerations of the steel industry, and five key issues are selected through external/internal discussions and confirmation with Management. We have secured assurance and credibility of the process and results through independent third-party verification and are incorporated into our Integrated Reports for disclosure.

2.1.1 Materiality Assessment Process

Process	Purpose and Activities	Detailed Procedures and Matters to Be Reviewed
STEP 1 **Understanding the Business Context**	Understanding the context of the company's business practices, business relations, stakeholders, and sustainability to identify significant actual and potential impacts of sustainability.	• General business practices: Mission, Business model/strategy. Product and service, Location, Types of workers • Business relations: Major business types, Customer and supply chain characteristics • Sustainability Context: Economic, environmental, societal issues, laws and regulations related to industry, activities and location.
STEP 2 **Identifying a Pool of ESG Issues**	Identifying a pool of ESG Issues reflecting the company and industry characteristics and stakeholder demands considering the actual and potential impacts.	• Global Standards: Analysis of international standards (GRI, ESRS, SASB, ISSB) and ESG assessment standards (MSCI, DJSI, KCGS) • Media Issues: Analysis of 1,691 ESG-related articles from 91 news sources • Industry Issues: Analysis of ESG issues of domestic and international industry peers • Corporate Business Strategy: Analysis of internal ESG management data, including sustainable management strategies and key focus areas
STEP 3 **Materiality Assessment**	Interviewing on external and internal experts with thorough understanding of Hyundai Steel and ESG, stakeholder survey and materiality assessment on impact and finance.	**Impact Materiality** • Major global issue: Analysis of standards and assessment indicators (ESRS, GRI, UN SDGs, ILO, KCGS, DJSI) • Industry characteristics: Material issues idenfied by 6 international and domestic industry peers • Media exposure: ESG-related articles on the company and steel (total of 1,691 articles) • Alignment with corporate strategy: Corporate strategic initiatives, KPI, etc. • Stakeholder interest: Survey results from 143 stakeholders including employees, customers, suppliers, etc. **Financial Materiality** • Inventor interest: Material issues relevant to key investors and customers. • Industry regulation status: ESG-related regulations and policies affecting the industry • Major global issue: Analysis of standards and assessment indicators (ISSB, SASB, MSCI, ESRS, KCGS) • Internal stakeholder finance impact assessment (in-depth interview): impact possibility, potential scale, etc.
STEP 4 **Prioritization of Key issues**	Prioritizing issues by materiality assessment, Selection of 5 key issues.	• Quantitative analysis of double materiality assessment results (impacts and finance) • Analysis of mid-to-long-term goals, management directions, and implementation performance
STEP 5 **Highest Decision-Making Body Report**	Reporting and confirming the finalization of 5 key issues through sustainability highest decision-making body	• Report to and final approval from the Board

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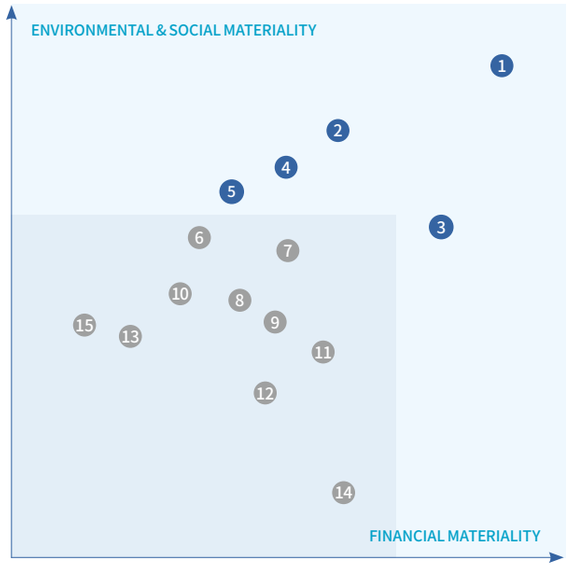
2.1.2 Materiality Assessment Result

As a result of the materiality assessment, we have concluded with five key issues:climate change response, occupational safety and health, supply chain management, pollutants management, compliance and ethical management. Considering environmental and social impact (impact materiality), we identified occupational safety and health, climate change response, human rights management, supply chain management, energy management. From the financial impact perspectives (financial materiality), identified key issues include climate change response, occupational safety and health, supply chain management, compliance management, pollutants management. This year, climate change response issue has replaced occupational safety and health as the top priority and pollutants management has been newly added. These key issues are reported to the Board and disclosed in this report.

2024 Results of Materiality Assessment



Cate-gory	Priority	Issue	Nature of Issues		Impact Timing		Financial impact		Stakeholders	Financial Materi-ality	Environmental & Social Materiality	Related GRI	Page
			Nega-tive	Posi-tive	Actual	Poten-tial	Threat	Opportu-nity					
Climate change	1	Climate change response	●	-	-	●	●	-	investors, Suppliers, Local community, Customers	1	2	GRI 302 GRI 305	p.18-29
Business sites	2	Occupational safety and health	●	-	●	●	●	●	Employees, Suppliers, Local community, Government	2	1	GRI 403	p.30-37
Supplier	3	Supply chain management	-	●	●	-	●	-	Investor, Suppliers, Customers	3	4	GRI 308 GRI 414	p.38-43
Pollutants	4	Pollutants management	●	-	●	-	●	-	Investors, Local community, Government	5	6	GRI 305 GRI 306	p.44-51
Corporate management	5	Compliance and ethical management	●	-	●	-	●	-	Investors, Employees, Suppliers, Local community, Government, Customers	4	8	GRI 205 GRI 206	p.52-56
Human rights	6	Human rights management	-	●	-	●	●	-	Employees, Suppliers, Local community, Government	11	3	-	p.70-73
Energy	7	Energy management	-	●	●	●	●	●	Suppliers, Local community, Government, Customers	9	5	-	p.62-63
Risk management	8	Risk management	●	-	●	●	●	-	Investors, Employees, Local community	10	9	-	p.98-101
Employees	9	Diversity and inclusivity	●	-	●	●	-	●	Investors, Employees, Local community	20	7	-	p.75
Water	10	Water management	●	-	●	-	●	●	Investors, Local community, Government	8	17	-	p.26-28
Circular economy	11	Resource circulation economy activities	-	●	●	●	-	●	Employees, Suppliers, Government	6	20	-	p.48-50
Employees	12	Labor-management relations	●	-	●	●	●	-	Employees, Suppliers, Government	16	10	-	p.80
Quality management	13	Quality and productivity	-	●	●	-	●	●	Investors, Employees, Suppliers, Customers	14	14	-	p.95-97
Environment management	14	Environment management system	-	●	●	-	●	●	Investors, Suppliers, Local community, Customers	15	13	-	p.59-61
Tax	15	Tax transparency	●	-	●	-	●	-	Investors, Government	7	25	-	p.104

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2.1.3 Management of Material Issues

2.1.3.1 Material Issues for External Stakeholders

No	Material issues	Analysis of material issues for external stakeholders					
		Value chain (Impact scope, %)	Stakeholder	Impact type	Relevance and importance to external stakeholders	Output metric	Impact metric
1	Climate change response	Hyundai Steel operations, suppliers, products and services (100%)	Environment	Positive/ Negative (neutral)	• Realization of carbon emission reduction plans by regularly inspecting carbon neutrality direction and implementation plans through identification of global carbon neutrality trends and management of internal issues in 'Carbon Neutrality Strategic Meeting'. • Minimization of carbon emissions in all business sites by continuously reducing carbon emissions in production process through production carbon neutrality strategy, production transition to electric arc furnace-blast furnace combined process and development of the new electric arc furnace. • Contribute to customer's low-carbon production by manufacturing carbon-reduced steel from the advancement of Hy-Cube, Hyundai Steel's own technology for low-carbon product production. • Not reducing carbon emissions can impact climate change, leading to possibilities of biodiversity reduction and ecoregion escapes due to ecosystem destruction.	• GHG emission • Net-zero production system transition investment • Completion rate of biodiversity/deforestation trainings for ESG personnel	Social cost of carbon
2	Occupational safety and health	Hyundai Steel operations, suppliers (100%)	Employees, suppliers	Positive/ Negative (Neutral)	• Offering various supports based on an integrated safety management system, including financial assistance for hiring safety personnel, provision of safety education, reinforcing management, and construction of rest and sanitation facilities to enhance supplier safety and health infrastructure. • Operating various internal and external medical facilities for the health care of employees, ensuring they have access to medical treatment at any time, and affiliating with professional medical institutes for employee health enhancement. • Adverse impacts such as disasters can be present due to the high temperatures, high pressures, toxic gases, and production of heavy products	• Health and safety training completion rate • LTIFR (Lost Time Injury Frequency Rate) • Ratio of offices with an ISO 45001 certification, Safety, and Health Management System Certification	A change in Health Status and Wellbeing - physical, mental, social, and spiritual wellbeing
3	Supply chain management	Hyundai Steel operations and suppliers (100%)	Suppliers	Positive	• Establishment of a stable partnership based on an integrated supply chain management system and the three foundational principles of "Fair Trade Compliance, Reinforced Foundation of Partnership, and Communication with Suppliers" • Expanded support on strengthening management competitiveness, funding projects for win-win partnerships, and a smart working environment for establishing organic and win-win partnerships with suppliers. • Providing ESG management training including compliance management, human rights management, environmental management, safety management, data security, supply chain management, etc. for suppliers to strengthen their understanding of ESG and transparent ethical management capability and to support suppliers in securing sustainable competitiveness	• Percentage of suppliers received ESG assessment • Inspection of suppliers with substantial negative impact for improvement • Completion rate of ESG training for procurement managers	Social & Human Capital Protocol
4	Pollutants management	Products and services (100%)	Local communities	Positive/ Negative (Neutral)	• Contributed to identifying and reducing local fine dust status through smoke checks on vehicles and pollution status inspection and surveillance on ports and hinterlands in collaboration with government offices in Dangjin area. • Monitors the real-time distribution status of chemicals and actively engages with the chemical safety community and peers in the local community to continuously advance chemical substance management practices to prevent negative issues. • Contribute to the local community development by establishing a circular economy of byproducts by promoting by-products as resources (asphalt concrete, slag aggregate, etc.) in road pavements and infrastructure construction material with local government. • There is possibility of local community environment risk and social disposal cost when pollutant emission reduction and by-products as resources are not appropriately carried out.	• Wastes treatment amount • Air/water pollutant emission amount • Environmental management systems certificate (ISO 14001) rate	Social cost of pollutant
5	Compliance and ethical management	Hyundai Steel operations and suppliers (100%)	Suppliers, Customers	Positive	• The Ethics Code of Conduct was announced based on the Hyundai Steel Five Guiding Principles of Ethics Charter to establish and maintain fair and transparent stakeholder relationships by suggesting the behavioral standards to abide by in business measures/transactions. • Annual CEO message is published to express compliance management intention and improve stakeholder trust by leading compliance management stabilization of subsidiaries and suppliers	• Human rights·compliance training • Ethical management pledge sign rate • Operation of internal compliance control system	Business for Social Impact

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2.1.3.2 Material Issues for Corporate Value Creation (Risk/Opportunity)

No	Material Issues	Analysis of material issues for corporate value creation				
		Material risk or opportunity	Business case	Business impact	Issue impact type	Business strategy (Response directions)
1	Climate change response	• Production and supply chain impacts from rising temperatures and natural disasters due to climate change • Increased demand for earthquake-resistant product lines and carbon emission reduced steel	• Strengthened climate change regulations and increased operating costs by purchasing emission rights • Decreased product price competitiveness resulting from rising energy prices • Needs to develop future-demanded steel in response to the climate change	• Cost • Revenue • Risk	Future	By establishing the 2050 Mid- to Long-term Net-zero Roadmap, we aim to achieve net-zero carbon emissions by 2050 through product decarbonization and carbon-neutral production in the steelmaking process. Our mid- to long-term net-zero strategy and direction are in line with the Nationally Determined Contribution (NDC), and we are implementing detailed action plans by setting phased reduction targets. Accordingly, we are promoting the transition of our production system and new product development
2	Occupational safety and health	• Tightening domestic and international safety requirements and increased demand on social contribution • Potential for increased scale and frequency of industrial accidents • Securing safety management capabilities through collaborations such as establishment of the Foundation for Industrial Safety Partnership	• Increased liability for penalties and damages in the event of a major industrial or civil accident with the implementation of the SERIOUS ACCIDENTS PUNISHMENT ACT • Needs for enhanced safety culture establishment and awareness improvement activities	• Cost • Risk	Present	To enhance our safety and health system, we are actively implementing integrated management system based safety activities and encouraging participation of engineers in these activities. We have integrated risk assessment practices to establish a preventive safety system that places a strong emphasis on risk assessment, and we are conducting labor-management safety and health community activities and facilitating "safety workshops" that enable on-site participation. Furthermore, we are delivering employee training and collaborations with outside professional organizations and expanding our exchanges with domestic and international operations with excellent safety and health levels to strengthen our overall safety and health capabilities
3	Supply chain management	• Possible expansion of supplier ESG issues to customers and investor related risks • Securing a stable supply chain, sustainability across the value chain, and establishing a competitive steel ecosystem through enhanced supplier management	• Increased demands for supply chain ESG management status disclosure of government, customers, and investors such as EU's corporate sustainability due diligence in supply chains • Increased administrative costs due to supplier ESG assessments, on-site due diligence, consulting and support	• Cost • Risk	Present	We are building a sustainable value chain by establishing a supplier management system and policies. Each year, we conduct an ESG assessments of our suppliers to identify potential risks and conduct on-site inspections of high-risk groups to improve 100% of the identified risk factors. In addition, to respond to new regulations such as the EU's Supply Chain Due Diligence Act, we are strengthening risk management by expanding the number of suppliers to be assessed and assessment items compared to the previous year
4	Pollutants management	• Local community environmental issue breakages due to lack of pollutant-discharging management • Circular economy system establishment and new market entrance by developing By-products and repurposing products	• Increased investments and operational costs on environmental impact reducing facilities to meet the internal standards that are more stringent than legal requirements • Increased demand on environmental impact minimalization of operation located local community and communication	• Cost • Revenue • Risk	Present	We are managing pollutant discharges by material/factory types with internal standards that are more stringent than legal requirements. Specifically, we have installed multistage combustion and NOx reduced burners on multiple production facilities for nitrogen oxides reduction and introduced SCR, which is perceived to be the most effective and stable technology in nitrogen oxides reduction. Also, the new installation of a dust collection facility and enhancements on existing facilities have been carried out after the actual plant-level on-site assessment for effective fugitive dust reduction. We are expanding our local community communication and enhancing pollutant management capability through external initiatives, including a win-win environment forum and campaigns to reduce fine dust.
5	Compliance and ethical management	• Increasing social demands for compliance and ethical management and strengthening regulations. • Fostering an internal compliance culture by strengthening the compliance management system	• Fines and penalties on violations of regulations such as collusion, unfair support activities, and unfair trade practices • Expansion of compliance management boundaries on overall value chain including suppliers and customers	• Cost • Risk	Present	We established the compliance control system in the Compliance Management Committee - CP Council – Compliance PIC order and our CEO directly participates in inspecting and managing compliance control activities. We have revised the Compliance Control Standards and implemented the Compliance Support Regulations to clearly define the compliance control system and compliance control activities and established comprehensive work guidelines to assist departments in making well-informed decisions regarding compliance matters. In addition, we are enhancing compliance support activities such as preparing compliance work manuals, investigating and improving the risk of violations, and providing compliance education. This helps us minimize the risk of violating the law.

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2.1.3.3 Material Issues for Corporate Value Creation (Plan/Performance)

No	Material Issues	Analysis of material issues for corporate value creation			
		Mid- to long-term plan (target year)	Key performance	Related activities	KPI for management (tied to compensation)
1	Climate change response	• Reduce carbon emissions across all operations by 12 % compared to the 2018 level (2030) • Achieve Net-Zero (2050)	1. Establishment of a net-zero roadmap and investments in net-zero production system transition 2. Purchased amount of green certified products (GR certification, Eco-label certification, low-carbon products) : approximately KRW 3.9 Billion 3. Sales revenue of green certified products (GR certification, Eco-label certification, low-carbon products) :KRW 4,749.7 Billion 4. Obtained EPD certification for reinforcing bars, sections, hot-rolled products, and plates	2.2 Climate change response p.18	• Participation in the operation of the sustainability strategy - Support for ESG disclosure - Support for strengthening sustainable capabilities • Promotion of ESG strategy initiatives per issue * When evaluating management's performance, we include ESG-related items to enhance their sustainability capabilities, contributing to raising their awareness of responsibility for ESG management.
2	Occupational safety and health	• 5% decreased LTIFR (Lost Time Injury Frequency Rate) (2026) • Achieving Zero Industrial Injuries and Accidents (2050)	1. LTIFR (Lost Time Injury Frequency Rate) : 2020: 2.28%, 2021: 2.98%, 2022: 3.79%, 2023: 3.04% 2. Safety and Health Trainings completion rate 100% (Direct 100% / suppliers 100%) 3. Safety and Health Trainings completion rate 100% (Direct 100% / suppliers 100%) 4. Safety level assessment implemented when selecting construction suppliers	2.3 Occupational safety and health p.30	
3	Supply chain management	• Maintained the percentage of suppliers who received ESG assessment above 60% • Maintained the percentage of suppliers for ESG management improvement support above 5% (2025) • Maintained 100% inspection rate of high-risk suppliers for improvement	1. Percentage of suppliers received ESG assessment: 57% (408 suppliers) 2. Percentage of ESG management improvement supports for suppliers compared to the total number of suppliers: 4.1% (29 suppliers) 3. Completion rate of ESG training for procurement managers: 100% 4. 100% inspection rate of high-risk suppliers for improvement (40 suppliers undergoing improvement measures, 2 suppliers finished contract)	2.4 Supply chain management p.38	
4	Pollutants management	• Applying internal standards that are more stringent than legal standards by factory and substance • Pollutant emissions intensity below 80% of legal requirements by 2030	1. 80% or less compliance with legal limits for pollutant concentrations per factory and substance 2. Nitrogen Oxides (NOx) emissions: 2022: 8,760 tonnes, 2023: 8,646 tonnes 3. Sulfur Oxides (SOx) emissions: 2022: 8,760 tonnes, 2023: 5,877 tonnes 4. Suspended Solids (SS) emissions: 2022: 36 tonnes, 2023: 29 tonnes 5. Total Organic Carbon (TOC) emissions: 2022: 80 tonnes, 2023: 90 tonnes	2.5 Pollutants management p.44	
5	Compliance and ethical management	• 100% compliance and ethical management education attending rate (2025) • Maintain 100% ethical management pledge sign rate (2025) • Pre-risk management utilizing compliance a control system	1. Compliance and ethical management education (Fair trade, ethical management, FOREIGN CORRUPT PRACTICES ACT, etc.) : 2,290 individuals 2. Established and operated the Compliance Management Committee (semi-annually) and CP Council (quarterly) 3. Produced and distributed compliance business manual, checklist, awareness enhancement training materials (business secrets undisclosed) 4. 100 % ethical management pledge sign rate (office workers and researchers)	2.6 Compliance and ethical management p.52	

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2.1.3.4 Collecting Opinions from Stakeholders

The interests and requirements of internal and external stakeholders must be thoroughly reviewed for the corporate to proactively identify and manage the material issues and risks surrounding the company. Hyundai Steel operates various communication channels and programs to actively gather opinions from stakeholders who have significant impacts on our business operations. Through regular engagement with customers, shareholders and investors, suppliers, employees, local communities, and the government, we identify our stakeholders' key interests and concerns, and incorporate them into out overall business activities. Also, transparency and credibility of management practices Is strengthened by stakeholder participations.

Communication Channels by Stakeholder Collecting Feedback from Stakeholders

Stakeholders		Definition	Organization	Communication Channel	Key Issues	Communication Frequency
	Customers	Source of economic and corporate values	All Business Division	Meeting, technical seminar, customer satisfaction survey, customer portal site, homepage, newsletter	• Increase customer satisfaction • Expand customer communication • Protect information	Frequently
	Employees	Key members for sustainable growth	Business Management Division,	Intranet, Company newsletter, Future Board, Townhall meeting, education program, labor-management cooperation	• Foster engagement among employees • Human rights, Working environment grievance control • Improve employees' capabilities	Frequently
	Suppliers	Cooperative partners for win-win growth based on trust	Procurement & Logistics Group, All Business Divisions, Operations at home and abroad	Win-win growth agreement, meeting, purchasing system, technology exchange session, homepage, newsletter	• Operate supply chain management process • Supply chain ESG assessment and management • Advance win-win growth support activities	Quarterly, Frequently
	Shareholders and investors	Individuals and entities who provide the source of our business management through financial capital	Financial Management Division	General meeting of shareholders, performance presentation, NDR and Conferences, 1:1 meeting, Work-site visits, public announced document	• Improve Hyundai steel corporate value • Secure new growth engines • Transparent business status disclosure	Quarterly, Frequently
	Local communities	Local communities and members who interact with us through our business operations	Business Management Division, Strategy Planning Division, operations at home and abroad	Social contribution council for the local community, feedback discussion on CSR activities, homepage, the Integrated Report	• Support the socially disadvantaged and the vulnerable • Conduct CSR activities	Quarterly, Frequently
	NGOs, Government, Media	Individuals and entities who set direction for our organization to protect and engage in policy-making	Business Management Division, Strategy Planning Division, Operations at home and abroad	Home page, Integrated report, Operation visits, press release	• Respond to and expressing opinions in government policies • Managing corporate reputation • Create jobs	Frequently

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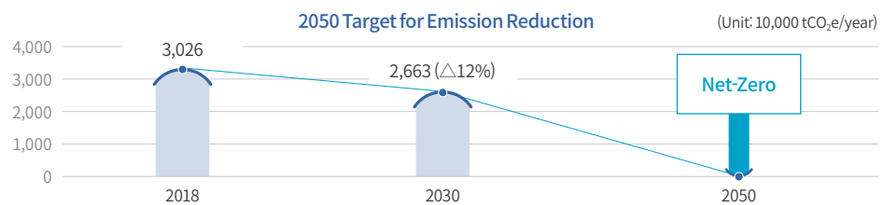
2.2 MATERIAL TOPIC 1 – Climate Change Response

2.2.1 Net-Zero Roadmap

2.2.1.1 2050 Net-Zero Roadmap

In April 2023, Hyundai Steel unveiled its 2050 Net-Zero Roadmap, demonstrating its commitment to the national GHG reduction target. Hyundai Steel aims to achieve net zero by 2050 through decarbonization of products and carbon reduction in the production process. To realize this goal, the company is driving innovation in the production system and transitioning to clean energy sources. With the advancement of Hy-Cube, Hyundai Steel's own technology for low-carbon product production, the company is preparing for the shift to eco-friendly steelworks by scaling up new electric arc furnaces and implementing Hydrogen-based DRI (direct reduction of iron) technology. the company plans to achieve a 12% reduction in carbon emissions across all operations compared to 2018 by setting an "electric arc furnace-blast furnace combined process" and taking various carbon reduction initiatives and by 2050, Hyundai Steel aims to achieve Net Zero by absorbing and offsetting residual emissions through measures such as emissions trading, carbon capture utilization and storage (CCUS), blue carbon[1], and afforestation[2], resulting in zero net emissions. Also, the company is currently going through a consulting process to establish a Net-Zero Roadmap in Scope 3 areas from the end of 2023 and is planning to set the goal by 2025 to complete the roadmap. The company is participating in the overseas renewable energy integrated procurement project of Hyundai Motors and will gradually implement the Net-Zero strategy starting from overseas business sites with good renewable energy procurement conditions. Georgia HSGA, Hyundai Steel Georgia, Inc. has signed a contract on March 2024 and is planning to procure reusable energy through VPPA (Virtual Power Purchase Agreement).

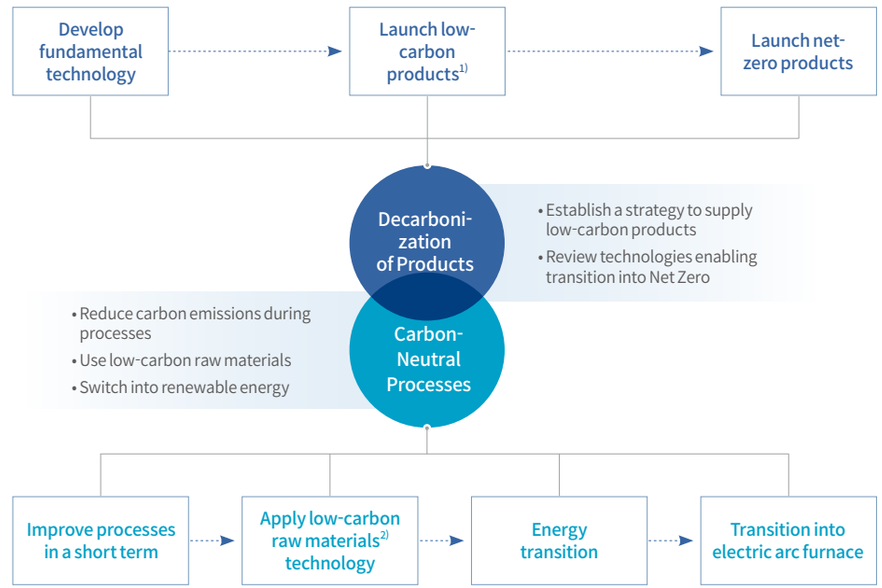


Short-to-mid-term	Long-term
Expand the supply of low-carbon products	**Transition to eco-friendly steelworks**
• Utilize existing electric arc furnaces and invest in new furnaces • Reduce carbon emissions by installing eco-friendly facility (CDQ) • Expand the use of low-carbon raw materials (e.g., low-carbon reduced iron, pellet)	• Develop technology and scale up for a new electric arc furnace • Apply hydrogen-based DRI technology • Gradually transition into cleaner energy (Expand the use of renewable energy)

1) Blue carbon: Carbon absorbed and stored by coastal and marine ecosystems
2) Afforestation: Creation of a forest by artificial means, such as planting or seeding trees

Strategic Direction for Net Zero

Hyundai Steel has implemented a Two track strategy to achieve Net Zero across all its operations. The first track focuses on product decarbonization, with the goal of developing low-carbon products and eventually introducing net-zero products. By supplying these to various customers and industries, Hyundai Steel aims to contribute to the overall achievement of Net Zero. The second track involves process carbon neutralization. Hyundai Steel is committed to reducing carbon emissions generated during its production processes. As part of this strategy, the company plans to transition to a new electric arc furnace process, which will significantly reduce carbon emissions to achieve the national GHG reduction target for 2030.



1) Low-carbon products: CFP (Carbon Footprint of Product) reduced product (approximately 20-40%)
2) Low-carbon raw materials: Materials that reduce carbon emissions in the production process (pellet, scrap, direct reduced iron, etc) compared to the traditional raw materials of blast furnaces (sintered light)

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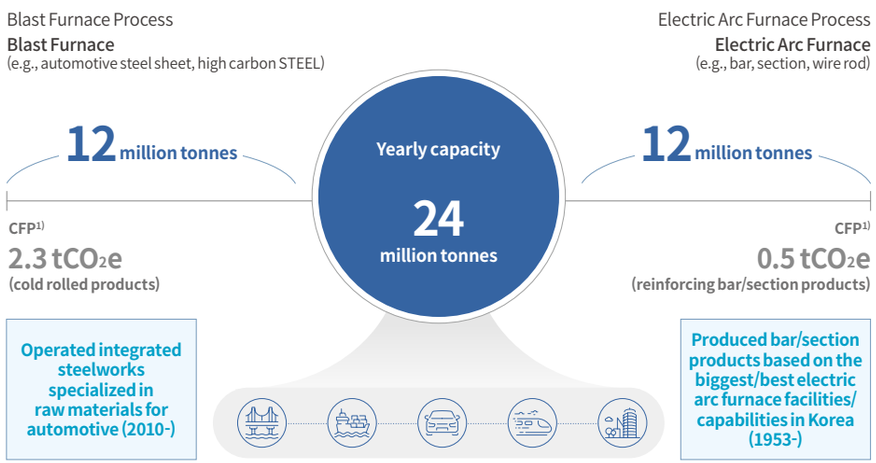
Competitiveness in Achieving Net-Zero

Hyundai Steel, a 70-year-old company with both electric arc and blast furnace facilities has a steel production capacity of 24 million tonnes. Especially, the electric arc furnace process offers advantages in reducing carbon emissions due to its process characteristics compared to the blast furnace. Hyundai Steel has been utilizing its electric arc furnace capacity to produce a diverse range of products, including steel bars, sections, and hot rolled sheets, even before the introduction of blast furnace operations. Additionally, in 2010, the company successfully entered the blast furnace integrated steelworks business and swiftly established itself as a global automotive steel sheet specialist in the short term. Leveraging the operating experience of both blast furnace and electric arc furnace processes, Hyundai Steel is committed to actively addressing climate change by drawing out the optimal solution for low-carbon production system transition.

Capabilities for Transition to a Low-Carbon Production System Based on Blast Furnaces and Electric Arc Furnaces

- Secured the biggest and most advanced electric arc furnace facilities/capabilities based on 70-year-long business
- Produced automotive steel sheets with electric arc furnaces (2007-2010 before the introduction of blast furnace operations, approximately 1 million tonnes covering chassis/frame/inner panel)
- Optimized raw materials for electric arc furnaces through operating the biggest volume of steel scrap in Korea and blending various raw materials
- Built both blast furnaces and electric arc furnaces within Dangjin Integrated Steelworks, creating an optimal test environment for production system transition

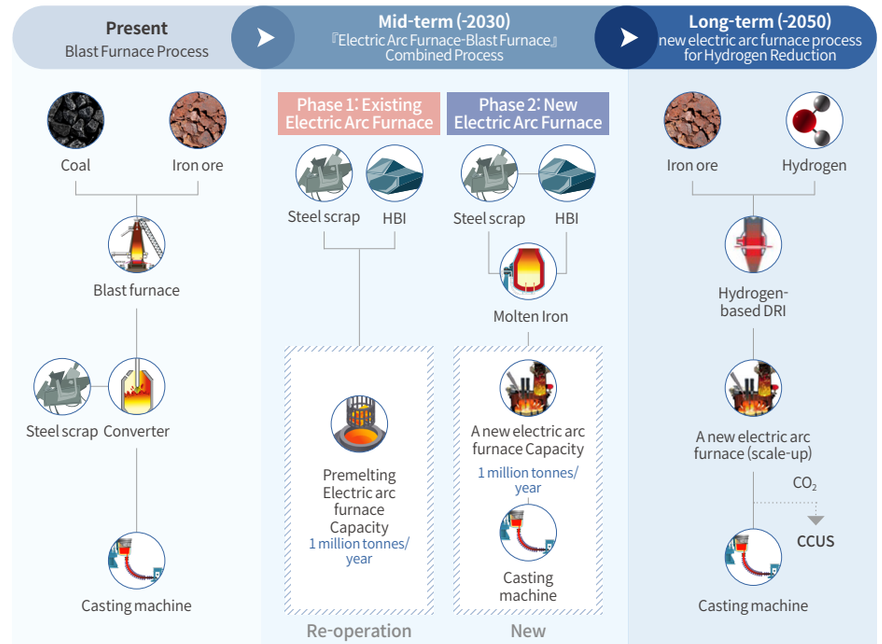


1) CFP (Carbon Footprint of Product): CO_2 emissions per tonne of product

2.2.1.2 Achieving Product Decarbonization Through Carbon Neutral Production Processes

Plan to Transition to Net-Zero Production System

Hyundai Steel is in the process of constructing an "electric arc furnace-blast furnace combined process" production system to gradually manufacture high-quality, low-carbon automotive products while maintaining the quality of products made with blast furnaces. The phase 1 involves utilizing the existing electric arc furnace to pre-melt steel scrap and DRI (Direct Reduced Iron), which will be put into the blast furnace converter process. The phase 2 entails investing in a new electric arc furnace, specifically developed by the company, to establish a production system that can achieve approximately 40% lower carbon emissions by 2030 to contribute to contribute to the Net Zero of the supply chains for key global customers. The mid-to-long-term goal is to produce net-zero products by transitioning to a new electric arc furnace process based on hydrogen reduction steel



CAPEX	About KRW 150 billion	Under review	Under review
CFP (cold rolled)	1.8 tonnes (20% less than normal flat products)	1.4 tonnes (40% less than normal flat products)	0.2 tonnes (90% less than normal flat products)
Capacity	4 million tonnes/year (1 million tonnes of electric arc furnace + 3 million tonnes of blast furnace)	1 million tonnes/year	

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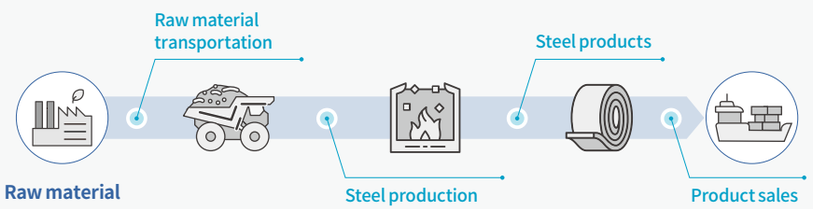
Leveraging Life Cycle Assessment to Calculate Carbon Footprint of Product

Hyundai Steel has managed the carbon footprint analysis system of products through the use of life cycle assessment (LCA). The steel product LCA boundaries include raw material collection to raw material transportation, production, and shipments of products. The internal system to analyze CFP (Carbon Footprint of Product) has been established and system enhancement has been conducted to implement quantified data in various ways in 2023 for flexible response to the fluctuating global trend. Production GHG emission amount calculation functions have been implemented in the system due to the upcoming application of EU CBAM (Carbon Border Adjustment Mechanism) and automatically calculated data is disclosed to the regulatory authorities as an active response to the Net-zero goal. Also, the accuracy and credibility of data collected from internally developed systems are planned to go through 3rd party assurance or certification for accuracy and credibility.

The steel product LCA boundaries



Environmental Product Declaration (EPD) certification

Global requirements for EPD (Environmental Product Declaration) submission are increasing, and steel products are one of the basic materials that the regulations on various manufacturing industries such as construction materials, cars, etc. must be considered. We have obtained EPD certification in Korea, the United States, and Sweden since 2019. In 2023, we obtained EPD certification from the Korean Ministry of Environment on hot rolled sheets/coils and plates, establishing the foundation to provide hot rolled sheets/coils and plates to G-SEED-certified construction sites. Our electric arc furnace-manufactured wire rod products are also the first in Korea to obtain an EPD certificate from the EDP certification organization in Norway (EPD Norge), certifying that the environmental impact is lower than the blast furnace production. We aim to strengthen business competitiveness and respond to customers by expanding certification items to various products including steel bars and plates.

Certification type	Overview	Certification period
Korean Ministry of Environment EPD	National EPD certificate held by Korean Ministry of Environment, the only EPD certification in Korea. • Reinforcing bars/Sections: All products manufactured in Dangjin, Incheon, Pohang are certified. • Hot rolled sheets and coils/Plates: Hot rolled sheets and coils/Plates products manufactured in Dangjin integrated steelworks are certified	September 2022 ~ September 2025 October 2023 ~ October 2026
Low-Carbon Product Certification	An Eco-label certified product by the Korean Ministry of Environment with a reduced maximum carbon emission limit compared to similar category products or carbon-reduced products compared to the company's product lines. • H-beam: H beam products manufactured in Incheon and Pohang are certified.	April 2023 ~ April 2026
UL EPD	Global certification organization with the most EPD certification records among organizations in North America • Reinforcing bars: Reinforcing bar products manufactured in Incheon are certified • Sections: Section products manufactured in Incheon and Pohang are certified.	October 2019 ~ October 2024
EPD International	The Swedish certification organization recognized as the oldest EPD certification organization with the largest amount of certification records. • Hot rolled sheets/coils, plates, cold rolled sheets/coils, plating: Obtained EPD certification on steel plate products manufactures in Dangjin integrated steelworks	October 2020 ~ October 2025
EPD Norge	A large-scale certification organization in Europe with mutual recognition agreements for EPDs in Sweden, Italy, Denmark, and Germany • Wire rod: Wire rods produced through special steel production are certified.	November 2023 ~ November 2028

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Electric Arc Furnace-Blast Furnace Combined Process Practical Test

Hyundai Steel is the first steelmaker to design the 'Electric arc furnace-blast furnace combined process', which uses electric arc furnace molten steel to produce low-carbon plates and is conducting a practical test on the process. The molten steel is made using the electric arc furnace for regular steel production and then put into a converter after combining with molten iron from the blast furnace for testing production methods with less carbon emission than the existing furnace products. The testing started in April 2023, and 10 tests have been completed until May 2024, concentrating on complicated steel grades with limitations to solely produce with an electric arc furnace. The test will consecutively take place until the 'Electric arc furnace-blast furnace combined process' is fully operational. Through the tests, we seek to establish the foundations to quickly convert into a mass production system when the 'Electric arc furnace-blast furnace combined process' is operational by shortening the pre-technological development and operational stabilization period and conducting customer testing on parts for building product credibility.

Practical Testing History

June 2023	August	October	January 2024	March	April	April	May
3rd Test (Cold-rolled coils EDDQ*)	4rd Test (Cold-rolled coils hot stamping)	5rd Test (Hot-rolled coils)	6rd Test (Cold-rolled coils EDDQ)	7rd Test (Cold-rolled coils ultrahigh tensions)	8rd Test (Cold-rolled coils EDDQ)	9rd Test (Cold-rolled coils EDDQ)	10rd Test (offshore wind turbine substructure)

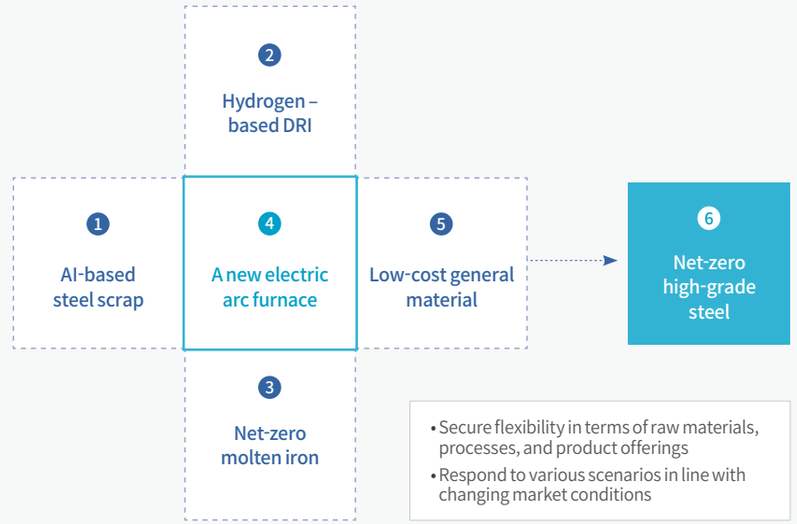
* EDDQ: Extra Deep Drawing Quality

Test Procedures

Cate-gory	Reinforcing bar making				#2 Steel making	#1 Steel making	
	Electric Arc Furnace	Refining	Separation	Molten steel deoxidi-zation and insulation	Molten steel+ molten iron combi-nation	Refining	Converter
Process Flow Diagram							

Advancing Hy-Cube Process for Low-Carbon Production

Hyundai Steel is actively advancing Hy-Cube, a key process in our long-term Net Zero roadmap, with the ultimate objective of transitioning to a hydrogen-based steel production system. The company aims to establish a comprehensive production system that encompasses carbon emission reduction in specific processes as well as the entire value chain and to manufacture high-performance, low-carbon products that are not achievable with traditional blast furnaces by utilizing new electric arc furnaces. This approach will provide the company with flexibility in terms of raw materials, processes, and product offerings, enabling effective adaptation to changing market conditions.



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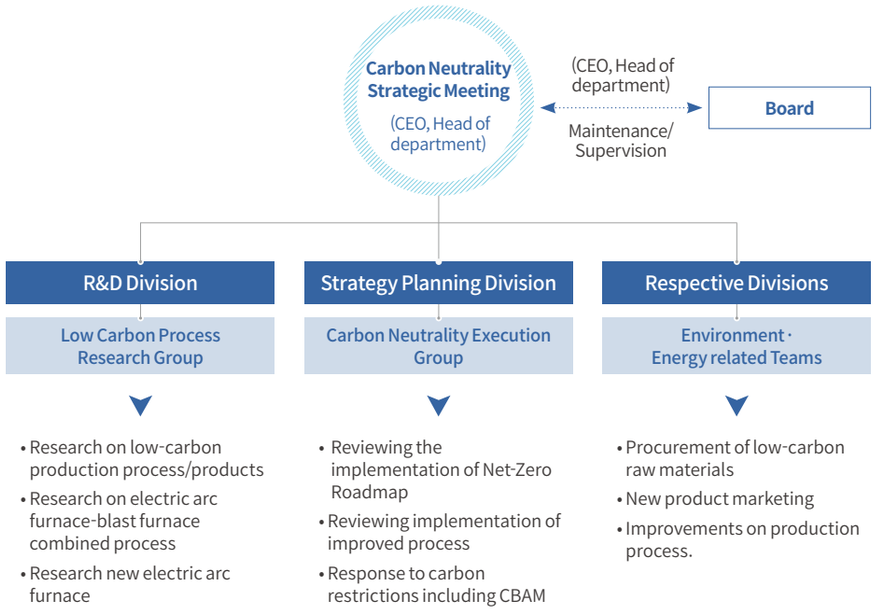
2.2.2 Governance

2.2.2.1 Climate Change Governance

Hyundai Steel has established a climate change response system to meet the domestic and international Net-Zero requirements and to align with the government's 2030 Nationally Determined Contribution (NDC). The company established the Low Carbon Process Research Group within the R&D Division, dedicated to advancing low-carbon technologies for achieving Net Zero, and the Carbon Neutrality Execution Group was created within the Strategy Planning Division, dedicated to establishing and implementing Net Zero directions. Last year, Hyundai Steel successfully developed and conducted a comprehensive Net Zero roadmap and execution strategy. From 2024, the Carbon Neutrality Strategic Meeting, which is the head administrative council led by the CEO, identified the global trends and issues to inspect corporate carbon neutrality directions and implementation strategies and make decisions on the key agendas. The Board of Directors resolves at least once a year on key issues related to climate change, and in Q1 2024, the Board reported on the progress of our net-zero strategy.



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2.2.3 Strategy

2.2.3.1 Climate Change Risk and Opportunity Analysis

Mid-to-long-term Risks and Opportunities

Type of Risk		Risk	Opportunity	Impact: Up-Stream	Impact: Down-Stream	Goals
Transition Risks	Policy and Law	• Increase in operation cost for purchasing emission rights • emission rights Increase in operation cost for purchasing renewable energy • Increased energy costs	• Profit generated from selling remaining emission rights following the use of carbon processing technology and low-carbon materials • Lower cost per energy intensity through improved energy efficiency	●	●	Mid-term Long-term
	Technology	• Increase in investment due to introduction of low-carbon facilities • Increase in the intensity cost due to lack of energy efficiency improvements at right timing • Weakened competitiveness in developing eco-friendly technologies		●	●	Long-term
	Market	• Decrease in market share due to the increasing customer demand for eco-friendly products	• Increase in market share with expanded products that are certified as eco-friendly • Stable pool of customers secured based on production of low-carbon product (HyECOsteel*) at the right time * 20% reduced carbon emission using electric arc furnace-blast furnace combined process compared to the existing blast furnaces or 40% carbon reduced products using new electric arc furnaces		●	Short-term Mid-term
	Reputation	• Loss of customers and financial investment due to insufficient effort and aspiration for climate actions	• Strengthen brand image and less uncertainties around investment based on broader and transparent disclosure of information • Resilience secured through international initiatives and business cooperation		●	Short-term Mid-term Long-term
Physical Risks	Acute	• Shutdown of the works caused by damage to facilities (Recovery cost, loss of sales from the shutdown) • Decrease in production volume caused by raw material supply issues	• Increase in demand ponse to physical risks of climate change	●	●	Mid-term
	Chronic	• Extended period of recovery due to elevating risks caused by rising temperatures • Increase in cost to supply industrial water in line with reduced precipitation	• Lower cost and competitiveness secured based on reduced water intensity and increased re-use of industrial water	●	●	Short-term Mid-term

Review of Scenarios

Transition Risks

Review changing domestic/global policies and markets and impact on securing technologies based on scenarios such as Korea's 2050 LEDS (Long-term low greenhouse gas Emission Development Strategies) and IEA (International Energy Agency)'s NZE 2050 (Net Zero Emissions by 2050)

Physical Risks

Review the climate change's impact on facilities and supply chain based on the SSP (Shared Socioeconomic Pathways) scenario in the IPCC (Intergovernmental Panel on Climate Change) report

Participating in Climate Risk Management External Activities

Hyundai Steel supports the implementation of the Paris Climate Agreement and the National 2050 Carbon Neutrality Goals, and pursues a climate change response strategy based on the Net Zero Roadmap. The company also supports the implementation of the Paris Climate Agreement through sponsorship of carbon neutral public policies based on the principles for climate change-related association. The climate change-related donation and sponsorship policy applies to the jurisdictions where all affiliated companies' domestic and overseas operations are located, and is equally applicable to employees in those regions. To contribute to national carbon neutrality goals and the Paris Climate Agreement, the Company regularly discloses its support for key sustainability initiatives that advocate carbon neutrality, such as the UNGC and Responsible Steel. Also, as a member of the Korea Iron & Steel Association and World Steel Association. The company is actively participating in sustainability and carbon neutrality-related sub-committees. We are putting efforts into expanding ESG culture in the Korean industry by participating in the ESG research committee under the Korea Iron & Steel Association, continuing to share best climate change response practices, and transparently disclosing the ESG information as a member of the sustainable management subcommittee under World Steel Association.

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2.2.3.2 Response to Transition Risks

According to the Sixth Assessment Report by the IPCC (Intergovernmental Panel on Climate Change), the challenge of limiting the global average temperature increase to 1.5 °C above pre-industrial levels has become more significant due to the continuous rise in GHG emissions. As a result, immediate action is necessary to reduce GHG, including active investments in low-carbon energy, such as renewable energy.
In response to climate change, Hyundai Steel is developing a strategy aligned with the NDC. We aim to minimize environmental impacts in the production and export of our products by carefully assessing domestic and international regulations and risks, such as the EU's CBAM, investing in eco-friendly facilities, and transitioning our production processes.

Implementation of the Emission Trading Scheme

As a business entity eligible for allocation of emission permits, Hyundai Steel places great emphasis on strict compliance with ACT ON THE ALLOCATION AND TRADING OF GREENHOUSE-GAS EMISSION PERMITS. The company is engaging in energy-saving activities through regular energy meetings and establishing a reduction portfolio to alleviate the burden of emission permits. To mitigate the risk of acquiring emission permits, the company utilizes the trading market, implements paid allocation, and undertakes reduction projects. To ensure accurate and efficient management of GHG emissions, the company consults with relevant departments through IT system. Through this, the financial impact of GHG is identified in inspections of products manufactured in the production process and new investment reviewing process and applied in decision-making. Aligned with the government's 2030 GHG Reduction Roadmap, Hyundai Steel remains committed to reducing internal GHG emissions, identifying GHG reduction projects both domestically and internationally, and actively engaging in energy saving activities.

Disclosure of Climate Action Information

Hyundai Steel has been transparently disclosing climate change responses annually in its integrated reports that abide by international standards (e.g., GRI Standards, SASB, WEF, and TCFD). Starting from 2023, the company has been disclosing the level of information disclosure on Scope 3 emissions and ensuring the transparency of data by external verification process. The company is striving to transparently communicate its climate change response initiatives to global financial investors and stakeholders by actively participating in the Carbon Disclosure Project (CDP) and has been honored with the Sector Leader Award etc. which is bestowed upon companies that excel in climate actions. Also, the climate change management system, strategy, risk management, objectives, and indicators are disclosed according to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Securing Overseas Emission Credits

To secure overseas emission credits and mitigate the risks of emission trading scheme, Hyundai Steel is providing cooking stoves and water purifiers to underprivileged countries like Kenya, Myanmar, and Bangladesh. These cooking stoves, made with cement materials, enhance thermal efficiency, leading to reduced GHG emissions and decreased reliance on wood fuel, while also shortening cooking time. Through these efforts, Hyundai Steel aims to address the environmental issues and improve the quality of life in the world's most impoverished regions.

Partnership for Energy Efficiency Innovation

Hyundai Steel joined Korea Energy Efficiency Partnership 30 (KEEP 30), a Korean energy efficiency innovation partnership, with the goal of establishing a practical energy management system and driving innovation activities. KEEP 30 is a voluntary agreement among 30 energy-intensive companies in sectors like steelmaking, oil refining, chemical, cement, and semiconductors to achieve a 1% annual improvement target in energy intensity over the next five years, with the government providing an incentive package. The participating companies' support for suppliers in enhancing their energy efficiency is also recognized as contributions in order to improve the overall energy efficiency.

Overview of KEEP 30	
Period	5 years following the agreement (2023-2027)
Contents	Company: Set and execute the goal to improve efficiency Government: Provide policy support to reach the goal
Goal	Average annual improvement rate of 1% or more, yearly
Monitoring	Submit an annual performance report and go through third-party validation

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2.2.3.3 Response to Physical Risks

The Intergovernmental Panel on Climate Change (IPCC) report highlights the alarming consequences of continued GHG emissions and following global warming, projecting a significant increase in global surface temperature by 1.5 °C in the near future (~2040) in all scenarios. The report emphasizes that this warming trend will contribute to sea-level rise, the collapse of the Antarctic ice sheet, and the loss of biodiversity, with more intense warming posing a higher risk of rapid or irreversible changes. In response to these climate disasters, Hyundai Steel proactively conducts physical risk scenario analysis to identify potential risks in advance and implements appropriate measures to mitigate them effectively.

Advancement of Management for Disaster Response

Hyundai Steel has established an emergency preparedness rule for its offices in case of emergencies caused by disasters. In order to minimize the impact of disasters such as human loss and delay in production, the company has set internal management procedures for personnel evacuation and facility restoration. Accordingly, the company conducts regular inspections on major facilities, reinforces facility structures, and regularly inspects disaster prevention facilities and supplies such as water out pumps. Additionally, the company assesses the time and cost required for repairs of equipment and raw ingredient supply, as well as the potential loss of sales resulting from production disruptions. The company also reviews its raw material supply sources to ensure stable supply in the event of natural disasters. To further mitigate risks, the company has obtained property insurance to minimize property damage and environmental liability insurance to address potential environmental damage caused by accidents. These measures enable us to effectively manage and respond to emergencies.

Research and Implementation of Water Barrier Door Technology for the Prevention of Inundation

Hyundai Steel has developed and implemented a new floodgate product specifically designed for the entrances of large-scale industrial facilities and plants in cooperation with the Korean Society of Steel Construction, Hyundai Engineering, and Haejeon Industrial Co.Ltd. The new floodgate is intended to respond to a broader scale with minimized containment space through multi-level sliding technology. The Korean Society of Steel Construction verified the structural performances of the technology after the announcement of the joint development of disaster prevention safety technology and is undergoing designation processes as a new disaster safety technology after completion of development in 2023. The new floodgate was applied on the main gate of Pohang Works in 2024, and regular barrier walls were installed on other gates together with compulsory drainage facility capacity increased. We have strengthened our disaster risk response to typhoons and floods by securing power to withstand 1,000-year frequency rainfall by blocking external water inflows, ensuring forced water drainage within the perimeter, and emergency measures utilizing the floodgate. We will not stop our efforts to establish a stable production environment with a strengthened drainage facility and a response system.

Advancement of Response to Chronic Climate Change

Hyundai Steel has set work standards considering climate impacts, such as high heat and extreme temperatures, and maintained relevant infrastructure, including air-conditioned rest areas. The company identifies potential workplace hazards, monitor and manage worker health conditions, and provide targeted safety training for managers and employees. Additionally, the company ensures emergency preparedness by equipping each works with paramedics and fire brigades, and conducting department-specific mock drills. We will make efforts to prevent work-related accidents caused by high temperatures and heat, which tend to occur more frequently as temperatures rise.

Water Risk Management

Risk management on water is mandatory since water is an essential resource for steel production and can affect climate change, ecosystems, and eco-diversity at the same time. Hyundai Steel has analyzed the water risks of domestic business sites and surrounding areas that account for 100% of total steel production and has developed response plans to prevent supply disruptions by sites.

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Water Usage Status

Hyundai Steel prevents production disruption by stable water supply and water quality control in production processes and by making local water risk reduction efforts by not using surface and underground water. During the dry season, Dangjin Integrated Steelworks addresses water quality issues of industrial water by blending raw water from Lake Daecheong, and Incheon Works manages risks by reducing local living water usage burdens by receiving industrial water from sewage treatment facilities. Pohang Works is always ready to utilize the River Hyeongsan diversion facility managed by K-water in case of insufficient water storage of Yeongcheon Dam, and Suncheon Works has agreed on restricted water usage from River Seomjin below limits during the dry seasons.

(As of Dec 31, 2023)

Site	Water source status			Water source utilization status			
	Category	Name of water source	Facility storage amount	Annual raw water withdrawal as of 2023 (before processing)	Annual raw water usage as of 2023 (after processing)	Major usage	Withdrawal ratio relative to storage amount
Dangjin Integrated Works	Industrial water	Lake Asan (70%) Lake Daecheong (30%)	540 thousand m³/day (Lake Asan)	44,822 thousand m³/year	39,545 thousand m³/year	1. Facility and product cooling 2. Steam production 3. Sprinkler truck and firefighting water	Lake Asan 15.9% Lake Daecheong 28.3%
	Domestic water	Lake Daecheong	130 thousand m³/day	3,685 thousand m³/year	3,685 thousand m³/year	Living water	7.8%
Incheon Works	Industrial water	Gajwa sewage treatment plant	350 thousand m³/day	2,793 thousand m³/year	2,793 thousand m³/year	1. Facility and product cooling 2. Steam production 3. Sprinkler truck and firefighting water	2.2%
	Domestic water	Office of Waterworks Incheon	1,163 thousand m³/day	1,222 thousand m³/year	1,222 thousand m³/year	Living water	0.3%
Pohang Works	Industrial water	Yeongcheon Dam	294 thousand m³/ day	1,808 thousand m³/year	1,808 thousand m³/year	1. Facility and product cooling 2. Steam production 3. Sprinkler truck and firefighting water	1.8%
	Domestic water	Yeongcheon Dam / River Hyeongsan (Yugang water purification plant) Yeongcheon Dam (Industrial complex water purification plant)	50 thousand m³/day 55 thousand m³/day	249 thousand m³/year 89 thousand m³/yea	249 thousand m³/year 89 thousand m³/year	Living water	Yugang water purification plant 1.3% Industrial complex water purification plant Suncheon Works 0.4%
Suncheon Works	Industrial water	Juam Dam Sueo Dam	540 thousand m³/day 550 thousand m³/day	3,266 thousand m³/year	3,216 thousand m³/year	1. Acid treatment of cold rolled products 2. Steam production 3. Sprinkler truck and firefighting water	1.0%
	Domestic water	Produced internally	-	-	-	Living water	-

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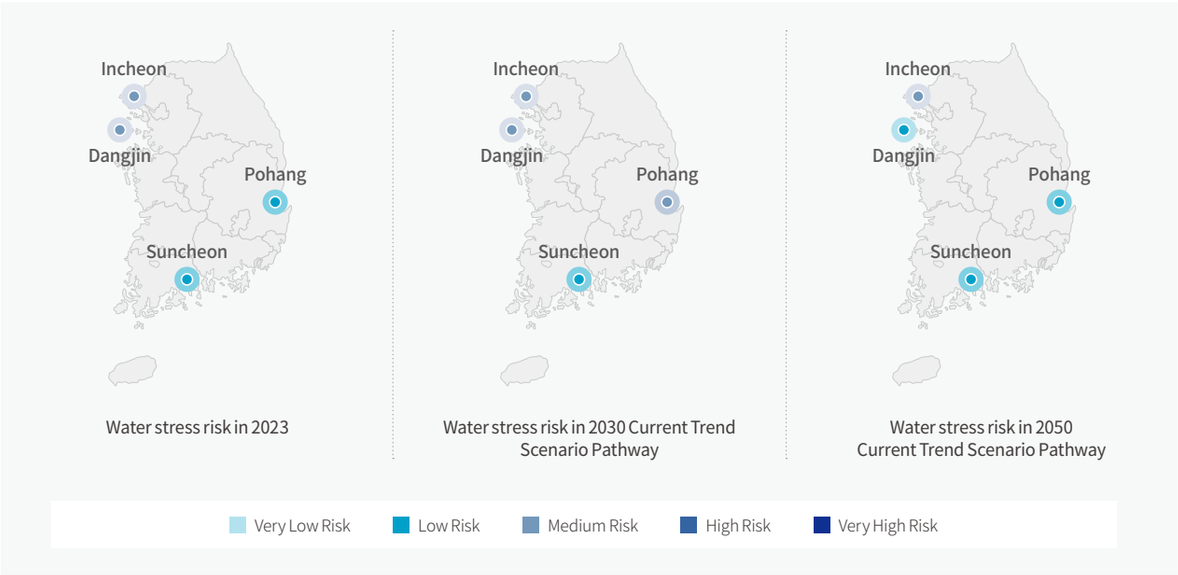
Water Stress Risk Analysis

Hyundai Steel conducted a comprehensive analysis of water scarcity risks for its local offices and surrounding areas, which constitute over 100% of its total steel production, using the Water Risk Filter developed by the World Wide Fund For Nature (WWF) (as of present/2030/2050 based on the SSP Climate Change Scenario[1]. This analysis considered human-related and natural factors such as the volume of water available (water use/demand and storage) frequency of droughts, and their projected changes. The findings indicate that water scarcity risk in Korea, where the company's major offices are located, is currently low, and there is no projected increase in water scarcity risk (high/very high) by region across different scenarios, including the optimistic scenario pathway[2], current trend scenario pathway[3], and pessimistic scenario pathway[4]. However, considering the World Meteorological Organization (WMO)'s prediction of five billion people facing water scarcity by 2050, Hyundai Steel is going to continue monitoring future scenarios and managing efficient water usage and developing water usage technologies, being vigilant about the risk of water scarcity.



1) SSP (Shared Socioeconomic Pathways) Climate Change Scenario: Scenario used in the Sixth Assessment Report by the IPCC, which explains scenarios considering socioeconomic factors in addition to RCP (Representative Concentration Pathway) that were used in the Fifth Report
2) Optimistic scenario pathway (SSP1-RCP2.6/4.5): Assumes societies with robust climate change policies, rapid and environmentally friendly technological development, and sustainable economic growth. Global average surface temperature would increase about 1.5°C by the end of the 21st century.
3) Current trend scenario pathway (SSP2-RCP4.5/RCP6.0): Assumes societies with medium degree of socioeconomic development and policies to address climate change, implying medium sustainability for climate crisis mitigation and climate change adaptation. Global average surface temperature would increase about 2°C by the end of the 21st century if the status quo is maintained.
4) Pessimistic scenario pathway (SSP3-RCP6.0/8.5): Assumes societies vulnerable to climate change due to weak climate change policies and slow technological development. Global average surface temperature would increase by about 3.5-4°C by the end of the 21st century.

Water Risk Response Strategy

Hyundai Steel identifies water risk and establishes and implements response strategies on a business site level. Local water stress, business site water supply, and price risks were identified, and each Steelworks is trying its best to reduce identified risks. We are preparing for regional water scarcity risks by re-using living sewage, securing alternative water sources in case of water shortages, and making agreements to restrict water withdrawal from local sources during dry seasons. Additionally, we are refraining from utilizing groundwater and surface water to minimize ecological impacts, such as effects on local biodiversity and climate. We anticipate a roughly 10% increase in industrial water usage by 2028 and are expanding the emergency drainage capacity to prepare for increased water usage. Moreover, to reduce water usage, we are identifying wastewater reuse sites, investing in water use reduction, and checking and repairing leaks in the cooling water system. We conducted internal campaigns such as prohibiting the use of water supply for purposes other than domestic water and water conservation, and provided training to employees centered on understanding water management.

To prevent quality issues caused by industrial water, we are measuring, analyzing, and monitoring the quality of water withdrawals. Also, to avoid sudden water supply stoppage, we are taking various managerial measures to reduce water risks such as installing backup pipelines and establishing productivity control processes at the Steelworks. The water usage fee increase in Korea is comparatively lower than that of other major nations, and other infrastructural resources in Korea. However, to prepare for possible future cost increases due to fluctuations, we are discussing various energy-saving measures and modifications to water withdrawal amounts in the contract, along with efforts to secure competitive water sources compared to current supply costs.

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Category		Water Risk		Response Measures		
		Overview	Level	Operations	Plans	Results and measures to be taken
Area	Water source risk	Water stress in operations	M-L	All sites	Monitoring water stress risk by scenario/site ※ There are no current high-level risks (high/very high)	Continue monitoring
				All sites	Prohibit using surface and underground water ※ Only domestic and industrial water is currently being used	Keep current status
				Incheon	Prevent supply disruption due to water stress by re-using living sewage	Keep current status
				Pohang	Utilize the River Hyeongsan diversion facility (managed by K-water) in case of insufficient water stress of Yeongcheon Dam	Keep current status
				Suncheon	Agreements on eestricted water usage from River Seomjin below limits during the dry season	Frequent negotiations depending on the water source condition
Operations	Usage amount	Withdrawal amounts increase due to facility expansion (10% increase compared to 2023)	M	Dangjin	Expanding the emergency drainage capacity to stabilize water supply (16 thousand tonnes/day)	Expansion of pretreatment facilities (2024-2026)
		Insufficient water supply compared to the consumption amount	M	Dangjin	Identification of leakage points and reduction initiatives for water usage reduction	Continue monitoring
					Identification of recycling initiatives of sewage water for water withdrawal reduction	No. 2 Hot rolling mill wastewater ->Supplementary water for No. 1 steelmaking RH mill (△350,000㎥/year expected, from 2024 onwards)
						Steel plate wastewater → Supplementary water for No. 2 steelmaking mill (△540,000㎥/year, from 2021 onwards)
				Incheon	Regular inspections and repairments on facility leakages such as the coolant system	Keep current status
				Suncheon	Investments on water quality improvement for water usage reduction - Observed a decrease in water consumption of manufacturing facility as water quality improved.	Replacement of old water withdrawal pipes (△30,000㎥/year, from 2022 onwards)
						Investment on ion exchange resin of manufacturing facilities (△7,000㎥/year, from 2022 onwards)
						Minimized coolant blow-down (△7,000㎥/year, short-term)
	Water quality	Quality deterioration of raw water withdrawal due to decrease in water storage amount of water source	M	All sites	Water quality monitoring through using measuring instrument and water analysis	Continue monitoring
				Dangjin	Addition of Lake Daecheong as a water source for industrial water – flexible management of blending ratio of raw water depending on the quality of withdrawal water (current: approximately 30%)	Improvement complete
				Pohang	Water quality analysis on living/drinking water and tank disinfection (semi-annually)	Keep current status
	Water stoppage	Stoppage due to pipe maintenance	L	Dangjin	Using the no-water-loss method for pipeline repair and relocation to ensure a stable water supply	Maintain the current status (Documentation received from the Water Resources Corporation before any issues arose)
		Sudden stoppage, supply disruption due to capacity decrease	M	Dangjin	Minimize stoppage time by emergency repairment Minimize replacements and defects by regular inspections on water pipes Steelworks operation with minimal water usage amount during stoppage: Operational for maximum 48 hours	Keep current status
				Pohang	Competed installing backup pipelines in care of pipe malfunctioning (Angye Dam connected)	Improvement complete
				Suncheon	Steelwork productivity control (operation rate, repairment schedule)	Keep current status
Others	Cost increase	Cost increase threat (compared to major nations and other infrastructural resources)	M	Dangjin	Minimized pump idling and electricity saving by efficient operation Discovering energy saving measures such as improving high-pitched pump impeller compared to the facility specifications. Agreements on adjusting amount by water usage fluctuation monitoring - Calculation of appropriate contract amount to reduce the basic fee of the contract	Keep current status
				Dangjin, Suncheon	Discovering competitive water sources compared to the current supply costs - Refrain from utilizing groundwater and surface water to minimize ecological impacts such as biodiversity and climate	Continue monitoring

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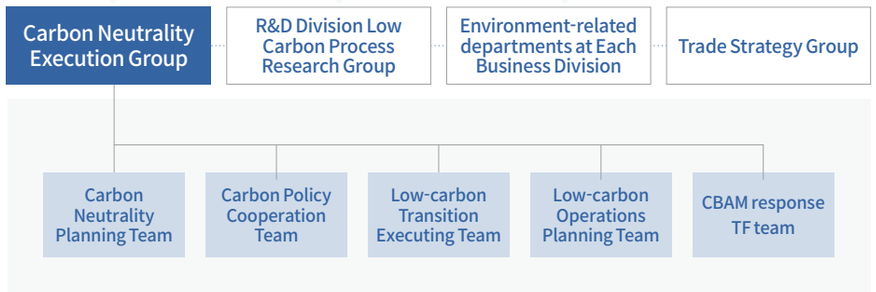
2.2.4 Risk Management

2.2.4.1 Climate Change Risk Identification and Assessment Process

Hyundai Steel set up the Carbon Neutrality Execution Group to address climate change issues. The group keeps up with evolving external policies and the needs of ESG management by identifying crucial management issues and assessing risks across all environmental and energy aspects through the Environment & Energy Meeting. Moreover, the group fosters a collaborative system with environment-related departments, working together to set strategic directions, define short-term objectives for achieving the 2030 carbon emission reduction target, establish mid-to-long-term strategies, and stay responsive to policy changes.



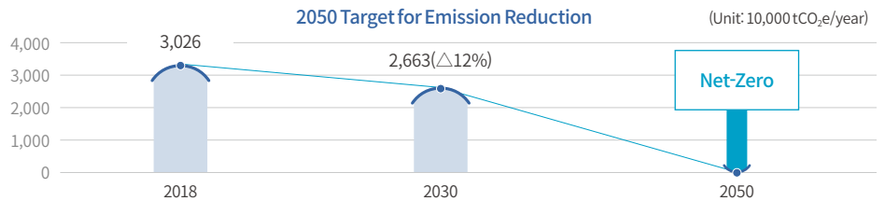
* CBAM: Carbon border adjustment mechanism of EU

2.2.5 Metrics and Targets

2.2.5.1 GHG Emission Management

Hyundai steel has set the metrics and targets for continuous performance management of climate change response. The company has announced the 2050 Mid- to Long-term Net-zero Roadmap in April 2023 demonstrating its commitment to the national GHG reduction target and the company plans to achieve a 12% reduction in carbon emissions across all offices compared to 2018 by 2030, through establishing 'electric arc furnace-blast furnace combined process' and production carbon reduction activities.

Hyundai Steel 2050 Net-Zero Roadmap



GHG Emissions: Scope 1 & 2[1) 2) 3) 4)]

GHG emissions of Hyundai Steel in 2023 is 29,269 thousand tCO_2e, 3.3% reduced from the base year emission of 2050 Net-zero Roadmap, 20,256 thousand tCO_2e.

Classification	Unit	2020	2021	2022	2023
Scope 1	1,000 tCO_2e	25,967	25,857	25,907	26,679
Scope 2		2,657	2,633	2,594	2,590
Total (Scope 1 + Scope 2)		28,624	28,489	28,501	29,269

1) In accordance with article 2-9 of FRAMEWORK ACT ON LOW CARBON GREEN GROWTH, including CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6
2) Reported GHG emissions in accordance with the "Guidance for Reporting and Certifying Emissions from GHG emissions trading scheme" and completed government (Ministry of Environment) compliance assessment
3) Since 2021, applied benchmark (incentivizing companies with high emissions efficiency)
4) Annual total GHG emission is different from total of Scope 1 and Scope 2 (total amount is calculated by adding rounded emission amounts on a operation level)

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2.3 MATERIAL TOPIC 2 - Occupational Safety and Health

2.3.1 Governance

2.3.1.1 Occupational Safety and Health Policy

To realize the vision of "Creating a Safe Steelworks Lasting 100 Years," Hyundai Steel has undertaken various actions, such as establishing safety and health management goals and policies, implementing these policies to promote compliance with safety management obligations among all employees in the workplace, strengthening preventive safety activities, internalizing a safety culture, and expanding smart safety. We take the lead in spreading safety culture based on the safety management slogan "H-S.O.S (Hyundai-Steel One Safety)," while raising the level of safety awareness of employees through safety culture level diagnosis. Furthermore, we are reinforcing safety capabilities and advancing the safety and health management system through various occupational safety and health activities.

Vision
Creating a Safe Steelworks Lasting 100 Years

Goal
Build a Workplace with Zero Industrial Accident

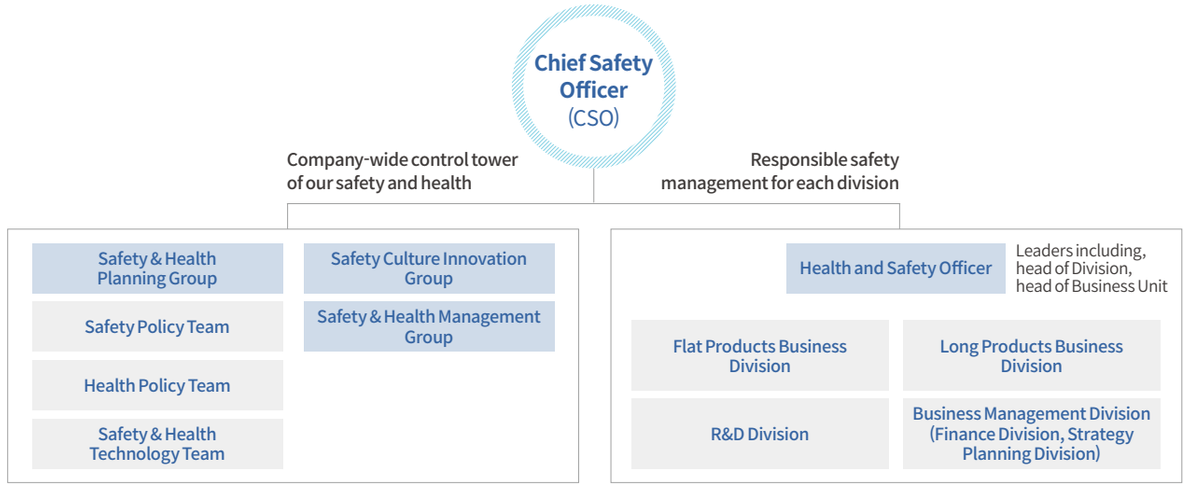
Safety and Health Policy

① Establish an effective safety and health management system by prioritizing safety and health across all business operations.
② Set safety and health goals and specific targets related to safety and health policies and implement action plans.
③ Enhance the safety and health management capabilities of employees through education and training.
④ Strictly comply with laws and regulations on safety and health, and the requirements of the safety and health management system.
⑤ Evaluate effectiveness and make continuous improvements through company-wide participation.

2.3.1.2 Occupational Safety and Health Management System

Strengthening the Integrated Safety Management

Hyundai Steel has organized the Safety and Health Division to function as a control tower of our safety and health to handling issues with expertise and make prompt decisions together with operating a company-wide integrated safety management system. The division efficiently operates the safety system by managing safety policies and regulations, committed to promote improvements in safety management capabilities of employees. The safety management supervision meetings, safety communication meetings, safety diagnosis, and evaluations are conducted on all of Hyundai Steel's operations to enhance safety awareness. Moreover, at each business site in Incheon, Pohang, Dangjin, Suncheon, and Ulsan, we have dedicated safety and health departments that closely monitor on-site safety, preventing disasters and safety accidents while minimizing damages. The Board (Transparent Management Committee) deliberates and resolves the agenda of authorization on annual safety and health plans once a year.



Occupational Safety and Health Committee

Hyundai Steel operates occupational safety and health committees at all operations to clearly set standards and responsibilities in accordance with OCCUPATIONAL SAFETY AND HEALTH ACT and foster a comfortable environment to promote employee safety and health. The Occupational Safety and Health Committee convenes quarterly meetings to deliberate and decide on important matters related to safety and health at operations. The committee comprises an equal representation of labor and management, and together, they discuss and make decisions on matters such as establishing plans to prevent industrial accidents on operation and inspecting and improving the working environment. In 2023, various agendas including starting a small group safety activity certification program, research on working environment surveys, and musculoskeletal disease prevention activities were presented and discussed.

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Safety Management

To recognize the importance of safety management and take the lead in spreading a safety culture, Hyundai Steel's management, including the Chief Safety Officer (CSO, conducts regular on-site inspections. The CSO visits each business sites sequentially, lead the in-person inspection of hazardous facilities that need improvement, encourages works on site, and remind all workers of adherence to work procedures and importance of safe work. Furthermore, heads of safety management by opeartions and department regularly participate in participates in safety management supervision meetings, led by CSO, and discuss safety policies and share safety activity performance and plans.

Safety and Health Management System Certification (ISO 45001) Across All Operations in Korea

Hyundai Steel has established a safety and health management system to proactively identify and prevent disasters that may occur during work. Based on our systematic implementation of safety activities such as risk assessment, safety training, and safety inspections at site, all of our operations in Korea (Incheon Works, Pohang Works, Dangjin Integrated Steelworks, Suncheon Works and Pangyo Office) have acquired ISO 45001 certification. ISO 45001 is an international standard for safety and health management systems established by the International Standardization Organization (ISO) and the International Labor Organization (ILO), and this international standard is applied to 100% of our employees at our every certified sites.

2.3.2 Strategy

2.3.2.1 Safety and Health Management Strategy

Goal	Elevate the level of safety culture by implementing key strategies (establishing safety management slogans and action items)
Slogan	[H-S.O.S, Hyundai-Steel One Safety] **Hyundai Steel pursues one safety value**
H-S.O.S Meaning	1. Hyundai Steel prioritizes worker safety through collaborative efforts between labor and management 2. Hyundai Steel applies and practices the same level of safety standards across all workplaces 3. Hyundai Steel listens to all safety improvement opinions, and all employees work together with shared safety values.

Key Strategies		
Category	Action items	
Strengthening on-site safety execution	• Implementing PDCA[1)]-based safety activities • Encouraging technical employees to participate in safety and health activities	• Rewarding safety activities and tightening penalties on safety rules violators
Establishing a risk-assessment-centered preventative safety system	• Internalizing risk assessment • Enhancing PSM (Process Safety Management)	• Expanding and utilizing smart safety and automation facilities
Enhancing safety and health capabilities	• Systematizing safety and health training and cultivating specialists • Holding on-site participatory "safety workshops"	• Improving subsidiary·supplier safety levels • Expanding exchanges with domestic and international operations with excellent safety and health levels.
Establishing health-friendly operations	• Strengthening employee health improvement activity • Establishing work-related disease prevention system	• Operating user-centric chemical substances management system • Promoting sustainable workplace environment improvement activities

1) improvement process consists of Plan-Do-Check-Assess-Act

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2024 Key Directions

Enhance Preventative Safety Activities Encourage participation of engineers in safety and health activities	• **Strengthened accident prevention by encouraging 「small group safety activity certification program」 and improvements on item** - Semi-annual inspection and improved operation (Industrial Injuries and Accident prevention) on 'on-site execution' - Workplace risk improvement by identifying and mitigating near-miss and non-stop accidents reflecting on-site feedback • **Continuing safety and health system advancement activities** - Enhancing safety work standard and risk assessment - Encouraging 'right to suspend work' usage when a hazard is detected
Integrate a Safety Culture into the Company Internalize a complementary safety culture	• **Establish and develop a safety innovation leader training program** - Select next-generation leaders from each business unit and run an expert training program (expert training, learning diagnostic techniques, participation in on-site diagnosis) - After the safety innovation leaders return to their workplaces, encourage them to promote a culture of safety • **Strengthen enforcement of safety and health compliance** - Apply strict penalties to those who violate core safety rules - Have innovation leaders diagnose the implementation of laws and systems, fostering a culture of adherence to safety and health standards at all our business sites • **Conduct workshops to enhance safety culture and deliver structured safety education** - Identify and implement action items through safety workshops tailored for each group (executives, general employees, engineers, subsidiaries) - Strengthen regular safety training within the company by establishing a safety education roadmap and promoting experiential safety education -Encouraging 'right to suspend work' usage when a hazard is detected
Expand Smart Safety Eliminate the root cause of risk	• **Enhance access control in hazardous areas** - Establish a system to restrict access to operational facilities using safety measures such as safety fences and locks - Remotely monitor individuals entering hazardous areas and set up safety fences using Lidar/Radar • **Improve safety work monitoring** - Strengthen the monitoring of hazardous work by utilizing fixed and mobile CCTV, as well as wearable • **Expand the application of smart equipment for high-risk work** - Use smart devices for remote measurement of gas concentrations in confined spaces - Consider the potential of replacing high-risk tasks with a quadruped robot and strengthen risk factor monitoring

2.3.2.2 Occupational Safety and Health Education

Internalization of Safety Education

To internalize safety education, Hyundai Steel utilizes a dedicated training venue equipped with audio-visual training equipment and provides expert courses to improve the capability of safety and health education instructors. We provide safety education programs for leaders and education on safety laws and regulations, our safety system, utilization of the safety computer system, and risk identification and improvement measures to help employees carry out their safety and health duties efficiently. In addition, we have enhanced the experience facilities of the Centennial Safety Culture Center located in the Dangjin Integrated Steelworks and developed new education courses aimed at further strengthening the safety capabilities of our employees

Emergency Response Training and Simulation training

Hyundai Steel has established a safety and health emergency preparedness and response plan for all operations and strives to minimize human and property damages by responding immediately in the event of an emergency. Safety training is conducted from time to time regarding safety, fires, explosions, and other accidents, and drills based on emergency scenarios are conducted at least once a quarter. In an emergency, the head of the safety and health department oversees the entire situation, including on-site command and victim relief, and each department head takes urgent actions in accordance with emergency response procedures to prevent the damage from expanding. After the emergency situation concludes, we develop and implement a recovery plan and systematically manage the emergency response system by reviewing measures to prevent recurrence and reviewing improvements on emergency response procedures.

Safety Education Status

Category	Education program name	Subject	Frequency	Attendance rate
Legally mandatory education	Regular Safety Education	All Employees	Quarterly	100%
	Supervisor Education	Leaders	Once a year	100%
	Onboarding Education	New hires	When newly hired	100%
	Special Safety Education	People performing hazardous work	When a task occurs	100%
	Hazardous Chemical Education	Related personnel, Personnel managing chemicals	Once a year, Once every two years	100%
In-house education	Advanced Supervisor Course, etc.	Applicants	On-demand	100%

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2.3.2.3 Improvement of Occupational Safety and Health

Creating a Safe and Comfortable Work Environment

In accordance with OCCUPATIONAL SAFETY AND HEALTH ACT, Hyundai Steel conducts work environment assessments semi-annually, to measure and evaluate the hazardous factors that workers are exposed to and reports the outcomes to the Ministry of Employment and Labor.

To achieve this, we cooperate with external specialized measuring agencies, and these agencies are selected by labor-management joint evaluation team after consultations with the Occupational Safety and Health Committee. The work environment assessment is conducted with presence of all related individuals and groups including the main safety and health department, labor union, on-site safety managers, and department heads, and the risk mitigation measures are established and implemented based on the assessment result. In cases where negative or harmful work environments are identified such as employees constantly being exposed to negative or harmful work environments, we establish fundamental measures by consulting with a specialized agency. In high-noise level workplaces, appropriate equipment such as hearing protection and respirators are provided to individuals through fitness tests.

With the goal of preventing safety accidents from occurring during work, Hyundai Steel has established and complies with work criteria and safety standards to prioritize safety when working in areas where there is a risk of accidents, such as oxygen facilities and gas handling facilities. For hazardous and dangerous areas where access is prohibited, we assign management grades, strengthen access procedures according to management methods and establish additional measures. We are conducting continuous inspections and improvement activities on the facilities and have improved the lighting in workplaces and passageways to ensure adequate illumination, thereby establishing a safe working environment. We inspect breakrooms and sanitation facilities on site and regularly renovate deteriorated, and we have made it mandatory to provide breakrooms and allocate sufficient break time for workers who operate under high heat and extreme cold temperatures, helping to reduce fatigue during work. We strive to enhance the overall level of safety and health at our business sites so that not even a trivial risk becomes an accident.

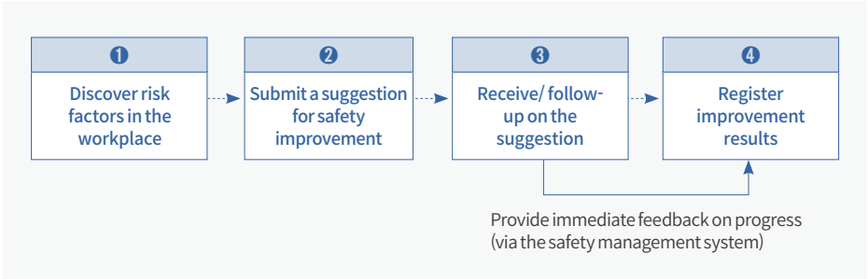
Executing Leader's Contact

Hyundai Steel assigns the leaders monthly safety activity goals through Leader's Contact and strengthens the safety and health duties based on the safety and health guidelines. Leaders fulfill safety activities such as TBM activities, safety education, and safety meetings, striving to share the company's management willingness to prioritize safety and to expand the autonomous safety protection culture.

Activate Safety Suggestion System

Hyundai Steel operates a safety suggestion system that allows us to hear the opinions of all employees in order to identify and improve risk factors in the workplace quickly. The system is open to all workers of Hyundai Steel, subsidiaries, and suppliers, and they can submit safety improvement suggestions, such as installing safety facilities, changing work procedures, improving the working environment, and organizing the workplace on our safety management website. Once suggestions are received, the dedicated safety facility maintenance department develops improvement plans and follows up on the progress and provides feedback to the employees who made the suggestions about the progress through the safety management system and private text message. Also, various measures are taken to invigorate employees to further utilize the suggestion system, such as adding and deducting points in safety evaluation and rewarding employees who made the best and most suggestions. In addition, all stakeholders can submit hazards and make safety suggestions through our official website and cyber audit website. In 2023, a total of 2,845 opinions were received from all operations, with 2,655 of them being acted upon, resulting in an impressive improvement rate of approximately 93%. We review the suggestions received on a monthly basis and take immediate action to improve them.

| Safety Suggestion System Procedure



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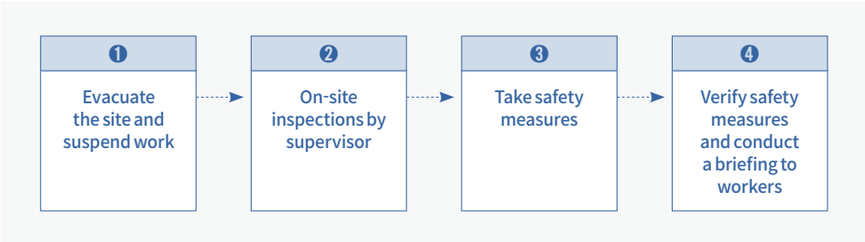
Right to Suspend Work

Hyundai Steel has introduced the "Right to Suspend Work" for the purpose to prevent safety accidents and protect lives of all workers from Hyundai Steel, as well as subsidiaries and suppliers, in the event of a dangerous situation. Upon finding an immediate danger, This policy allows anyone at our business sites to suspend work and initiate safety measures in a systematic manner through the following steps; 1)evacuate workers from the site and suspend work, 2)investigation of the site conducted by the supervisor of a responsible department, 3)take safety measures to address the risk factor, 4)verify the safety measures and conduct a briefing to workers. We provide cascade training to ensure that employees are equipped to respond to dangerous situations by utilizing the right to suspend work.

Process For Enforcing Right To Suspend Work



Promotion of the Safety Exchange Meeting

As a move to share issues and best practices of safety and health management within the industry, Hyundai Steel holds safety exchange meetings with companies known for their outstanding safety and health management, as well as industry peers from home and abroad. Through these meetings, we expect to further enhance our safety and health management system by benchmarking best practices, such as preliminary safety review before the introduction of major facilities and risk mitigation measures for similar processes and utilize them when inspecting safety risks prior to introducing major facilities.

Company-wide Safety Response

In the event of a safety accident, Hyundai Steel is committed to minimizing damages and preventing the recurrence of such accidents by promptly identifying the cause of the accident, preparing and implementing countermeasures. When a safety accident occurs, an investigation committee is formed swiftly to start investigating. The committee identifies the root cause and develop countermeasures along with implementation plans which are then shared with related employees. Moreover, we maintain continuous monitoring of the implementation of recurrence prevention measures to ensure that the underlying causes of accidents are effectively eliminated.

Accident Management Process

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2.3.2.4 Employee Health Promotion

Accessible Internal And External Medical Facilities For Employees

Hyundai Steel operates various internal and external medical facilities for the health care of its employees. We operate in-house clinics, physiotherapy rooms, exercise prescription rooms, oriental medicine clinics and psychological consultation centers to ensure employees receive appropriate care and treatment from medical professionals. The medical facilities help to prevent possible musculoskeletal diseases of employees that can occur while working. We also support medical check-ups for employees and their families in cooperation with external professional medical institutions.

| Operating a Psychological Consultation Center for employees' mental health

The company operates psychological counseling centers to assist employees in receiving in-person psychological counseling and simultaneously operates counseling centers outside business sites and a remote mental health center to provide convenient counseling regardless of location. Every year, we conduct job stress assessments for all employees to diagnose and prevent mental health problems caused by work stress and to systematically manage the mental health of employees and their families.

| Medical Check-ups Support

Hyundai Steel supports employees and their families with comprehensive medical check-ups and PET-CT scans for early detection of serious diseases to prevent and detect various health issues. We provide general and specialized medical check-ups for employees annually. For those who show health abnormalities according to the medical check-up results, we provide follow-up management in collaboration with external medical institutions. Furthermore, we operate an in-house clinical pathology laboratory for employee health management and improvement.

| Cerebral Cardiovascular Disease Prevention Activities

Hyundai Steel operates cerebral cardiovascular disease prevention program to prevent diseases such as cerebral infarction, cerebral hemorrhage, and myocardial infarction. We have installed Automated External Defibrillators (AEDs) throughout the company to ensure their availability within the 'Golden Hour' in case of an emergency. We also routinely inspect this equipment to maintain its operational readiness and regularly train our employees in CPR and AED operations.

2.3.2.5 Occupational Safety and Health for Suppliers

Support and Participation for Safety and Health Management of Suppliers

Hyundai Steel is supporting its suppliers in an effort to realize win-win safety management. In order to assist our suppliers in strengthening their safety and health infrastructure, we offer various supports, including financial assistance for hiring safety personnel, provision of safety education, reinforcing management, and construction of rest and sanitation facilities. We can monitor the entry and exit status of all workers at our business sites, including those from our supplier companies, in real-time through our safety management system to improve the work safety management levels. In addition, just like our employees, if any hazards are discovered on site, our suppliers' employees can submit their suggestions through the 'Safety Suggestion System,' which is available within the safety management system, and then receive the results of our follow-up actions on the suggestions. The same reward system is applied to those who provide the best and most suggestions, encouraging participation in safety improvement

Strengthening Supplier Safety Capabilities

To continue our Safety Partnership with our suppliers, Hyundai steel discusses improvement measures on safety issues and shares accident cases and safety improvement activities with them through the Health and Safety Council. To establish a self-directed safety culture, we provide various systematic training courses for workers of our suppliers, including risk assessment training, basic safety courses for those new to our business sites, and experiential safety training. We are operating a safety price bidding system for contracting works to ensure that safety capabilities are fully considered when selecting suppliers, which is expected to increase the overall safety capabilities of our suppliers.

| Introduction of Contracting Work Safety Bidding System

Goal ➤	Make safety a key factor when selecting a contractor to increase the contractual value of companies with strong safety capabilities
Key description ➤	Conduct price safety bidding for qualified bidders → Select the best company based on the combined scores of Price(70 points) + Safety(30 points)

Category	Number of suppliers
Safety Basics Evaluation	• Evaluation of six items related to occupational injury rate, safety and health management system, safety and health management regulations and safety and health trainings completion of executives(conducting department: Safety and Health Division(Regularly/Frequently), Equipment Purchasing Team)
Safety Performance Evaluation	• Occupational safety evaluation on risk assessment, compliance with work procedures, health certifications(conducting department: Claims department) • Evaluation of safety and health technical abilities, safety and health education(conducting department: Each works/Business unit's Safety and Health Team)
On-site Quality Evaluation	• On-site quality evaluation on project completion, progress management ability, and submitted construction documents(Conducting department: Claims department)

※ Supplier Comprehensive Assessment: Safety Basics Evaluation(30%) + Safety Performance Evaluation(35%) + On-site Quality Evaluation(35%) → Companies scoring 70 points or more are granted the eligibility to participate in bidding.
Safety Comprehensive Assessment: Safety Basics Evaluation(30%) + Safety Performance Evaluation(70%)
→ Price Safety Bidding System Scores
Price Safety Bidding System: Price Bidding(70 points) + Safety Comprehensive Assessment(30 points)

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2.3.3 Risk Management

2.3.3.1 Occupational Safety and Health Diagnosis and Process

Safety Culture Diagnosis

Hyundai Steel is conducting a safety culture diagnosis for all employees of the company, subsidiaries, and suppliers, aiming to gauge the level of safety awareness among employees and set safety management goals and activity directions accordingly. An individual survey tailored differently for duties of managers and non-managers to collect valid and effective information is conducted. The results of the safety culture survey serve as the foundation for conducting safety workshops and evaluating safety and health activities. Also, safety workshops are held for safety culture organizations within each business division and for organizations selected by leaders of business divisions and small group discussions and safety coaching on the accident cases based on the results of safety culture survey take place. Each division develops plans to reinforce safety management based on the workshop outcomes and implements safety improvement activities accordingly. Moreover, customized safety culture interviews are conducted to provide accurate safety counseling.

Diagnosis and Improvement of Health and Safety System

For the purpose of advancing our safety and health management system to assess risk factors and prevent accidents across our operations, Hyundai Steel works with an external professional agency on the improvement of safety and health system and safe culture. Through the expertise gained, we conduct diagnostics that reflect the key points outlined in the “Roadmap to Reduce Serious Accidents,” perform on-site monitoring of potential accidents that could result in severe or more serious injuries and take measure to improve. The implementation checks of our safety system is conducted annually based on the opinions of experts. These concerted efforts aim to minimize the occurrence of legal risks and safety accidents. Going forward, we will continue to elevate our level of safety management, including improving occupational disease and the working environment and enhancing safety monitoring through specialized safety and health consulting in areas such as risk assessment safety consulting.

Reinforcing Company-wide Safety Inspection

Hyundai Steel conducts company-wide safety inspections to discover and mitigate potential risk factors on-site. Employees from all departments including production, maintenance, support, and safety, as well as management participate in these safety inspections. Employees establish improvement plans based on on-site opinions on risk factors found during safety inspections and monitor the improvement results. These endeavors not only aid in establishing a system for preventing and responding to various accidents in the business sites but also encourages employees to take responsibility and protect the safety of their coworkers as members of a safety community.

Establishing a Process for Rapid Safety Improvement

Hyundai Steel immediately mitigates any hazards discovered under the Safety Rapid Improvement Process in order to ensure the safety of all employees working at our business sites. We regularly engage specialized companies to inspect our gas facilities and all hazardous machines and equipment, and If any signs of danger, such as gas leaks, are detected during these inspections, specialists promptly respond. Further, If potential risks to equipment or safety facilities are identified, and safety investments are required, the relevant issues are reported through our Emergency Safety Investment System and the Maintenance Department then reviews the issues and takes further actions to immediately address the reported issues.

Managing Safety Leading Indicators

Hyundai Steel sets the safety management indicators and evaluation criteria tailored to each organization and manages the activities that should be carried out proactively to prevent accidents leading indicators, aiming to achieve zero industrial accidents across all business sites. The leading indicators for accident prevention include safety inspections, on-site risk mitigation, safety awareness activities, risk assessment, and completion of safety training. At the end of every year, we evaluate the performance of these leading indicators and reward organizations and individuals who excel in safety management to incentivize employees to proactively prevent safety accidents.

Executing Company-wide Risk Assessment

Hyundai Steel is conducting an annual company-wide risk assessment every year to discover hazardous and risk factors at its business sites, estimating the likelihood(frequency) and severity (intensity) of injuries or illnesses caused by them and establishes and implements risk mitigation measures accordingly. Furthermore, we determine the acceptable range of risks estimated for each hazard and risk factor and take various measures to reduce unacceptable risks to the lowest possible level when the unacceptable risks are identified. The assessment is conducted all over again in the event of any significant event such as the formation of a new team, establishment of work standards circumstances or introduction of new tasks. After the initial assessment, regular assessments are conducted every year(once a year). Additionally, in the event of any specific circumstances such as the construction, relocation, modification, or dismantling of structures at our business sites, we perform an assessment within 14 days of recognizing the occurrence. Moreover, we share best practices for improving risk assessment to raise safety awareness among employees and utilize risk assessment materials in our regular safety training.

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2.3.4 Metrics and Targets

2.3.4.1 Occupational Injury Rate Management

Hyundai Steel strictly abides by the safety and health guidelines and prevents accidents from occurring in all operations to achieve 'Zero Industrial Injuries and Accidents'. To realize our goal, we have established goals by quantifying the LTIFR level of each employee and contractors. We aim to achieve LTIFR under 2.61 in 2026, 5% decreased every year compared to that of 2023.

Category		Unit	Performance		Target	
			2023	2024	2025	2026
Lost-Time Injury Frequency Rate(LTIFR)	Employee	Cases/ million hours worked	3.08	2.93	2.78	2.64
	Contractor, Outsourced		3.00	2.85	2.71	2.57
	Total		3.04	2.89	2.74	2.61

1) Lost-Time Injury Frequency Rate(LTIFR): Number of lost time injuries occurring in a workplace per 1 million hours worked

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2.4 MATERIAL TOPIC 3 - Supply Chain Management

2.4.1 Governance

2.4.1.1 Supply Chain Management Governance Framework

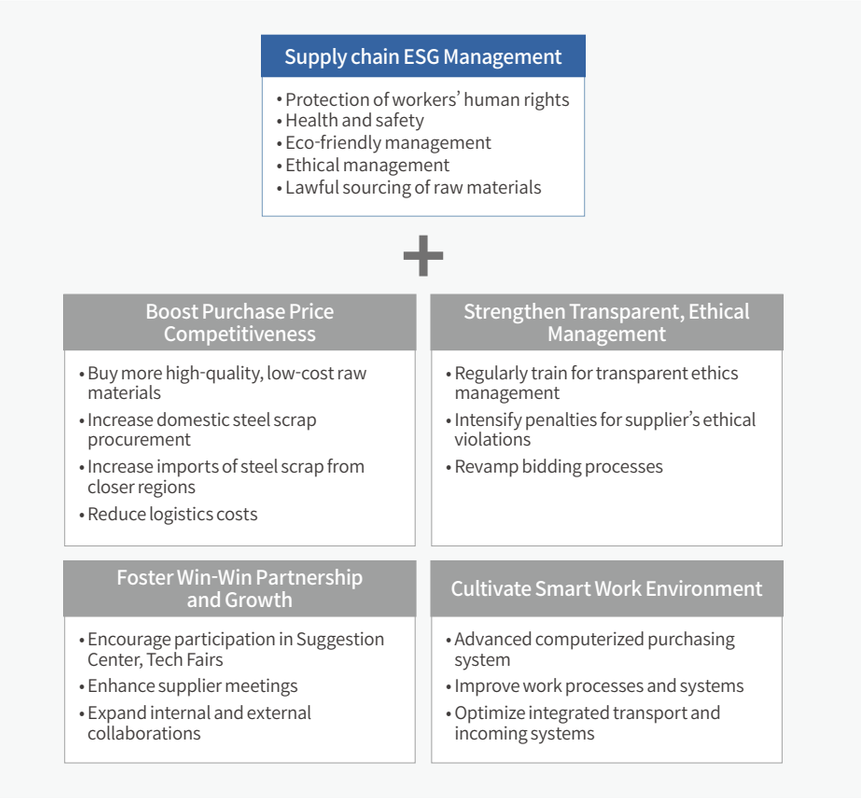
To become a competitive steel company focusing on profitability, Hyundai Steel has reorganized from a functional organization to a divisional organization in April 2021, and the suppliers in the supply chain are professionally managed through SCM (Supply Chain Management) operation accordingly on the business division level. Being in charge of supply chain management, the procurement planning team conducts win-win growth support and risk management-related duties considering the supplier characteristics.

2.4.2 Strategy

2.4.2.1 Supply Chain Management Strategy

Based on an integrated supply chain management system, Hyundai Steel strengthens its suppliers' purchasing cost competitiveness and transparent ethical management, and fosters healthy partnerships through expanding support for cooperative win-win growth and smart workplaces. Furthermore, we identify potential risks of suppliers through annual supply chain ESG assessments to support their activities to improve ESG related issues and operate ESG education programs for them to raise the level of ESG management.

Integrated Supply Chain Management



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Establishment of Sustainable Supply Chain

As attention to supply chain risks intensifies globally, Hyundai Steel is committed to establishing competitive steel ecosystem by enhancing sustainability of overall value chain through building and managing the sustainable supply chain. We conduct ESG management level assessments and due diligence on our suppliers and conduct differentiated transactions according to the results. Suppliers are excluded from the transaction if they fail to meet the minimal ESG requirements within the given period, and the transaction is halted if the potential risks identified through ESG capability assessment are not mitigated. Major issues on supply chain ESG are reported to the Board through ESG Governance. Also, to build a more sustainable supply chain, we provide training on supply chain ESG management not only to internal stakeholders, such as our procurement organization but also to our suppliers' employees, together with supportive activities on our suppliers for the ESG management level enhancement and risk mitigation.

Establishment of Sustainable Supply Chain

ESG assessment	ESG capability improvement	Trading relationship differentiation
• Conduct regular assessments of suppliers • Perform ESG evaluations for newly registered suppliers	• Enhance human rights and labor related capabilities • Improve environment-related capabilities • Strengthen ethics and governance capabilities • Procurement personnel internal training	• Align procurement policies with ESG risk levels • Support for win-win growth to improve ESG capabilities • Exclude from the transaction if suppliers fail to meet the minimal ESG requirements and capabilities

2.4.2.2 Code of Conduct

Hyundai Steel's Supplier Code of Conduct outlines the fundamental expectations for our suppliers of products and services, to create a safe workplace, uphold the human rights of workers, and fulfill their environmental and ethical responsibilities. Furthermore, we require all our suppliers to adhere to laws and regulations relevant to their business activities and ask them to also maintain sound operating practices in areas such as ethics, environment, labor, human rights, safety, health, and management systems.

2.4.2.3 Win-Win Growth Policies

Under the three foundational principles of "Fair Trade Compliance, Reinforced Foundation of Partnership, and Communication with Suppliers," Hyundai Steel promotes win-win growth with suppliers. We are dedicated to strengthening the competitiveness of our suppliers with our various support activities such as financial aid, technical support, and business management assistance, and areas they need further support. Also, we have signed a fair-trade agreement with the Korea Fair Trade Commission and have been evaluated on the implementation results of the agreement, demonstrating our commitment to promoting win-win growth internally and externally.

2.4.2.4 Supply Chain ESG Assessment

Hyundai Steel conducts a "Supply Chain ESG Assessment" annually in consideration of government regulations, the steel industry, and product production processes, and checks supply chain ESG risks accordingly. The company conducts and assures the 'Supply Chain ESG Assessment' with the third party professional organization, and global standards such as Responsible Business Alliance, OECD Multinational MNE Guidelines, ILO Fundamental Conventions, ISO 26000, UNGPs, TCFD are considered and reflected in the assessment methodology.

Hyundai Steel increases the number of assessed suppliers and assessment criteria yearly to strengthen our risk management. In 2023, a total of 408 suppliers were assessed with 145 items in four areas—labor and human rights, ethics and governance, safety and health, and environment whilst the number of assessed suppliers exceeds the target set by 2%. The bottom 10% of suppliers in respective industries based on the assessment results were classified as suppliers with substantial negative impact and underwent our on-site/remote inspections. We have achieved risk check and setting remediation plans towards suppliers with substantial negative impacts by 100%. These suppliers implemented system-wide changes such as setting up internal risk communication channels and establishing a safety and health management system. In terms of environmental concerns, suppliers have conducted remediation tasks such as setting and managing targets for water usage and wastewater discharge and developing plans to reduce air pollutants and GHG emissions, and shred the results with us.

We conduct ESG capacity-building programs for suppliers in collaboration with specialized independent audit firms. In addition, we have created and provided a benchmarking casebook for suppliers with substantial negative impact to support improvement measures.

We reflect the ESG level of our suppliers in our procurement policy to provide incentives to suppliers with excellent ESG performance and penalize suppliers who fail to achieve ESG requirements. In particular, suppliers who fail to comply with internal regulations in the ethics and compliance area may be subject to bidding disadvantages and business sanctions. For example, in 2023, we suspended two suppliers with substantial negative impact for failing to achieve ESG standards.

Category	No. of companies	Remarks
Supply Chain ESG Assessment (Supplier desk assessments and on-site due diligence)		
Suppliers assessed	408	
Significant supplier[1]	65	41% of significant suppliers (155 companies)
Non-significant suppliers	343	
Suppliers with substantial negative impact[2]	40	
Significant suppliers[1]	10	
Non-significant suppliers	30	
Supplier's corrective action and capacity building		
Suppliers established and fully implemented corrective action plan	40	
suppliers supported in corrective action plan implementation	40	
suppliers in capacity building programs	109	20 significant suppliers participated (18.3%)

1) Significant suppliers are designated based on transaction size, materiality, and substitutability, including the raw material suppliers of significant raw materials such as iron ore and steel scrap, facility and distribution suppliers and subsidiary goods supplier.
2) Initially identified 42 suppliers with substantial negative impact, of which 2 were excluded from the count due to suspension.

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2.4.2.5 ESG Education for Suppliers

Hyundai Steel has organized an ESG education program for its suppliers to enhance their understanding of ESG and strengthen their capabilities. In 2023, the program was held over two months, from October to November, and a total of 273 suppliers completed the education. The ESG education program includes topics such as ethical management, human rights management, environmental management, safety management, privacy, and supply chain management and We are supporting various education programs to help our suppliers bolster their ESG capabilities and secure sustainable competitiveness.

ESG Education for Suppliers

Education program	Description
Ethical Management	Concept of Ethical Management
	Hyundai Steel Ethics Charter and Code of Conduct
	Concept of Human Rights Management
Human Rights Management	Management Elements in Human Rights Management
	Hyundai Steel's Human Rights Management Status
Environmental Management	Concept of Environmental Management
	Climate Change
	Carbon Neutrality
	Circular Economy
	Biodiversity

Education program	Description
Safety Management	Concept Safety Management
	Occupational Field Safety Management
	SERIOUS ACCIDENTS PUNISHMENT ACT
Information Security	Information Security and Cyber Safety
	Information Security Compliance Principles
Supply Chain Management	Sustainable Supply Chain Management
	Conflict Minerals
	Global Supply Chain ESG Due Diligence Act
	Hyundai Steel's Supply Chain Management Status

2.4.2.6 Win-Win Growth Programs

Three Foundational Principles	Category	Win-Win Growth Programs	
Fair Trade Compliance	Fair trade and ethical management	• "Four key practices" of the Fair-Trade Commission	• Compliance Program
		• Procurement ethics regulations	
	Fair procurement policy	• Transparent procurement process	• Payment conditions for supply of goods
		• In-house integrated procurement system	• Procurement information sharing portal
Reinforced Foundation of Partnership	Financial support	• Win-win partnership fund	• Network loans(based on transaction history, loan provision)
		• Win-win payment system	• Win-Win Growth investment project
	Technical support	• Performance sharing system	• Seminars on improving awareness of technology protection
		• Non-exclusive licensing	• Joint R&D
		• New product development project with an option to purchase	• Joint patent applications
		• Technical data bailment system	
	Business management support	• Dedicated online recruiting center for suppliers	• Support for suppliers in expanding domestic and international sales channels
		• Education/training program	• Employee benefit support
		• Foundation for Industrial Safety Partnership	
Communication with Suppliers	Operation of various communication channels	• Procurement cooperation council and subcommittee	• Ethical management pledge
		• New Year's meeting with suppliers	• Supplier inquiries (communication bulletin)
		• On-site visits to suppliers by our management	
		• Meetings with our departments related to win-win growth	• Online platform for win-win growth, "Sangsaeng-Nuri"

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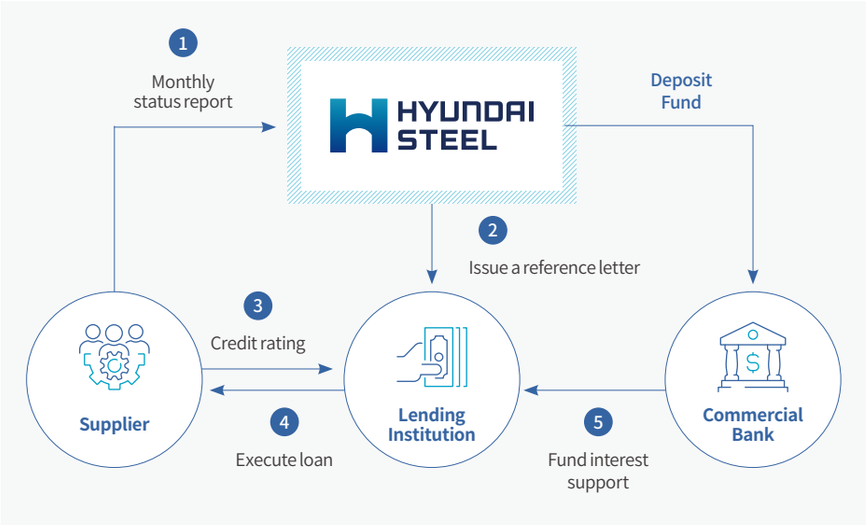
Organization of Steel ESG Win-Win Fund

Hyundai Steel, in collaboration with the Korea Iron & Steel Association, POSCO, and IBK Industrial Bank has established the "Steel ESG Win-Win Fund" raised around KRW 150 billion. The fund is expected to improve managerial performances of steel industry related SMEs suffering from rise in raw materials by SMEs by enabling them to borrow at lower interest rates. Suppliers eligible for this fund are those that have ESG-related certifications or those that need funds to enhance their ESG management environment, and the fund is intended to be utilized to strengthen supply chain ESG capabilities.

Win-Win Partnership Fund

Hyundai Steel's Win-Win Partnership Fund offers financial support to cover the loan interest of our small and medium-sized suppliers. This fund, which totals KRW 40 billion and operates in collaboration with financial institutions, allows these suppliers to reduce their financing costs and manage their operations without financial difficulties ensuring stable management of the company.

| Fund Operation Process



Supplier Environment Risk Management Business Support

To fundamentally address the environmental risks associated with our suppliers, Hyundai Steel provides free consulting services in analyzing energy consumption patterns and identifying solutions to reduce them, as well as free support in establishing efficient energy-saving equipment systems such as solar power generation facilities and air compressors. Furthermore, we provide specialized consulting in the environmental and energy sectors, and we train our suppliers' personnel to bolster their environmental risk management capabilities. In 2023, we provided KRW 400 million in support to nine suppliers, saving them approximately KRW 48 million in energy costs annually. Since we launched this program in 2014, we have built energy-saving facilities and systems worth KRW 2.6 billion for a total of 56 suppliers, resulting in our suppliers saving about KRW 600 million in electricity costs annually.

Supplier Suggestion Center

Hyundai Steel operates the Suggestion Center, a platform for suppliers to voluntarily submit suggestions and proposals, such as localizing parts and enhancing facility performance. and provides the necessary human resources and services for on-site testing to apply the proposal in the field. When the test results are positive, we share the outcomes with our suppliers and offer them incentives such as long-term supply contracts and additional points in supplier evaluations. In 2023, a total of four suppliers received incentives for presenting ESG-related topics in the proposal center, such as carbon emissions and energy saving. This approach enables our suppliers to secure a stable supply chain and boost their technological competitiveness, thereby contributing to our cost reduction and productivity increase.

Soil Scrap Disposal Support

Hyundai Steel is the only steelmaker in Korea to introduce a soil scrap disposal support system, which has been in operation since 2012. This system, designed to aid our suppliers in disposing of soil scraps generated from the dumping sites of our steel scrap suppliers free of charge, enhances the competitiveness of our suppliers by improving the quality of the steel scrap they receive. It also aids in addressing environmental issues, such as fugitive dust arising during the distribution of steel scrap. Every year, we have subsidized the disposal of 50,000 tonnes of soil scraps, and in 2022 alone, we managed soil scrap from 140 dumping sites.

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Establishment of the Foundation for Industrial Safety Partnerships

In 2022, Hyundai Steel established the Foundation for Industrial Safety Partnerships, a public benefit corporation for industrial safety, together with Hyundai Motor Group affiliates, to generate safe workplace environment and establish systematic safety management. To contribute to supplier safety and health capability improvement, the company is operating safety management system inspections, safety gear support, trainings, safety material provision, AI based safety technology development, scholarship projects for bereaved families, etc.

Project	Description
Safety management system inspection and technical support project for occupational accident prevention	• Provide support for the establishment and implementation of safety and health management systems. • Facilitate safety inspections and the establishment of improvement measures to prevent serious accidents • Offer consulting to enhance their level of safety management
Education and training support project	• Provide specialized training to train professionals and improve their qualities • Arrange visits to overseas excellent companies to advance safety management techniques
Safety information and data support project	• Share accident cases by industry, safety-related laws and regulations, and safety awareness posters • Organize seminars and forums on safety-related best practices
Support project for the introduction of AI-powered technologies such as smart safety management	• Assist in the introduction of selected smart safety technologies to SMEs • Support R&D of new safety-related technologies
Award project to recognize outstanding SMEs and contributors to industrial management improvement	• Grant awards to outstanding SMEs and contributors to safety management through safety-related competitions
Funding project for win-win partnership to promote business safety and safety management	• Support the cost of credit insurance when suppliers take loans for safety improvement investments in SMEs
Scholarship project for bereaved family members of workers deceased from serious accidents	• Provide scholarships to support bereaved family members of SME workers died in serious accidents
Other projects aligned with the purpose of subsidiaries	• Carry out other related projects to improve the safety level of the entire industry

Subcommittees and Communication Channels

We operate various communication channels and programs aimed at fostering win-win growth with our suppliers, thereby building a collaborative business model. Through our supplier communication page, we share supply chain policies and procurement data, and are receiving and addressing our suppliers' difficulties and complaints regarding system and business improvements, resolving a total of 255 cases in 2023 alone. We also share our procurement policies and item operation plans through subcommittees for each procurement area, convening a total of 18 subcommittees with 148 suppliers. We are concentrating on drawing out the major tasks considering characteristics of each subcommittee and have strengthened feedback management for the goal achievement.

Operation of Procurement Information Sharing Portal

In 2023, we opened a new procurement information-sharing portal within the integrated material procurement system to guide suppliers on our procurement policies and processes. This platform features 14 content areas, including information necessary for transactions with us, supply chain ESG, and procurement ethics management. The four most relevant areas are separated for easy access, allowing suppliers to transact with us conveniently. Furthermore, the procurement information sharing platform does more than just share information. It is also linked to a system access function that enables transactions. Furthermore, it supports the issuance of credit ratings, tax invoices, and accredited certificates, facilitating suppliers' daily work.

Procurement information-sharing portal

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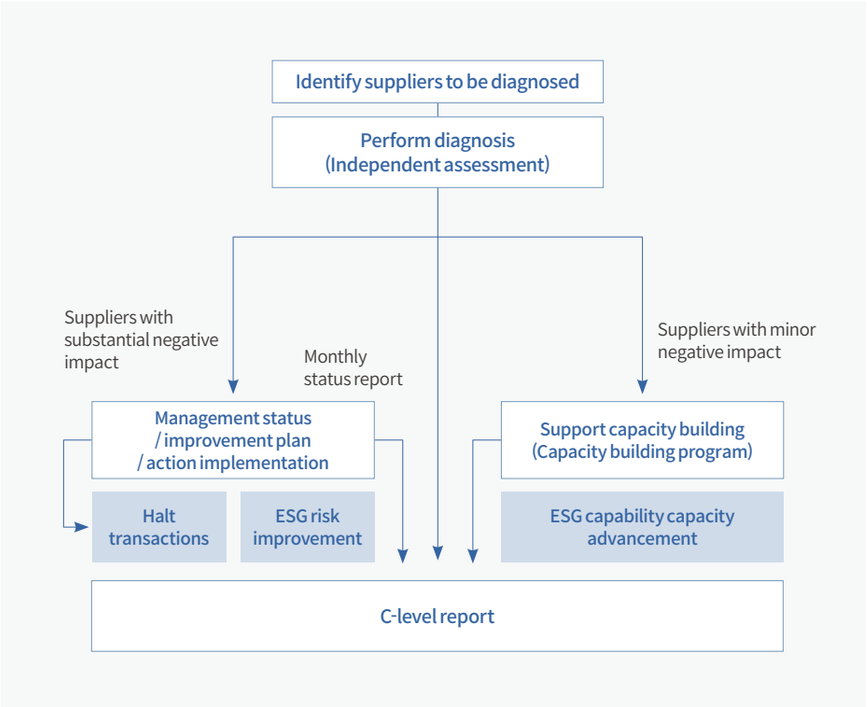
2.4.3 Risk Management

Supply Chain ESG Diagnosis Process

Hyundai Steel examines the management practices of our suppliers in areas such as labor and human rights, environment, ethics and compliance, and safety and health, and identifies potential risks to our business. Based on the assessment results, we select suppliers with substantial negative impact, and require them to carry out due diligence and establish improvement plans. We then monitor the results of these improvements.



2.4.4 Metrics and Targets

2.4.4.1 Supply Chain ESG Management Target

Hyundai Steel enhances the understanding of sustainable management of suppliers by providing them with ESG assessments reviews, management improvement support, and education. We will put our efforts into establishing a sustainable supply chain by gradually expanding the supplier pools for assessments every year, and strengthening our win-win growth supports.

Indicator	2023 Achievement	2025 Target	Remarks
ESG assessment review	57% of the total suppliers reviewed	67% of the total suppliers reviewed	Selecting suppliers for review in 2023 among all suppliers in 2022
ESG management improvement support	29 companies (4.1%)	5% of all suppliers	2023 management improvement support - Steel ESG Win-win Fund: 20 companies - Investment financial capital business: 9 companies
ESG Education	2 times / year (273 companies)	3 times / year (Intended companies expanded)	ESG management mind improvement contents.
on-site due diligence on low-rated companies in the assessment	40 companies (100%)	All intended suppliers	Including on-site / remote assessment

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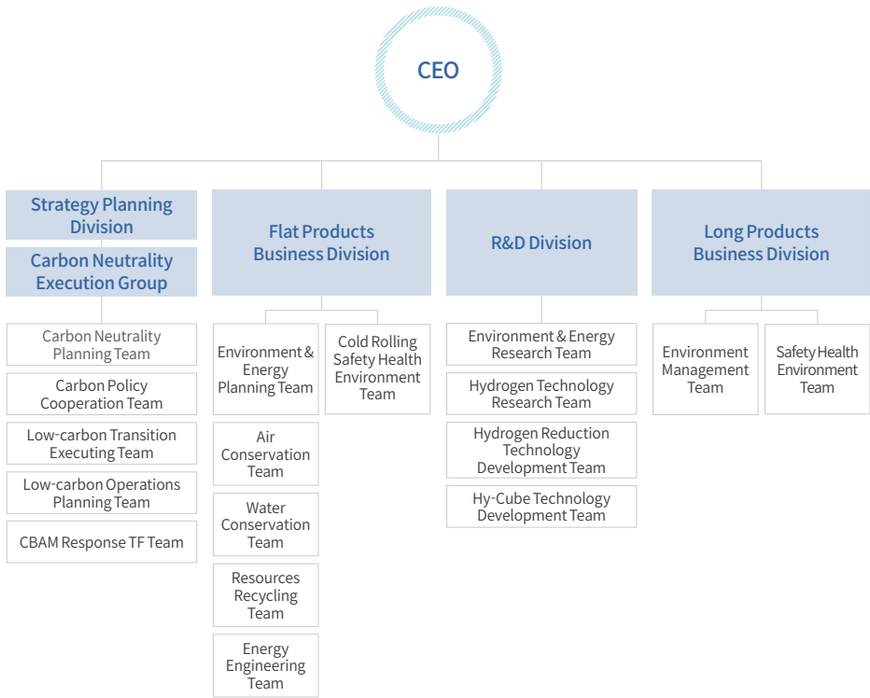
2.5 MATERIAL TOPIC 4 - Pollutants Management

2.5.1 Governance

2.5.1.1 Environmental Management System

Hyundai Steel conducts periodical reports of respective division heads on issues including environmental management performances and major environmental issues to discuss internal environmental management target achievements and improvements. For effective pollutants management, teams in respective business sites under each business division are organized. In Dangjin Integrated Steelworks, a large steelworks with blast furnaces, Air Conservation Team, Water Conservation Team, Resources Recycling Team, and Energy Engineering Team are in charge of the respective areas with the supervision of the environment energy operations team. In Incheon, Pohang, and Suncheon Works, the environment management team overviews the environmental impact management of the production process.



2.5.2 Strategy

2.5.2.1 Analysis of Environmental Risks

Hyundai Steel has conducted an analysis of environmental risks associated with its business operations, regulatory requirements, and local communities. The analysis revealed that environmental risks could occur, such as local environmental issues resulting from fine dust caused by nitrogen oxides, the reduction of emission permits, changes in emission permit pricing, fines for excessive emissions, and an overall reduction in emission permits. Accordingly, we conducted a financial analysis and estimated potential financial losses of KRW 503 billion, including the costs of purchasing emission credits and fines, for 2025 if we continue operating without investing in pollutant reduction measures.

To reduce nitrogen oxides, we installed multistage combustion and low-NOx burners at various production facilities while introducing selective catalytic reduction (SCR), recognized as the most efficient and reliable technology for reducing nitrogen oxides. Since 2018, SCR systems have been installed and operational at each business site and are planned to be installed at all business sites. We have completed developing the low-temperature catalyst with excellent nitrogen oxides removal performance, even at low exhaust gas temperatures. This catalyst is currently going through a validation process by being installed on the first heating furnace of Dangjin Integrated Steelworks. Going forward, we aim to ensure a thorough response and mitigate any potential environmental risks by closely monitoring the situation and analyzing the results.

Classification		Risk	Response
Business Operation	Water source	Lack of water supply sources due to factors like climate change	Diversification of water sources, advancement of measures to reduce water usage
	Waste	Increased cost to waste disposal due to decreasing the number of landfill/ incineration plants	Recycling, diversification and advancement of waste usage
Regulation	Pollutant (air/water)	Regulation on total amounts according to the Special Act On The Improvement Of Air Quality In Air Control Zones	Introduction of best available control technology, purchase of emission permit
	Chemicals	Increase in premiums for liability insurance due to chemical accidents	Replacement/reduction of harmful chemicals
	Others	Investment needed due to violations of regulations related to noise and soil	Regular monitoring
Local Community	Environmental Accident	Chemical spills	Purchase of liability insurance, installation of retaining walls/trench to prevent chemical diffusion
	Civil complaint	Civil complaints about noise, fugitive dust, and odor (which weaken the business foundation)	Operation of committee, review of relevant investment

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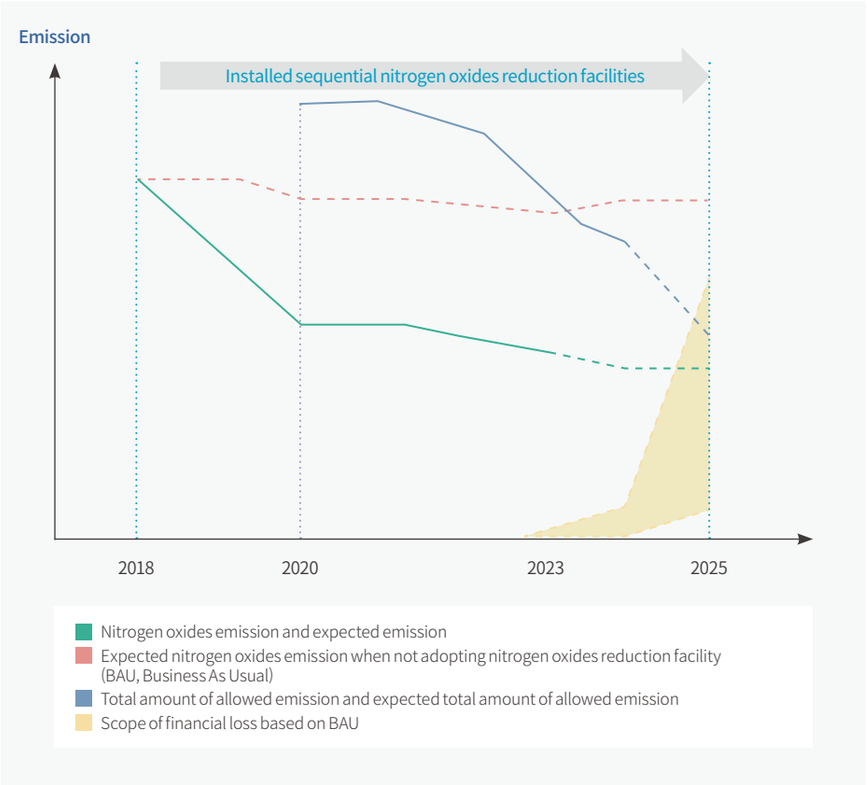
Expected Nitrogen Oxides Emissions and Financial Impact



※ Emission and total amount of allowed emission: Expressed as the sum of regional allowances for ease of understanding
※ Purchase amount of emission permit: Calculated as estimated emissions of nitrogen oxides compared to the total amount of allowed emissions by region, considering the price trend of emission permit in the air pollutant management system of business sites; not reflecting the sales amount
※ Fine: Calculated as the estimated amount of nitrogen oxides emissions relative to the total allowed emissions by region, referring to SPECIAL ACT ON THE IMPROVEMENT OF AIR QUALITY IN AIR CONTROL ZONES; excludes reduction in total allowed emissions due to excessive emissions

2.5.2.2 Air Pollution Management

Hyundai Steel is enhancing its air environment management system by reinforcing internal management standards for key air pollutants, including nitrogen oxides, fugitive dust, and odor, and also increasing investments in environmental improvement tasks. Additionally, Hyundai Steel is actively engaging in external initiatives such as Steel Industry City Win-Win Environment Forum, Net Zero MOU ceremonies, and campaigns to reduce fine dust.

Investment in Nitrogen Oxides (NOx) Reduction Facility

To respond to the continuous tightening of regulations, Hyundai Steel discovers and applies the operational conditions and methods to reduce NOx emissions on facilities with concerns regarding excessive NOx emissions and invests in environmental and preventive facilities. We established plans to sequentially install a total of eighteen Selective Catalytic Reduction (SCR) facilities and five low NOx burners on heating furnaces and sintering facilities in Incheon Works, Pohang Works, Dangjin Integrated Steelworks, and Suncheon Works by 2025, and sixteen SCR facilities and two low-nitrogen oxides burners have already been installed and are in full operation. We are operating the SCR monitoring system for early identification of the real-time operational status and malfunctions aligning with the investments in SCR facilities. Monitoring systems have been installed on the four SCR facilities (investment completed in 2022) in 2023 first and is planned to expand installation to thirteen SCR facilities (investment completed in 2023). Also, 'research and development of low-temperature catalysts' that can achieve excellent NOx removal performance at low exhaust gas temperatures was completed through government-led projects and is going through a validation process by being installed on the 1st heating furnace of Dangjin Integrated Steelworks.

Response to Fugitive Dust Reduction

The fugitive dust reduction TFT initiated in 2022 was completed in February 2024 with two phases (phase 1, and phase 2), and the short-term investments and mid-to-long-term plans are being established based on this. The short-term investment budget is allocated for immediate improvements, and operational plans for the long-term plans that require significant time and budget are being sequentially established. In case mid-to-long-term expansion and improvements on dust collection facilities are required, we plan to conduct horizontal operations by conducting actual plant-level on-site assessments and validations by the second half of 2024 and are eager to optimize the current facilities by enhancing dust collection effectivity and preventing fugitive dust from spreading outside and install new facilities.

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Response to Odor Management

Dangjin Integrated Steelworks is actively addressing odor issues in the surrounding area through the utilization of odor monitoring systems and modeling devices. While monitoring environments susceptible to odor emissions (seasonal and environmental factors), the company is also investing in making improvements to major internal odor sources. In 2023, Hyundai Steel invested approximately KRW 4 billion to improve major odor sources at Dangjin Integrated Steelworks, completing the installation of odor prevention facilities and other improvement constructions. The blast furnaces of Dangjin Integrated Steelworks subject to under 500 times dilution based on air dilution olfactory method according to MALODOR PREVENTION ACT, the newly installed odor prevention facilities are designed to operate under a more stringent condition of 300 times dilution as a warranty condition. The newly installed odor prevention facilities are consisted in a multi-stage liquid cleaning tower system (up to 4 stages), and the appropriate chemicals are injected into each stages according to the odor characteristics.

Establishing Proprietary Emission Standards

In compliance with the strengthened environmental laws and regulations, pollutant emission concentration standard is increased, and TMS installation is mandated to manage pollutant emissions. We have installed TMS at each air outlet, and we have successfully implemented TMS for four categories (TSP[1], SOx, NOx, and HCL[2]) at a total of 72 locations throughout our facilities. Additionally, we have established internal management standards by analyzing pollutant emission data for each facility. These standards not only enable us to proactively address the risk of exceeding environmental regulations but also detect any abnormalities in our facilities. The internal management standards are expected to become a systematic and reasonable managerial standard to not only respond to tightening environmental regulations but also to proactively respond to the mid-to-long-term aging of environmental facilities and abnormalities of factory facilities.

Participated in Voluntary Reduction of Fine Dust

In March 2024, we actively participated in initiatives aimed at reducing fine dust during the seasonal management period in the Dangjin Port areas, organized by the Geum River River Basin Environmental Office and other relevant organizations[3]. We conducted various activities and promotions, smoke emission inspections on vehicles and pollution surveys and surveillance activities in Dangjin port and hinterlands using measuring vehicles and drones. Since signing the "Agreement on Voluntary Reduction of High-concentration, Seasonal Fine Dust" with the Ministry of Environment in 2019, during the high-concentration season of fine dust (December-March) and when emergency reduction measures are issued, our various departments at each business site remain on high alert emergency response and promptly implement measures to improve air quality in accordance with the prescribed guidelines. We strive to reduce fine dust by adhering to strengthened emission concentration standards, optimizing the operation of best available control technology, and installing early preventive facilities to reduce nitrogen oxides emissions.

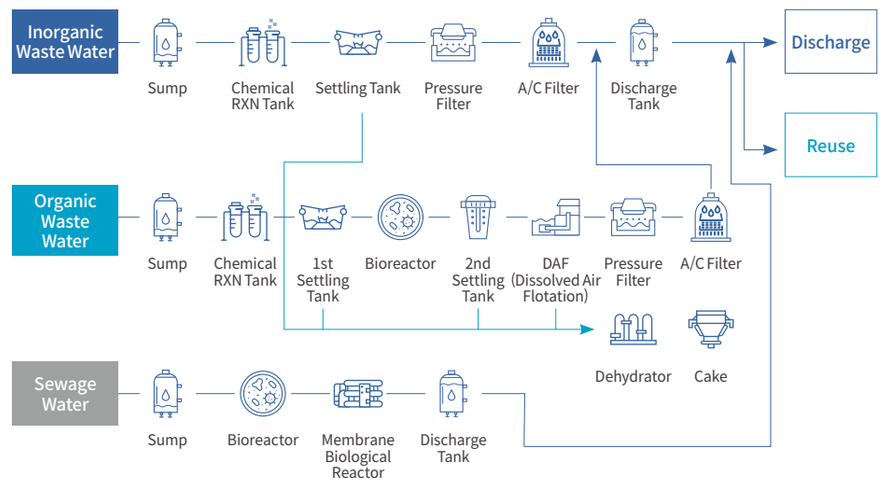
1) TSP: Total Suspended Particles
2) HCL: Hydrogen Chloride
3) Metropolitan Air Quality Management Office, Pyeongtaek Regional Office of Oceans and Fisheries, Gyeonggi-do, and Chungcheongnam-do

2.5.2.3 Water Pollution Management

Hyundai Steel has implemented a water quality data management system as part of its integrated environmental management system to enhance the efficiency of water quality management. This system allows the company to closely monitor water quality and minimize its impact on the water environment. By adopting rigorous monitoring practices, the company aims to preemptively address any potential risks related to environmental regulations.

Water Quality Data Monitoring System

Hyundai Steel diagnoses the efficiency of water treatment facilities and strictly monitors water quality management by regularly managing the water quality concentration and chemical usage in cooling water, boiler water, and wastewater generated at the Dangjin Integrated Steelworks. Based on this, the company carefully controls chemical injection and facility operating conditions to ensure desired levels. In 2023, the company completed the construction of a water quality data management system based on existing integrated environmental management system, enabling efficient data utilization for facility diagnosis and operations. Also, we have upgraded the system to enable monitoring of water quality at the wastewater treatment facility operating in Dangjin Integrated Steelworks. This reduced the lead time for data checking and application, in turn facilitating data storage and retrieval by period, enhancing the convenience of water quality management. Going forward, Hyundai Steel aims to preemptively respond to environmental regulations and to upgrade the system to monitor all water quality data across the steelworks effectively.



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2.5.2.4 Chemical Substances Management

Hyundai Steel utilizes a chemical substance management system to monitor the real-time distribution status of chemicals. The company also conducts regular self-inspection on implementation in order to prevent chemical accidents, with the assistance of specialized consulting firms. Additionally, Hyundai Steel actively engages with the chemical safety community and peers in the local community to continuously advance its chemical substance management practices.

Operation of Chemical Substances Management System

Hyundai Steel operates chemical substance management to abide by the related regulations such as CHEMICAL SUBSTANCES CONTROL ACT, ACT ON REGISTRATION AND EVALUATION OF CHEMICAL SUBSTANCES, OCCUPATIONAL SAFETY AND HEALTH ACT, etc. since 2015. Every material classified as chemicals must undergo a two-staged composition and hazard assessment to verify appropriateness before incoming in the business sites. Also, the MSDS (Material Safety Data Sheet) is updated and registered in the system for effective management.

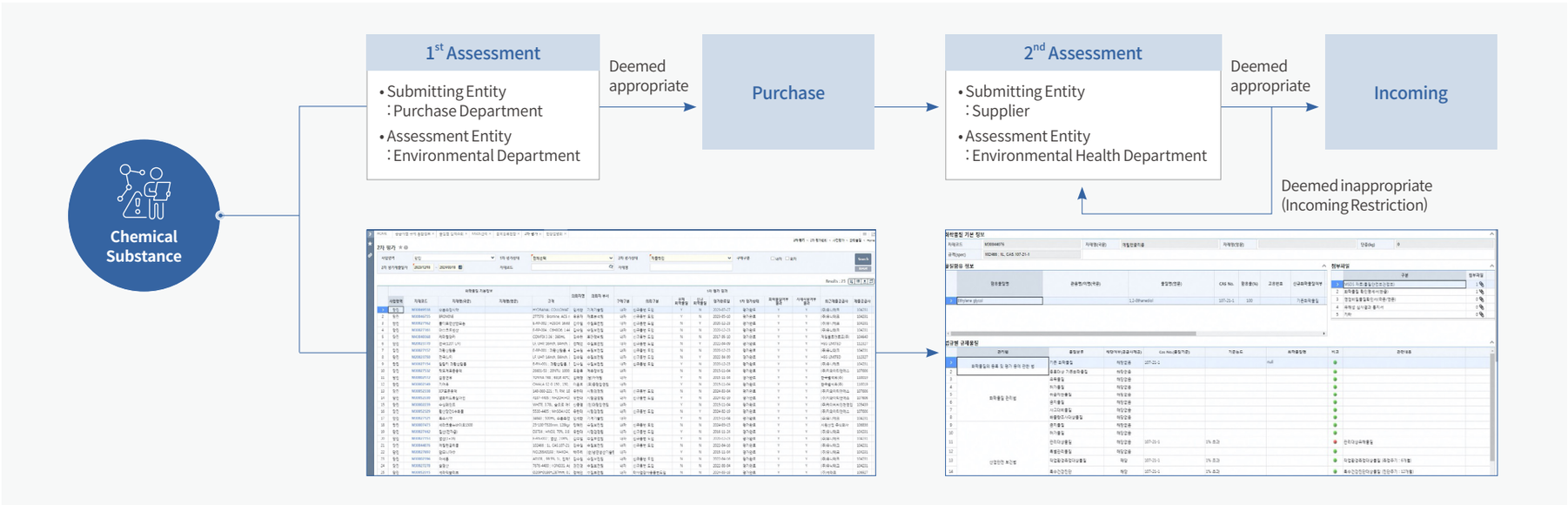
Proactive Response to Chemicals Regulations

By 1st quarter of 2024, Hyundai Steel has registered 36 chemical substances, including carbon black, in compliance with CHEMICAL SUBSTANCES CONTROL ACT and ACT ON REGISTRATION AND EVALUATION OF CHEMICAL SUBSTANCES. The company has plans to register an additional 25 substances by 2030. Real-time monitoring of chemical distribution status is conducted through the chemical substance management system, and Hyundai Steel actively participates in exchanges with the Chungcheong chemical safety community and other peer companies to enhance its chemical substance management practices. The company will proactively respond to the strengthened chemical regulations to mitigate environmental impact on local communities and address concerns regarding environmental pollution.

Safety Management of Hazardous Chemical Substances

Hyundai Steel is preemptively responding to the extended designation of hazardous substances and the revision of standards about the installation and management of hazardous chemical handling facilities. In 2023, the company included a hazardous chemical substance, Lead (II) oxide, in its business license and is actively promoting the use of non-hazardous alternatives for these chemicals. The company conducted a self-inspection on implementation of the chemical accident prevention and management plan in collaboration with a consultancy specialized in chemical substances, and submitted the inspection results to the National Institute of Chemical Safety.

| Evaluation of Registration Process of Chemical Substances



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2.5.2.5 By-Product Resource Utilization

Hyundai Steel recognizes the growing social demand for the utilization of By-products as resources and has established a steering committee with executive-level participation to oversee and manage related initiatives, striving to fulfill circular economy.

By-Product Resource Utilization Council and Operating Committee

Hyundai Steel operates an operational council and operating committee that involves executives to unite the directions on by-product utilization management initiatives, promote quick decision-making, and strengthen execution. The personnel in charge of the operational council shares issues collaborates for task resolution, and reports the process and results to the steering committee to execute the integrated initiatives. The integrated operations of the steering committee and company-level environmental meeting deal with the issues shared by the operational council and report to the CEO semi-annually on significant issues.

Implementation of Integrated Tasks for By-Product Resource Utilization

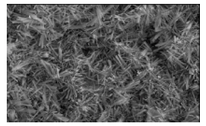
In 2023, the company successfully implemented the integrated initiative for utilization of by-products resulting in cost reduction of over KRW 2 billion (excluding the continued initiatives from 2021) by a total of 12 new initiatives. In 2024, we are executing a total of 6 initiatives including specific tasks, in line with the company's management policy.

Name of initiative	Overview	Remark
Examination of new by-product utilization technology	• Establishing collaborative system for securing by-product utilization and recovery technology of valuable resources • Signing a joint research agreement and establishing plans for pilot production and production process testing	Continued initiative from 2023
Development of environmental impact assessment methodologies for steel by-products	• Strengthening logic for allocation methods in slag system expansion • Guidelines for preparing by-product related domestic EPD (Environmental Product Declaration) and application for improvement proposal	New initiative
Development of construction aggregates using slag	• Development of inter-floor noise insulation materials and electric furnace slag expansion reduction technology • Collaborative development of pavement and roadside blocks utilizing slag	Continued initiative from 2023
Development of cement substitutes using slag	• Development of rapid-hardening cement using refined slag • Development of cement substitutes through blast furnace slag expansion control and formulation technology development	Continued initiative from 2023
Development of sodium bicarbonate dust processing technology	• Establishment of sodium bicarbonate pilot and practical assessment	New initiative
Reviewing utilization methods for coke dust	• Reviewing utilization methods for coke dust in production process	New initiative

Development of Rapid-Hardening Cement Using Reduction System Slag

Hyundai Steel is broadening the application scope of recycled by-products by developing rapid-hardening cement that achieves quick strength level after curing, using reduction system slag this year. Being a non-cement product composed of 70-80% reduction slag and 20-30% gypsum, high strength is achieved within a short term after curing. Reduction slag generated during refining processes contains calcium aluminate($12CaO \cdot 4Al_2O_3$), making it suitable to be used as a cement mixture by forming the finely divided ettringite compounds when it reacts to water and gypsum. The test results indicate that the new rapid-hardening cement product exhibits approximately 70% less shrinkage compared to conventional rapid-hardening cement and shows 1.3 times higher compressive strengths after 3 hours of curing. We look forward to effectively applying rapid-hardening cement in secondary concrete products that require quick strength and road maintenance materials. We are also executing collaboration with various institutions to initiate the pilot applications.

Hyundai Steel reduction system slag


Ettringite compound

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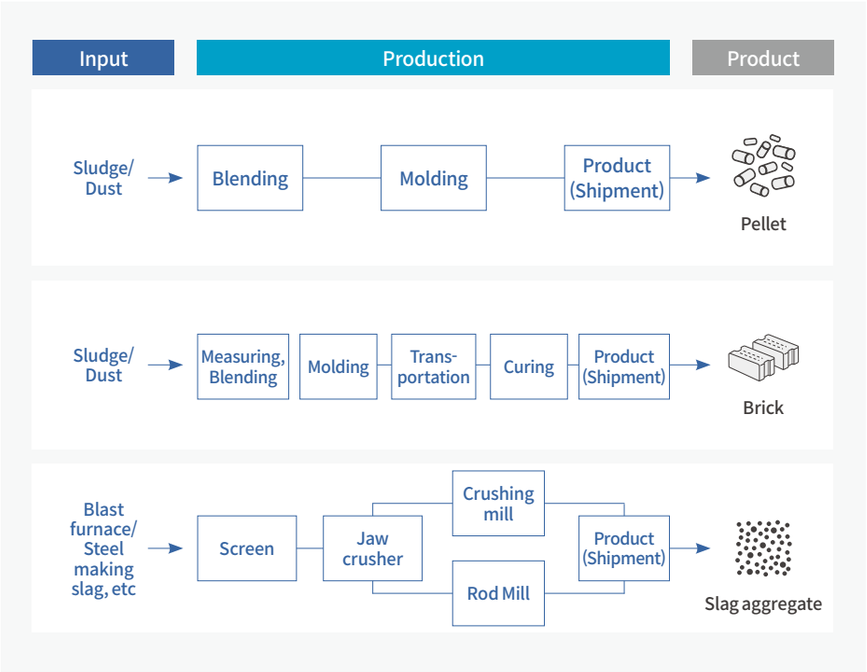
Operation of By-products as Resources Self-Processing Facility

Hyundai Steel operates the approved self-processing facility to achieve by-products as resources to reduce business wastes and improve recycling rate by utilizing by-products as resources on its own capabilities. The self-processing facilities in operation include solidification, stabilization, refining, shredding, pulverizing, and sorting facilities. Pellets and bricks are produced from sludge and dust, and aggregates and water-quenched furnaced slag are produced and commercialized using slag. The slag generated from plates, hot and cold rolled sheets/coils, and steel bars production is converted to slag aggregate secondary products after being processed in shredding and wind-crushing facilities. Slag products are recycled in multiple areas such as construction materials. Through our subsidiary Hyundai ICT, our by-product reprocessing factories are operated on a professional level, using the bricks and pellets produced in the reprocessing factories again in the production process. By eagerly utilizing the by-products as resource facilities, we achieved a resource utilization rate of 98.35%, surpassing the 2023 goal of 94.2%.

| Resources Self-Processing Facility Operation Process



Hazardous Chemical Substances Management

According to WASTES CONTROL ACT Article 2, hazardous waste refers to hazardous substances including waste oil and acid among the industrial wastes that might potentially pollute the surrounding environment, or harm human health. Hyundai Steel diligently manages hazardous waste by Article 7 of the Enforcement Rules (Standards for Waste Disposal, etc.), focusing on accident prevention. Abiding by Article 18-2 of WASTES CONTROL ACT (Obligation to Compile and Provide Hazardous Information Data), the potential hazards in the working process are informed to the newly contracted suppliers in advance by providing hazardous information data and writing work plans. Especially for liquid waste processing, the safety equipment is provided under the standards for handling hazardous chemicals. Hyundai Steel manages the entire process from emission, transportation, and processing of wastes through an electronic information processing program (Allbaro System). Also, we report on our disposal and treatment performances every February in compliance with Article 38-1 of WASTES CONTROL ACT (Submission of Reports) and pay disposal charges in accordance with Article 36 of ACT ON PROMOTION OF TRANSITION TO CIRCULAR ECONOMY AND SOCIETY (Waste Disposal Charges). The proportion of hazardous waste within the total waste generated has been consistently maintained at less than 1.5% since 2020.

| Yearly Waste Generation Status

Category	Unit	2020	2021	2022	2023
General Waste Generation Amount	1,000 tonnes	10,173	9,722	9,828	10,029
Hazardous Waste Generation Amount		153	128	124	133
Total		10,326	9,850	9,952	10,162
Hazardous Waste Proportion	%	1.48%	1.30%	1.25%	1.31%

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Symposium on Repurposing Steel By-Products into Low-Carbon Construction Materials

In February 2023, Hyundai Steel co-hosted the "Symposium on Low-Carbon Construction Materials Transforming Technology of Steel By-products" collaborating with the Slag Concrete Committee under the Korea Concrete Institute, held at COEX in Gangnam-gu, Seoul. Six organizations including Hyundai Steel, Hyundai Construction, POSCO Construction, Korea Institute of Civil Engineering and Building Technology, Korea Ceramic Technology Institute, and Gongju National University were able to share the technological advancement in low-carbon construction materials transformation of slag in the symposium. Amongst the agendas, Hyundai Steel shared insights on slag generation status in Korea, recycling issues, and domestic and international development status of slag-using technologies. Specifically, we shared our ongoing technological development status such as the performance verification case of lightweight mortar for sound insulation using slag, developing secondary concrete products utilizing blast furnace slag powder and steelmaking dust, etc. Also, exchanges on various perspectives regarding the demand-supply dynamics of construction materials with construction industry stakeholders and academic institutions personnel took place by sharing research status on forecasting changes in slag generation volumes due to future carbon-neutral transition technologies. We plan to host a technology symposium in 2024 again for mutual advancements.

2.5.2.6 Management of Pollution Incidents

Hyundai Steel conducts regular environmental inspections to monitor and assess the status of pollutant management. Through these inspections, we identify areas that require improvement and implement necessary measures to enhance our management practices, with an aim to prevent accidents resulting from pollutant leakage.

Pollution Incident Prevention Measures and Activities

| Chemical Accident Prevention and Management

Hyundai Steel provides annual training about hazardous chemical substances in order to ensure the safe usage of chemicals and prevent accidents involving hazardous chemicals. According to CHEMICAL SUBSTANCES CONTROL ACT, all employees in operations handling hazardous chemicals are required to attend safety training sessions on hazardous chemicals such as the safety management of hazardous chemicals, response protocols in case of accidents, etc. at least once a year for over 2 hours, and the training performances are reported annually to the National Institute of Chemical Safety. Also, Departments using hazardous chemicals hold at least one emergency response training a year to prepare for any potential chemical accidents.

Name of training	Training employees		Attending status			
	Target	Number of employees	Offline	Online	Total attendees	Attendance rate
Training for hazardous chemical substance handling employees	All employees in the business sites handling hazardous chemicals	20,673	13,280	7,393	20,673	100%

| Environmental Inspection

Hyundai Steel conducts environmental inspections to operate environmental equipment and facilities legally, manage pollutants, and prevent pollution incidents related to air and water quality. We regularly hold company-level environmental meetings twice a year, environmental circulation inspections once a quarter, and monthly environmental inspections and improvement activities through the environmental administrative council.

Name of meeting	Discussion agenda	Period
Company-level environmental meetings	Reports on status and improvements on the identified issues	Twice a year
Environmental circulation inspection	Identify environmental issues in each operation and establish improvement measures and plans	Quarterly
Environmental administrative council	Persons in charge discover environmental improvement items and discuss on improvement measures	6 times a year

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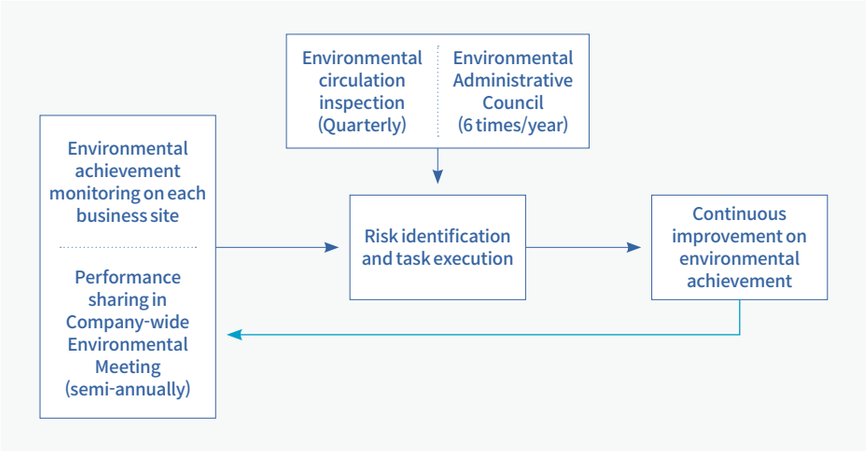
2.5.3 Risk Management

2.5.3.1 Environmental Risk Management Process

Hyundai Steel manages environmental risks in areas including air pollutants, water pollutants, chemical substances, waste, water, energy, and local communities utilizing the environment management system. The production, support and environment teams in respective operations conduct environmental inspections to identify and improve risks. Also, circular inspections between the environment teams on each operation are held to address the not-yet discovered/new issues without any exemptions, and the environmental risks are shared through an integrated administrative council. The identified risks are continuously being improved through small-scale repairing, large-scale investments in facilities, changes in the production process, employee training, etc. The improvement process and results are reported to the Company-wide Environmental Meeting and the Environment Administrative Council which are attended by the top management, and shared with the entire company.



2.5.4 Metrics and Targets

2.5.4.1 Pollutant Emission Management

Pollutant Emissions[1)2)3)4)]

Category	Pollutant	Unit	2020	2021	2022	2023
Air pollutant	Dust	tonnes	293	291	285	329
	NOx	tonnes	9,269	9,362	8,760	8,646
	SOx	tonnes	4,984	3,739	5,507	5,877
Water pollutant	SS	tonnes	35	45	36	29
	TOC	tonnes	-	-	80	90

1) Dust: Based on TMS (Tele Monitoring System)
2) NOx, SOx: Based on total amounts referring to SPECIAL ACT ON THE IMPROVEMENT OF AIR QUALITY IN AIR CONTROL ZONES (subject exceeding 4 tonnes annually)
3) TOC, SS: Based on TMS (Tele Monitoring System) and proprietary measurement
4) Organic substance indicator among water pollutants changed to TOC according to WATER ENVIRONMENT CONSERVATION ACT since 2022

Pollutant Management Plans and Goals

Category		This year's Goal	Mid-to-long term goal
		2024	~ 2030
Pollutant Emissions Intensity	Managerial standards for air pollutants (Dust, NOx, SOx)	Strengthen management level up to 80% of legal requirements	Strengthen management level up to 80% of legal requirements
	Managerial standards for water pollutants (TOC, SS)	Strengthen standard level up to 80% of legal requirements	Strengthen standard level up to 80% of legal requirements

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2.6 MATERIAL TOPIC 5 - Compliance and Ethical Management

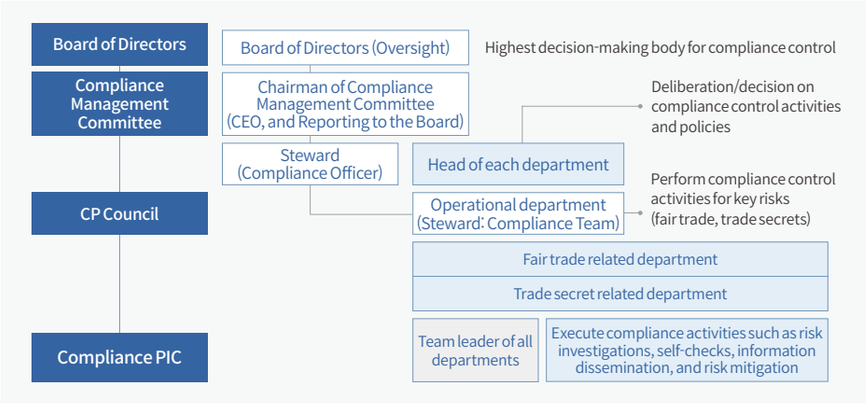
2.6.1 Governance

Hyundai Steel strives to solidify trust with stakeholders by faithfully fulfilling its economic and legal responsibilities, and to enable employees to voluntarily practice compliance management through the internalization of the company's compliance culture. To strengthen the compliance management system, we have established the Compliance Management Committee and the CP Council under the Board, both of which contribute to our stringent management of core risks related to fair trade and trade secrets. Additionally, we operate various compliance support programs such as compliance training for our employees and the publication of compliance news to promote the establishment of a robust compliance culture.

2.6.1.1 Compliance Management System

To address the growing social demands for compliance management and stricter regulations, Hyundai Steel has implemented revisions to its compliance control standards, which aim to minimize the risk of legal violations, and we established compliance regulations as a sub-section. In addition, the company has provided business guidelines to provide practical standards for departments to use in their work. We have established the Compliance Management Committee where the CEO can directly participate, direct, and manage all compliance control activities and designated Compliance PICs for each department under the CP Council, to establish the compliance control system that starts from the business sites and connects to the executive level. The Compliance PICs actively engage in compliance control activities, which include on-site investigations and risk assessments, inspecting the improvement measures, and execution levels of key risks such as fair trade and confidential business information in the CP Council. The results of the discussions and improvements are reported to the CEO, the Chairman of Compliance Management, and the Board.

Compliance Control System



2.6.1.2 Advancement of Compliance Activities

Establishment and Operation of Compliance Principles

Hyundai Steel pursues compliance management based on the Hyundai Steel Five Guiding Principles of Ethics Charter to become a trustworthy partner of various stakeholders and to improve customer value at the same time. Also, to prevent legal violation risks, we created a compliance work manual and checklists to establish a compliance risk prevention and management system based on relevant laws and regulations across various sectors, including fair trade, personnel and labor, safety, environment, personal information, and trade secrets, and interviews with representatives of related departments. Furthermore, in 2022, we introduced the "Three Principles of Fair Trade at Hyundai Steel" and incorporated eight work principles to prevent collusion, unfair favoritism, and unfair trade practices, along with adding manuals, action guidelines, and checklists to assist employees in understanding the details of each regulated area, strengthening the compliance management system. These updates were communicated with general and research employees through the intranet and individual emails.

| Principles of Fair Trade at Hyundai Steel

1. Avoid contact with competitors' employees
2. Avoid discrimination between affiliates and non-affiliates
3. Refrain from engaging in unilateral communications and transactions without justifiable reason or reasonable basis

| Development and Revision of Compliance Regulations

Refrain from engaging in unilateral communications and transactions without justifiable reason or reasonable basis

Compliance regulation	Overview
Ethics Charter and Code of Conduct	General Ethical management
Compliance Control Standards	Organization, Roles, Duties, Operation of training programs, Inspections, Internal reports, Violation handling, Restriction standards, Awards, etc.
Compliance Support Regulations	
Fair-trade self-compliance regulations	

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2.6.2 Strategy

2.6.2.1 Strategies for Ethical Management

Hyundai Steel suggests behavioral standards to abide by in business activities by establishing an Ethics Code of Conduct based on the Hyundai Steel Five Guiding Principles of Ethics Charter. We strive to build a fair and transparent relationship with our stakeholders.

Hyundai Steel Ethics Code of Conduct

1	2	3	4	5
Employee ethics	Fair competition and trade	Realization of customer value	Employee respect	Pursuit of sustainability

Hyundai Steel Five Guiding Principles of Ethics Charter

1. We shall perform our duties based on clear and transparent standards, and do our utmost to fulfill our responsibilities with integrity.
2. We shall compete fairly in the market and conduct business ethically with parties that engage in contractual relationships with us.
3. We shall provide safe products, exceptional services and accurate information, and we rigorously protect personal information to increase customer value.
4. We shall respect our members as independent individuals, and to this end, we provide fair working conditions and safe working environments.
5. We shall contribute to sustainable development by fulfilling our social & environmental responsibilities as a member of society, so that diverse stakeholders may prosper together in harmony.

Operational Directions of Ethical Management

Establishment of ethics management policy	Pre-risk inspection	Employee recognition improvement
• Establishment of ethics charter and code of conducts • Establishment of ethics regulations	• Execution of ethics inspection • Operating reporting channels (Cyber Audit Group)	• Operation of customized ethics training • Compliance and Ethical Management Pledge

Compliance Program

Hyundai Steel has introduced and executed the CP(Compliance Program) to establish the foundation of sustainability competitiveness through transparent business activity since 2002.

Fair Trade Compliance System and Key Components

Hyundai Steel aims to lead the compliance culture by implementing the seven key components of the fair trade compliance program.

Compliance Commitment	Formation of Organization	Implementation Plan	Monitoring
• Statement of the CEO's Commitment of Compliance	• Independence of Compliance Department • Formation/Operation of company-wise compliance operation organization	• Training and compliance hand book distribution, restrictions on employee violation of regulation and self-compliance awards	• Operation of internal reporting channel • Detection of threat through computerized monitoring system, vindication and management

Hyundai Steel Seven Key Components of Compliance Program

1. Introduction of CP and establishment of operational policies
- Establishment of Compliance Control Standards (established in April 2024 / 1st revision in January 2023)
- Establishment of Compliance Support Regulations (Established in January 2023)

2. Executive Support
- Statement of the CEO's commitment to compliance through two annual CEO compliance messages
- Annual signing of compliance and ethical training pledge of all employees
- Incorporating compliance management activity indicators into KPIs
- Designating the compliance manager (general manager of compliance management)

3. Publishing and utilizing compliance handbook
- Publishing of 2023 compliance handbook and distribution to all employees

4. Sustainable and systematic compliance training
- Customized compliance training by departments and positions

5. Establishment of pre-monitoring system
- Implementation of pre-task briefing system
- Operating reporting channels (Cyber Audit Group)
- Direct report to the board on CP operations plan and performance
- Operating administrative councils such as Compliance Management Committee and CP Council
- Execution of self-inspection and risk assessment

6. Restriction and incentive system
- Operating restriction standards according to the intentionality/significance of legal violations
- Incentivizing top performers and whistleblowers

7. Effectiveness assessment and improvement measures
- Quarterly CP operation effectiveness assessment and improvement measures.

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2.6.2.2 Whistleblowing Policy

Hyundai Steel operates the Cyber Audit Group to identify potential legal incompliances or unethical behaviors within the Company. Our employees and external stakeholders, including suppliers and customers, can report to the Cyber Audit Group under confidentiality. It is prohibited from disclosing or implying the identity of whistleblowers without their consent, the Cyber Audit Group upholds the principles of confidentiality, identity protection, and reduction/exemption of responsibility, by protecting whistleblowers from any disadvantages and discrimination they might face as a result of their reports. The Cyber Audit website receives and handles reports of unreasonable demands and irregularities committed by our executives or employees abusing their positions, such as unfair trade practices favoring parties with academic or regional affiliation, unfair demand for or provision of money, bribes or entertainment, abuse of authority and solicitation, and other incompliance with the Code of Ethics. The Cyber Audit Group also accepts suggestions for correcting unreasonable practices. Reports can be submitted online via, telephone, fax, or letter, and are handled with confidentiality to ensure anonymity. The outcomes of the reports are made available on the Cyber Audit Group website.

2.6.2.3 External Audit Operation Status

Hyundai Steel's Finance Planning Team operates an internal accounting management system in compliance with the Act on External Audit of Stock Companies. As part of internal control under this system, Hyundai Steel engages in various internal activities such as posting the website and in-house intranet (ethical charter and code of conduct), conducting related education (corporate ethics and fair trade), and expressing self-compliance with CEO fair trade. These activities undergo annual verification by third-party external auditors (accounting firms).

2.6.2.4 Compliance Education

Hyundai Steel educates its employees on ethical management, fair trade, and trade secrets to enhance employees' understanding of compliance management and foster compliance awareness. In particular, our ethical management education covers the definition and necessity of ethical management, our efforts to implement ethical management, and anti-corruption including prohibition of bribery and entertainment, as well as precautions to prevent workplace bullying and sexual harassment. In 2023, we provided education to 289 new and experienced employees, including contract interns in general positions, on ethics management and 26 newly appointed expatriate and corporate managers on the Foreign Corrupt Practices Act(FCPA). The ethics education lectures are uploaded to our online system and made available to all employees at any time. Additionally, in 2023, we provided basic fair-trade education for both new and experienced employees, fair trade Dos and Don'ts education for procurement and sales-related departments, trade secret education for R&D departments, and education on the Subcontracting Act for departments related to subcontracting. With the goal of establishing a high level of compliance management culture throughout the company, we provide customized training based on position, task, and risk type.

| Compliance Education

On-line programs	Off-line programs
① Sexual harassment prevention / disability awareness improvement / workplace bullying prevention(mandatory for all employees) ② Ethical management education for new team leaders(online education due to COVID 19) ③ Sending letters to the cCompliance PICs (related to ethics code of conduct) ④ Signing ethical and compliance management pledge annually	① On-boarding education ② Customized ethical education considering duty characteristics

Major education	Time	Result
Ethical management education	Frequent	Completed training for all new and experienced general/ research employees joined in 2023(organized education within the onboarding training course for new employees
Prohibition of use of technical materials education	April	Completed training for 200 employees in operation/ Procurement related departments
Trade secret education	May~Jun	Completed education for 499 employees at R&D Center
Compliance management education	Jul	Completed education on 103 general managers and above
Fair trade job education	Jul	Completed education on 557 employees in procurement/sales related departments
Fair trade basic education	Nov	Completed training for all 282 new and experienced general/ research employees in 2023
Subcontracting Act education	Dec	Completed education on 147 employees in operation/ repairment/procurement related departments
Employee ethics education	Dec	Completed training for 213 employees in electric arc furnace business division

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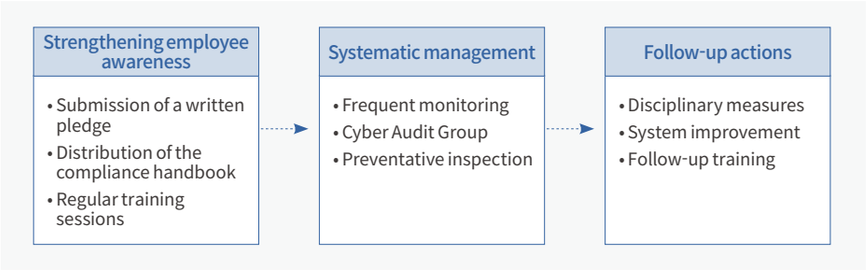
2.6.2.5 Internalize Ethical and Compliance Management

Internalize Compliance Management

Hyundai Steel implements various compliance support programs to promote effective compliance management practices. Twice a year, the CEO's message on compliance management is posted on the website and intranet and disseminated to all employees. In addition, we release timely compliance news twice a month, operate a reporting system for pre-and post- contact with competitors, and enforce rules that ban information exchange. In December 2023, we published and distributed a compliance handbook to all employees. We also conduct employee compliance surveys to assess our compliance status, measure improvements, and evaluate employees' understanding of laws and regulations related to their work. Insights from these surveys are applied to our compliance support activities. In October 2023, we conducted the Compliance and Ethical Management Pledge for 3,594 general position employees, which encourages employees to practice compliance in their daily work.



| Enhancing Compliance Awareness

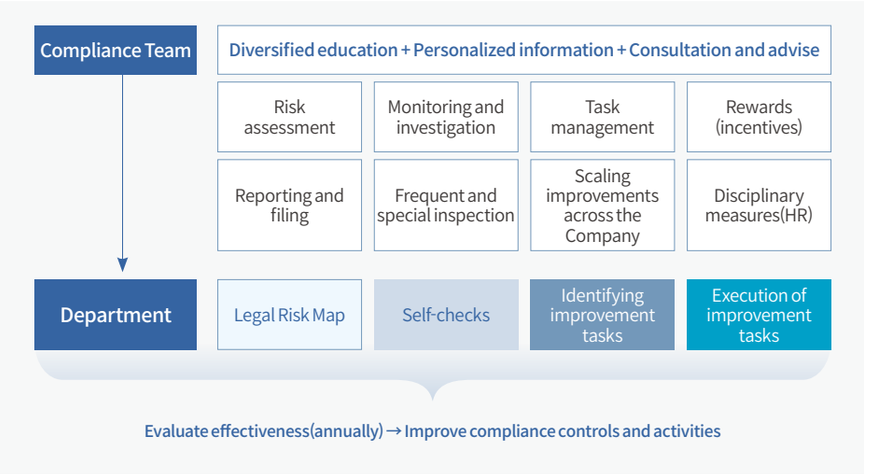
Hyundai Steel publishes Compliance News and sends text messages to employees for enhanced compliance awareness. In 2023, 28 issues (twice a month) were published, covering legislations and amendments, court decisions, precedents, and other key issues in the fields of fair trade, environment, safety, human resources, and labor. The fair-trade text message service informs the employees of fair-trade precautions with case examples that might occur at work via text messages and e-mails. The service intends to routinize employee compliance awareness by sending messages to employees in sales, procurement, and management support departments. The text messages include familiar case examples and key points, and the e-mails provide detailed information on behavioral guidelines. As of the first quarter of 2024, a total of 23 messages have been sent, with plans to continue weekly to draw employee awareness.

2.6.3 Risk Management

2.6.3.1 Legal Violation Risk Investigation Process

Establishment of a Compliance Control System

Hyundai Steel is promoting the establishment of a compliance control system to ensure the continuity and effectiveness of compliance management directly within on-site departments, using IT systems. The Compliance Team creates and distributes the checklists related to department agnostic tasks and legal violation risk to all departments in all domestic operations. The compliance PIC from each department utilizes these checklists to perform self-checks and select improvement tasks and implement them. The progress of these tasks is then reported to the Compliance Management Committee through the Compliance Team.



Compliance Management Campaign and Monitoring

Hyundai Steel conducts various campaigns and compliance inspection activities to promote a compliance management culture and manage legal violation risks. In 2023, we designated the departments for focused management through activities such as departmental legal risk mapping and compliance management interviews and conducted concentrated education, enhancing the legal violation risk management capabilities. Additionally, various programs are held, including on-site visit campaigns and customized education for different jobs to improve the ethical and compliance awareness of employees.

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2.6.4 Metrics and Targets

2.6.4.1 Ethical and Compliance Management Targets

Hyundai Steel places ethical and compliance management at the fundamental core of its corporate operations. We build the trust of all stakeholders by establishing a transparent and fair business environment through ethical and compliance management and pursue sustainable development based on the trust we have built.

Establishing ethical management system

- Operating reporting channels Cyber Audit Group
- Establishment and revision of ethical policies (Ethics Charter, Code of Conduct, Regulations)
- Operating management process for bribery (gifts and money)
- Proactive risk management utilizing compliance a control system
- Acquisition of ISO 37301 certification (2027)

Expansion of ethical management culture

- CEO's message on commitment to compliance management
- Ethical management pledge signing by all employees
- Expanding the compliance culture to subsidiaries and suppliers
- Maintain a 100% ethical management pledge sign rate by 2025

Educations for corporate ethics expansion

- Customized ethics training tailored to job categories
- Self-checks for legal violations and improvement activities
- 100% attendance rate for ethical and compliance management education by 2025

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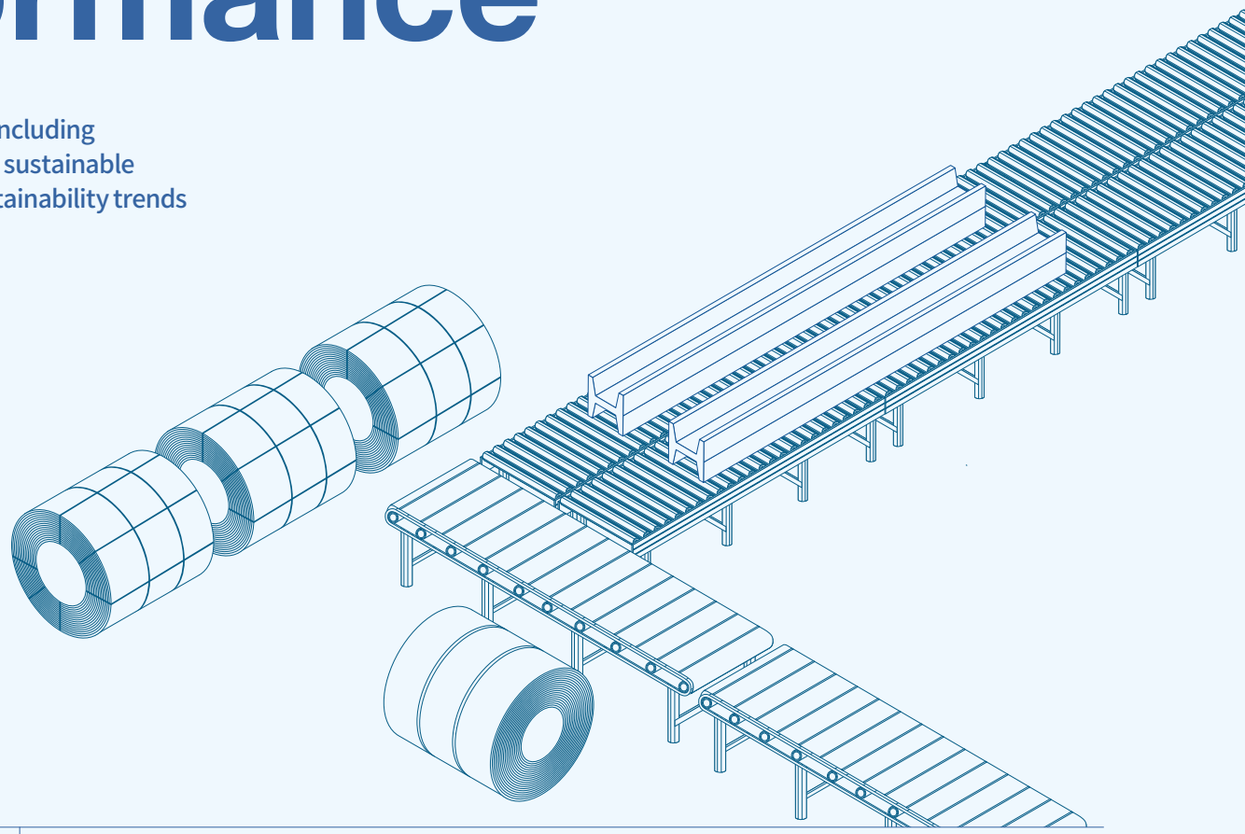
HYUNDAI STEEL

For additional information about Hyundai Steel, please visit our website. For further details, please contact us at the following:

Phone: +82-31-510-2114
E-mail: sustainable@hyundai-steel.com
Website: https://www.hyundai-steel.com

ESG Performance

Hyundai Steel will improve the value of various stakeholders, including customers, shareholders, and local communities, and create a sustainable company and society by reflecting domestic and overseas sustainability trends and stakeholder requirements.



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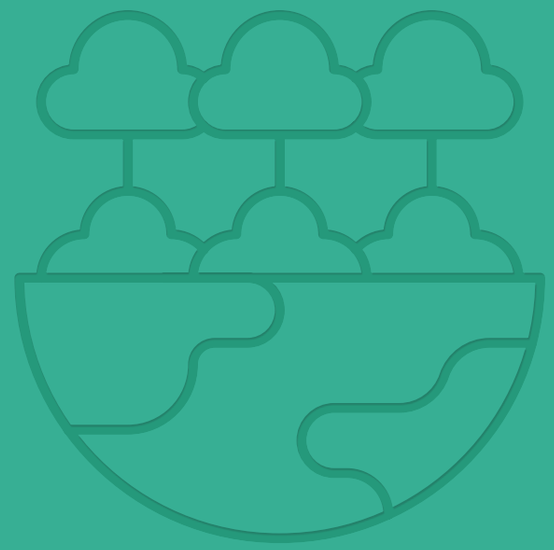
Environmental

Hyundai Steel recognizes the environment as a fundamental driver of corporate success. To create value and fulfill our social responsibility through environmental management, we have implemented an environmental management system at the core of each business division.



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3.1 Environmental Management

Hyundai Steel has established an environmental management system centered on each business division, aligning with its integrated environmental management policy. All business divisions are to minimize environmental risks by identifying potential impacts throughout our operations, implementing continuous improvement initiatives, and proactively responding to significant environmental laws and regulations. One such regulation is FRAMEWORK ACT ON CARBON NEUTRALITY AND GREEN GROWTH FOR COPING WITH CLIMATE CRISIS, which took effect in 2022. We engage in ongoing communication with key internal and external stakeholders through the Environmental Improvement Council (involving local communities) and regular environment meetings (involving executives and employees at all levels). Moreover, we fulfill our environmental and social responsibilities by expanding investments in the reduction of pollutants and GHG.

3.1.1 Integrated Environmental Management

Proactive response to environmental risks through systematic environmental management process

Policy for Integrated Environmental Management

Risk analysis of management activities

- Proactive response to government policies and regulations
- Information gathering on environment and energy issues
- Prediction, assessment and actions on environmental impacts

Efficient use of energy and resources

- Fuel, raw materials, equipment, and energy management
- Optimization of process inputs and GHG reduction
- Reduction of water and risk management

Minimization of emissions and pollution

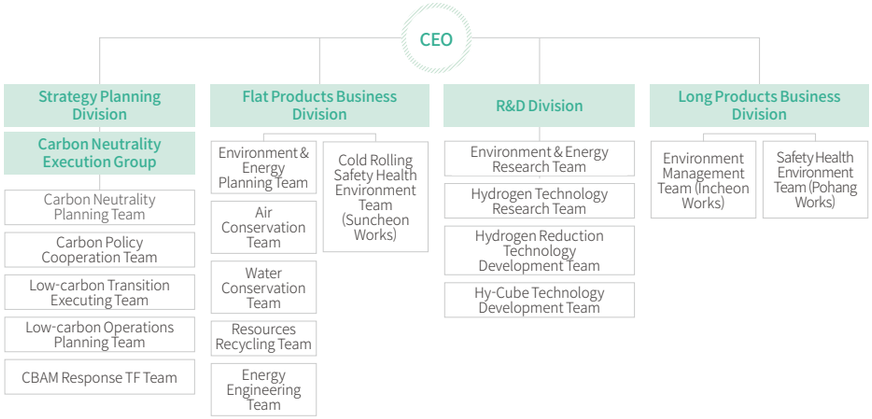
- Measurement and containment of pollutants
- Optimized operation and monitoring of pollution prevention facilities
- Recycling by-products and added-value creation

Fulfilling corporate ethical and social responsibilities

- Enhancing brand value through win-win growth with local communities and CSR activities
- Increasing use of alternative resources and energy

3.1.2 Environmental Management System

Hyundai Steel recognizes the environment as a fundamental driver of corporate success. To create value and fulfill our social responsibility through environmental management, we have implemented an environmental management system based on ISO 14001 at the core of each business division. Our commitment includes compliance with both domestic and international environmental laws and regulations, as well as proactive responses to evolving environmental requirements. Throughout the entire production process, we prioritize sustainable resource and energy usage while diligently reducing pollutants. Furthermore, we identify and address environmental risks while effectively managing environment-related complaints. In 2023, Hyundai Steel underwent organizational restructuring to enhance its environmental management. The Blast Furnace Business Division has been restructured to Flat Products Business Division, and the Environment & Energy related teams have been restructured to Air Conservation Team, Water Conservation Team, Resource Recycling Team, Energy Engineering Team for strengthened operational functions. The environment teams in each business sites conduct environment educations associated to ISO 14001 in respective areas including air and water pollutants management, emission reduction and recycling of wastes, chemical substance management, prevention and response to environmental accidents. Key stakeholders responsible for the environment (CEO, division heads, team leaders, and team members) establish annual Key Performance Indicators (KPIs) that encompass compliance with pollutant emission standards, CAPEX (capital expenditures), and the implementation of mid-to-long-term strategic initiatives aimed at reducing carbon emissions and achieving Net Zero. The achievement of these KPIs has an impact on personnel evaluations, wages, and promotion considerations, among other factors.



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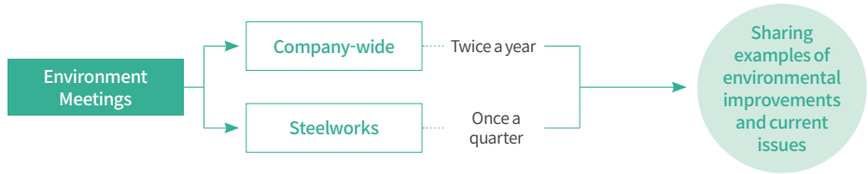
3.1.3 Operation of Environmental Improvement Council

Hyundai Steel operates the Environmental Improvement Council in order to foster transparency and facilitate the exchange of information and perspectives on environmental matters and the enhancement of our steelworks. The Council consists of 19 members representing Dangjin City, Dangjin City Council, Chungcheongnam-do Province, civic groups and resident representatives, and its operation is supervised by Dangjin City to ensure transparency. We provided the Council with an update on the status of our environmental improvements and GHG reduction agreement, as well as our investment plans for transitioning to an electric-arc-furnace-centered production process to achieve Net Zero by 2050. In addition, regular meetings were conducted to discuss the environmental improvement performance of the steelworks, such as the concentration of pollutant emissions and the amount of air pollutant emissions and seek concrete solutions for local development.

Dates	Details
Sep 2019	• Convened the first meeting of the Council
Dec 2019	• Established the operating rules of the Council
Jan 2020	• Discussed how to disclose the environmental data of the Dangjin Integrated Steelworks • Disclosed real-time air pollutant emission concentrations on the website of Dangjin City
Feb 2020	• Started to operate a watering car and a sweeper truck to reduce fugitive dust near the Dangjin Integrated Steelworks
Mar 2021	• Disclosed odor data collected from the automatic odor measuring systems installed at three locations in the southern part of the Dangjin Integrated Steelworks on the website of Dangjin City
Oct 2021	• Agreed to assess fugitive dust around the Dangjin Integrated Steelworks in joint with Dangjin City and a private environmental monitoring agency (Feb 2022-Dec 2022)
Apr 2022	• Installed an electronic dashboard near the Dangjin Integrated Steelworks and disclosed environmental data of the steelworks in real time, including air quality data)
Jan 2023	• Developed an environmental improvement plan for 2023 (127 cases with a scale of KRW 87.5 billion)
Apr 2023	• Changed operational cycle of the Council • Changed from bi-monthly operation to quarterly operation (Reason: Most of Hyundai Steel's environmental issues have been resolved and under management since the council was formed in 2019)
Sep 2023	• Shared environmental improvements and GHG reduction agreement status : Increased cost (KRW 488.3 billion → KRW 868 billion), agreement is being fulfilled within the agreed timeframe
Nov 2023	• Shared carbon neutrality investment initiative (released by Dangjin city) • Production system transition from blast-furnace-centered to electric-arc-furnace centered (2050 Net zero goal)
Feb 2024	• Environmental improvement investment plan for 2024 : Total investment of KRW 116.8 billion (KRW 24.6 billion increased compared to 2023)

3.1.4 Systematic Operation of Environment Meetings

Hyundai Steel regularly conducts environment meetings to enhance executives' awareness and promote companywide consensus regarding the significance of environmental management. These meetings serve as platforms for sharing examples of environmental improvements and current issues and discussing solutions through risk analysis. The meetings are divided into two types: company-wide meetings and steelworks meetings. The company-wide environment meetings take place twice a year and involve direct participation from executives. It facilitates practical discussions and effective communication on environmental matters that have impact on the entire organization. On the other hand, steelworks environment meetings occur once a quarter, led by working-level employees. These meetings focus on developing action plans to tackle specific issues at hand and provide feedback on their implementation. In 2023, a total of 6 environment meetings were held (two company-wide meetings and four steelworks meetings), and the utilization of by-products for effective resource usages has been included in the meeting agenda from 2024.



3.1.5 Investment in Environmental Improvement and GHG Reduction

Hyundai Steel has devised a comprehensive plan to invest KRW 680 billion over a five-year period from 2021 to 2025 to improve the environment and reduce GHG emissions. Including this new allocation, the total investment in environmental improvement tasks over the past decade amounts to approximately KRW 1.2 trillion (KRW 510 billion from 2016 to 2020). These investments have been instrumental in establishing an advanced environmental system and taking proactive measures to address environmental concerns. Hyundai Steel plans to install a coke dry quenching (CDQ) facility and a coke desulfurization and denitrification facility and enhance the quality of COG from gas refinery #1 and #2. By CDQ facility investment, the company expects to reduce GHG emissions by more than 500,000 tonnes per year. This achievement will be made possible by capturing waste heat generated during coke cooling and utilizing it for the production of steam and electricity. Hyundai Steel also intends to improve energy efficiency within its steelworks through the adoption of measures such as heat exchangers and waste heat recovery systems. In addition to improving energy efficiency at the steelworks through measures such as heat exchangers and waste heat recovery, we plan to continue comprehensive environmental improvements. This includes upgrading pollution control facilities, fugitive dust suppression facilities, and air emission control systems; enhancing slag recycling; expanding on-site waste treatment; and improving wastewater discharge quality.

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3.1.6 Major Environmental Laws and Our Responses

Law	Content	Our Response
ACT ON THE INTEGRATED CONTROL OF POLLUTANT-DISCHARGING FACILITIES	Taking effect from 2017, the Act integrated 7 legislations and 10 declarations of permissions that were categorized by environmental media (e.g., air, water, waste) to simplify procedures and set up customized criteria for each company	Through collaboration with the Ministry of Environment, we have identified and adhered to 62 permit conditions aimed at minimizing environmental risks. As part of the permit approval, we have been granted permission to construct a facility for nitrogen oxides reduction and a new coke desulfurization and denitrification facility.
FRAMEWORK ACT ON RESOURCES CIRCULATION	Taking effect from 2018, the Act introduced new systems to reduce waste and encourage recycling in the entire process from production, distribution, consumption, and disposal of products as a purpose to protect the environment as well as establish a basis for a circular economy	We seek to reframe by-products as recyclable resources rather than disposal waste. To take pre-emptive actions for resource circulation, we manage by-products intensity, conduct research on new technology, expand applications of processes, and collaborate with other industries
ACT ON LIABILITY FOR ENVIRONMENTAL DAMAGE AND RELIEF THEREOF	Taking effect from 2016, the Act established a clear standard to provide speedy and fair compensation aid for victim of environmental pollution by easing the burden for demonstration.	Starting from 2016, all business sites of Hyundai Steel have been mandated to obtain environmental liability insurance, ensuring equitable compensation and relief in the event of an environmental accident.
SPECIAL ACT ON THE IMPROVEMENT OF AIR QUALITY IN AIR CONTROL ZONES	Taking effect from 2020, the Act seeks to improve air quality by comprehensively and systematically controlling sources of air pollutants in line with regional characteristics.	Being nominated as a business entity subject to total air pollutant emission control, our primary focus is to adhere to the total allowable emissions by enhancing the efficiency of abatement facilities at major emission sources and increasing investments in new prevention facilities.
ACT ON REGISTRATION AND EVALUATION OF CHEMICAL SUBSTANCES	Taking effect from 2015, the Act regulates chemical substances manufactured in or imported to Korea, and mandates the registration of chemical substances, including data about their characteristics and risks, when manufacturing or importing chemical substances	By 2023, we have successfully registered 33 chemicals (36 by the first quarter of 2024) with the Ministry of Environment. Moving forward, we are committed to ongoing registration efforts, closely monitoring the distribution of chemicals through a comprehensive chemical management system.
CHEMICAL SUBSTANCES CONTROL ACT	Taking effect from 2015, HAZARDOUS CHEMICAL SUBSTANCES CONTROL ACT (which took effect in 1991) has been amended to reinforce the management standards and regulations for harmful chemical substances.	The facilities handling hazardous chemical substances are managed thoroughly through frequent internal inspections and consultations with specialized organizations, receiving an “appropriate” rating at the regular inspections held in 2023. After being assessed as “appropriate” in 2021, the Chemical Accident Prevention Management Plan is inspected internally every year, and the result is reported to the NICS (National Institute of Chemical Safety). Also, in response to the increased nomination of hazardous chemicals by the Ministry of Environment, we proactively address the CHEMICAL SUBSTANCES CONTROL ACT through regular internal monitoring.
ACT ON THE ALLOCATION AND TRADING OF GREENHOUSE-GAS EMISSION PERMITS	Taking effect from 2012, the act includes the information on the fundamental plans for the emission trading system, the allocation plans, the allocation of emission rights as well as transactions, which targets to effectively reach the national GHG reduction goal by introducing the trading system.	As a business entity eligible for allocation of emission permits designated by the Ministry of Environment, Hyundai Steel actively engages in GHG reduction activities to ensure compliance with relevant laws and regulations. Furthermore, we conduct annual calculations of GHG emissions and transparently disclose the data, which is verified by external organizations.
FRAMEWORK ACT ON CARBON NEUTRALITY AND GREEN GROWTH FOR COPING WITH CLIMATE CRISIS	Taking effect from 2022, this act outlines the national carbon neutral vision for 2050 and sets GHG reduction targets for 2030. It also lays the groundwork for engaging in international GHG reduction activities in accordance with Article 6 of the Paris Agreement by establishing policies to adapt to climate change, foster eco-friendly industries, raise climate response funds, and define the key factors required for fostering net-zero policies.	We developed a comprehensive mid-to-long-term Net Zero strategy aligned with the Nationally Determined Contribution (NDC), aiming to achieve Net Zero by 2050. We have set phased reduction targets and are actively working on detailed implementation plans to realize this vision. Moreover, we are dedicated to achieving Net Zero by 2050 through company-wide process improvements and are establishing a low-carbon product supply strategy and transitioning to renewable energy.

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3.2 Energy Management

3.2.1 Energy Saving Goals

To achieve a 5% reduction in energy consumption from 2023 to 2027, Hyundai Steel has implemented a range of company-wide energy saving initiatives. These efforts are guided by an executive-led meeting that identifies, implements, and manages the specific initiatives to drive energy saving, aiming to effectively manage energy through establishing a mid-to-long-term energy investment system. Legally mandatory diagnosis is conducted in all business sites including Incheon, Pohang, and Dangjin, and the energy diagnosis is conducted every year in cooperation with external professional institutes for energy saving including electricity and steam. Furthermore, we are conducting education related to energy efficiency and improvement measures covering the entire process from energy planning to improvement implementation for all energy PICs, aligning with ISO 50001 (energy management system).

Energy Efficiency Improvement Goals

Goals		Base Year (2021~2022)	2023	2024	2025	2026	2027	Remark
Goals	Intensity based goal (Unit: toe/1,000 tonnes)	488.3	483.4	478.4	473.4	468.4	463.4	Weighted sum of the Dangjin Integrated Steelworks and Incheon Works
	Reduction rate compared to the standard year	-	1%	2%	3%	4%	5%	
Perfor-mances	Intensity performance (Unit: toe/1,000 tonnes)	-	480.2					Weighted sum of the Dangjin Integrated Steelworks and Incheon Works
	Reduction rate compared to the base year	-	1.58%					

The electricity and gas costs have been increased in 2023 and we anticipate the energy costs to increase further in the future. In alignment with the government's energy saving efforts, the company became a member of KEEP 30 (Korea Energy Efficiency Partnership 30) in October 2022 and committed to achieving a 5% reduction in energy consumption by 2027. To achieve this goal, bi-monthly company-wide energy meetings (a total of 6 meetings per year), attended by both executives and working-level employees, are held to manage energy intensity and to execute energy saving initiatives. In 2023, Hyundai Steel successfully managed 62 energy saving initiatives, resulting in energy cost savings of KRW 15.6 billion (electricity 7GWh, LNG 156 m^3). For 2024, the company has planned 60 energy-saving initiatives (estimated amount KRW 12 billion) and will achieve the company's energy saving target through additional energy activities like operation management. Additionally, as part of a separate large-scale energy-saving investment, Hyundai Steel is currently constructing a coke dry quenching (CDQ) facility. CDQ is a facility that takes waste heat generated from the process to produce high-pressure steam, which is then used to help generate electricity. The CDQ facility will be equipped with steam production units (two with a capacity of 114 tonnes/hr and one with a capacity of 131 tonnes/hr) and three electricity generation units (two with a capacity of 34 MW each and one with a capacity of 39 MW). The CDQ facility is expected to result in an annual reduction of 500,000 tonnes of greenhouse gases. Additionally, the carbon neutral energy strategic investment initiative, the mid-to-long-term energy investment system, has been established in 2023, and the investment of around KRW 48.2 billion (estimated energy saving amount: KRW 14.6 billion) is planned to be executed through this initiative in 2024.

3.2.2 Energy Saving Activities

3.2.2.1 Optimization of Automatic Combustion Control System for Hot Stove

Hyundai Steel implemented combustion automation to enhance the efficiency of its hot stoves in the blast furnace production process, which are known for their significant fuel consumption and high GHG emissions. To achieve this, the company developed the 'Automatic Hot Stove Fuel Control System' to provide the right amount of hot air for blast furnace operations, the 'Model Automatic Tuning System' to improve the accuracy of the fuel control system, and the 'Automatic Combustion Control System' to enhance combustion efficiency. These advancements have been applied to all three blast furnaces at the Dangjin Integrated steelworks. To further enhance energy efficiency, the company is actively optimizing operation indicators that can contribute to energy savings in conjunction with the combustion automatic control system. The dome temperature and waste gas temperature optimalization technology of hot stoves to minimize heat loss and create an optimal thermal condition in hot stoves has been implemented to all furnaces in 2023. Through this implementation, we have reduced approximately 235,000 Gcal of by-product gas annually.

3.2.2.2 Development of Virtual Sensor to Predict Slab Temperature in Coke Oven Combustion Chamber

Hyundai Steel is implementing a smart control system to enhance the efficiency of its coke ovens. Typically, the temperature in a coke oven combustion chamber is not continuously measured and requires manual checks, making it impossible to determine if the target temperature has been met during non-measurement periods. To address this, at Hyundai Steel, we are developing a virtual sensor[1] to predict temperature in a coke oven combustion chamber that utilizes AI machine-learning technology, to improve the accuracy of hitting the target temperature. We are expecting to reduce excess heat and enhance the quality of coke. In 2023, we completed the development of the Coke Plant #3 virtual sensor and verified its reliability by comparing it with actual temperature. In 2024, the sensor is planned to be installed in Coke Plant #3, together with the development of virtual sensors for Coke Plant #1 and #2.

1) Virtual sensor: A virtual sensor that can predict the secondary properties required for process operation by identifying patterns between operating data and experimental values with machine learning algorithms

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3.2.2.3 Improving Combustion Efficiency of Reheating Furnaces

Hyundai Steel is implementing the Tunable Diode Laser Spectrometer (TDLS) control system to enhance the combustion efficiency of its reheating furnaces, which are significant energy-consuming facilities. The TDLS system utilizes laser absorption spectroscopy to measure the concentrations of specific chemical species, such as O_2 and CO, in gas mixtures. By providing real-time measurements and enabling precise combustion control, the TDLS control system improves combustion efficiency in the reheating furnaces.

Starting in 2019 with two reheating furnaces in the hot rolling mill at the Dangjin Integrated Steelworks, we expanded the application of the TDLS control system to a total of twelve furnaces by 2022, resulting in annual energy savings of approximately 45,350 Gcal. By 2021, we also extended the use of the TDLS control system to four reheating furnaces at Incheon and Pohang Works, achieving annual energy savings of about 30,740 Gcal. In 2023, a feasibility test was conducted for the expansion of the TDLS control system to three reheating furnaces in the special steel and steel bar mills at the Dangjin Integrated Steelworks and further plans are being established to expand the usage to one small special steel reheating furnace. The company has been implementing the TDLS control system since 2023, aiming not only for the fuel efficiency improvement of the reheating furnaces but also the optimization of Gas Refinery Plant. In the future, the company is planning on executing energy saving by expanding the TDLS control system on the reheating furnaces and further moving on to other production processes.

3.2.2.4 Establishment of Facility Operation Optimization system

At the Dangjin Integrated Steelworks, Hyundai Steel has an integrated steelworks process, which encompasses sinter, heavy plates, cold rolling, and electric arc furnace process where special steel and rebar products are produced, using diverse energy sources for each process. To reduce energy consumption in each process, analyzing the real-time operation data is essential. Since 2019, the company has been establishing a monitoring system to collect and analyze real-time utility-related operation data, starting from reheating furnaces, the high-energy consuming facility, to hot blast stoves and utilities for each plant. We have established an analysis system to optimize equipment, from real-time diagnostics to identifying improvement areas. We are using this system to carry out various energy-saving projects. Furthermore, the LNG consumption of the duct burner used to increase the heat level of exhaust gas in the SCR was reduced through the SCR monitoring system, the air pollution prevention facility at the rear end of the reheating furnaces in 2023, expecting annual 19,080Gcal reduction in two reheating furnaces. The analysis system is operational for energy saving not only on the Steelworks level, but also at the individual facility level, and is planned to expand to another production process shortly.

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3.3 Biodiversity Protection

Hyundai Steel recognizes the importance of ecosystem and biodiversity protection and is enhancing relevant policies and assessment processes in alignment with the Taskforce on Nature-related Financial Disclosure (TNFD) framework. We conduct ecological impact surveys on ecosystems near our business sites and biodiversity risk analysis of the region to execute improvement measures by establishing countermeasures to the relevant risks.

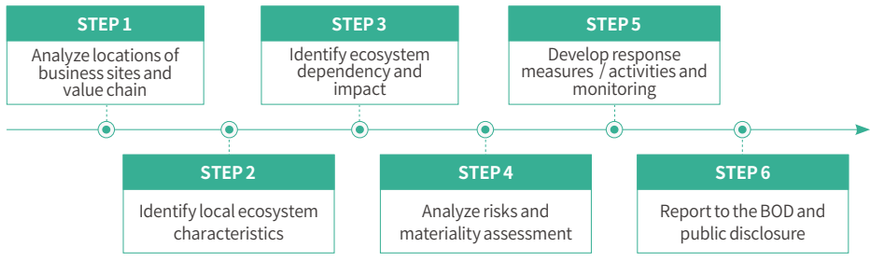
3.3.1 Biodiversity Approach and Policy

Hyundai Steel acknowledges the significance of ecosystem and biodiversity preservation within its business operations. We prioritize the minimization of negative impacts and operate management systems to achieve this goal. To assess ecosystem changes, analyze associated risks, and implement appropriate mitigation measures, we integrated these considerations into our company-wide risk management, which incorporates globally recognized methodologies such as the Taskforce on Nature-related Financial Disclosure (TNFD) guidelines and the Locate Evaluate Assess Prepare (LEAP) approach. Since the establishment of the biodiversity policy in 2018, activities to strengthen ecosystems in the areas where our business sites are located and to reduce biodiversity risks have been planned and implemented annually through policy revisions. The mid-to-long-term plans and implementation status related to biodiversity are regularly reported to the BOD after the authorization of the executives.

3.3.2 Biodiversity Risk Analysis

3.3.2.1 Risk Analysis Process

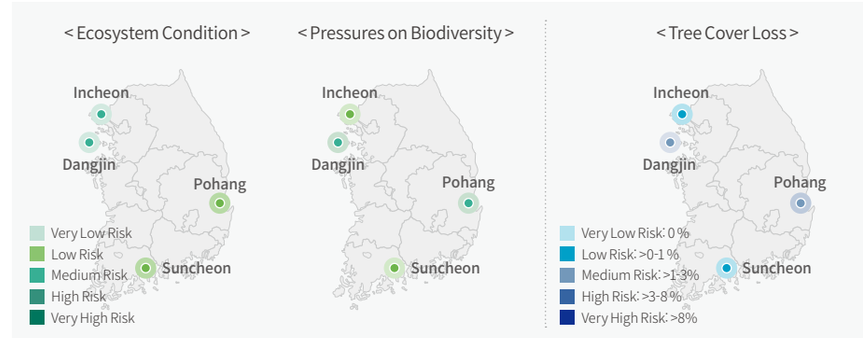
When conducting ecological environment assessment, we consider biodiversity risks in terms of dependency and impact. The scope of the assessment includes our business sites and adjacent areas, as well as upstream and downstream areas in the value chain.



3.2.2.2 Risk Assessment Boundaries (Steel Production Business Sites)

Classification	No. of business sites	Area (ha)	Classification	No. of business sites	Area (ha)
Total	4	1,155	Identify risk exposure	0	0
Conduct an assessment	4	1,155	Establish and implement management plan	0	0

3.3.2.2 Ecosystem Characteristics and Risk Identification by Area



Hyundai Steel has analyzed the ecological characteristics of domestic facilities and adjacent areas, which account for 100% of crude steel production, by utilizing the World Wide Fund for Nature (WWF)'s Biodiversity Risk Filter. According to the analysis based on <Ecosystem condition>[1] the Dangjin Integrated Steelworks and Incheon works area exhibited a medium risk, while Pohang and Suncheon Works areas displayed a low risk. According to the analysis based on <Pressures on Biodiversity>[2] Pohang Works and the Dangjin Integrated Steelworks areas were identified as having a medium risk, while Incheon and Suncheon Works areas showed a low risk. According to the analysis based on < Tree Cover Loss >[3] Pohang Works and the Dangjin Integrated Steelworks areas were identified as having a medium risk while Incheon and Suncheon Works areas showed a low risk. Considering the health of local ecosystems and human impacts, we have determined that there are no significant biodiversity-related risks. However, considering the limitations of risk assessments and the local environmental load in our operating regions, we plan to expand and enhance biodiversity management at our large-scale facilities in the Dangjin Integrated Steelworks and other domestic business sites responsible for crude steel production.

1) Refers to the comprehensive risk related to biodiversity integrity index, water quality risks, marine health index and habitat condition data based on the criterion that ecosystems remain intact and well-connected. Lower risks refers to a healthy ecosystem
2) Represents the impact of human activities on ecosystems and is an aggregate risk encompassing water use, loss of forest area, invasive alien species, and pollution. The lower the risk, the less human impact on nature.
3) Represents a decrease in local tree cover rate. Lower risk refers to less tree loss during the specific period (based on 2020~2021)

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The company has conducted the environmental impact assessment on the Dangjin Integrated Steelworks and its adjacent areas to continuously manage the surrounding ecosystem. The environmental impact assessment focuses on various aspects of the environment, including atmosphere, freshwater, soil, noise, vibration, waste, etc. To preserve the ecosystems near business sites, we monitor the species composition and population status of various wildlife (mammals, birds, reptiles, amphibians, fish, insects, land plants, and seaweeds), including legally protected species[1]. We have established and implemented enhancement plans for environmental facilities to minimize the impact on ecosystems near our business sites. These plans are based on our investigations and involve restricting pollutant emissions by setting internal standards that are more stringent than legal requirements. To engage with local residents, we have set up an 'Environmental Issues Reporting Desk' to gather feedback on environmental issues and operate the 'Environment Improvement Council' through cooperation between the public and private sectors.

1) Wildcat (IUCN LC), Greater White-fronted Goose (IUCN LC), Black-headed Gull (IUCN LC), Crane (IUCN EN),
*IUCN Least Concern (LC), IUCN Endangered (EN)

Population of Wildlife near the Dangjin Integrated Steelworks and Adjacent Area

(Unit: No. of species)

Classification	Mammals	Birds	Amphibians, Reptiles	Fish	Marine fish	Insects	Plants	Plankton
2023	11	60	8	2	43	87	293	125
2024	10	59	9	2	43	86	301	129
2025	9	58	10	2	43	84	296	108

3.3.2.3 Ecosystem Dependency and Risk Analyzation

Hyundai Steel identified the ecosystem dependency of the industry and materiality of impacts based on the information provided by ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure).

Ecosystem dependency		
Major indicator	Source	Materiality
Water as a raw material (Surface water, underground water)	Water	M
Production process activation through water circulation in the ecosystem	Atmosphere, habitats, water	M
Production sustainability through climate stabilization	Atmosphere, habitats, soils and sediments, species, water	VL
Production sustainability through ground stabilization	Habitats, land geomorphology, soils and sediments	L

Ecosystem impact			
Major indicator	Materiality	Impact boundary	Impact time
Water use	H	Local	Short/ Medium/ Long
GHG emissions	H	Global	Medium / Long
Solid waste	H	Local	Short/Long

Water Use

Water use impacts droughts, habitat modification, population change, and water withdrawal. Specifically, inconsiderate usage of surface and underground water causes changes in geographical and geological features and weakens the water circulation in the ecosystem. This directly impacts the reproduction and growth of plants, impacting vegetation changes of all species (including population migration and decline, and invasion of alien species) as a chain reaction. The weakened ecosystem circulation causes a reduction in the natural purification of pollutants, and decreased water availability (quantity and quality of water), which in turn transforms into company's business risks such as cost increase of water withdrawal, strengthened regulation on local pollutant emission, and decrease in quality and productivity.

GHG Emissions

GHG emissions cause a decrease in coastal habitat and wetlands and can provoke changes in plankton and marine species due to a rise in sea-level temperature. Also, pollutant overcrowding from atmospheric congestion, habitat migration due to temperature change, wildlife damage, and geographical damage from natural disasters such as floods and typhoons can be caused. If the company fails to adequately reduce greenhouse gas emissions, it could result in increased greenhouse gas emission limits and allowance costs, damage to the company's reputation, and physical risk impacts. According to the Ministry of Environment's report on predicted ecosystem damage from climate change (based on data from 2015 to 2020), two main scenarios are applied to forecast domestic ecosystem changes: one where greenhouse gases are left unchecked[1], and one where active reduction measures are taken[2]. The forecast suggests that without greenhouse gas reduction, 336 out of 5,700 domestic species (6%) could face extinction due to climate change—five times more than if active reduction measures are implemented. Furthermore, species that find it difficult to move habitats are expected to suffer significant damage. It is predicted that wetlands and aquatic ecosystems will be affected by increasing invasive and disruptive species, with damage from nutria in inland wetlands projected to affect 120 out of 2,500 wetlands (5%), which is four times higher compared to active reduction scenarios.

1) When GHG emission continue at the same rate globally as in 2017, leading to an average 4.5°C temperature increase in the Korean Peninsula compared to 1880
2) When global policies to significantly mitigate greenhouse gas emissions are effectively implemented, thereby restricting the temperature increase on the Korean Peninsula to an average of 2.9 °C compared to 1880.

Solid Waste

The environmental impacts of landfilling and incineration of unrecycled waste can lead to changes in wildlife population change and habitat migration near the waste facilities, which would transform into company's business risks such as a reduction in landfilling and incineration companies and increased costs due to stricter biodiversity regulations.

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3.3.2.4 Analysis of Risks and Opportunities

Hyundai Steel has analyzed the ecosystem dependence and impacts based on biodiversity risks in the business sites and adjacent areas, as well as in upstream and downstream processes. Based on the analysis, we are implementing measures to prevent and mitigate the negative impacts and to recover and restore the ecosystem. We plan to broaden the analysis scope, mitigate ecosystem dependency risks, and minimize the impacts on the ecosystem.

Category		Contents	Depen-dency	Impact	Value chain impact				Materi-ality	Response
					Business site	Adjacent areas	Up stream	Down stream		
Risk	Business Operation	Ground weakening due to groundwater usage	●		All business sites	●			L	Maintenance of surface water and groundwater non-use Full utilization of industrial water and waterworks
		Declining supply water (Quantity, Quality) and product quality deterioration due to climate change	●	●	Incheon, Dangjin	●	●	●	H	Increase water reuse rate Participate in regional environment committees related to water Expand the quality assessment system of water supply Expand the by-pass pre-water treatment system
		Increased damages on business sites due to extreme weather events such as sea level rise	●		All business sites	●		●	M	Establish natural disaster response system for typhoon, heavy rainfall, and flood
		Declining supply of minerals like iron ore and coal	●		Dangjin		●		M	Expand the pool of mineral suppliers Encourage biodiversity protection activities in the overall value chain
	Regulations	Strengthened biodiversity related regulations such as expanded protected species and area	●	●	All business sites	●	●	●	H	Monitor ecological issues
		Strengthened pollutant and waste regulation due to weakened environment circulation	●	●	All business sites	●	●	●	H	Develop waste recycling/reusing measures Develop pollutant emission reduction measures
	Local community	Surface water usage exceeding the sustainable boundaries of ecosystem	●		All business sites	●			L	Maintenance of surface water and groundwater non-use Full utilization of industrial water and waterworks
		Ecosystem damage due to environmental pollutant emissions such as GHG (direct damage, indirect damage due to atmospheric stagnation)	●	●	All business sites	●	●	●	H	Reduce GHG emissions in line with Net Zero roadmap Monitor ecotoxicity of effluent Conduct environmental impact assessment on a quarterly basis to identify the species and number of wildlife Identify and implement improvement measures related to pollutant emissions Manage pollutant emission based on strengthened internal standard Participate in committee to strengthen the preservation of protected species/area
Opportunity	Business Operation	Stabilization of production output and product quality through smooth water supply		●	All business sites			●	M	Secure stable water sources Monitor cost-competitive water sources compared to current sources
		Reduction of waste processing cost by expansion of recycling throughout the value chain		●	All business sites		●	●	M	Monitor waste processing costs Research on scaling up cross-industry waste recycling

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3.3.3 Biodiversity Risk Response

Hyundai Steel conducts prevention, reduction, recovery, restoration, and transition activities for biodiversity protection and improvements to reduce the environmental burdens of the local ecosystem. The activity includes resource replacement, pollutant emission reduction, ecological niche improvements of the protected species, habitat restoration, and biodiversity awareness improvements of the employees and the local communities. Hyundai Steel has signed partnerships with professional institutes such as World Vision (General management, collaborations with the local environmental organizations), Korea Ecotourism Society (establishment and implementation of protection and enhancement activities), Citizen's Institute for Environmental Studies (establishment and implementation of local community education programs) and NS Ecology Research Institute (ecological surveys) to carry out these activities. We will strive to achieve the NNL (No Net Loss) and NPI (Net Positive Impact) goals by completing the comprehensive ecological surveys across all regions, establishing the baseline data for a reference group, and conducting ecosystem reinforcement projects in all regions by 2026.

3.3.3.1 Prevention: Surface Water and Groundwater Non-Use, Replacement and Reduction of Hazardous Chemical Substances

Steel production requires large amounts of coolants to cool off the heat of the product and facilities. Hyundai Steel refrains water withdrawal from surface and underground water but uses industrial water and waterworks instead. Inconsiderate usage of surface and underground water causes changes in geographical and geological features and weakens water circulation in the ecosystem. This directly impacts the reproduction and growth of plants, impacting vegetation changes of all species (population migration, decline, invasion of alien species) as a chain reaction. The weakened ecosystem circulation causes a reduction in the natural purification of pollutants, and decreased water availability (quantity and quality of water), which in turn transforms into the company's business risks such as cost increase of water withdrawal, strengthened regulation on local pollutant emission, and decrease in quality and productivity. Therefore, Hyundai Steel will keep on encouraging our surface water and groundwater non-use initiative.
Hyundai Steel conducts management activities of environmental risks stemming from chemical substances from business sites starting from our supply chain, by reducing inputs of materials containing toxic substances for hazardous chemical substance replacement and reduction. We have replaced and reduced a total of 10 hazardous chemical substances, including methanol (CH_3OH) used in wastewater treatment, inorganic zinc compounds for coolant production, and chromium compounds for product processing.

3.3.3.2 Reduction: Introduction of Best Available Control Technology and Compliance with Emission Standards

Hyundai Steel reduces air pollutant emission by introducing the Best Available Control Technology such as desulfurization and denitrification facilities in the coke oven plant and SCR facility. The effluent quality is managed through physical, chemical, and biological pre-water treatment facilities, and the local water pollution risks have been mitigated by implementing water quality monitoring system.
Also, emission concentration is managed through internal emission standards more stringent than legal standards to ensure ecological resilience protection. Furthermore, the immediate response process is operated for the production and environmental departments through system alerts in case of exceeding internal standards

3.3.3.3 Recovery: Protection/Enhancement Activities on Ecosystems and Protected Species

Biodiversity has been nominated to be one of the three most serious climate change risks the Earth is facing in the next 10 years. The International Union for Conservation of Nature (IUCN) has announced that it is the amphibians that are going to be the most severely impacted, with a 41% impact rate. Amphibians move back and forth between land and water, playing crucial roles as secondary consumers in ecosystem dynamics. Amongst the amphibians, Gold-spotted Pond Frog (*Pelophylax Chosenicus*) is rapidly declining due to habitat destruction and the invasion of alien species, in turn, classified as a vulnerable species (VU) on the IUCN Red List and designated as an endangered wildlife species (Category II) in South Korea for protection. To contribute to biodiversity enhancement and restoration through protection and enhancement activities for Gold-spotted Pond Frog (*Pelophylax Chosenicus*) in Dangjin area, Hyundai Steel has collaborated with the Korea Ecotourism Society and NS Ecology Research Institute on habitat restoration activities and installed 30 ecological ladders around Dangsan Ecological Park in Songsan-myeon, Dangjin City, Chungcheongnam-do. Ecological ladder installation is an activity to promote the population and species of Gold-spotted Pond Frog (*Pelophylax Chosenicus*) by helping reproduction and spawning. We plan to continue our efforts[1] to protect Gold-spotted Pond Frog (*Pelophylax Chosenicus*) by focusing on areas with fragmented habitats (artificial agricultural waterways).

Hyundai Steel, in collaboration with NS Ecology Research Institute, has completed a literature review on biodiversity in the Suncheon area and is currently conducting field investigations. Through the on-site inspection, we have found excrements of otter (IUCN Red List NT (Near Threatened)) and Japanese hop (*Humulus japonicus*), the alien invasive species. We are planning on establishing biodiversity-related activities after completing an ecological survey of Suncheon area by 2024. Suncheon Bay, with conservation efforts of Suncheon City, was registered to the Ramsar Convention in 2006 and was nominated as a UNESCO World Heritage site in 2021, being a habitat with significant biodiversity for more than 140 bird species including the migratory bird, hooded crane (IUCN VU). The company supported Suncheon Bay National Garden (nominated in 2015) Expo, established to disperse excessive tourism and prevent urban expansion. Parts of the profits are planned to be used to enhance ecological functions in Suncheon Bay.

1) Target goal: More than 90 ecological pathways to be installed by 2026.

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3.3.3.4 Restoration: Restoration Activities in Areas with Weakened Ecosystem Functions

In an effort to achieve Net Deforestation Zero, Hyundai Steel has been implementing forest restoration and greening projects including expanding green areas within business premises, building parks near business sites and establishing multi-purpose green areas. From 2018 to 2020, the company has funded KRW 100 million on tree planting and park building projects in Dong-gu area where Incheon Works is located. Although the project has concluded, the employee participation fund was raised to initiate 'Green Dong-gu Project', the tree planting project. In 2021 and 2022, 400 Oriental Arborvitaes were planted, and in 2023, KRW 40 million was raised, resulting in the planting of 800 azaleas and box trees.

Hyundai Steel strives to restore the local river ecosystem functions by participating in the '1 company 1 river campaign.' Gulpocheon in Incheon, the waterway connecting the Han River to the West Sea, was weakened in its ecosystem function due to industrialization and urbanization. The company, in collaboration with the local government, companies nearby, and residents has been conducting restoration efforts such as purification activities, releasing water-purifying organisms, and eliminating ecosystem-disrupting alien plants for over 10 years, contributing to the restoration of ecosystem functions of Gulpocheon.

3.3.3.5 Transition: Shift to Businesses with Reduced Ecosystem Impacts

Hyundai Steel implemented the 'Junior Citizen Scientist' program for teenagers and children with World Vision and the Citizen's eco-institute. Environmental NGOs in Dangjin, including Dangjin Environmental Movement Union, Dangjin Sustainable Development Council, Poolsee Eco-Education Research Institute, and Our Seed Research Institute, participated in this program. The launching ceremony for the 'Junior Citizen Scientist' program was held in April with 20 teenagers and children. Through the program, participants conducted ecological monitoring and surveys in Dangjin Eumseom Port and Dangjincheon areas after the preliminary education including biodiversity value, the current environmental resource status of Dangjin, and biological observation and recording. The 'Junior Citizen Scientist' program is planning to disclose the monitoring data participants gathered to external platforms. The program aims to expand to the areas outside of Dangjin, gathering 280 participants by 2026. Based on the program operation result in 2024, we will enhance the program to draw better biodiversity awareness of local communities.

The company conducts education to enhance employee understanding of biodiversity more than once a year. In 2023, educations for ESG-related departments and ESG governance council members were held on subjects including the relationship between climate change and biodiversity, the current status of biodiversity-related tasks, and forest protection. Furthermore, biodiversity-related items were included in the strategic investment review items, such as additional water usage and water source verification, recyclability of the current resources, increased or decreased GHG and pollutant emission, and biodiversity impact prediction. Through these transitions, we anticipate our employees to understand biodiversity and to naturally consider biodiversity when conducting daily tasks.

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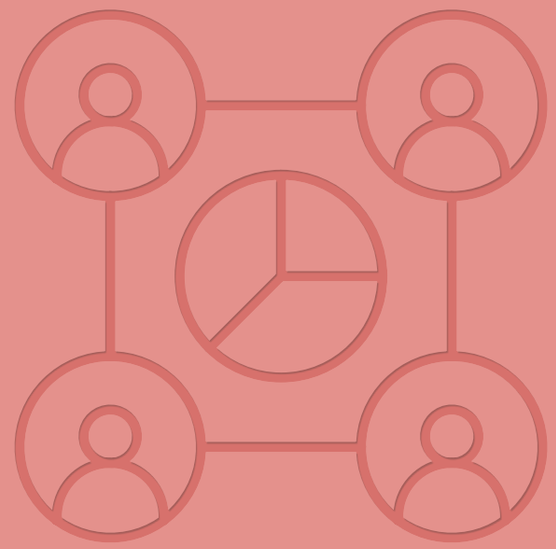
Hyundai Steel is striving to enhance employee job satisfaction and take a leading role in protecting the rights of various stakeholders.



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4.1 Human Rights Management

Hyundai Steel is committed to protecting human rights throughout its operations. To ensure compliance with the human rights policy and related detailed guidelines, and to mitigate the risks outlined in the guidelines, we conduct annual human right impact assessment and risk assessment mapping at all business sites, suppliers, and consolidated subsidiaries including joint ventures. In case of changes in business relationships such as M&A, the company prioritizes identifying the human rights risks. The improvement measures to mitigate the risks are executed promptly when the potential risk is identified after the assessment of business sites and suppliers.

4.1.1 Establishing the Foundation of Human Rights Management

4.1.1.1 Governance

Hyundai Steel established the internal management system to identify, prevent, and alleviate the negative impact and risk on human rights stemming from the company's business activities. The company reports the policy revision and establishments on human rights and human rights risks identified through human rights impact assessment to the Transparent Management Committee under the BOD and ESG governance where the executives participate, sharing the implementation results with all internal and external stakeholders. Also, by operating the human rights management system with related departments (ESG, HR, compliance, procurement), the company pursues improvement measures in line with internal and external changes.

Human Rights Management Process

4.1.1.2 Human Rights Policy

Hyundai Steel actively supports international standards and guidelines pertaining to human rights and labor, such as the UN Guiding Principles on Business and Human Rights (UNGPs), the Universal Declaration of Human Rights (UDHR), International Labor Organization (ILO) conventions, and the OECD Due Diligence Guidance for Responsible Business Conduct. We have declared a human rights policy that reflects these standards and are committed to realizing the value of respecting human rights. The company regularly revises and establishes the human rights policy to proactively implement human rights management, prevent human right infringements due to the business operation and to alleviate the related risks. The human rights policy applies to every employee of Hyundai Steel (executives, employees, contract workers), domestic and overseas production and sales subsidiaries, consolidated subsidiaries, affiliated companies and joint ventures. Furthermore, the company encourages every stakeholder and transaction entity in the overall business activities including suppliers to respect these efforts. When the matters covered in the human rights policy conflicts with the local laws in other nations, the local laws are prioritized. The overseas subsidiaries may reflect the legal requirements and industrial characteristics of the respective countries they are located into the human rights policies and may also establish separate detailed policies when necessary. Except for cases where there are specific provisions in the local laws, organization's articles or company regulations, all Hyundai Steel employees are required to conduct their work in accordance with the human rights policy.

Fundamental Principles of the Human Rights Policy

Article 1. Prohibition of discrimination and harassment
Article 2. Compliance with legal labor conditions
Article 3. Humane treatment
Article 4. Freedom of association and collective bargaining
Article 5. Prohibition of forced and child labor
Article 6. Ensuring occupational safety
Article 7. Protection of local residents' human rights
Article 8. Protection of customers' human rights

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4.1.1.3 Discrimination and Harassment

Hyundai Steel declared a discrimination and harassment prevention policy in August 2023, to prevent discrimination, harassment, and sexual harassment and respect the employee rights to be treated equally without any form of discrimination. Under this policy, the company strictly prohibits actions such as excluding or rejecting individuals or groups based on differences, inflicting physical or psychological harm, exploiting positions or relationships in the workplace, and sexual harassment or assault.

Status of Discrimination and Harassment Measures

Category		Unit	2022	2023
Discrimination / Harassment	Warnings	persons	0	2
	Disciplines		5	4

4.1.1.4 Human Rights Grievance Handling

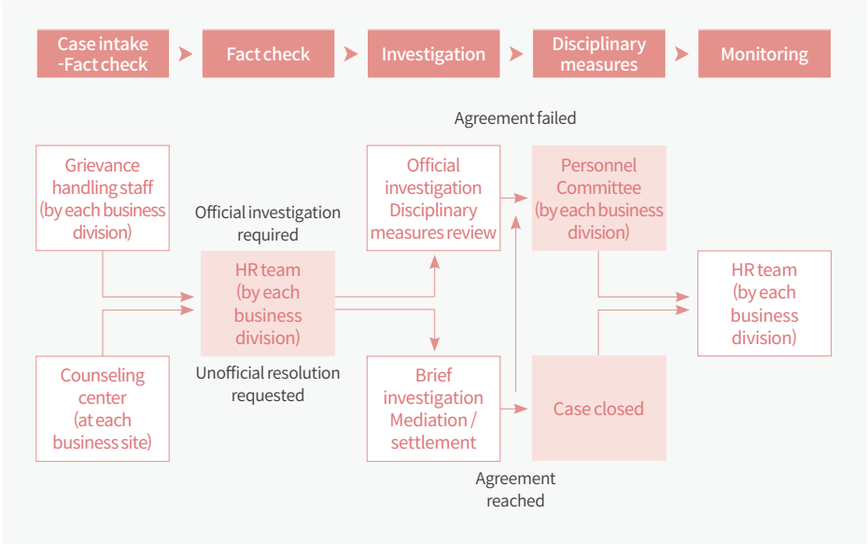
To address human rights violations and grievances experienced in the workplace and protect the human rights of those affected, Hyundai Steel has established a comprehensive grievance handling process. The grievance handling channels are operated both on and off-line including e-mail, hot-line, Cyber Audit Group and external psychological counseling centers for better accessibility of the whistleblowers. The information on incident reporting, personnel responses, monitoring process, and the responsible organizational units are accessible on the grievance handling channels. The company ensures the anonymity and confidentiality of whistleblowers and strictly prohibits any retaliatory actions, disclosure of identity, or employment-related disadvantages due to reporting grievances. This policy is publicly available on the company's website (Cyber Audit Group) to ensure that everyone can access it. When a grievance is received, we promptly assess the situation according to established procedures and make necessary improvements to internal systems or processes to address the root cause and prevent recurrence. Additionally, employees who cause negative impacts on human rights through discrimination, harassment, or other means will face disciplinary actions according to the standards and procedures outlined in the company's employment rules and disciplinary regulations.

Grievance Intake and Ethical Management Reports

• Reporting channels

- All stakeholders: Cyber Audit Group (Website)
- Employees: Grievance PIC in business sites (Intranet)
- Suppliers: Procurement information sharing portal (Website)

Grievance Handling Process



Operation of Psychological Counseling Center

The company operates a counseling center to provide professional psychological counseling for employees experiencing physical or mental difficulties such as family and interpersonal relationships, stress, etc. The counseling center is located both internally and externally, with options for online sessions for remote counseling.

[Internal] Greuteogi (Dangjin), Mind forest (Pangyo)
[External] Naemamen (Incheon), Choi Seung-ae psychological counseling center (Pohang), Psychological Counseling Coaching Center (Suncheon), Doran Doran (Yeosu)
[Online] Remote counseling reservation (www.koreaeap.com/steel)

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4.1.2 Human Right Risk Management

4.1.2.1 Human Right Impact Assessment

Hyundai Steel has organized preliminary survey and quantitative evaluation diagnostic sheets considering major human rights regulations and initiatives such as domestic and international human rights laws and OECD multinational enterprise guidelines to proactively address the human rights risk, in collaboration with the 3rd party professional organization, KPMG Korea. Also, the company is operating a human rights impact assessment process to identify human rights risks by designating the human rights-related PICs. The human rights impact assessment conducted on employees, suppliers, and consolidated subsidiaries including joint ventures identifies potential risks in the business sites by conducting written diagnosis and on-site due diligence. The responsible department analyses the risks identified from the assessment and supports the mitigation and alleviation of the risks. Furthermore, Hyundai Steel has set mid-to-long-term human rights goals and is progressing towards achieving 100% human rights impact assessments across all business sites including overseas branches, by 2026.

Human Right Impact Assessment Process

Designing Indicators	Written Diagnosis	On-site due diligence	Result Analysis	Improvement
Analysis and overview of domestic and international ESG assessment system and industry initiatives based on human rights policies of Hyundai Steel	Diagnosis based on indicators designed by differentiating assessment subject and issue, identification of human right risk factors	Conducting on-site due diligence accompanied by external experts at business sites where risks have been identified based on written diagnosis	Identifying risks and implications of business sites by collecting human rights assessment results(written diagnosis, due diligence).	Establishing improvement plans by risks, checking and inspecting of implementations

Results of the Human Rights Risk Forecast

Hyundai Steel has conducted risk forecasts based on the human rights survey and materiality assessment executed on employees, women, children, migrant/contract workers, suppliers, and local communities. When responses indicating negative experiences exceeded 20% or the related policies were insufficient, the issues are classified as 'potential risks. As a result of the forecast, the potential risks have been identified in the work environment and occupational health and safety.

Human rights issues	Target					
	Emplo-yees	Women	Children	Migrant, Contract workers	Suppli-ers	Local commu-nities
Work environment (Emotional labor, Discrimination, Freedom of association, etc)	Potential risk	Low risk	Low risk	Low risk	Low risk	Low risk
Employment condition (Child/Forced labor, Working hours, Salary, etc.)	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Occupational safety and health (Wearing safety gears, Workplace safety facilities, etc.)	Potential risk	Low risk	Low risk	Low risk	Potential risk	Low risk
Business impact (Environmental/Social risks near business sites)	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Conflict minerals (Human rights infringement occurred in raw material supply process)	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk

4.1.2.2 Human Rights Risk Diagnosis

Written Diagnosis

Hyundai Steel has prioritized all six domestic facilities and 16 overseas subsidiaries that produce the company's products to conduct a human rights impact assessment in 2023. The domestic business sites and overseas subsidiaries selected for the assessment account for over 90% of Hyundai Steel's employees. Additionally, assessments were conducted on six domestic consolidated subsidiaries including joint ventures and 408 suppliers. The assessment was structured through supervision and revisions of the 3rd party professional institute (KPMG Korea) and was conducted on various subjects distinguished by employment type, age group, gender, position, and nationality, including the stakeholders identified as 'vulnerable to human rights risks. The assessment comprises a of total 64 items focusing on major categories of human rights management systems and employee experiences, and identified significant issues if responses exceeded 10% of total responses.

Human Rights Risk Assessment Items

Human rights management system	Employee experience
• Humane treatments to employees • Ensuring occupational safety • Private information protection • Employee education • Corporate-labor relationship • Local community human rights	• Basic human rights and prohibition on discrimination • Salary • Prohibition on forced labor • Compliance of legal working hours • Ensuring of occupational safety • Private information protection • Workplace sexual harassment • Workplace bullying

On-site Due Diligence

Hyundai Steel conducted 100% on-site due diligence on business sites identified with human rights risks to ensure the credibility of written human rights diagnosis results. As a result of the diagnosis, two business sites above certain percentages of negative response were selected for the due diligence. The due diligence was comprised of quantitative assessment based on the diagnostic sheet and qualitative assessment through FGI (Focus Group Interview), accompanied by an external human rights expert.

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4.1.2.3 Human Rights Risk Assessment Result

Hyundai Steel identified potential risks in one business site among all business sites where on-site due diligence was conducted and mitigated the issues. Also, the company identified 40 human rights risks through a human rights impact assessment conducted on 408 suppliers. Out of suppliers identified with human rights risks, 15 suppliers established and reported the improvement plans. The rest of the suppliers are planned to be guided to improve the risks as well. We aim to improve all identified human rights risks and are continuously striving to achieve this goal.

Diagnosis and Improvement Status of Human Rights Risk

Period	Contents	Hyundai Steel	Suppliers
2023	Percentage of sites conducting human rights assessment	100%	57%
	Percentage of sites where risks were identified	9%	10%
	Percentage of implementation of improvement 100% measures and activities	100%	38%
Past 3 years	Percentage of sites conducting human rights assessment	100%	49%
	Percentage of sites where risks were identified	10%	7%
	Percentage of implementation of improvement measures and activities	100%	70%

Improvement Measures on Identified Human Rights Risks

Target	Segment	Item	Identified risks	Improvement measures
Hyundai Steel	Business site A	Basic human rights and prohibition on discrimination	Lack of human rights dedicated departments, insufficient promotion of the human rights-related process system	Promotion on human rights policy, related departments and process to all business sites
		Ensuring occupational safety	Absence of employee and supplier safety objectives	Establishment of shared safety objectives applying to Hyundai Steel and suppliers
Suppliers	Supplier A	Human rights policy	Absence of human rights policy	Suggestion of required guidelines for human rights policy establishment
	Supplier B	Pursuit of diversity	Absence of diversity/ inclusion policy	Suggestion of UN diversity related recommendations

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4.2 Talent Management

Hyundai Steel operates various employee competency development programs for the HRD mission of 'Cultivate talents with competence and character' based on a flexible and healthy organizational culture enhancing work satisfaction and concentration of employees. Based on this, the company is supporting the employees to strengthen proactive development, job expertise, and future response capabilities aligning with the business environment shifts.

4.2.1 Talent Management Mission

Mission

Cultivate talents with competence and character

HRD Direction

- Nurture leaders with an innovation mindset who can create new values
- Cultivate world-class professionals
- Build a learning ecosystem that supports self-driven growth

Ideal employees

CHALLENGER
Talents who are not complacent and possess an ambition for future leaps

CREATOR
Talents who actively and creatively adapt to changes

SPECIALIST
Talents equipped with specialized expertise and knowledge, striving to become the best in their respective fields

COLLABORATOR
Talents who build harmonious relationships with coworkers and collaborate effectively

4.2.2 Employment Status

As of December 31, 2023, the total number of employees at Hyundai Steel was 11,835 with an average of 13 years and 4 months of service. The company employs 203 individuals with disabilities and 326 employees with national merits. In terms of regional distribution, there are 588 local hires in Asia, 254 in the Americas, and 220 in Europe. Within the organization, there are 341 female managers (holding general researcher positions), accounting for 9.57% of all managers.

4.2.3 Talent Recruitment

4.2.3.1 Introduction of Year-round Recruitment System

Hyundai Steel implements a year-round recruitment system to ensure the acquisition of top talent for each position. Each division recruits talents with its own hiring plan and cross-checks its screening results with the head office to ensure transparency in the recruitment process. This approach reduces socio-economic costs by preventing the placement of individuals in careers unrelated to their competencies, thereby promoting the seamless integration of new employees within the organization and reducing early retirement rates. The Company adheres to relevant laws and regulations by providing preferential hiring opportunities for employees with national merits and operates employment policies that takes the needs of socially vulnerable individuals into consideration.

4.2.3.2 Recruitment of Competitive Global Talents

Hyundai Steel pursues key management strategies such as expanding its overseas market base, responding to economic bloc formation and changes in supply chain systems. To achieve global success, we are actively recruiting global talents from various countries. In the first half of 2024, we recruited employees with outstanding research and global business capabilities, from master's and PhD courses in top universities in Asia including Singapore, Hong Kong, China, and Japan. We are evaluating job suitability and characters of the candidate pools acquired from online and local promotions, recruiting required talents in different job sectors.

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4.2.4 Diversity and Inclusion

4.2.4.1 Diversity Policies and Activities

Hyundai Steel is committed to fostering a culture that values and embraces diversity among its employees, recognizing and appreciating their unique backgrounds, experiences, and perspectives throughout all aspects of the business. Furthermore, we are improving our culture and policies so that the employees are ensured with equal opportunities without discrimination, regardless of any reasons including gender, age, and ethnicity. In September 2022, the 'Diversity and Inclusion Policy' was established to contribute to the transformation to the embracing society, and the 'Anti-Discrimination and Harassment Policy' was established and disclosed to ensure equal treatment without discrimination in August 2023. Proceeding further from policy establishment, we are executing internal activities to promote employee awareness improvement this year. In June 2024, 'Cultural Diversity Council' was organized and a kick-off ceremony with gender sensitivity improvement education and a D&I campaign was held at The K Hotel Seoul. Also, disability awareness improvement, anti-discrimination, and gender equality education was designated as mandatory courses, to encourage employees to attend the education every year. We will keep putting efforts to expand employee awareness in diversity and inclusion.

4.2.4.2 Nurturing Female Talent

Hyundai Steel strives to nurture female talents by securing employee gender and diversity and raising the female-employee ratio in new recruitments. Not only in planning, finance, and researching departments with high female ratios, the company is seeking to expand female recruitment into production management and quality control departments. Also, by operating female Incheon Hyundai Steel Red Angels, the female soccer team, the company is striving to cultivate female rookies in Korean soccer. The female ratio of employees is gradually increasing due to the efforts of the company to encourage long-term services, maintain work-life balance, and help female employees showcase their capabilities. We are continuously nurturing female talents and appointing them to managerial positions and above and will keep on securing female talents.

4.2.4.3 Establishing a Family-Friendly Culture

To encourage employees to showcase their capabilities at work and perform their roles in their families, Hyundai Steel supports working-from-home arrangements, flexible working hours, leave to care for family members, reduced working hours in pregnancy and child-caring periods, and establishes workplace daycare centers and breastfeeding facilities. Also, to establish a family-friendly corporate culture, the company grants a 1-year legal parental leave (incentives guaranteed for the period), and an additional 1 year of parental leave. Furthermore, supports on medical expenses, comprehensive medical check-ups, and psychological counseling are provided for employees and families to ensure a healthy life. The employees are always welcomed in the company gym and swimming pools as well. The Ministry of Gender Equality and Family has nominated our family-friendly policies as an exemplary case and has certified us as a 'Family-Friendly Company' since 2014.

Major Employee Welfare Benefits Programs on Diversity and Inclusion

For all employees(including permanent and contract workers)

Support	Policy	Major benefits
Childbirth Support	Reduced working hours in pregnancy period	Reduced working hours for employees in their early pregnancy period (within 12 weeks) and late pregnancy period (over 36 weeks). 2 hours reduced from daily working hours
	Medical check-up leave for pregnant employees	Leave days for pregnancy medical check-ups of pregnant employees. Once a month before 28 weeks, once in every two weeks after 29 weeks and once a week after 36 weeks
	Leave days before and after birth	Leave days during pregnancy, available before and after birth. 90 days for single pregnancy, 120 days for multiple pregnancy
	Spousal birth leave	Birth leave days for spouses. Maximum 10 days within 90 days of birth
	Stillbirth and Miscarriage Leave	Leave days for stillbirth and miscarriage during pregnancy. Different number of days depending on pregnancy period
	Fertility Leave	Leave days for fertility treatment. 3 days per year
Childcare	Parental Leave	Parental leaves granted for caring of child under 8 or under year 2. Maximum 2 years of leave granted per child, maximum 2 splits granted within 2 years
	Reduced working hours in child caring periods	Reduced working hours for child-caring of children under 8 or year 2. For both male and female employees, maximum 1 year (maximum 2 years when legal parental leaves are not used), 15-35 hours per week for periods over 3 months
	Breastfeeding break	Breastfeeding break (paid) is given for female employees with children under 1. Two times a day, 30 minutes each
Family care support * In cases where parents and children of employees or patents of employee's spouse require family care due to disease, accident and age	Family care leave	Family care leave days. Maximum 10 days (can be used day by day, included in family care absence period)
	Family care absence	Family care absence. Maximum 90 days per year
	Reduced working hours for family care	Reduced working hours for family care. Maximum 1 year, 15-30 hours per week
Medical support (partially includes families)	Diagnosis and treatment	Company hospital, physical therapy rooms, exercise prescription room, oriental clinic. Diagnosis and treatment by medical experts provided
	Comprehensive medical check-ups	Regular/Special medical check-ups for employees. Once a year
	Operation of psychological counseling center	Diagnosis and prevention of employee job-related stress. Mental and psychological health support

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4.2.5 Talent Development

4.2.5.1 Operation of IDP System

Hyundai Steel implements a systematic approach to support employees' competency development and career management through the Individual Development Plan (IDP) system. Team members create personalized job training and growth plans aligned with their roles and responsibilities, and their progress is tracked using quantitative data. Team leaders provide constant feedback to help enhance their capabilities. The plans and performance data of team members are also utilized as reference indicators for team leader evaluations regarding the improvement of team members' capabilities. During 2023, the overall IDP program recorded a total of 240,792 hours, slightly decreased from the previous year's 251,015 hours. However, the average training time per person excluding compulsory educations increased by approximately 7% from 84 hours to 90 hours.

4.2.5.2 Building a Metaverse Platform

Hyundai Steel has established a Metaverse environment to create a non-face-to-face work environment for employees and enhance communication channels with external stakeholders. The metaverse environment consists of four distinct zones (Education, PR, Tour, and Recruitment), providing employees with virtual meeting spaces, non-face-to-face training environments, and new hires and job applicants with content to understand Hyundai Steel's business structure and history. By conducting training for new hires and leadership courses utilizing the Education Zone, 1,436 employees took 43 training courses in the platform.

4.2.5.3 Nurturing Steel Industry Talents

Development of Internal Training Materials based on NCS

To ensure that all employees can develop a fundamental understanding of steel without being limited by time or location, Hyundai Steel has designed and developed an educational curriculum based on the existing internal instructors' materials and learning modules in the areas of ironmaking, steelmaking, and rolling among the NCS areas. Building upon this foundation, we have created and distributed 41 video lessons on R&D, 12 on facility reinforcement and 5 certification courses to employees across the company. Development of these educational resources has enhanced the comprehension of the steel manufacturing process, its characteristics, and intricacies among new hires and transferees, contributing to an overall uplift in steel knowledge across Hyundai Steel's workforce.

Fostering Master Certification System

Master Certification System is operated to foster the motivation for growth among technical employees, while also expanding their learning opportunities and facilitating knowledge transfer. The technical employees earn growth points through participation in growth activities and obtain skill levels through verification and evaluation processes. The growth activities under this system are categorized into three main areas: self-development, technology transfer, and innovation. Self-development includes activities such as participating in job training, obtaining certifications, and publishing academic papers. Technology transfer encompasses working as an in-house lecturer, conducting job training, and patent applications. Innovation activities are composed of suggestion activities and team-based activities. By engaging in these activities, technical employees can earn growth points and gain recognition as skilled worker, innovator, expert, or master, based on their fulfillment of certification requirements. Hyundai Steel expects the Master Certification System to provide growth opportunities for technical employees and elevate the status of technical employees through certification and utilization of professional talents with high level of expertise.

Operation Expertise Strengthening Programs

Hyundai Steel operates various expertise-strengthening programs to reinforce technical expertise and develop practical performance skills for general and research employees. The training program consists of three academies. The Steel Technology Academy focuses on production processes, key products, core steel theories, and R&D cases. The Hydrogen and Electric Mobility Academy centers on carbon neutrality and future mobility. The PRO Academy emphasizes general technologies based on engineering. Each academy is structured into four levels (beginner, intermediate, advanced, and expert) tailored to the participants' steel knowledge acquisition levels. The sessions are conducted by both external experts (such as specialists and university professors) and internal instructors. In 2023, a total of 92 sessions were held, and a total of 2,500 employees acquired extensive knowledge of the steel business through this program, contributing to the company's competitiveness.

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4.2.5.4 Customized Training Courses

Personal Development Program

Hyundai Steel operates a company-wide education system to encourage employees to secure the required capabilities for the achievement of organizational performance and individual development.

Training	Directions	Target	Major programs
Leadership	Performing responsibilities by steps of Team member – Team leader – Executive, and developing steel business leaders contributing to performance achievement	Executives, team leaders, team members	• Executive insight forum • Leadership training for team leaders • Leadership training for team members
Job	Developing steel business experts with job understanding and practical knowledge by jobs	Team members	• Steel Technology Academy • Job Academy • PRO Academy • DX Academy
Global	Developing global talents with business mindset and language fluency	All employees	• Expatriate education • Language education
Organizational development	Establishment of healthy organizational culture based on independency and responsibility	All employees	• Work –Life Integration • Pre-retirement Education • Master Certification System • Legal education (sexual harassment prevention, workplace bullying prevention, disability awareness improvement)

Leadership Training Programs by Job Level

Hyundai Steel conducts pipeline based leadership program to systematically cultivate leadership of the employees within their journey from new-hires to executives.
In 2023, we enhanced the independent and proactive working capabilities of team members by offering seven courses in 'team member leadership training,' covering performance management, proactiveness, communication, objective setting, motivation, relationship building, and problem-solving, to 351 general and research employees. Furthermore, 'team leader leadership training' was provided to support the development of successful performance and insights for team leaders, and 'leader insight training' was held seven times for 113 heads of Groups and above.

Training	Key programs	Target	Major contents
Executive leadership	• CEO course • Leader insight • HMG Prime	Executives	- Management information and insight improvement - Sharing managerial issues and solutions by timeframe - Incubating economic, managerial, historical and philosophical insight
Team leadership	• In-hub training • Leadership training for team leaders • Training for new team leaders	Team leaders	- MBA, customer value creation, entrepreneurship - Management insight, performance management, coaching - Role recognition, leadership of team leaders, policy comprehension and utilization
Working-level	• New promotion training • Leadership training for team members	Managers, senior managers	- Role recognition, introspection, motivation - Expected roles by position, leadership capabilities
	• Onboarding	New hires	- Orientation, basic steel knowledge, job training, organizational adaptation

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4.2.5.5 Pre-retirement Education

Hyundai Steel provides reemployment support services to employees scheduled for retirement through annual retirement training programs, aiming to assist them in adapting to new environments and designing a new life after retirement. In 2023, we conducted training for 199 employees who were approaching retirement age, and out of those, 175 employees (with an attendance rate of 87.9%) successfully completed the training. The training receives positive feedback from the attendees due to effective reflection of unretirement needs and job characteristics. Our pre-retirement education has been nominated as an exemplary case for unretirement support service corporate consulting.

4.2.5.6 Human Rights and Compliance Training

Hyundai Steel conducts human rights and compliance training to establish a fair and transparent organizational culture and healthy working environment. The mandatory compliance training courses are established and executed for enhanced ethical compliance awareness of new hires and newly promoted. In 2023, a total of 350 (61 new team leaders, 289 new hires) employees completed the training. Sexual harassment prevention training, disability awareness enhancement training, and workplace bullying prevention training are conducted for all employees every year, achieving a 100% completion rate (4,128 online, 7,805 cascade training) in 2023. Moving forward, we are striving to stabilize mature organizational culture by enhancing mutual dependence and understanding through human rights and compliance training and to cultivate employee ethical compliance awareness.

4.2.5.7 AI·Digital Capability Development Support

Hyundai Steel operates the digital capability development program 'DX Academy', reflecting the external environmental shifts stimulating digital transformation and internal needs for developing talents with capabilities to lead the smart factory establishment. The DX Academy offers four levels of digital competency. For each level, we set appropriate learning goals and developed a systematic training course based on real data from the steel manufacturing process and various on-the-job cases. The curriculum of the DX Academy covers "planning competency," focusing on digital mindset; "utilization competency," aimed at maximizing data utilization using Structured Query Language (SQL); and "analysis competency," targeting our customized AI and machine learning modeling based on Python. Notably, courses based on programming languages such as SQL and Python allow certified members to take higher-level training through assessments like written exams, practical exams, and on-the-job tasks. According to the survey on work productivity changes conducted for the attendees of Python and SQL basic courses, we have received feedback implicating that work productivity has increased by three times. The company has developed online courses intended for regular and research employees to support them in learning theories and technology cases to enhance their DX mindset and 3,481 employees (29% of the total employees) completed the course in 2023. Also, courses on 'ChatGPT application cases training at work' were newly organized to encourage versatile utilization of generative AI technology such as ChatGPT at work. The course was conducted 4 times, consisting of real application cases of in-house trainers mainly focusing on the work application case studies. ChatGPT-related contents are planned to be expanded in DX Academy in the future.

4.2.6 Organizational Culture for Coexistence and Symbiosis

4.2.6.1 Establishment of Mid-to-Long Term Strategic System in Organization Culture

Hyundai Steel has recognized the significance of organizational culture and established a mid-to-long-term strategic system in organization culture to achieve corporate vision effectively. We are pursuing practical and detailed transformation targeting 'coexistence and symbiosis' as our direction, acknowledging the company, environment, stakeholders and all business sites are in a coexistence relationship, and structuring organizational culture in a mutually positive way.

Vision	**Green Steelmaker Capable of Sustainable Growth** (Green Steel)
Organizational culture direction	**CO-existence Culture**
Three standpoints	**Vision/Strategy coexistence**: • Hyundai Steel↔Hyundai Motor Group • Hyundai Steel↔Environment (carbon neutrality) **Employee coexistence**: • Hyundai Steel↔employees • Leader↔employees **Structural coexistence**: • All jobs/fields • All business sites

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4.2.6.2 Organizational Culture Improvement Initiative

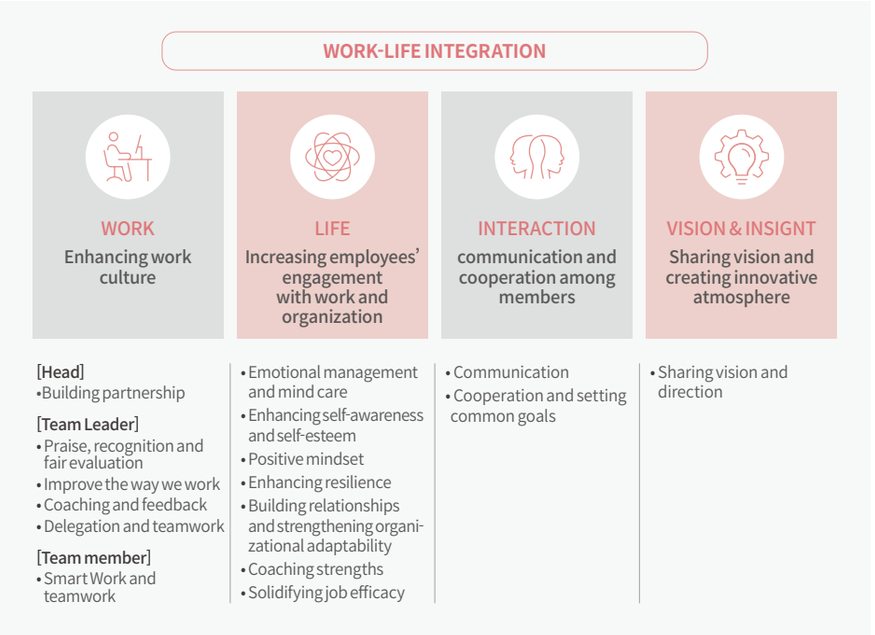
Hyundai Steel has implemented a range of programs aimed at enhancing employee work engagement through a reasonable and flexible work environment. The company strives to make substantial changes by establishing the 'Organizational Culture Council' with designated Culture Designers and Culture Leaders in charge of the organizational culture in each business division. The designated individuals plan and implement the customized culture activities by organizations and continuously share the company's organizational culture directions with employees. To promote work-life balance, we offer up to five days of promotion leave to employees who have been promoted and encourage all employees to utilize long-term vacations and birthday leave. We manage working hours through a selective work system, allowing employees to choose their own working hours for the management of flexible and reasonable hours, and implement a program that automatically controls PCs when planned working hours are exceeded. Furthermore, we introduced remote work arrangements such as working from home to support employees to work anywhere at any time.

4.2.6.3 Future Board

Hyundai Steel established the 'Future Board' composed of junior-level employees to support them in viewing the organizational culture from new perspectives, identifying problems, and improving them. The future board established and shared the 10 ground rules by naming the way of working as 'Steel Recipe'. The Steel Recipe was established using a bottom-up approach, led by junior-level employees. It includes content that everyone, regardless of their position, department, or business site, can agree with and relate to. The company promotes the Steel Recipe through active campaigns such as making short-form videos and game events, continuing with its efforts towards awareness internalization.

4.2.6.4 Work-Life Integration Program

Hyundai Steel implements the Work-Life Integration program to foster a healthy corporate culture that promotes the growth of individuals and the company, as well as creating a flexible and engaging work environment. This program is developed based on the annual Hyundai Motor Group Culture Survey and analysis of feedback from retired employees, both general employees and researchers. The diagnostic items include goals, organizational structure, institutions, job experiences, satisfaction with the company, and other factors. In 2023, a total of 34 training sessions were conducted, covering 14 courses across four categories: Work, Life, Integration, and Vision & Insight. Under the Work course, the training on the job positions (general manager, team leader, team member) was conducted focusing on working culture improvement, to stimulate attendees to improve their working culture based on their roles and pay grades. The Life course provided mindfulness and self-esteem enhancement practices to promote a positive mindset among employees and increase their engagement with the organization and their work. In the Integration and Vision & Insight course, training covered communication and collaboration among employees, vision sharing, and staying updated with innovation trends. As a result, a total of 910 employees attended the course, and the Net Promoter Score (NPS) for the Work-Life Integration program implemented in 2023 reached 66.0. The operation of the program has confirmed to be contributing to the positive influence inside the organization and healthy establishment of organizational culture, increasing the employee engagement score by 1% in the Culture Survey conducted in the second half of 2023.



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4.2.6.5 Labor-Management Relationship for Coexistence

Hyundai Steel maintains an equal and cooperative relationship with labor unions. We protect the labor union activities within the boundaries of labor relations laws of a labor union, respecting the three labor rights protected by the constitution: the right to organize, the right to collective bargaining, and the right to collective action. There are multiple unions, and the annual collective bargaining with a negotiating representative labor union selected through a process of single bargaining channel consolidation is conducted. Through the collective bargaining process, the collective agreements concerning employees' wages, bonuses, welfare systems, and working conditions are decided and negotiated.
The company operates a labor-management council to enhance employee welfare through labor-management cooperation. Every quarter, the council listens to employee grievances and suggestions and discusses current issues such as the working environment, leading to the planning and implementation of the improvement measures. In 2023, discussions were held on improvement measures such as establishing sports facilities (futsal fields), enhancing recreational buildings, providing PCs for on-site work, and upgrading workplace restrooms.

Key Status of Labor-Management Council in 2023

Business sites	Key agenda
Incheon Works	· Unmanned operation of welfare center cafes and expansion of welfare facilities · Improvement on sports facilities and recreational buildings
Pohang Works	· Discussion on operational adjustments for the large-scale rolling heating furnace · Discussion on additional distribution of on-site working purpose PCs
Dangjin Integrated Steelworks	· Improvement of wastewater (rust water) in restrooms at cold rolling mill site
Suncheon Works	· Establishing sports activity support facility (Futsal field) · Installation of EV charger

4.2.7 Fair Assessment and Compensation System

4.2.7.1 Continuous Performance Management System

Hyundai Steel conducts MBO (Management by objectives) based assessments and 360-degree feedback on the work performance and capabilities within the working process. The performance enhancement related to the company's objectives is pursued and capability improvement and work capabilities are improved through the assessments. Also, leadership improvement and cooperative culture are generated by listening to the opinions of superiors, subordinates, peers, and individuals themselves regarding personal leadership.

Assessment	Contents	Frequency	Target
Performance assessment	Assessment of annual work performance based on objectives established at the beginning of a year	Once a year	All employees
Capability assessment	Assessment of individual knowledge, skills, and behavioral patterns manifested during job performance		
360-degree leadership feedback	Leadership assessment for enhancing job engagement, improving leadership, fostering inter-organizational communication, and promoting coexistence culture		Senior managers, all managerial positions

Communication with the leaders on setting objectives, and performance management during and at the end of year assessment is crucial when the company conducts performance assessment. Employee objectives are set by detailed discussions with senior employees on individual targets and achievement levels based on the annual targets established at the beginning of a year by organizations (departments, groups). The company's objectives on items such as ESG management objectives are discussed together with strategic and operational standpoints when the performance objectives are set. The objectives are to be changed whenever issues such as change of duty and transfers happen, by consulting with senior employees in managing positions. During a year, the objective progress and issues of managerial and normal employees are discussed, and a ccontinuous performance management system based on agile conversations is operated so that frequent discussions on work progress can be discussed whenever required.
The end-of-year assessment is conducted once a year for all employees to monitor their individual objective progress and assessment with confirmation of the leaders and higher executives with personnel management authorities. The assessment confirmation is conducted on a group level, and a general manager aggregates the workload, level of difficulty, and achievements collected through the review sessions and discussions with the team leaders. Also, parts of the KPIs considered in the employee performance assessment are linked with the KPI of the team leaders, leading to the team-based performance assessment enabling assessment of the employees as a team member. For personnel-related decisions such as position appointments dismissal and transfers, the appropriate personnel are placed at each department, referring to the 360-degree feedback.
Under the principle of performance-based compensation, the assessment results are reflected in promotions and salary increases. The base salary for both male and female employees is the same, based on their position and years of service, and both managers and non-managers receive the same base salary within the same job level, ensuring there is no wage discrimination.

4.2.7.2 Reward System

To enhance employees' job satisfaction and foster a corporate culture of challenge and innovation, Hyundai Steel has implemented various reward systems. Each headquarters independently executes a reward system considering headquarters characteristics such as patent application and excellent safety cases, and the reward system focusing on achievements and capabilities is operated on a company level. The Innovative Leader Award is a reward system for individuals who contribute to the company's development and business performance through innovative ideas aligned with the management philosophy of the company. We also operate the Challenger Award, which gives back a portion of the economic impact amount as a reward for achievements that have generated an economic impact exceeding KRW 1 billion, based on comprehensive judgment of innovation and challenge. We also recognize outstanding employees who set an example for the entire company with the Exemplary Employee Award to encourage their efforts. Through the operation and improvement of these various reward systems, we are building a healthy corporate culture by enhancing employees' work engagement and motivation.

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4.3 Local Community Engagement

Hyundai Steel has established a social contribution vision under the slogan "We do in sustainable H-ways" and is focusing on social contribution initiatives that align with its goals in the areas of Environment, Safety & Protection, and Next Generation. In addition, based on the community engagement framework, we actively communicate with various stakeholders and endeavor to fulfill our corporate social responsibility through community engagement activities that reflect their needs.

4.3.1 Social Contribution Strategy System

Sustainability slogan

We do in sustainable H-ways

CSR mission

Value creation for future together
Hyundai Steel will make future together through various value-creating social contributions

Key areas

Environment	Safety & Protection	Next Generation
Perseverance of healthy environment and ecosystem	Creation of safe society and protection of socially vulnerable citizens	Discovering future talents for new era

Core business of 2023

- **Repurposing of Coffee Grounds [Main Project]** Establishing resource circulation system of coffee grounds and product development support
- **Green Dong-gu Project** Planting trees and building resting areas for residents
- **Protecting Endangered Species** Operating protection activities on endangered species near business site
- **H-shaped Shining Road** Installation of ground LED lights on crosswalks for traffic safety
- **Bench for Everyone** Production of disabled/non-disabled shared bench using steel
- **Step Donation Campaign** Employee donation campaign, support on walking-aid for disabled people
- **H Steel Atelier [Main Project]** Discovering new steel artists and supporting artwork
- **Elementary School Archery Class** Discovering new talents in archery and support on becoming a daily sport
- **Energy Efficient School** Improvement in electricity, education and hygiene environment of schools near overseas business sites

Operation method

❶ Local-based	• Prioritizing the location of business sites for balanced regional development and mutual communication for coexistence • Consideration of country-wide implementation considering the uniqueness and social impact of the business
❷ Business-related	• Planning social contribution activities linked to the characteristics of the steel industry, business model, and value chain • Proposing distinctive social contribution models through strategic alignment and enhancing societal impact creation
❸ Employee participation	• Encouraging voluntary and proactive participation of employees in fulfilling corporate social responsibility • Fostering a community-oriented corporate culture through shared experiences of participating in resolving local issues together

4.3.2 Mid-to-Long-Term Stimulation Strategy of Social Contribution

Strategy	Task	Name of business	Detailed objectives and status
Environ-ment	Establishment of resource circulation ecosystem Discovering circulation resource and establishing repurposing system	Repurposing of Coffee Grounds	Establishment of a public coffee ground recycling system in Incheon and encouragement of participation from 500 cafes, with over 15 selected companies for recycling innovation and product development support (2018-2023)
	Environment habitat conservation Efforts to secure biodiversity through conservation activities for animals, plants, and habitats	Green Dong-gu Project	Planting trees near the business sites and establishing resting areas for residents, with planting of 10,000 trees (2018-2023)
		Protection of Endangered Species	Conducting ecological surveys in the vicinity of the business site, identifying endangered species, and organizing protection activities with employee participation at least twice a year (2023-2025)
Safety and protection	Expanding traffic safety infrastructure Establishing various traffic safety infrastructures for pedestrian and driver safety	H-shaped Shining Road	Installation of total 100 LED safety lighting on crosswalks in school zones and accident-prone areas near the business site, with a cumulative total of 100 installations (2021 ~ 2027)
	Protection of socially vulnerable groups Various support activities and campaigns for socially vulnerable and disadvantaged groups	Bench for Everyone	Designing and distributing benches for use by both disabled and non-disabled individuals, 90 locations over four years (2023-2026)
		Step Donation Campaign	Establishing goal-achievement fund Through an employee-driven step donation campaign, walking-aid support on more than 60 disabled children for 2 years (2022~2023)
Next generation	Discovering next generation / providing opportunities Providing opportunities for talented individuals with exceptional potential to discover and showcase their talents.	H Steel Atelier	Discovering and supporting new steel artists, selecting and producing at least four pieces per session (since 2018)
		Elementary School Archery Class	Operating archery classes in elementary schools and expanding to country-level including locations near business sites, plans to operate classes in 50 schools (2024 to 2028)
	Supporting improvement in poor educational environments Supports in electricity, education and hygiene infrastructures of schools near overseas business sites	Energy Efficient School	Supporting over 12 vulnerable schools near Hyundai Steel's business site in Chennai and Anantapur, India with solar panels, IT education facilities and hygiene facilities (2023 ~2026)

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4.3.3 Social Contribution Activities

4.3.3.1 Environment

Coffee Grounds Recycling Project

Hyundai Steel conducted 'Coffee Grounds Recycling Project' for 5 years starting from 2018, based on multiple partnerships with Incheon City, the Ministry of Environment, the Korea Productivity Center, and environmental foundations. We established the resource circulation system by collecting coffee grounds generated in Incheon and upcycling them into eco-friendly innovative products (flowerpots, bricks, road pavements) and contributed to waste reduction in the local community and job creation for socially vulnerable groups. we extended the collection area within Incheon, initiating collections in seven autonomous districts, and collected total of 496 tonnes of coffee grounds utilizing a private collection system centered on local self-sufficiency centers. To promote the upcycling of coffee grounds, we held a contest and selected 16 companies to support on research development expenses and signed an agreement to supply coffee grounds free of charge. Incheon Yeonsu Regional Self-sufficiency Center sent coffee grounds collected by Incheon City to the Gyeongbuk Health and Environment Research Institute to support research on reducing odors in livestock farms, and the research is expected to reduce the odor by maximum 96%. The Coffee Grounds Recycling Project conducted from October 2018 to September 2023 was transitioned to Incheon City Public Works through stable transition process and is planned to be continued in the future. We will keep on executing discovering activities of repurposing resources and establishing repurposing system.

Social contribution (Environmental/ Economic)

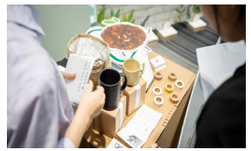
- Reduced cumulative amount of coffee ground landfill: 496 tonnes
- Reduced cumulative GHG emissions from coffee ground landfill: 69.2 tCO_2e [1)]
- Cost savings from coffee ground landfill reduction: around KRW 49 million (496 tonnes x KRW 97,963)[2)]
- Social job creation: 20 recruitments in self-sufficiency center
- Growth stimulation of coffee ground industry: support on 16 selected companies from the contest, production of 300 thousand related products

Business contribution

- Presented a pioneering model of resource circulation through the Coffee Grounds Recycling Project
- Increased positive exposure: Related articles have grown approximately 5.7 times over 5 years (80 articles → 463 articles)

1) The figure for methane and nitrous oxide emissions from coffee ground landfills converted to CO_2 equivalent
2) Landfill fee for the metropolitan area: KRW 97,963 per tonne

Category	Environmental contribution		Economic contribution	
Year	Number of cafes	Collected amount of coffee grounds	Number of socially created jobs	Number of selected companies
2019	62	9 tonnes	-	-
2020	181	15 tonnes	8	5
2021	280	53 tonnes	6	4
2022	469	141 tonnes	2	7
2023	523	278 tonnes	4	-
Total	**523**	**496 tonnes**	**20**	**16**



Green Dong-gu Project

Hyundai Steel has been implementing the "Green Dong-gu" urban forest creation project near Incheon Works in collaboration with Incheon Dong-gu, Incheon Social Welfare Council, and Incheon Community Chest of Korea since 2018. Using employee participation funds, the company has donated over KRW 230 million to plant 10,000 trees of five different species in parks and green spaces throughout Incheon Dong-gu over a period of six years, ending in 2023. In 2023, arrowwood, azalea, boxwood, moon-glow and grass were planted in Incheon Dong-gu Incheon Park. We will continue our various environmental contribution business for forest creation near out business areas.

Protecting Endangered Species

Hyundai Steel has been executing an endangered species protection project to protect the ecological environment near the business areas since 2023, in collaboration with World Vision. To assess the environmental environment within 5 km of the business site, Hyundai Steel has conducted ecological surveys in collaboration with NS Ecology Research Institute and the Korea Ecotourism Society, focusing on the area around Haryong-myeon, Suncheon. We have selected Gold-spotted Pond Frog (*Pelophylax Chosenicus*) for endangered species protection activities and are planning to engage in ongoing ecological protection activities and campaigns with our employees to increase the population of the protected species. In 2024 in Dangjin area, we selected 20 students from the 4th grade of elementary school and middle school and operated the 'Junior Citizen Scientist' program. After conducting pre-education on the value of biodiversity, ecological resource status, methods of biological observation, and recording, we proceeded with ecological monitoring and surveys at various sites such as Dangjin Eumseom Port and Dangjincheon with students. Environmental organizations in Dangjin, such as the Dangjin Environmental Movement Union, Dangjin Sustainable Development Council, Poolsee Eco-Education Research Institute, and Our Seed Research Institute, collaborated and communicated together in the project. In the long term, we will keep on collaborating with various professional groups to expand the project areas from Dangjin and Suncheon areas to areas near Incheon and Pohang areas, conducting practical protection activities based on scientific research.

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4.3.3.2 Safety and Protection

H-shaped Shining Road

Hyundai Steel has signed an agreement with Dangjin City, Dangjin Police Station, and Dangjin Welfare Foundation to carry out the "H-shaped Shining Road" project since 2021 with the goal of creating a sustainable and safe city, preventing traffic crimes, and building a Dangjin-type social safety net. Through this business, the company plans to reduce accidents by installing safety detection LEDs at crosswalks in accident-prone areas with large population fluctuations such as school zones and traditional markets. By 2023, Hyundai Steel donated about KRW 510 million from the employee participation fund to install "LED runway-type markers" at 30 locations and "floor-type markers," which are synced to traffic lights and prevent jaywalking, at 14 locations. These installations contribute to traffic accident prevention by providing psychological assurance to pedestrians, making it easier for drivers to identify crosswalks, and raising awareness of signal compliance. Also, we conducted a traffic safety campaign to improve awareness among drivers and pedestrians. Dangjin City has marked a nation's top spot in traffic safety index improvement in 2023, thanks to various efforts on road traffic safety enhancement. A 22% reduction in traffic accidents and a 35% decrease in traffic fatalities was achieved compared to 2021, before the implementation of the business. The H-shaped shining road business will be expanded to Incheon, Pohang, and Suncheon areas where the company's business site is located starting in 2024.

Bench for Everyone – Daily Life Changing Project for the Disabled

Hyundai Steel has been conducting the "Bench for Everyone" project since 2023, as part of the Daily Life Changing Project for the Disabled, with the goal of installing facilities for both disabled and non-disabled individuals, and to improve disability awareness. In collaboration with architect Professor Hyun-Jun Yoo, the user-friendly bench models were designed and produced using the steel products of Hyundai Steel, manufactured and installed together with Pureume Foundation. On Disability Day in April 2024, the first donation ceremony for "Bench for Everyone" was held at Yeouido Park, and is planned to be installed at more than 30 sites countrywide starting from the ceremony. We plan to install benches at 90 sites by 2026 and plan to improve the bench models by collecting user feedback.

Step Donation Campaign - Walk Aid Support for the Disabled

Hyundai Steel has conducted "The Miracle of 70cm, Moonshot Challenge" celebrating its 70th anniversary in 2023. By donating KRW 100 million upon achieving the 500 million steps, the campaign provides voluntary social contribution participation experience and health habit recognition opportunities and supports socially vulnerable groups. The participants achieved 526 million steps within 22 days, and the fund raised in a total of KRW 100 million was used to support walk aids for 37 disabled children through the Pureume Association. In 2022, we achieved 220 million steps, double the amount of the original objective, generating funds of KRW 50 million and providing walking aids for 22 disabled children.

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4.3.3.3 Next Generation

H Steel Atelier –Steel Public Art Project

Hyundai Steel has implemented the "H Steel Atelier -Steel Public Art Project," a social contribution project to establish cultural infrastructure in local communities and provide opportunities for cultural and artistic activities to budding and young artists. Through the project, we have installed five sculptures at Dangjin Samsunsan Arboretum in 2018 and four sculptures at Suncheon Bay Ecological Culture Education Center in 2019. In 2023, in line with the three pillars of sustainability management, we held a call for artworks under the theme of 'H Steel Dream Road', which reflects hope for a sustainable future, respect for human beings, people-centered culture, and harmony with the surrounding environment. 44 teams of professional artists and 58 local children participated in the contest, of which three sculptures by professional artists and one sculpture by citizen participation were selected. The selected works were installed at Songdo Central Park in Yeonsu-gu, Incheon, and can be viewed by pedestrians.

Social Contribution

Providing opportunities for steel artists to create works of art
- Installed 13 sculptures (cumulative from 2018 to 2023)
- Supported 44 teams of professional artists

Contributing to the creation of local community attractions near business sites and revitalizing local culture and arts
- Signed a mutual agreement with the Incheon Free Economic Zone Authority (IFEZA) for collaborative efforts on the 'H Steel Atelier Social Contribution Project'

Business contribution

- Fostering a positive image of steel through steel art
- Providing a direction for steel recycling
- Increased publicity exposure

Elementary School Archery Class

Hyundai Steel will conduct the 'Elementary School Archery Class' for five years (2024 to 2028) to expand the foundation of school sports and to promote archery as a recreational daily sport. While Korean archery has maintained a strong global competitiveness by winning medals in the Olympics and Asian Games, there have been challenges in promoting archery as a recreational daily sport due to a lack of domestic professional coaching staff, practice facilities, and expensive equipment. To address current circumstances, Hyundai Steel and the Korea Archery Association have partnered to establish a basic foundation model for elementary archery classes and to develop and distribute the materials and equipment. In the first half of 2024, retired archery athletes and specialized instructors were dispatched to 26 elementary schools in 8 different regions including the areas near the company's business area, conducting archery classes in after-school classes and regular school hours. Moving forward, the company will continue its efforts to expand the schools with archery classes.

Energy Efficient School

Hyundai Steel has been implementing the "Energy Efficient School" project with World Vision India, an international relief and development NGO, for schools in the Chennai and Anantapur regions of India. This project aims to prevent frequent electricity stoppages stemming from chronic electricity shortages, through supporting a stable electricity supply by renovating electricity facilities in schools and installing eco-friendly solar panels by 2026. Also, the project enhances the safety and hygiene infrastructure for the students by installing solar panel streetlights, establishing sewage systems, building toilets, and supplying high-efficiency stoves, so that the students can concentrate on their studies in a safe and clean environment. In 2023, we supported the improvement of educational environments by selecting two schools in Chennai and two schools in Anantapur. Additionally, we dispatched a volunteer group called Dream Challenge, consisting of around 10 employees, to schools in Chennai. They took part in activities like painting murals, landscaping, and conducting educational and cultural exchanges.

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4.3.4 Employee Participation in Social Contribution Activities

4.3.4.1 Employee Participation Fund

Hyundai Steel voluntarily operates the Employee Participation Fund to expand the interest and participation culture of our employees in social contribution activities. The fund is raised by deducting certain amounts from employee salaries every month and is used for social contribution activities in each region where Hyundai Steel's business site is located. Participating employees vote on social contribution activities and choose locally customized projects for each region of our business sites. In 2023, a total of 4,173 employees (34% of all employees) participated, raising a total of KRW 286.48 million in participation funds. Based on this, the 'H-shaped Brilliant Road' project is being launched in the area where the business sites are located in 2024.

Social Contribution Activities Using Employee Participation Fund

Area	~ 2020	2021	2022	2023	2024 ~
Seoul/ Gyeonggi	House repairing activity 'Hope'	Building Han-river Forest for citizens	Establishment of traffic-safety yellow carpets	Bench for everyone	H-shaped Shining Road
Pohang		Zero-waste campaign	Volunteer activities for disabled and social partnership volunteer activities		
Ulsan		Raising children's dreams			
Dangjin		H-shaped Shining Road			
Incheon		Green Dong-gu Project			
Suncheon		Culture sharing concerts		Fire safety equipment support for vulnerable groups	

4.3.4.2 Employee Volunteering

Voluntary Volunteer Group Activities

Hyundai Steel has been conducting volunteer activities mainly executed by volunteer groups that our employees voluntarily participate. Voluntary volunteer groups of business sites efforts extend to cleaning the sea and rivers to protect local cultural artifacts and the environment, distributing briquettes, sharing holiday gifts, and providing free meals to local communities. We operate a family volunteer organization comprised of employees and their families to provide continuous volunteer services for the local community in Dangjin. Hyundai Steel is committed to actively supporting activities that foster co-prosperity and win-win growth with local communities.

Labor-Management Cooperative Volunteer Activities

H-USR (Union Social Responsibility) is a social contribution project jointly planned and promoted by labor and management and has been implemented for about 8 years since 2017. This ongoing project enables our labor at each business site to fulfill their social responsibilities and promote a culture of volunteerism in local communities. By establishing 'H-USR Day' as a day for unions to voluntarily engage in volunteer work, we conduct region-specific volunteer programs aimed at improving infrastructure and providing a safer living environment for low-income households in the region. In 2023, our labor unions at each business site conducted six volunteer activities for vulnerable groups, including making kimchi for disabled families, creating memory boxes to help prevent Alzheimer's in the elderly, supporting recreational activities for children at orphanages, and preserving local cultural artifacts. These efforts reflect our commitment to actively engaging with the local community.

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4.3.5 Local Community Support Activities

4.3.5.1 Local Community Donations and Supportive Activities

Hyundai Steel contributes to the development of local communities near its business sites and builds trust through various supportive activities. Not only does the company aim to enhance the overall life of residents by supporting socially vulnerable groups, but the company also supports local festivals, cultural and sports activities, educational support projects, and ecological and environmental improvement projects. Through these supportive activities, the company pursues the sustainability of the local community by accumulating societal and environmental assets and building infrastructures.

Annual Local Community Donation Support Status

(Unit: KRW million)

Area	2022		2023		Major supports
	Amount	Proportion	Amount	Proportion	
Welfare	1,990	35%	2,998	46%	Hygine, safety and welfare supports on vulnerable social groups near business area
Culture & Sports	1,776	32%	2,572	39%	Creating cultural capital in the community through support for cultural and sports events and artistic activities
Education	1,409	25%	937	14%	Investments on local educational environment development and scholarships for academic achievers
Environment	449	8%	26	1%	Social contribution business for enhancing ecology environments and supports for establishing renewable energy system
Total	**5,624**	**100%**	**6,533**	**100%**	16% increase compared to 2022

4.3.5.2 Job Creation in Local Communities

Hyundai Steel hired 59 residents as employees whilst operating a subsidiary in Anantapur, Andhra Pradesh, India. The employees are working in offices and business sites of the subsidiary after completing related job training. We plan to continue providing employment opportunities in the Indian community to ensure job stability. Additionally, the company has participated in the Uni-Tech initiative implemented by the Ministry of Education and the Ministry of Labor. Hyundai Steel organized a consortium with universities near the Dangjin Integrated Steelworks area and supported customized job training for students from local schools. In 2023, 20 students out of a total of 70 trainees were recruited after successfully completing the education program.

4.3.5.3 Local Community Communication Channel

Hyundai Steel regularly operates councils composed of the company's stakeholders in areas where the company's business sites are located. In the council, various issues for the development of the local community are discussed and the response measures are organized.

Site	Name of council	Year of operation	Core agenda	Frequency
Dangjin	Hyundai Steel Environmental Improvement Council	2019	• Management status of air and water pollutant in Steelworks • Air pollutant reduction status of steelworks and environmental issues	Once every quarter
	H-shaped Shining Road Social Safety Net Stakeholder Council	2020	• Detailed implementation of H-shaped shining road installation • Engaging employees and citizens in road safety campaign	4-5 times per year
	Children Protection Social Security Network Working Group	2021	• Participation in children harassment prevention meeting and campaign	2-3 times per year
Suncheon	Sinsung-ri Development Council	1996	• Environmental issues in Suncheon Works, etc.	Once every quarter
	Suncheon Community Security Council	2023	• Establishment and operation of community protection systems through public-private cooperation	Once every half year
Ulsan[1]	Ulsan Chamber of Commerce and Industry	2019	• Interdepartmental exchange between HR and General Affairs Divisions of major companies in Ulsan • Information exchange and networking among companies	Once every half year
	Residents Representative Committee of Seongwon Apartment	2007	• Discussion on response measures regarding environmental complaints (noise, etc.) near the business site	Once every quarter

1) Transferred to Hyundai Steelpipe (Subsidiary) from 2024

Status of Production Assets Requiring Community Consultation

Category	2023
Total number of production assets	20 (4 domestic, 16 overseas)
Number of production assets requiring local community consultation[1]	20
Percentage of production assets requiring local community consultation[1]	100%
Total number of development projects	0
Number of development projects requiring local community consultation	0
Percentage of development projects requiring local communityconsultation	0%

1) Hyundai Steel consult with the surrounding communities at all of our business sites on a variety of issues, and disclose major consultations with local communities in our Integrated Report.

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Governance

The Board of Directors at Hyundai Steel is founded on principles of independence, expertise, and diversity and is dedicated to supervising management while safeguarding shareholder rights and interests.

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5.1 Corporate Governance

The Board of Directors at Hyundai Steel is founded on principles of independence, expertise, and diversity and is dedicated to supervising management while safeguarding shareholder rights and interests. We have established a transparent and sound governance structure for a sustainable business environment, the details of which are disclosed in our integrated reports, business reports, and on our official website.

5.1.1 Composition of BOD

The Hyundai Steel Board of Directors consists of nine directors (four executive directors and five independent directors), ensuring the ratio of independent directors remains at 55% or higher to strengthen its independence. In addition, the Board has separate specialized committees, which include Audit Committee, Transparent Management Committee, Independent Director Candidate Recommendation Committee, and Compensation Committee to secure expertise in decision-making and improve operational efficiency. On these specialized committees, at least half of the members are independent directors to reinforce the Board's management supervisory function. In particular, to systematically ensure the autonomy and participation opportunities of independent directors, we appointed independent directors as the chairs of the specialized committees and composed the Audit Committee and Transparent Management Committee entirely of independent directors. Also, all independent directors are prohibited from holding concurrent positions as directors, executive officers, and auditors in two or more other companies than Hyundai Steel in order to ensure that independent directors faithfully fulfill their duties. As the Company's highest decision-making body, the Hyundai Steel Board of Directors prioritizes sustainable growth through increased corporate value.

5.1.1.1 Positions and Roles of Directors

● Committee Chair ○ Committee member (As of June 2024)

Name	Gender	Position	Chair of the Board	Audit Committee	Transparency Management Committee	Independent Director Candidate Recommendation Committee	Compensation Committee	Verification of the Independence Diversity of the Independent Directors
Executive Director								
Gang-hyun Seo	Male	President of Hyundai Steel (CEO)	●			○		
Won-bae Kim	Male	Executive Vice President of Hyundai Steel (Head of Flat Products Business Division)	○					
Gwang-pyung Kim[1]	Male	Senior Vice President of Hyundai Steel (Head of Financial Management Division)	○				○	
Seong-soo Lee[1]	Male	Senior Vice President of Hyundai Steel / (Head of Long Products Business Division)	○					
Independent Director								
Kyung-tae Hong	Male	Research Specialist at Korea Institute of Science and Technology	○	○	●	○		Verified
Jung-han Yoo	Male	Professor of School of Architecture at Seoul National University of Science & Technology	○	○	○			Verified
Geum-joo Jahng	Female	Professor of the University of Seoul (Accounting)	○	●	○		○	Verified
Ji-soon Park	Male	Professor of School of Law at Korea University	○	○	○	●		Verified
Seung-ah Cho[1]	Female	Professor of School of Business at Seoul National University	○		○		●	Verified

1) Newly appointed at the general meeting on March 26th, 2024

5.1.1.2 Committees within the BOD

(As of June 2024)

Audit Committee

The Audit Committee consists of four independent directors, and its main duties include supervising management to facilitate informed decision-making by directors and management, deliberating and resolving matters assigned by the Board of Directors, and auditing accounting-related affairs. The committee has the duties and authority to convene and request an extraordinary general meeting of shareholders, provide statements on the agenda of general meetings and submit audit reports. In addition, it reviews the feasibility of changes to important accounting standards or accounting estimates, appoints, dismisses, and evaluates external auditors, and assesses control systems such as internal accounting management system.

In 2023, the Audit Committee held a total of five meetings, deliberating on matters such as the operation of the internal accounting management system and the reporting of quarterly business performance. The Committee also conducts quarterly meetings with external auditors without the presence of the management. In October 2023, an external expert was invited to provide a training to further improve the expertise of the members.

Training date	Training contents
September 1, 2023	Accounting Transparency Seminar (Chair of Audit Committee participated)
October 25, 2023	Financial accident cases and internal accounting management system response • Strengthening of internal accounting management system assessment capabilities

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Transparent Management Committee

The Transparent Management Committee consists of five directors and entirely of independent directors. Its duties include building an ethical corporate culture and practicing sustainable management with the purpose of reviewing the transparency of internal transactions, promoting ethical management, and protecting shareholder rights and interests. In order to enhance shareholder-friendly management, the Committee assign a member responsible for safeguarding shareholder rights and interests, enhancing engagement with shareholders at home and abroad, and continuing activities such as identifying policies that enhance their rights and interests. In 2023, the Transparent Management Committee held a total of six meetings to deliberate on matters such as social contribution activities, fair trade compliance program, activities of the compliance officer, and the approval of large-scale internal transactions, and it also discussed on the materiality assessment results to identify core risks in July. In addition, the Committee deliberates and discusses on various agenda items with a focus on overall ESG management, including the approval of the safety and health management plan of the Company.

Independent Director Candidate Recommendation Committee

The Independent Director Candidate Recommendation Committee nominates candidates who align with the interests of the Company and shareholders according to fair and transparent procedures and verifies that the candidates meet the legal requirements for independence and expertise to ensure the Committee is operated transparently and soundly. The Committee consists of two independent directors and one executive director, ensuring a majority of independent directors in compliance with relevant laws, the Articles of Association, and the regulations of the Board of Directors. The committee has appointed the independent director Ji-soon Park as the chairman to ensure transparency and independence, and has re-appointed and newly appointed three independent directors.

Compensation Committee

The Compensation Committee serves to enhance transparency in the director compensation system and improve the overall governance structure by holding at least one session a year primarily to approve the remuneration limit for directors and to review the executive director compensation system. The committee is convened prior to the annual general shareholders meeting. The Committee consists of two independent director and one executive director, making a majority of independent directors. Seung-ah Cho an independent director, was appointed as the chairman.

5.1.2 Considerations for Appointment and Composition of BOD

In accordance with the COMMERCIAL ACT and the Articles of Association, directors are elected during the general meeting of shareholders. The Independent Director Candidate Recommendation Committee recommends a slate of director candidates, which is shortlisted by the Human Resources Committee. Then, the Committee recommends qualified candidates to the general meeting of shareholders after evaluations on expertise and independence. The recommended director candidates are presented as individual items at the general meeting of shareholders and are finally appointed as directors after the convened meeting. Having experts from different fields, the Board facilitates objective decision and execution of important matters related to management supervision and the fundamental policies and provides diverse insights and perspectives based on their respective areas of expertise. In particular, as changing business environment requires strategic judgment by the Board, Hyundai Steel seeks independent directors from different fields to enhance the expertise of the Board, while executive directors are appointed from among executive managers of different divisions across our business. The chair of the Board is elected through a resolution passed at an extraordinary board meeting following the general meeting of shareholders. As the chair leads the convening of the Board and the deliberation of agenda items, the chair should have a thorough understanding of all issues brought to the Board and be capable of providing sufficient explanations and information. In this regard, as an expert in steel industry with thorough understanding of overall business, President and CEO of Hyundai Steel, Gang-hyun Seo was elected as Board Chairman in March 2024.
Currently, the Board consists of experts in various fields (finance/accounting, business administration/economics, law/regulation, production/R&D, industry experience). Among them, independent directors Kyung-tae Hong and Jung-han Yoo are experts in metal and architecture and have expertise in the steel industry.

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5.1.2.1 Transparency and Expertise of BOD

Establishing an Advanced Governance Structure

Hyundai Steel provides transparent information on its overall governance structures. As part of our disclosure expansion efforts, we have disclosed BOD information on appointing female executives to the Board to ensure diversity, providing notice periods of general shareholder meetings and granting greater convening authority, and disclosing annual compensation, compliance status, and independence of independent directors. We have also enhanced the disclosure of information on ESG management activities during our quarterly IR sessions.

We announced our commitment to a sound governance structure and established the Charter of Corporate Governance, which outlines general principles and is available on our website. In an effort to further enhance transparency of the governance structure, the Charter was revised to include a minimum attendance rate (75%) and specific diversity requirements for director appointments. Furthermore, through the amendment of Articles of Association in 2021, the equal authority was granted for each director in convening the Board to improve the flexibility and independence of the Board. In addition, the step-by-step tasks are established as a response to the mid-to-long term agenda and to systematize the governance performance assessment.

Strengthening Sub-committee Members' Expertise

The role of each sub-committee member is crucial as the Board operation primarily relies on these sub-committees to which it has delegated authority. Therefore, we provide regular training to support the development of our members' expertise. In April 2020, Hyundai Steel established a foundation for "providing regular training to improve the expertise of BOD members and enhance their understanding of the Company" through the BOD Regulations. Every year, we host external experts and in-house instructors and provide training to the members. In 2023, an in-house instructor trained independent directors on electric arc furnace production process and vision of steel industry by visiting Incheon Works to enhance the understanding of the Company and the steel industry of independent directors. The Audit Committee members were trained by external experts on cases of money-related incidents and how to respond to the internal accounting management system, and the Chairman of the Audit Committee attended a seminar on accounting transparency organized by EY Hanyoung.

| Business Skills Matrix (BSM)

(As of June 2024)

Category	Kyung-tae Hong	Jung-han Yoo	Geum-joo Jahng	Ji-soon Park	Seung-ah Cho	Gang-hyun Seo	Won-bae Kim	Gwang-pyung Kim	Seong-soo Lee	Ratio
Leadership	●	●	●	●	●	●	●	●	●	100%
CEO experience						●	●			22%
CFO experience						●		●		22%
Finance / Accounting			●			●		●		33%
Business management / Economics					●	●	●	●	●	56%
Production / R&D	●	●					●		●	44%
Law / Regulation				●						11%
Year of first appointment	2019	2021	2021	2022	2024	2023	2023	2024	2024	
Age	66	54	52	56	56	56	58	55	58	
Gender	Male	Male	Female	Male	Female	Male	Male	Male	Male	

| Training Status of Independent Directors

Training date	Training subject	Attending independent director	Main training content
June 3, 2023	Hyundai Steel	Four of five	Enhancement of BOD expertise through better understanding of the Company • Visiting Incheon Works and electric arc furnace production process training
October 25, 2023	Hyundai Steel	All five directors	Future of steel with human society • Providing industry insight through steel industry vision training

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5.1.2.2 Diversity of BOD

The "Guideline upon Independence and Diversity of Independent Directors" at Hyundai Steel specify the expertise required of independent director candidates and outline the diversity of the Board (nationality, age, gender, background, race, religion, ethnicity, etc.) in consideration of the business environment. Article 2-3 (Qualifications and Independence of Directors) of the "Charter of Corporate Governance" stipulates that directors shall be persons from diverse backgrounds who have sufficient expertise and/or practical experience in related fields, such as finance, economy, management, law, and accounting, and can make substantial contributions to corporate management. To promote diversity on the Board, Article 2-4 (Election of the Directors and Recommendation of the Candidates) states that candidates shall not be discriminated based on gender, age, nationality, experience and background, but be evaluated on an equal basis to enhance corporate value and protect shareholders' rights and interests. Furthermore, it stipulates that the Company shall strive to promote diversity in the Board, considering the interests of various stakeholders, including shareholders.

Hyundai Steel is dedicated to ensuring the Board of Directors consists of directors from diverse background and experience considering all stakeholders of the Company including shareholders and customers, and the current average tenure of the directors is 2 years.

Background of Appointment

(As of June 2024)

Name	Evaluation of Expertise and Diversity	Reappointment	Number of Reappointments	Tenure (years)	Concurrent Position Status
Executive Director					
Gang-hyun Seo	To ensure reliable management of overall business activities, such as enhancing competitiveness and securing sustainable growth engine as CEO and the president of the Company	X	-	0.6	-
Won-bae Kim	As the head of the Flat Products Business Division, to ensure reliable management of overall business activities, including expanding production and technical capabilities.	X	-	1.3	-
Gwang-pyung Kim	As the head of the Financial Management Division, to ensure reliable management of overall business activities	X	-	0.3	O
Seong-soo Lee	As the head of the Long Products Business Division, to ensure reliable management of overall business activities, including expanding production and technical capabilities	X	-	0.3	-
Independent Director					
Kyung-tae Hong	As an expert in metal, to ensure reliable management of overall business activities related to steel product quality in stability.	O	1	5.3	-
Jung-han Yoo	As an expert in construction, to ensure reliable management of overall business activities related to steel product development and sales strategy for upstream industries.	O	1	3.3	-
Geum-joo Jahng	As an expert in accounting, to ensure reliable management of overall business activities necessary for transparent accounting information disclosure, such as compliance with corporate accounting standards.	O	1	3.3	O
Ji-soon Park	As an expert in labor laws, to ensure reliable management of overall business activities necessary for building sound labor-management relationship.	X	-	2.3	O
Seung-ah Cho	As an expert in global management strategy, to ensure reliable management of overall business activities necessary for establishing management strategies	X	-	0.3	O

5.1.2.3 BOD Independence

The Hyundai Steel Independent Director Candidate Recommendation Committee adheres to the "Guideline upon Independence of Independent Directors" to promote fairness and transparency. Moreover, independent directors are elected only from the candidates recommended by the Committee, during the general meeting of shareholders, ensuring fair nomination process. The "Guideline upon Independence" outlines the Committee's responsibilities in considering any significant relationship between an independent director and the Company, including the domestic and international environment and any circumstances around the candidate and the Company. In addition, Hyundai Steel clearly stipulates the importance of independence of independent directors in its "Charter of Corporate Governance." Paragraph 1 of Article 2-2 (Composition and Operation of the Board of Directors) states that a majority of the Board of Directors shall be independent directors who serve independently of the management and the controlling shareholders. Paragraph 4 of Article 2-3 (Qualification and Independence of Directors) states that an independent director is a person who has a wealth of professional knowledge and/or practical experience in related fields such as finance, economics, management, law and accounting, and should have no stake or interest in the Company and be able to make decisions independently from the management and the controlling shareholders. Hyundai Steel verifies the legal qualifications and in-house independence requirements, and this information is explicitly stated in the notice of the general meeting of shareholders. Furthermore, Hyundai Steel submits a "Certificate of Independent Director Qualifications" to the Korea Exchange to confirm the validation of the independence from the Company and legal qualifications of independent directors.

Independence requirements of BOD	Kyung-tae Hong	Jung-han Yoo	Geum-joo Jahng	Ji-soon Park	Seung-ah Cho
Independent directors must not have held a management position below the CEO level within the Company in the past five years.	●	●	●	●	●
Independent directors and their family members must not have received more than $60,000 in any form from the Company, its parent company or its subsidiaries within the past three years	●	●	●	●	●
Independent directors and their family members should not have been employed as executives within the Company, its parent company, or its subsidiaries in the past three years.	●	●	●	●	●
Independent directors must not serve as advisors or consultants to the Company or its senior management, and they should not be affiliated with the Company.	●	●	●	●	●
Independent directors must not have affiliations with the Company's major clients or suppliers.	●	●	●	●	●
Independent directors should not engage in personal transactions or service agreements with the Company or its senior management.	●	●	●	●	●
Independent directors should not have transactions or relationships with non-profit organizations (NGOs) that receive significant aid from the Company.	●	●	●	●	●
Independent directors must not have served as partners or employees of the Company's auditor within the past three years.	●	●	●	●	●
Independent directors must meet other requirements for independence as defined by the Board of Directors and should not have any other conflicts of interest with the Company.	●	●	●	●	●

* In addition to the above requirements, the Board of Directors will comprehensively consider any substantial relationship an independent director has with the Company, including the domestic and international environment and the circumstances around the director and the Company, in determining independence.

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5.1.3 Operation of BOD

Each director submits his or her proposals to the Chair of the Board, along with the relevant explanations, and the chair notifies each director of the meeting at least seven days in advance in writing, verbally or via electronic document, and then convenes a Board meeting. The directors may attend the meeting virtually and can also request the attendance of relevant employees and external personnel to voice their opinions about the matter in question.

The Board of Directors is divided into regular and extraordinary meetings according to the Articles of Association. Regular board meetings are convened quarterly, while extraordinary meetings are called when necessary. In 2023, the Board of Directors held 10 meetings (four regular and six extraordinary), deliberating on 28 agenda items (including business plan and budget, issuance of corporate bonds, signing off on management performance). The attendance rate of executive and independent directors at the Board of Directors was 95%, and the individual attendance and voting on agenda items are disclosed in the business report. Furthermore, the Board reviewed both financial and non-financial business performance, including the status of the internal accounting management system, fair trade compliance program and activities of the compliance officer.

Main Agenda Items of the General Meeting of Shareholders (2023)

Agenda Item No.	Item	Details
Agenda Item 1	Approval of the 59th financial statements (Fiscal Year 2023)	※ Profit distribution (planned): Dividend KRW 1,000 won per share
Agenda Item 2	Election of directors	• Item 2-1: Election of Gwang-pyung Kim as executive director • Item 2-2: Election of Seong-soo Lee as executive director • Item 2-3: Election of Jung-han Yoo as independent director • Item 2-4: Election of Seung-ah Cho as independent director
Agenda Item 3	Election of Audit Committee Member	• Election of Jung-han Yoo as independent director
Agenda Item 4	Election of Independent Directors as Audit Committee Member	• Election of Geum-joo Jahng as independent director
Agenda Item 5	Approval of the limit of remuneration for directors	• KRW 5 billion

Differences from the Model Standard (Feedback of the independent institution on the BOD evaluation)

Recommendation for the model standard	Adoption Status
Introduction of the Charter of Corporate Governance	O
Introduction of ethics regulation for executives and employees	O
Adoption of the cumulative voting, and disclosure of the adaptation status	X
Disclosure of independent directors taking the majority	O
Separation of the representative director and the chairperson, or appointment of the lead independent director	X
Disclosure of BOD activities, attendance rate, and voting results (pros and cons) on major agenda items	O
Composition of the Independent Director Candidate Recommendation Committee	O
Composition of the Compensation Committee	O
Disclosure of the composition of the Audit Committee (100% independent directors)	O
Introduction of regulations regarding the roles and operational procedures of the Board of Directors and each Committee	O
Subscription to the director's liability insurance at the Company's expense	O
Maintaining independence of external auditors	O
Validation on the accuracy and completeness of financial reporting by the CEO and the CFO	O
Explanation of the differences from the model standard	O
Disclosure of audit reports and important occasional disclosures in Korean and English	O

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5.1.4 Board Assessment and Remuneration

Hyundai Steel operates the BOD assessment system from December 2022 to enhance management responsibility and operational efficiency of the BOD members. To ensure the objectivity of the BOD assessment, the assessment entity was restricted to independent directors, conducting anonymous online self-assessments annually. The assessment is comprised of 30 questions in 4 items: Role and responsibilities of the BOD, BOD composition, BOD operation, and committees under the BOD. The board has scored an average score of 4.9 out of 5, scoring 5 for the Role and responsibilities of the BOD, 4.8 for BOD composition, 4.8 for BOD operation, and 4.9 for committees under the BOD. The results and core improvement measures were reported to the BOD convened on the 30th of January 2024. New items such as 'Feedback enhancement on BOD discussion items', and 'Expansion of external experts according to the characteristics of issues' were presented for 2023 key issues, and the improvement measures are being discussed. In addition, at the end of each year, the BOD is evaluated by a third-party organization on its overall governance, including the performance of BOD activities, and suggestions for improvement include 'managing BOD candidates,' 'reporting ESG materiality assessment result,' and 'disclosing BOD and committee regulations'. The company is continuously improving the BOD operation by reflecting the assessment opinions and feedback.

In accordance with Article 388 of COMMERCIAL ACT and the Articles of Association of Hyundai Steel, the limit of remuneration for directors is determined by the resolution of the general meeting of shareholders. After the resolution, remuneration is paid in a transparent and reasonable manner pursuant to a payment regulation. At the regular general shareholders' meeting in April 2023, the remuneration limit for the 59th Board was set at KRW 5 billion, and the actual amount paid in 2023 was KRW 3.7 billion. This amount does not include the KRW 2.6 billion severance payment made to retired executives, and the provision for executive severance payments is excluded from the limit because it received separate approval at the general meeting of shareholders. During the regular general meeting of shareholders in 2024, the remuneration limit of directors was decided to be frozen at KRW 5 billion.

The CEO's compensation varies annually based on performance. The performance evaluation process takes various factors such as tenure, leadership, expertise, contribution to the Company, and human resources development into account. Moreover, evaluations are conducted as per reasonable standards and on a variety of items, such as financial performance (business performance including sales and operating income which forms the basis of financial indicators such as ROE and ROI), comparative indicators (e.g. stock price variation vs. steel industry peers, competitiveness evaluation, ESG evaluation ratings), the executive's performance and contribution, and internal/external business environment. Performance evaluations for executives, including the CEO, are conducted on a yearly basis, and all performance-related bonuses are determined through these evaluations.

5.1.4.1 Shareholding Status of the Majority Shareholder and Related Parties

(AS of 31st of March 2024)

Relationship	Name	Number of shares held (shares)	Remarks
Majority shareholder	Kia Motors	23,049,159	* Affiliated Person : Honorary Chairman of Hyundai Motor Group * Current outstanding shares 133,445,785 shares (Treasury stock: 1,900,046) * Pension fund : No golden shares granted
Affiliated person	Mong-koo Chung	15,761,674	
Affiliated company	Hyundai Motor Company	9,173,595	
Registered director	Gang-hyun Seo	2,000	
	Jung-han Yoo	1,000	
	Geum-joo Jahng	1,000	
Non-registered director	Bo-ryong Lee and 36 others	15,168	
Pension fund (e.g., operated by government institutions)	National Pension Fund (NPF)	9,506,435	
Total		57,510,031	

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5.1.5 CEO Candidate Management

Hyundai Steel secures stable succession of the management and continuity of strategies through the preparation of a CEO succession plan. The Talent Management Team annually verifies the qualifications required of executives, such as expertise and leadership. They identify potential successors for each business division and develop and implement a Succession Plan that includes strategies for their future development and utilization.
Considering the recent business environment and mid-to-long-term strategic plans, we define the qualification criteria for potential successors. The candidates are comprehensively evaluated based on their recent performance, experience, capabilities, and leadership through an internal review committee. Additionally, we establish career development plans for these candidates and incorporate them into regular executive appointments. We support their development through internal and external training programs, focusing on enhancing business insights and leadership skills.

Training Status of Major Candidates in 2023

Category		Purpose	Target	Training method
Internal course	E-MBA	Gaining Management Knowledge for Overall Business Operations	2 department/ division head candidates	Off-line (2 times), On-line training
	Intra-preneurship	HMG's Future Leaders Embody 'Entrepreneurial Leadership' to Drive Growth	1 department/ division head candidate	Off-line (4 times), On-line coaching
External course	CEO training course	Gaining business insight Building external network Strengthening strategic decision making	2 department head candidates	Collective training at external institutions such as Seoul National University (1-2 times a week)
	Leader insight training	Business, leadership, and trend trainings to support the enhancement of management insight and decision-making skills	113 department/ division head candidates	On-line course

Succession Process

The company designates the appointment of the CEO as a BOD responsibility, as outlined in Article 30 of the Articles of Association and board regulations. The management succession process is as follows:

1. The Succession Committee recommends an optimal candidate among the CEO candidates based on comprehensive considerations of management status and strategic directions.
2. The BOD verifies whether the candidate is capable of managing the Company in direction aligning with the Company's and shareholders' interests and possesses the capabilities to efficiently execute core values and vision.
3. Confirmed candidate is appointed as an executive director at the shareholders' meeting according to the shareholders will and subsequently elected as CEO through the resolution of the Board.

When the CEO cannot commence with the given duty due to personal reasons, the director designated by the CEO will act as an acting CEO. When there is no designated director, the responsibilities will be assumed in following order: President-Vice President-Executive Director-Managing Director. Additionally, in accordance with advisor management regulations, the former CEO is nominated as advisor for smooth succession process.

5.1.6 Protection of Shareholder Rights and Interest and IR activities

Reinforcing Protection of Shareholder Rights and Interest

Hyundai Steel has extended the notice period for agenda items beyond the legally stipulated duration (two weeks before the general meeting) and disclosed the agenda four weeks before the general meeting, ensuring shareholders have ample time for review. Additionally, we hold meetings with major institutional investors before the general meeting to thoroughly explain our agenda and actively consider the opinions of shareholders and market participants. We have implemented an electronic voting system to make participation more convenient for minority shareholders. As such, Hyundai Steel is committed to establishing a transparent and shareholder-friendly corporate governance structure and actively reviewing measures to improve mid- to long-term shareholder returns, such as increasing dividends. To strengthen communication with the shareholders for reinforced protection of shareholder authority and profit, the conversation with shareholders are held every year for the CEO to answer directly to the shareholder's questions.

Investor Relations (IR) Activities

Hyundai Steel conducts quarterly, semi-annual, and annual conference calls for analysts, institutional investors, credit rating agencies, and the media. The heads of each business division, including the Chief Financial Officer (CFO), explain the Company's performance and key management issues, and engage in related Q&As to actively broaden communication. We participate in major investment conferences and conduct quarterly non-deal roadshows (NDRs) for major institutional investors, including our shareholders, to widen our engagement with domestic and international investors. Additionally, we occasionally hold analyst visits and conference calls to provide information to investors who are unable to visit the Company in person. We actively utilize virtual conference calls for participants' convenience, and we have established a consultation and inquiry page on our website to proactively respond to investors' inquiries regarding the business environment and investment. The company also promptly provide information through disclosures and other means in the event of market events.

Quarterly	• Business performance explanation (Quarterly, half year, annual performance) • NDR (Non-Deal Roadshow)
Frequently	• Analyst visit, conference calls, and major conferences

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5.2 R&D

Hyundai Steel is not only securing the competitiveness as an automotive materials provider through continuous R&D investment and technology development expansion, but also is contributing to the future mobility industry in Korea. By actively engaging in academic / research institution networks and partnerships, we are enhancing our capabilities to foster mutual growth with our customers.

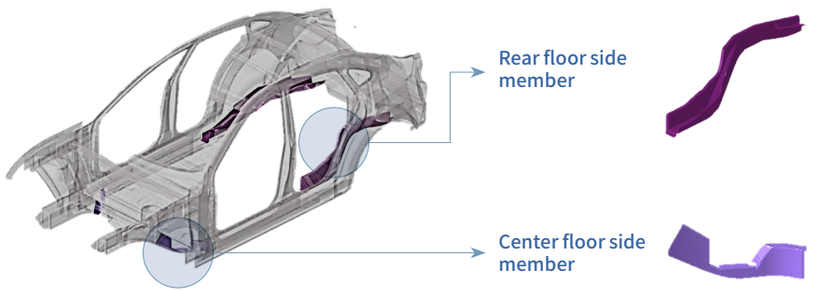
5.2.1 Development of Core Future Mobility Materials and Parts

Development of 1.0GPa[1] Grade Cold-Rolled Galvanized Steel Sheets for Automotive Parts

Hyundai Steel has developed 1.0GPa[1]-grade cold-rolled galvanized steel sheets for automotive parts with improved molding. By improving yield strength[2] by 43% and hole expansion property[3] by 180% compared to the current 1.0 GPa-grade materials, the defect rate and generation rate of steel scraps could be reduced through optimization of processing in the formability of automotive parts. The company is looking forward to achieving economic feasibility by production process optimization due to the utilization of the molding-effective characteristics of the product.

1) GPa (Giga Pascal): Unit used to measure tensile (pulling) and compressive (pushing) strength of materials.
2) Yield strength: The point at which a material begins to undergo permanent deformation when subjected to tension, indicating the maximum stress it can sustain without permanent damage within a certain range of deformation.
3) Hole expansion property: A test that measures how much a material with predefined holes (such as in sheet metal) can expand without developing defects like cracks when punched, determining the formability of the material.

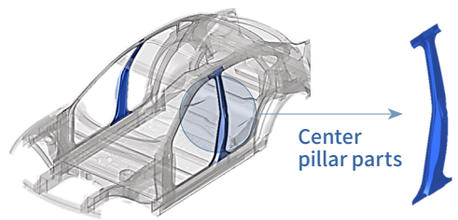
| High-Formability Ultra-High-Strength Steel Applicable Parts

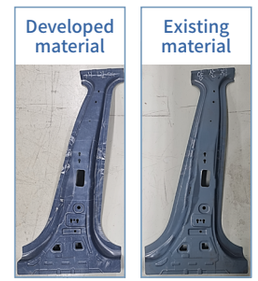


Development of 1.5 GPa Grade Hot-Stamped Parts for Automobiles Using High Ductility Steel

Hyundai Steel has developed 1.5 GPa grade high ductility hot-stamping parts for automobiles. The crash absorption capabilities were enhanced by improving fracture performance, bending performance by 25%, and weldability by 67% while maintaining strength compared to the existing 1.5 GPa grade materials. Starting in 2025, these parts will be applied to the center pillar and outer parts of premium large SUVs. The company consecutively secures its competitiveness as an automotive material specialist company, by continuously developing products for enhancing vehicle stability.

| Parts Suitable for High Ductility Hot Stamping Technology





Picture of actual parts

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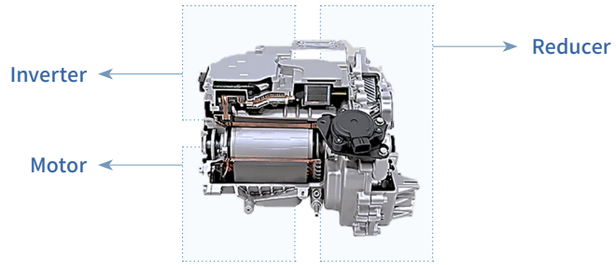
Development and Production of Special Steel for reducers in High-Performance Electric Vehicles

Hyundai Steel has developed special steel for reducers in electronic vehicles to respond to the increased production of electronic vehicles and various characteristic demands of reducers. The recently developed special steel for automotive parts is characterized by optimal alloy design, achieving both heat deformation reduction and durability. The thermal deformation caused by increased surface temperature from the high-speed motor rotation was reduced by 48% compared to the existing steel, the driving quietness has been improved through reduced noise generation from gear switching and the durability has been improved by 105%. Production and implementation of semi-large-sized electric SUVs started in 2023 and has been awarded the 'iR52 Jangyeongsil Prize' together with the Namyoung R&D center of Hyundai Motors in July of the same year. This special steel is expected to be applicable to the high performances of the electric vehicle, lightening and downsizing of the parts, further anticipated to contribute to securing competitiveness in the future mobility industry by applying to PBVs (Purpose Built Vehicles) using solar charging panels and enhancing energy efficiency.

| Material for Reducers in High-Performance Electric Vehicle



Steel products for high-performance electric vehicle reducers showcased in the R&D center

Production and Showcasing of the World's First Electric Arc Furnace 1.0 GPa Low-Carbon Plate Applied Parts

On October 2023, Hyundai Steel separately organized an electric-arc-blast-furnace combined process section in SMK 2023 (the largest industrial exhibition on steel and non-steel metals) and showcased the parts made of 1.0 GPa low-carbon plates produced in electric-arc furnace designed for automobiles. Previously in 2022, the Company has succeeded in pilot production for 1.0 GPa grade electric-arc furnace high-quality low-carbon plates. The 1.0 GPa grade electric-arc furnace low-carbon plates are the result of the application of electric-arc furnace refining technology with fine tuning of microstructures ultra-high-strength steel to ultra-high-strength steel technology. This product is significantly meaningful since it is the first production case of high-quality plate using an electric-arc furnace in the world and has reduced carbon emission up to over 30% compared to the blast furnace. At the exhibition, Hyundai Steel exhibited prototype automotive components including lower and trailing arms made from 1.0 GPa grade hot-rolled plates, door impact beams from cold-rolled ultra-high-strength steel, and side outers from cold-rolled high-formability steel, drawing attention from attendees.

Low-carbon plate product showcased in SMK 2023

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5.2.2 Improved Networking Based on Industry-Academia Association

Promotion of Industry-Academia Joint Development of Earthquake-Resistant Steel Products (H CORE)

In May 2023, Hyundai Steel held a launching seminar for the H CORE Solution product development project. The seminar was held to share the outstanding project results selected from the competition held from February to March on eco-friendliness & low-carbon initiatives, smart construction, and safety. Domestic construction companies, universities, and research institutes participated in the competition. The judges selected "Optimization of Architectural Structures and Improvement of Construction Efficiency Using H CORE Products" and "Development of Low-Carbon Steel Solution Products to Reduce Carbon Emissions in Construction Processes" as the final winning projects, considering the marketability, business potential, technicality and ESG performance indicators. The company plans to expand the adaptability of earthquake-resistant (H CORE) products by conducting joint research with various institutions in Korea so that the outstanding projects selected can be utilized in the construction sites.

2023 H CORE solution product development launching seminar

Signing of Industry-Academia Collaboration for the Development of Eco-friendly, High Value New Steel for Carbon Neutrality

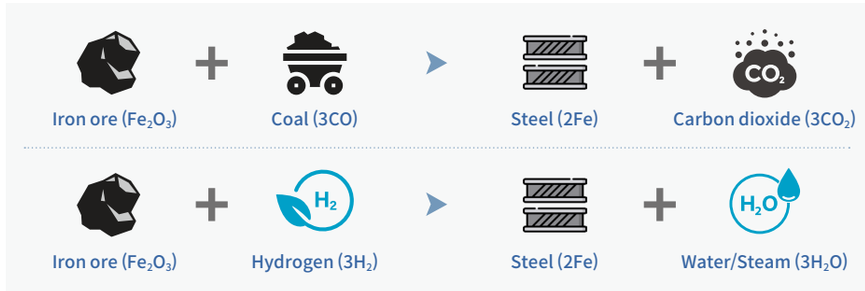
Hyundai Steel continues to collaborate with academia to realize a carbon-neutral society. In December 2023, Hyundai Steel signed a MOU with Hanyang University to provide designated laboratories for the development of high-value new steel with low environmental impact and is planning on conducting joint research on ultra-high-strength steel sheets for the future mobility and steel for ultra-low temperature liquefied hydrogen, the eco-friendly alternative energy. The company also strives to contribute to talent acquisition, by incubating master's/PhD level experts for the development of the steel industry in Korea. Through this MOU, the Company anticipates securing foundation technology for carbon-reduced steel essential for the realization of a carbon-neutral society and to strengthen the high-value technology and global competitiveness of the steel industry in Korea.

Hanyang University-Hyundai Steel Designated Laboratories MOU

5.2.3 Enhancement of Specialized Infrastructure for R&D

Establishment of Specialized Research Building for Hydrogen Production/Utilization and Low-Carbon Production Process Development

As response to climate change is emerging to be a global issue, steel industry focuses on the transformation to hydrogen-based reduction in steel production. The iron ore, which exists in the form of oxides combined with oxygen, requires coal as a reducing agent to separate iron and oxygen to generate pure steel. In this process, carbon dioxide is generated. However, the hydrogen-based reduction technology uses hydrogen instead of coal as a reducing agent, which does not generate carbon dioxide, since the oxygen in iron ore combines with hydrogen and becomes water. Hyundai Steel focuses on the hydrogen-based reduction technology, regarding it to be a technology for achieving carbon-neutrality and survival of the steel industry and has finished the establishment of a hydrogen-specialized R&D building to effectively research hydrogen in 2023. Leveraging the new facilities and research infrastructure, Hyundai Steel plans to intensify the research on hydrogen-based reduction, particularly focusing on developing technologies to increase hydrogen content from waste gases generated in the steelmaking process. Also, a carbon-neutrality R&D building for securing new electric-arc furnace production process and facility technology will be completed in 2024, creating a carbon-neutrality R&D cluster in Dangjin, Chungchungnam-do.



Enhanced Utilization of AI and Big Data

Hyundai Steel has been utilizing the AI and big data technology to achieve cost reduction and quality improvement of high-strength steel bars. By optimizing alloy designs based on AI models, the same quality as existing products was achieved, and material prediction accuracy was enhanced through the application of optimal algorithms. In October 2023, Hyundai Steel applied SD500 and SD600 grade steel bars in mass production, leveraging advanced technologies. The company plans to utilize the advanced prediction models, to secure not only productivity and quality but also flexibly responding to the fluctuating alloy steel market.

SD 600 steel bars of Hyundai Steel

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5.3 Risk Management

Hyundai Steel identifies emerging risks by area that may impact our management activities, responding proactively according to the company-wide risk management process. During monthly CEO meetings, we review major risks and establish optimal countermeasures, while continually monitoring sectoral risks through risk governance. We continuously update major risks and related materials in line with internal and external market conditions to minimize the impact of risks that could negatively influence our business.

5.3.1.1 Risk Governance

Hyundai Steel has established a risk management system to identify, prevent, and manage emerging risks across various areas of operation, encompassing business, society, environment, and compliance. The Transparent Management Committee, with risk management authorities delegated from the management, supervises the risks of the Company, and the Audit Committee monitors and conducts a final overview on the risks generated. Individual risks are directly managed (first line) by the respective organizations in charge and technical organizations in charge in each business department, and the strategic planning department inspects and supervises on a company level (second line), establishing response measures. The significant risks are reported to the BOD through the Transparent Management Committee. Audit Committee discusses the policies and guidelines for the risk assessment and management process and conducts auditing roles (Third line) and annual reviews on the major financial impact and alleviation plans.

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5.3.1.2 Risk Management Council

Since reorganizing the organization into the divisional structure responsibility management system in 2021, we have been holding monthly management strategy meetings to share issues and manage key risks to enhance the competitiveness of our steel business, contributing to strengthen our risk management capabilities within each division. We also select risks that need to be managed according to priority among emerging risks identified through objective assessments, such as materiality assessments and surveys of expert groups. The monitoring of responsible management, identification of improvement tasks, and security activities are continued after the introduction of the divisional organization structure. In 2023, we strengthened the synergy of divisional operation and re-assessed the risk management system through the company-wide level working council. Additionally, the Company immediately responds to the fluctuating management environment by operating regular meeting councils in different areas such as General Meetings of Safety Management, Company-wide Level Environment Energy Meetings, and New Technology Strategy Meetings. The "instruction management system" on the CEO's instructions in each meeting council improved its operation to enhance operational efficiency and inspection.

In order to effectively respond to risks, the role of organizations in business site and support organizations are divided. Strategy Planning Division, as the Company's support department, is responsible for "collecting, managing, monitoring and assessing" risks factors of the Company. The business sites focus on their business operation and promptly respond to any risks that may arise inadvertently during operations.

At Hyundai Steel, all executives and employees are impacted by risk-related performance, and the security and ethics factors, which are applied across the Company, directly influence individual performance and promotions. In particular, for the designated employees in charge of risk management, at least 10% of their individual performance evaluation is dedicated to risk management tasks.

5.3.1.3 Risk Management Process

Risk Analysis Process

Hyundai Steel analyzes the level of risk it can tolerate to create value based on its established risk acceptance range. To mitigate financial and non-financial risks that affect our reputation, sales, and operations, we operate within this defined risk tolerance and regularly review our risk exposure. Each year, we select key risks among company-wide risks through a materiality assessment, and define these key risks and discuss countermeasures under each division's responsible management system.

The major risks with significant financial impacts are identified and reported to the management meeting in which C-level executives including the CEO participate. The monthly risk assessment results are analyzed, and the response measures are established in the meeting. Recognizing that insufficient responses to major risks can lead to restrictions on business activities and financial losses, Hyundai Steel focuses the Company's efforts on the prevention and mitigation of key risks. Hyundai Steel obtained ISO 22301 (Business Continuity Management System), an international certification for risk management in 2024, and is also conducting external third-party audits to ensure the soundness of its company-wide risk management approach and internal controls.

The Company conducts regular risk management training for all members of the Audit Committee every year, including "Cases of Money-related Incidents and Countermeasures for the Internal Accounting Control System." In addition, the Company strives to establish a risk management culture throughout the organization by conducting ethics management training for all employees every year.

Risk Identification and Response

STEP 1 Identification of key risks	• Risk pooling • Risk priority assessment • Selection of key risks
STEP 2 Establishment of risk management system	• Establishment of a monitoring and response system for business divisions (sales/procurement/ production/safety/environment, etc.) and management support (planning/finance/compliance/HR/labor, etc.) • Monthly CEO meeting to check key risks (management strategy meeting, on-site management meeting, etc.)
STEP 3 Risk monitoring and response	• On-site direct monitoring of risks and timely response to them • Identification of key risk issues and establishment of optimal responses through CEO meetings • ESG-related issue management

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Key Tasks of Company-wide Risk Mitigation

Category	Task	Detail	Org. in charge	Impact	Urgency	Significance[1]
Planning	Enhanced profitability by business division	Specification and implementation of company-wide profitability improvement initiative	Each business division	3	2.5	2.9
Planning	Strengthened pre-verification of investment	Discussion and implementation on investment process improvement	Each business division in Business Management Group	2	1.8	1.9
Finance	Business performance improvement	Achievement of 2024 annual profit-deficit goal	Each business division in Business Analysis Group	2.8	2.5	2.7
Finance	Financial structure improvement	Meeting targets regarding loans, retained cash amount and liability proportions	Finance Group	2.8	2.5	2.7
Production	Renovation and rationalization of key production process	Establishing time frame plans of key steel production process	Each business division	2.3	1.3	2
Planning R&D	Consideration of new business entry	Feasibility re-assessment of new businesses including electrification response plate and parts business	Plate Business Management Group	2.3	1.8	2.1
R&D quality/ production	Stabilization of new products production	Securing next-generation plate sales and establishment of early production stabilization plan	Facility Engineering Group	2.3	1.8	2.1
Carbon neutrality	Promoting low-carbon production system transformation	Establishing electric arc blast furnace-combined facility	Facility Engineering Group	2.5	1.8	2.3
Carbon neutrality	Consideration of low-carbon overseas business	Establishment of plans such as overseas business feasibility and appropriate investment direction	Green Steel Promotion Group	2.5	2.3	2.4
Sales	Promotion of customer diversification strategy	Enhancing customer bargaining capability through new customer acquisition by product and product quantity	Each business division	2.8	2	2.5
Supply chain	Securing low-carbon raw materials	Establishment of investment plans to secure high-quality scrap and DRI raw meterials	Scrap Procurement Group, Plate Raw Material Procurement Group	2.5	2	2.4
Local community	Local community stakeholder communication	Inspection and response on local community contribution activity implementation status by regions business sites are located	Management Support Group, General Affairs Group	2	1	1.7

1) Assigning impact and urgency scores (High 3 points, Mid 2 points, Low 1 point), followed by comprehensive assessment considering weighted factors (70% impact, 30% urgency)

5.3.2 Emerging Risk

Hyundai Steel identifies and monitors emerging risks that we anticipate will have a significant impact on our business. Specifically, we are proactively responding to the competition for securing next-generation steel materials according to the industrial transformation and technological innovation, securing supply chain for raw material supply and carbon neutrality risk according to the climate change.

5.3.2.1 Intensification of Competition for Securing Next-Generation Steel Materials According to the Industrial Transformation and Technological Innovation

Technological innovation and transformation demand new changes for various industries including automotive, aerospace, and shipbuilding. In the steel industry, demands for high-strength steel, which is lightweight and strong, and new materials are increasing. With the development of autonomous driving technology and strengthened connectivity, automobiles are evolving into digital devices beyond simple modes of transportation, and significant changes in the automotive materials and parts market are expected. Specifically, weight reduction of automobiles is arising to be the priority task, due to the increase in battery weight and components. The hot stamping[1] parts adoption rate for internal combustion engine vehicles of global car manufacturers stands at 15%, whereas it increases to 20% for electric vehicles, increasing the importance of the development of plates using lightweight new materials. In accordance with the current shift, Hyundai Steel is expected to face production demands for lighter and stronger steel plates for electric vehicles compared to the plates used in internal combustion engine vehicles, and the development of new material plates to secure the safety of autonomous automobiles remains to be an important task.

For shipbuilding industry, it is estimated to focus on producing eco-friendly ships and autonomous ships, due to the strengthened environmental restrictions. According to the 10th Basic Plan for Electricity Supply, the capacity percentage of LNG (Liquefied Natural Gas) facility is estimated to mark 22.9% in 2030, which forecasts the increased demand for LNG in the energy transformation period with reduced coal dependence and increased renewable energy proportions. Consequently, the utilization of various functional steel materials is expected to be increased, including ultra-high-strength steel, low-temperature toughness protection materials, and high-efficiency electric plates used in large vessels, LNG-fueled ships, electric propulsion vessels, and polar navigation ships

To respond to such changes, the Company has achieved both lightweight automobiles and passenger safety enhancement by developing 1.8 GPa grade Ultra-high strength hot-stamping steel. Through this technological innovation, we achieved a 20% improvement in tensile strength and 10% lightweight compared to the existing 1.5 GPa grade steel and are continuously investing in global competitiveness enhancement. Also, we strive to secure a market advantage in markets for eco-friendly automobiles by establishing a high-strength automobile parts production system in Steelwork located in the Czech Republic and supplying the parts to major customer companies. In addition, we are developing new steel grades capable of withstanding extremely low temperatures and supplying them for LNG-powered vessels. Hyundai Steel developed the ultra-high performance steel, 9% Ni (Nickel) plate with great impact resistance and weldability even in extremely low temperatures of -196℃, used in LNG fuel tanks. The product boasts a world-class wide width of 6 to 45mm thickness and up to 4.5m width and has obtained certifications from major classification societies such as KR (Korea), ABS (USA), DNV (Norway/Germany), securing competitiveness in both domestic and international onshore LNG plant markets.

1) Hot stamping process: a method of forming steel plates at high temperatures, which enhances strength and lightweight characteristics compared to traditional stamping methods
2) GPa (Gigapascal): A unit used to measure material strength. 1 GPa is the strength that a material with 1 mm x 1 mm dimensions can withstand 100 kg weight

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5.3.2.2 Securing Supply Chain for Low-Carbon Product Raw Material Supply

Hyundai Steel has established the carbon neutrality roadmap to achieve 2050 Net-Zero and is promoting product development and production system transformation. We plan to reduce carbon emissions by developing new low-carbon products and establishing a new electric arc furnace production process. Producing low-carbon products and new production process innovation requires raw materials with low carbon emissions. Specifically, the impact of low-carbon raw materials is significant, before hydrogen-reduced steel technology is applied to the production process and renewable energy is expanded. Steel scrap[1] and Direct Reduced Iron (DRI) are exemplary low-carbon raw materials, and the supply of both materials is expected to arise as an important issue in the near future.

High-quality steel scrap is a raw material for electric arc furnace production, being a core raw material for producing high quality products with low carbon emission. However, the international demand for steel scrap is expected to exceed the supply capability. According to the analysis conducted by BCG (Boston Consulting Group), the estimated demand for 2030 marks 883 million tonnes whereas the supply marks 868 million tonnes, resulting in a global shortage of 15 million tonnes since the steel scrap usage portions and the electric arc furnace usage are expected to be increased to 50% and 41%, whereas the transaction amount is expected to decrease due to the increased demands of nations worldwide. Like steel scrap, the demand for DRI is expected to increase due to increased electric arc furnace utilization and low-carbon production process transformation. The DRI production amount, which is 120 tonnes in 2022, is increasing every year. However, due to the geopolitical concentration of production in regions such as India, Iran, and Algeria, securing future supply chains is essential.

Hyundai Steel is developing mid-to-long-term plans to secure a stable supply chain of low-carbon raw materials by 2030. To maintain the shares (30~40%) of high-quality steel scraps, we plan to diversify and expand the long-term supply sources within the domestic steel scrap market. Also, we will expand the operation of high-quality steel scrap sorting devices installed at some of our business sites and increase related investments. In addition, we anticipate that Hot Briquetted Iron (HBI), a form of direct reduced steel, could potentially increase its share up to 60% of the total raw materials used in electric furnaces and therefore is seeking for new supplier that could meet the optimal blending requirements, establishing a close relationship. Simultaneously, the overall risk factors including ESG are preemptively identified and prevented through annual supply chain assessments on our supply chains. The supply chain identified potential risks through the assessment is continuously managed by establishing and implementing improvement measures so that the potential risks are prevented within the existing supply chain. The company is thereby creating a stable foundation for securing future resources through these measures.

1) Steel scrap: leftover pieces or discarded steel products. Used as the primary raw material in electric arc furnaces for steel production

5.3.2.3 Carbon Neutrality Strategy and Risk Management in Overall Value Chain According to Climate Change

During the 2023 G7 Summit, the member states agreed to accelerate the phase-out of unabated fossil fuels to achieve net zero in the energy system by 2050. From October 2023 to the end of 2025, European Union enters to a Carbon Border Adjustment Mechanism (CBAM) transformation period and has declared its intention to address the risk of carbon leakage - the relocation of high-carbon emitting industries to low-regulated countries - by imposing costs, such as additional tariffs, on imports of high-carbon goods from 2026.

Among Korea's total USD 68.1 billion amount exported to the EU, the CBAM eligible products marked USD 5.1 billion (7.5%). Among these CBAM-eligible products, steel takes up to approximately 89.3% (USD 4.5 billion), indicating that the steel industry is expected to be significantly impacted by the implementation of CBAM. Corporation NEXT predicted that the total steel export cost of Korea to the EU is expected to increase by 15% when the CBAM is officially initiated. Also due to factors including the steep increasing tendency of EU carbon cost, expansion of CBAM application, and 0% free allotment rate by 2034, the carbon tax burden is expected to increase continuously.

According to a research report, the annual domestic response cost is expected reach approximately KRW 300 billion from 2026 to 2050, when assuming the domestic emission permit prices change into the same proportion as EU emission permit prices and a 100% free allocation rate is maintained domestically. When estimated on a per-tonne basis, in 2030, KRW 12 thousand per tonne will be required for electric furnace products, and KRW 140 thousand per tonne for integrated steel products for response costs. In addition, the World Economic Forum's "Global Risks Report 2023," defined failure to adapt to climate change, natural disasters and extreme weather events, biodiversity loss and ecosystem collapse as long-term risks, and expressed concerns over the potential risk of a "polycrisis" where present and future risks can interact with each other.

To secure a sustainable future, Hyundai Steel has established the "2050 Hyundai Steel Net-zero Roadmap" and is promoting production system innovation and clean energy transition. We plan to transform ourselves into an eco-friendly steelwork by expanding the application of new electric arc furnaces and hydrogen reduction technology through the advancement of Hy-Cube technology, a low-carbon product production system. With this initiative, we plan to reduce CO_2 emissions by 0.2 tonnes per tonne of product by 2050. Moreover, our "HyECOsteel," a unique brand for low-carbon products, is promoting our competitiveness in low-carbon products, allowing us to respond to the carbon neutrality needs of our customers' suppliers. We aim to establish a low-carbon supply system capable of supplying 5 million tonnes by 2030.

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5.4 Customer Management

To meet the diversifying needs of our customers, Hyundai Steel is committed to improving customer satisfaction based on three customer management directions. Alongside strengthening cooperative relationships through various customer support activities, we are also dedicated to achieving sustainable growth with our customers by maintaining regular exchange channels such as the 3S forums and bench-dit activities.

5.4.1 Customer Management Strategy

Hyundai Steel places customer satisfaction at the core of business management, building customer trust with high-quality products and providing differentiated services. We pursue customer value innovation through S-mix optimization and sales structure restructuring, market transformation and quick responses to new opportunities, organizational improvement, and employee capability reinforcement. We strive to become a company that grows together with the customers.

- S-Mix optimization and sales structure restructuring
- Response to new business and trend transformations
- Organizational improvement and employee capability reinforcement

5.4.2 Customer Satisfaction Survey

Hyundai Steel conducts an annual customer satisfaction survey with the aim of minimizing customer attrition by "diagnosis satisfaction levels, analyzing customers' needs, and implementing measures for improvement." Over a span of 11 weeks in 2023, we carried out a satisfaction survey to domestic and overseas customers, asking about their transaction experiences with Hyundai Steel in 2022. After analyzing the responses from 373 companies that participated in the survey, we found that the satisfaction level (with a score of 66.6 or higher) stood at 63%, marking a slight decrease of 6% from the previous year. This decline appears to be mainly due to heightened price and profitability sensitivity triggered by the global economic downturn and interest rate hikes, both domestic and overseas, despite our varied customer activities and quality support efforts. Additionally, we conducted in-depth interviews with 44 customers and set our improvement tasks to enhance customer satisfaction. The improvement tasks are linked to KPIs, and the implementation status is continuously monitored. The Customer satisfaction survey is planned to be conducted at the second half of the year.

5.4.3 Operation of Customer Support System

To hear the opinions of distributors and end-use customers, Hyundai Steel organizes site visits for roundtable discussions, conducts customer technology and quality exchanges, and continues promotional activities such as presenting awards to our top client companies. These efforts not only maximize customer satisfaction but also enhance mutual understanding and build long-lasting trust with customers.

5.4.3.1 Customer Engagement and Top Customer Management

To further solidify our partnership with customers, Hyundai Steel regularly organizes customer meetings, including business exchanges and roundtable discussions for customers, where we discuss key issues. At these events, we share various information and updates, such as our business status and plans, the progress of improvement activities in response to customer requests, and the state of our technology development, while also listening to their opinions. Each year, we host various events like a New Year's party to strengthen our relationships with our customers. We also send out gifts and offer support to around 250 customers in all products, ranging from rewards for excellent performance and gifts on a customer's foundation day or CEO's birthday to funeral supplies.

5.4.3.2 Technology and Quality Exchange Meetings with Customers

We frequently engage in technology and quality exchanges, provide technical training, and offer proactive technical support for customers, managing customer complaints promptly to prevent future problems. We collect customer feedback on each product, such as hot and cold rolled steel plates, heavy plates, mobility parts, and bars and sections, and provide customers with necessary technical training and solution support, work to improve product quality and respond to their requests. In addition, we hold technical exchanges for bar and section products for construction companies, structural designers, and designated distributors. We also send newsletters to our customers that cover information on major standard revisions, technological developments, and issues. In particular, in 2023, we strengthened technical exchanges for our global OEM customers and held more than 30 technical exchanges related to our production methods and new technologies.

5.4.3.3 Technical Supports for Customers

Hyundai Steel remotely provides comprehensive root-cause analyses and solutions to efficiently address molding processing quality issues for our major parts processing customers, aiding them in improving their problems. We assist them in addressing their quality issues through cause analysis, molding analysis, and driving solutions. When necessary, we even visit the customer to troubleshoot the issue. These efforts are contributing to minimizing the quantity of defective steel plates by resolving problems that occur during parts processing and improving the customer's part molding technology.

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5.4.4 Customer Centered 'Zero Claim Campaign'

As part of our innovation efforts to navigate the intensifying competition in the global steel market and uncertainty in the market economy and to swiftly respond to our customer's diverse needs, we have launched the "Company-wide Zero Claim Campaign." The key to the campaign is to focus the entire company's capabilities on reviewing and improving the quality management system by proactively analyzing customer and market requirements, going beyond the practice of KPI-oriented quality management and reactive measures. To this end, we have shifted our focus on customer satisfaction from conventional indicator-oriented production and quality management to a more customer-centric approach. Additionally, we set out three main strategies: "Transformation to Customer-centered Production and Quality Management", "Quality-focused Mindset Across All Departments", and "Customer-centered Proactive Work Processes." And we are implementing specific plans, including promoting a company-wide quality mindset, enhancing customer-facing activities, reforming claim management policies, and sophisticating management processes.

5.4.5 3S Forum

With stakeholders including our customers, Hyundai Steel organizes the Steel for Safe Society (3S) Forum to provide a venue for communication, cooperation, and change, aiming to spearhead a culture of safety. The 3S Forum brings together construction experts and opinion leaders from diverse fields such as the humanities, arts, and civil society. These participants engage in meaningful discussions on various topics, including safe trends in the construction industry and directions to improve policy systems, enabling steel, a major construction material, can contribute to the creation of safe buildings and infrastructure. Beyond simply responding to customers for sales, we will continue to communicate extensively with members on the demand side and identify action plans for nurturing a safer society, such as developing safe steel and participating in research on safe structures and designs.

5.4.6 Bench-dit Events for Customers

Hyundai Steel has strengthened its customers' quality and safety management through our bench-dit[1] activities. We hold regular exchange sessions among customers to help them exchange information on each other's best practices and provide training on improvements. Additionally, we assist our customers in benchmarking the best management practices of others, enabling them to bolster their own capabilities in quality, safety, transportation, and facilities management.

1) Bench-dit: A blend of benchmarking and auditing, this term refers to activities designed to enhance customer management capabilities (such as quality and safety) through benchmarking against best practices and conducting self-audit.

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5.5 Tax Strategy

Hyundai Steel complies with the tax laws of each state authority and the Organization for Economic Cooperation and Development (OECD) Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations in international transactions and faithfully fulfills its obligations to file and pay taxes as stipulated by domestic and international laws. In addition, we continuously manage and check our management and reporting system by outlining the system and payment responsibilities related to taxes in the Company's regulations while maintaining a cooperative relationship with tax authorities through transparent data disclosure.

5.5.1 Tax Policy

Hyundai Steel Tax Policy

1. Employees in charge of taxation fulfill the duty to report and pay taxes in accordance with relevant laws, and they work based on the principle of transparent relations with the tax authorities.
2. When tax laws change, or other laws, rules and precedents are amended or enacted, we monitor any areas that could apply to the company and review potential risks in advance.
3. The company's tax information is disclosed through external notification in a transparent way. The financial statement and the footnotes of the audit report contain information on corporate tax calculation standards, deferred tax assets, liabilities, composition and rate of corporate tax. Transparency and objectivity are ensured by an external audit.
4. The company fully complies with its legal duty to report and pay taxes in every country where it does business and fulfills its duty as a taxpayer in close cooperation with the tax authorities of each country.
5. The company does not conduct income transfers between countries and it does not evade taxes by exploiting tax law differences, loopholes in the international tax system or tax havens. The company ensures that taxable income is legally distributed based on its value in each country where the company does business.
6. The company appoints external experts to deal with regulations such as the duty to prepare and submit BEPS (Base Erosion and Profit Shifting) -related reports in each country, and it implements BEPS risk analysis and documentation projects in overseas offices.
7. Hyundai Steel does not attempt to avoid taxes using tax structures that serve no commercial purpose.
8. All transactions with our subsidiaries are based on Arm's length principle (normal prices are applied to transactions with third parties that do not have special relations with Hyundai Steel). In addition, the appropriateness of transfer prices is evaluated through confirmation by external experts

5.5.2 Tax Risk Management

Hyundai Steel manages its tax risk based on "strict compliance with the law." We maintain transparent relations with the tax authorities and provide relevant factual evidence upon request, further strengthening our credibility. We do not own subsidiaries established for the purpose of tax evasion, and do not transfer income to subsidiaries located in tax havens. We recognize the risk of double taxation in transfer pricing that involves our overseas business sites as caused by competition between the tax authorities for taxation rights. To address this issue, we abide by the principle of transacting within the "normal price range."

5.5.3 Tax Reporting

Every year, Hyundai Steel faithfully pays corporate taxes in the countries where we operate, with no instances of unpaid taxes. Currently, we operate overseas subsidiaries (19) and overseas branches (10) in 14 countries and disclose tax information on our major legal entities in our business report.

Tax Reporting of Major Entities

(Based on 2023 K-IFRS)

Country	Names of entities	Primary activities	Number of employees	Revenue (KRW million)	Profit before tax (KRW million)	Income tax accrued (KRW million)
Korea	Hyundai Steel	Manufacturing	11,835	21,609,416	462,469	0
USA	Alabama HSAL, Hyundai Steel America, Inc.	Overseas steel service center	120	906,123	1,450	0
USA	Houston HSSA, Hyundai Steel USA, Inc.	Steel product sales	10	559,252	(8,759)	0
China	Tianjin HSCN, Hyundai Steel Investment Co., Ltd.	Overseas steel service center	102	210,520	3,038	0
India	Chennai HSCH, Hyundai Steel India Private, Ltd	Overseas steel service center	53	749,620	20,939	0

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5.6 Cyber Security

At Hyundai Steel, in order to proactively respond to internal and external information security threats, our Audit Committee under the Board of Directors, oversees security risks while Chief Information Security Officer (CISO) and Chief Information Officer (CIO) establish and implement management strategies for each area of information security. In adherence with the information security management system (ISO 27001), we annually diagnose and improve security levels and policies and strive to internalize security awareness among employees through in-house security training.

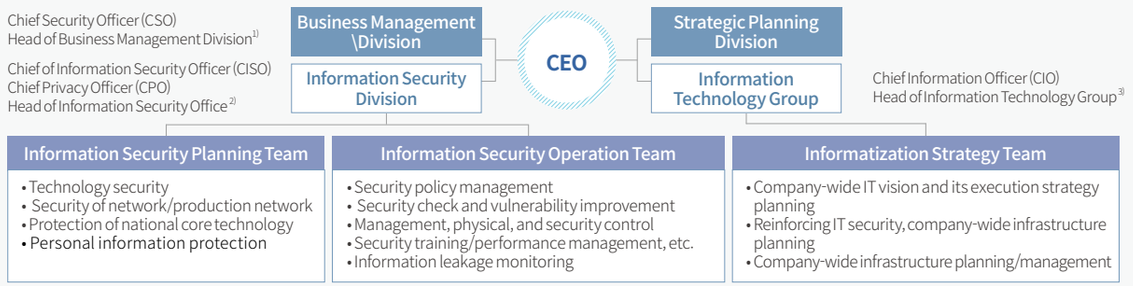
5.6.1 Cyber Security Management System

5.6.1.1 Cyber Security Policy

Hyundai Steel has established and operated security policies in accordance with the security operation policy, the "protection of tangible and intangible business information and technical information." We have made our "Regulations on Security Management" accessible on our in-house standards management system, allowing all employees to recognize rules on entry, everyday security rules, personal information protection, and rules for suppliers/outsourcing companies, etc., and apply them to everyday work and helping employees promptly respond to any emergency, such as information leakage and hacking attempts.

To strengthen our information protection capabilities, we conduct annual assessments of our IT systems and infrastructure through hacking simulations to identify vulnerabilities and establish and improve countermeasures tailored to each type of vulnerability, thereby raising our security level. In addition, we enhance our crisis management capabilities by diagnosing security policies through the Hyundai Motor Group's security level assessment and the ISO 27001 certification audit. Furthermore, we have introduced company-wide security performance evaluation to foster employees' understanding of security policies and compliance, and are conducting assessment, notification, and improvement activities on 41 items, based on the security management policy. With the recent increase in utilization of generative AI technology such as ChatGPT, we have published and distributed the security policy on generative AI and are guiding the employees to not manually enter company information including reports and meeting details, and customer information.

5.6.1.2 Information Security Governance



1) A general decision maker in information security area
2) Chief Information Security Officer (experienced in information protection and technology, regulation and policy establishment, and has right to direct and supervise company-wide security management, inspection and audit) Chief Privacy Officer (establishment and inspection on system security policy for personal information leakage prevention and protection)
3) Chief officer of information system and information resources management

5.6.1.3 Information Security Certification

ISO 27001 (Information Security Management System) Certification

Hyundai Steel maintains the ISO 27001 certification through post-certification assessments conducted every half year. In the second half of 2023, we passed the ISO 27001 certification assessment conducted on a three-year cycle, renewing the certification. In the second half of 2024, we plan to diagnose the transition assessment of certification sectors in accordance with the updates on the certificate standard. Through proactive responses such as document review, on-site due diligence, and on-site assessment, the Company is continuously strengthening its security system, and maintaining the international security standard certification.

IT Infrastructure and Information Security Management System Verification

Hyundai Steel establishes and operates 25 security solutions as a response to cyber-attacks and personal data breaches, running a 24/7 Security Operations Center. Immediate responses to the newly discovered risks are executed and the weaknesses of the information system are prevented through security assessments. With support from external professionals, the hacking simulations and security diagnosis are conducted, eliminating weaknesses and verifying the stability of the security system. Also, our regular management system audits and assesses the security operations adequacy of our information systems (OS, DBMS, WEB/WAS). Vulnerabilities identified through these assessments are logged in the tracking system for improvement initiatives.

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5.6.2 Prevention and Response of Security Accidents

5.6.2.1 Strengthening Personal Information Management System

Hyundai Steel operates a personal information management system to protect the personal information of our employees and customers. We have established personal information processing rules as internal regulations and appointed a person in charge of personal information management, technology, and protection to systematically execute personal information protection activities. Major activities include administrative activities such as writing a consent on personal information collection and use, establishing a personal information processing policy, and destroying personal information in accordance with the personal information lifecycle, as well as technical activities such as encrypting unique identification information, access control, and malware prevention.
In addition, we prevent misuse and leakage of personal information by performing proactive management of threats through regular monitoring and inspection. To ensure the rights of personal information subjects, we notify them of the processing status through the personal information processing policy and provide information on measures in the event of unauthorized personal information access and infringement. In 2022, we introduced a "Personal information detection solution" to prevent the unnecessary retention and misuse of personal information, thereby improving and enhancing data management and ensuring proper destruction.

5.6.2.2 Strengthening the National Core Technology Protection System

In accordance with the revised ACT ON PREVENTION OF DIVULGENCE AND PROTECTION OF INDUSTRIAL TECHNOLOGY, Hyundai Steel has organized a special protection organization and strengthened its security management system for the national core technologies[1] it owns. The organization defines, identifies and manages core technologies, on 12 special security areas to enable more stringent security control. To prevent data leakage of core technologies, we have established a file centralization system for management and check of the data, and with our field-oriented, practical core technology activities, we continue to comply with relevant laws and regulations. In addition, we have revised security management regulations and rules, collected security pledges, provided security education, conducted self-inspection and checked on the management status of national core technologies, to further reinforce our protection system.

1) Current status of National Core Technologies owned by Hyundai Steel ① Rebar/section steel manufacturing technology with a yield strength of 600MPa or higher ② Giga-class, high-strength steel sheet manufacturing technology with a sum of total alloying elements of less than 4% ③ Fuel cell metal separator coating technology

Core Technology Protection System

Management and security	Technological improvement	Security inspection
• Protection body • Segmentation (Category and grade) • Protection pledge • Security training for employees dealing with core technology • Procedures for external provision of technology • Operation of Export Assessment Committee of National Core Technology • Patent registration security assessment	• Security policy for external work • Application of watermarks	• Security assessment upon employee resignation/ retirement • Monitoring and security assessment on information leakages • Leakage response

5.6.2.3 Building a Real-Time Detection of Malicious Activities and Blocking Solution

Hyundai Steel has established an EDR system[1] to strengthen cyber breach defense, detecting malicious behavior (ransomware, etc.) in real time for company-wide PCs and server endpoints[2] and preventing damage from new zero-day vulnerability[3] attacks. We introduced SASE[4] to respond to security threats to unmanaged network areas due to the recent increase in various external working environments such as work from home, business trips, and base offices. By establishing a real-time attack detection and blocking system for external networks with relatively weak security, we minimize the risk of malware infection through bypass attacks (overseas and VPN) and continuously strengthen the defense system to protect the Company's information assets through real-time monitoring and response.

1) EDR (Endpoint Detection and Response): A security solution that detects, analyzes, and responds to malicious acts occurring on terminals in real time to prevent the spread of damage
2) Endpoint: Terminal devices (PCs/servers) at endpoints connected to the network
3) Zero-day vulnerabilities: Software vulnerabilities for which security updates have not been released
4) SASE (Secure Access Service Edge): A solution that protects against internet-based threats with URL filtering, malware protection, and more.

5.6.2.4 Cyberattack Prevention Training

Hyundai Steel conducts preventive training activities against cyberattacks for all employees. To enhance security awareness, we conduct quarterly simulated phishing training sessions reflecting various attack types such as phishing websites and attachment of malicious files. Through the introduction of simulated phishing training system, the stereotypical training methods were developed, reflecting recent trends. Also, we analyze the results of the phishing exercises and provide additional, in-depth training to employees who are susceptible to phishing attacks. We have conducted at least three additional separate simulation practices with multiple infected individuals. Starting from 2023, we plan to extend these exercises to our overseas subsidiaries to strengthen our overall resilience against cyberattacks.
We encourage employees to report any suspected or actual cyberattacks to the security organization and the security control department, who will immediately block the source of the attack upon receiving the report. They will then take prompt damage restoration and follow-up measures, such as backing up the infected person's data and initializing the PC. Through strict monitoring, the security control staff prevents further damage from occurring and prevents it from escalating to a critical stage. As such, the Company has the capability to take quick action in the event of an actual cyber attack based on continuous and systematic training, and maintains an agile reporting system to minimize damage and ensure quick recovery.

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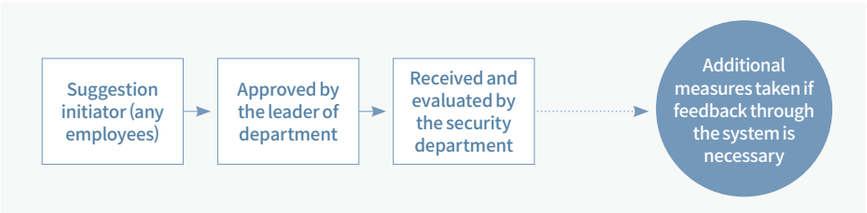
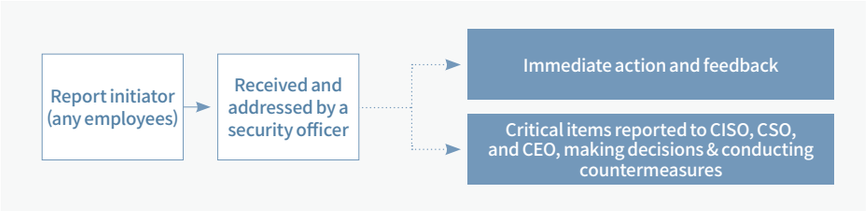
5.6.2.5 Suggestion and Reporting System for Security Control

Hyundai Steel operates a security suggestion and reporting system that allows all employees to report and suggest opinions on information protection-related threats and improvement factors. Items of high priority are escalated to the top management for necessary actions and improvement. We also operate a variety of security-related channels to share threat attempts and information, and through our multi-channel communication channels, we quickly respond to security incidents, threats, etc. and provide feedback on the results.

MY Security System Suggestion



MY Security System Security Interference and Reporting (report on security violation)



Operation of Reward System on Phishing Reporting

In 2023, Hyundai Steel introduced a phishing reporting reward system to incentivize employee participation in prevention activities and increase awareness. Along with verifying and analyzing reported phishing emails and attacks and giving feedbacks of the results to the reporters, we provide rewards to employees who contribute to preventing damage from actual external attacks and improving security vulnerabilities. This will not only prevent any potential damage to an individual and company, but also contribute to raising awareness and motivating employees about phishing attacks. The system also facilitates early detection of damage from external attacks, such as phishing and ransomware, and enables a swift first response.

5.6.3 Internalization of Information Security Culture

5.6.3.1 Security Awareness Training

In an effort to prevent various threats and incidents, Hyundai Steel puts efforts to raise employees' awareness on security through annual security training and campaigns. We hold annual security meetings for all employees, covering security issue trends, security common sense, policy guidance, personal information protection, and trade secret protection. We have also developed and utilized video content to educate employees about ransomware prevention and information leakage threats to help employees understand better. To make our training more accessible and relevant, we are planning on utilizing new training methods using new channels like social media and mobile platforms, and the training satisfaction survey enables us to better provide effective training.

In 2023, we conducted online training for all employees aimed at preventing information leakage and protecting trade secrets. Furthermore, we implemented a range of training programs including those for newly promoted employees, new security officers, new hires, expatriates, and tailored programs for individuals who are particularly vulnerable in simulated phishing drills. In addition, as part of our training and promotion activities, we organize a "Security Day" every third Tuesday of each month to check the implementation of basic everyday security checks by the department and communicate important security matters. We strive to make it easier for all employees to be mindful and learn about security issues, trends, regulations, and security common sense through monthly security quiz events.

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For additional information about Hyundai Steel, please visit our website. For further details, please contact us at the following:

Phone: +82-31-510-2114
E-mail: sustainable@hyundai-steel.com
Website: https://www.hyundai-steel.com

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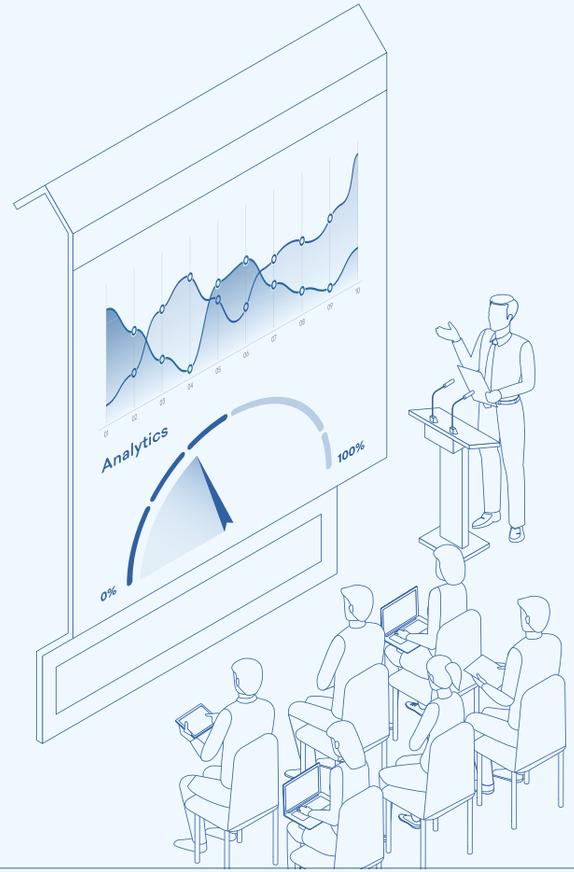
Hyundai Steel pursues sustainable development by increasing the value of the company and society through diverse activities.



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6.1 Consolidated Financial Statement

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Assets (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Current assets	12,775,842,711	13,191,046,263	11,953,568,810
Cash or cash equivalents	1,380,923,938	1,698,640,646	1,385,746,851
Short-term financial instrument	279,705,500	474,489,677	704,782,656
Financial asset measured at fair value through profit or loss	940,417,827	971,173,276	296,982,323
Trade receivables and other receivables	3,223,147,479	2,714,085,881	3,031,878,244
Inventory	6,730,410,667	6,704,290,296	6,279,341,225
Corporate tax	2,824,699	4,153,109	12,531,095
Derivatives	21,228,163	33,880,957	47,014,217
Other financial assets	38,236,885	39,531,757	60,723,512
Other current assets	158,947,553	152,103,321	110,255,019
Assets held for sale	-	398,697,344	24,313,668
Non-current assets	24,266,455,655	23,609,909,567	23,265,273,120
Trade receivables and other receivables	233,614,573	269,454,467	193,359,196
Financial asset measured at fair value through other comprehensive income	1,536,368,849	1,255,208,361	1,434,482,977
Shares invested in affiliated companies and joint ventures	176,944,661	259,548,482	258,666,216
Lease rights	846,190,251	821,419,384	762,262,794
Property investment	494,683,214	106,201,920	111,817,364
Tangible assets	19,251,425,071	18,755,056,659	18,249,880,029
Intangible assets	1,364,539,508	1,328,067,734	1,437,513,626
Derivatives	103,198,732	173,562,056	134,409,604
Other financial assets	188,919,607	300,324,380	372,700,815
Net defined benefit assets	10,905,862	273,145,547	207,247,425
Deferred income tax assets	44,609,011	46,857,587	67,418,205
Other non-current assets	15,056,315	21,062,991	35,514,869
Total assets	37,042,298,366	36,800,955,830	35,218,841,930

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Liabilities (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Current liabilities	7,466,844,695	8,119,176,425	7,984,156,917
Purchase payables and other payables	3,778,860,085	3,232,446,227	3,769,858,306
Short-term loans	506,624,617	1,346,957,522	1,288,639,830
Current bonds	1,235,309,530	1,219,645,510	1,009,742,922
Long-term current loans	1,320,916,099	1,575,283,075	1,542,247,049
Unpaid corporate tax	322,989,534	248,359,420	93,240,341
Derivative liabilities	1,302,638	22,708,202	24,715,730
Other financial liabilities	866,300	1,277,611	1,820,900
Lease liabilities	79,541,054	83,729,053	85,677,461
Current provisions	21,736,596	8,523,726	6,512,544
Other current liabilities	198,698,241	379,272,173	156,887,301
Liabilities held for sale	-	973,905	4,814,533
Non-current liabilities	11,315,049,511	9,553,236,427	7,738,684,685
Bonds	4,471,788,428	3,796,449,988	3,207,469,681
Long-term loans	4,670,585,056	3,590,923,192	2,635,379,905
Derivative liabilities	127,778,536	175,038,588	126,275,565
Other financial liabilities	734,506	2,377,524	734,506
Net defined benefit liabilities	11,953,437	8,867,672	10,604,989
Deferred tax liabilities	857,732,166	712,260,562	535,091,789
Lease liabilities	751,428,377	731,378,772	681,923,058
Non-current provisions	338,784,616	455,504,326	444,859,589
Other non-current liabilities	84,264,388	80,435,803	96,345,603
Total liabilities	18,781,894,206	17,672,412,852	15,722,841,602

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6.1 Consolidated Financial Statement

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Equity (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Shares held by holding company	17,868,585,155	18,713,734,433	19,100,148,563
Capital	667,228,925	667,228,925	667,228,925
Capital surplus	3,906,081,405	3,906,081,405	3,906,081,405
Retained earnings	12,358,515,675	13,373,650,242	13,639,305,564
Accumulated other comprehensive income	1,049,223,864	879,238,575	999,997,384
Treasury stock	(112,464,715)	(112,464,715)	(112,464,715)
Non-controlling interest	391,819,005	414,808,545	395,851,765
Total equity	18,260,404,160	19,128,542,977	19,496,000,328
Total liabilities and equity	37,042,298,366	36,800,955,830	35,218,841,930

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6.2 Consolidated Statement of Changes in Equity

2021 (Unit: KRW 1,000)

Term 57: Jan 1 2021 to Dec 31 2021

Classification	Equity						
	Capital	Capital surplus	Retained earnings	Accumulated other comprehensive income	Treasury stock	Non-controlling interest	Total equity
Jan 1 2021 (Beginning equity)	667,228,925	3,906,081,405	10,933,098,787	951,498,277	(112,464,715)	347,588,663	16,693,031,342
Total comprehensive profit							
Net income (loss)	-	-	1,461,422,625	-	-	43,731,944	1,505,154,568
Profit or loss of financial asset measured at fair value through other comprehensive	-	-	(255,333)	2,722,378	-	270,570	2,737,615
Disposal of financial asset measured at fair value through other comprehensive income	-	-	-	-	-	-	-
Valuation profit and loss of financial derivatives	-	-	-	22,837,744	-	-	22,837,744
Cumulative translation adjustments for overseas subsidiaries and branches	-	-	-	73,511,295	-	698,691	74,209,986
Remeasurement of net defined benefit liabilities	-	-	26,289,296	-	-	431,083	26,720,380
Valuation by equity method	-	-	3,733,170	(1,345,829)	-	-	2,387,341
Transactions with shareholders directly reflected in equity							
Dividends	-	-	(65,772,870)	-	-	(901,946)	(66,674,815)
Changes from paid-in capital increase of subsidiary companies	-	-	-	-	-	-	-
Acquisition of treasury stocks	-	-	-	-	-	-	-
Disposal of treasury stocks	-	-	-	-	-	-	-
Dec 31 2020 (Ending equity)	667,228,925	3,906,081,405	12,358,515,675	1,049,223,864	(112,464,715)	391,819,005	18,260,404,160

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2022 (Unit: KRW 1,000)

Term 58: Jan 1 2022 to Dec 31 2022

Classification	Equity						
	Capital	Capital surplus	Retained earnings	Accumulated other comprehensive income	Treasury stock	Non-controlling interest	Total equity
Jan 1 2022 (Beginning equity)	667,228,925	3,906,081,405	12,358,515,675	1,049,223,864	(112,464,715)	391,819,005	18,260,404,160
Total comprehensive profit							
Net income (loss)	-	-	1,017,588,713	-	-	20,604,217	1,038,192,930
Profit or loss of financial asset measured at fair value through other comprehensive	-	-	-	(190,484,651)	-	(10,062)	(190,494,713)
Disposal of financial asset measured at fair value through other comprehensive income	-	-	148,503	(148,503)	-	-	-
Valuation profit and loss of financial derivatives	-	-	-	7,153,343	-	-	7,153,343
Cumulative translation adjustments for overseas subsidiaries and branches	-	-	-	12,268,599	-	592,008	12,860,607
Remeasurement of net defined benefit liabilities	-	-	129,686,604	-	-	2,879,081	132,565,685
Valuation by equity method	-	-	(743,514)	1,225,923	-	(173,758)	308,650
Transactions with shareholders directly reflected in equity							
Dividends	-	-	(131,545,739)	-	-	(901,946)	(132,447,685)
Changes from paid-in capital increase of subsidiary companies	-	-	-	-	-	-	-
Acquisition of treasury stocks	-	-	-	-	-	-	-
Disposal of treasury stocks	-	-	-	-	-	-	-
Dec 31 2022 (Ending equity)	667,228,925	3,906,081,405	13,373,650,242	879,238,575	(112,464,715)	414,808,545	19,128,542,977

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2023 (Unit: KRW 1,000)

Term 59: Jan 1 2023 to Dec 31 2023

Classification	Equity						
	Capital	Capital surplus	Retained earnings	Accumulated other comprehensive income	Treasury stock	Non-controlling interest	Total equity
Jan 1 2023 (Beginning equity)	667,228,925	3,906,081,405	13,373,650,242	879,238,575	(112,464,715)	414,808,545	19,128,542,977
Total comprehensive profit							
Net income (loss)	-	-	461,194,753	-	-	(18,211,292)	442,983,461
Profit or loss of financial asset measured at fair value through other comprehensive	-	-	-	131,135,696	-	544,132	131,679,828
Disposal of financial asset measured at fair value through other comprehensive income	-	-	-	-	-	-	-
Valuation profit and loss of financial derivatives	-	-	-	(22,236,633)	-	-	(22,236,633)
Cumulative translation adjustments for overseas subsidiaries and branches	-	-	-	11,776,900	-	37,488	11,814,388
Remeasurement of net defined benefit liabilities	-	-	(63,615,596)	-	-	(545,214)	(64,160,810)
Valuation by equity method	-	-	(378,096)	82,846	-	120,052	(175,198)
Transactions with shareholders directly reflected in equity							
Dividends	-	-	(131,545,739)	-	-	(901,946)	(132,447,685)
Changes from paid-in capital increase of subsidiary companies	-	-	-	-	-	21,145,046	21,145,046
Acquisition of treasury stocks	-	-	-	-	-	-	-
Disposal of treasury stocks	-	-	-	-	-	-	-
Dec 31 2023 (Ending equity)	667,228,925	3,906,081,405	13,639,305,564	999,997,384	(112,464,715)	395,851,765	19,496,000,328

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6.3 Consolidated Statement of Cash Flows

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Cash flows from operating activities (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Cash flows from operating activities	2,002,894,272	2,179,616,640	1,948,393,342
Cash flows created from operating activities	2,376,247,601	2,830,949,005	2,702,109,562
Net income	1,505,154,568	1,038,192,930	442,983,461
Addition of expenses without cash outflow	2,952,235,213	2,926,792,148	2,324,960,549
Deduction of expenses without cash inflow	(355,462,986)	(395,713,721)	(370,258,968)
Change in assets/liabilities from operating activities	(1,725,679,194)	(738,322,352)	304,424,520
Decrease (increase) in sales and other receivables	(589,321,924)	480,170,170	(212,006,250)
Decrease (increase) in inventory	(1,977,349,118)	(257,747,180)	618,317,206
Decrease (increase) in other(current) financial assets	71,112,140	5,019,767	(19,476,337)
Decrease (increase) in other current assets	(30,296,960)	5,068,515	36,531,283
Decrease (increase) in other(non-current) financial assets	(15,187,419)	(66,421,262)	(37,753,404)
Decrease (increase) in other non-current assets	(13,579,271)	(4,737,725)	(9,430,661)
Increase (decrease) in purchase payables or other payables	1,025,408,759	(555,332,215)	30,045,378
Increase (decrease) in other current payables	60,135,106	(125,546,489)	(23,160,963)
Increase (decrease) in current provisions	(3,493,725)	(4,852,726)	(753,858)
Increase (decrease) in other(non-current) financial liabilities	(321,485)	(446,099)	(385,727)
Increase (decrease) in other non-current liabilities	5,814,331	(2,841,875)	17,201,704
Increase (decrease) in non-current provisions	(83,881,420)	(530,901)	(2,940,343)
Increase (decrease) in derivative financial assets and liabilities	(21,440,964)	(11,558,230)	4,566,930
Severance pay	(66,370,716)	(45,230,690)	(83,192,033)
Decrease (increase) in plan assets	(86,906,529)	(153,335,410)	(13,138,405)
Interest received	18,353,104	40,621,075	74,122,423
Dividend received	41,048,366	37,127,847	50,795,632
Interest paid	(306,211,098)	(349,620,012)	(418,745,428)
Corporate tax refund (payment)	(126,543,700)	(379,461,275)	(459,888,847)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Cash flows from investment activities (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Cash flows from investment activities	(663,360,314)	(1,394,514,739)	(132,288,779)
Cash inflows from investment activities	8,313,234,323	7,690,576,569	3,641,715,843
Decrease in short-term financial instruments	1,860,874,669	1,110,107,803	1,282,516,420
Decrease in long-term financial instruments	-	-	91,015
Decrease in other (current) financial assets	-	26,385,097	80,300,607
Disposal of financial asset measured at fair value through profit or loss	6,412,345,936	6,339,495,250	2,060,481,742
Disposal of financial asset measured at fair value through other comprehensive income	6,417,076	374,040	2,979
Disposal of investment assets owned by subsidiary companies	9,423,700	-	-
Disposal of tangible assets	16,310,714	20,740,181	23,546,201
Disposal of intangible assets	7,862,227	610,454	659,618
Disposal of property investment	-	1,018,879	70
Increase in advance payment related to disposal of assets held for sale	-	191,786,410	192,685,437
Decrease in other (non-current) financial assets	-	58,455	140,429
Cash outflows from investment activities	(8,976,594,637)	(9,085,091,308)	(3,774,004,622)
Increase in short-term financial instruments	(1,600,700,194)	(1,229,924,908)	(1,512,544,365)
Increase in long-term financial instruments	-	(5,451,770)	(347,069)
Acquisition of financial asset measured at fair value through profit or loss	(6,379,266,685)	(6,434,406,285)	(1,347,138,393)
Acquisition of financial asset measured at fair value through other comprehensive income	(5,942,510)	(12,270)	(291,759)
Acquisition of shares of joint ventures	-	(77,399,996)	-
Acquisition of tangible assets	(904,496,021)	(1,020,997,883)	(823,992,843)
Acquisition of intangible assets	(86,189,227)	(6,235,074)	(5,603,255)
Acquisition of property investment	-	(67,474)	(20,430)
Increase in other (current) financial assets	-	(310,137,829)	(80,479,228)
Increase in other (non-current) financial asset-	-	(457,820)	(3,587,279)

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Cash flows from financial activities (Unit: KRW 1,000)

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Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Classification	Term57	Term58	Term59
Cash flows from financial activities	(887,329,204)	(469,190,614)	(2,120,850,082)
Cash inflows from financial activities	5,275,994,276	4,837,638,733	7,193,329,663
Acquisition of short-term loans	2,409,634,759	3,620,166,003	5,257,508,153
Issue of corporate bond	1,036,666,000	627,789,120	348,693,240
Acquisition of long-term loans	1,829,431,445	495,583,613	1,016,736,913
Settlement of derivatives	-	93,261,607	569,953,775
Increase in security deposit	262,072	838,390	437,582
Cash outflows from financial activities	(6,163,323,480)	(5,306,829,347)	(9,314,179,744)
Repayment of short-term loans	(2,521,373,206)	(2,493,647,660)	(5,324,110,406)
Repayment of current bonds	(950,000,000)	(1,235,565,000)	(1,220,000,000)
Repayment of long-term current loans	(2,183,971,568)	(1,301,517,616)	(1,569,154,729)
Repayment of current lease liabilities	(63,943,492)	(69,996,499)	(74,624,767)
Repayment of long-term loans	(376,970,398)	(67,042,839)	(459,067,914)
Dividend payout	(66,674,815)	(132,447,685)	(132,447,685)
Settlement of derivatives	-	(6,612,047)	(534,394,243)
Repayment of security deposit	(390,000)	-	(380,000)
Effect of FX changes on cash and cash equivalents	11,486,174	1,986,875	(8,148,276)
Increase (decrease) in cash and cash equivalents	463,690,928	317,898,162	(312,893,795)
Cash and cash equivalents at beginning of term	917,233,011	1,380,923,938	1,698,640,646
Classified as assets held for sale	-	(181,454)	0
Cash and cash equivalents at end of term	1,380,923,938	1,698,640,646	1,385,746,851

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6.4 Consolidated Comprehensive Income Statement

Consolidated Comprehensive Income Statement (Unit: KRW 1,000)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Classification	Term57	Term58	Term59
Sales		27,340,601,238	25,914,760,456
Cost of sales	19,326,351,922	24,506,876,612	23,782,266,548
Gross profit	3,523,569,056	2,833,724,626	2,132,493,908
Selling, general & administrative expense	1,076,066,043	1,217,267,501	1,334,168,840
Operating profit	2,447,503,013	1,616,457,125	798,325,068
Financial income	(196,022,882)	(248,951,920)	(278,598,748)
Financial profit	264,824,509	345,051,173	371,903,128
Financial cost	(460,847,390)	(594,003,093)	650,501,875
Profit from investment in affiliated companies and joint ventures	3,168,359	11,837,910	4,880,710
Other income	(105,531,259)	(30,785,088)	7,468,645
Other profit	271,375,634	339,607,625	275,725,105
Other cost	(376,906,893)	(370,392,713)	268,256,460
Net profit before income tax expense	2,149,117,232	1,348,558,027	532,075,676
Income tax expense	643,962,664	310,365,097	89,092,215
Net profit (loss)	1,505,154,568	1,038,192,930	442,983,461

Net profit before income tax expense Income tax expense Net profit (loss) (Unit: KRW 1,000)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Classification	Term57	Term58	Term59
Cash flows from investment activities	128,893,065	(37,606,428)	56,921,575
Cash inflows from investment activities	97,047,730	20,013,950	(10,422,245)
Decrease in short-term financial instruments	22,837,744	7,153,343	(22,236,633)
Disposal of financial asset measured at fair value through profit or loss	74,209,986	12,860,607	11,814,388
Disposal of financial asset measured at fair value through other comprehensive	31,845,335	(57,620,378)	67,343,820
Disposal of assets held for	26,720,380	132,565,685	(64,160,811)
Disposal of tangible assets	2,737,615	(190,494,713)	131,679,828
Disposal of intangible assets	3,733,170	(743,514)	(378,095)
Disposal of property investment	(1,345,829)	1,052,165	202,898
Cash outflows from investment activities	1,634,047,634	1,000,586,503	499,905,036
Increase in short-term financial instruments			
Acquisition of financial asset measured at fair value through profit or loss	1,461,422,625	1,017,588,713	461,194,753
Acquisition of financial asset measured at fair value through other comprehensive income	43,731,944	20,604,217	(18,211,292)
Acquisition of shares of subsidiary companies			
Acquisition of shares of joint ventures	1,588,915,346	976,695,017	517,959,869
Cash outflow from split-off	45,132,288	23,891,486	(18,054,834)
Acquisition of tangible assets			
Acquisition of intangible assets	11,110	7,736	3,506

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7.1 Statement of Financial Position

Term 57: As of 31 Dec 2021
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Term 59: As of 31 Dec 2023

Assets (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Current assets	10,190,060,054	10,949,001,472	9,686,638,706
Cash or cash equivalents	1,066,071,987	1,414,019,697	1,256,382,766
Short-term financial instrument	278,699,479	459,390,573	644,077,036
Financial asset measured at fair value through profit or loss	866,686,120	971,173,276	296,982,323
Trade receivables and other receivables	2,380,502,656	2,344,329,807	2,420,942,604
Inventory	5,310,442,932	5,145,183,698	4,849,660,903
Derivatives	20,517,913	30,811,844	46,425,764
Other financial assets	31,395,510	32,071,713	51,506,321
Other current assets	102,567,256	87,174,606	61,387,683
Assets held for sale	133,176,201	464,846,258	59,273,306
Non-current assets	23,991,205,171	23,114,789,881	22,763,038,374
Trade receivables and other receivables	228,019,041	269,220,147	193,152,867
Financial asset measured at fair value through other comprehensive income	1,532,640,387	1,251,943,309	1,429,843,262
Shares invested in affiliated companies and joint ventures	168,512,357	168,512,357	168,512,357
Shares invested in subsidiary companies	1,376,773,791	1,276,398,410	1,297,065,022
Lease rights	757,684,486	740,429,499	698,370,450
Property investment	416,915,495	19,925,046	19,925,046
Tangible assets	18,107,865,492	17,640,495,977	17,150,085,073
Intangible assets	1,108,199,933	1,086,698,397	1,198,531,566
Derivatives	103,105,705	168,741,745	131,889,479
Net defined benefit assets	10,905,862	256,680,134	195,655,424
Other financial assets	180,281,758	235,443,996	266,306,965
Other non-current assets	300,864	300,864	13,700,863
Total assets	34,181,265,225	34,063,791,352	32,449,677,080

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Liabilities (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Current liabilities	5,944,497,676	6,902,090,556	6,640,368,693
Purchase payables and other payables	3,023,840,718	2,913,681,814	3,384,487,979
Short-term loans	97,153,909	686,878,567	618,624,446
Current bonds	1,169,752,635	1,219,645,510	899,860,673
Long-term current loans	1,085,422,195	1,396,979,173	1,424,776,916
Unpaid corporate tax	304,900,432	240,391,651	88,044,840
Derivative liabilities	176,431	22,013,387	21,111,274
Lease liabilities	78,628,834	82,844,650	84,233,486
Current provisions	20,033,331	6,493,555	3,829,456
Other current liabilities	164,589,190	333,162,250	115,399,623
Non-current liabilities	10,470,383,780	8,619,329,860	6,980,372,359
Bonds	4,361,991,776	3,607,172,984	3,127,639,837
Long-term loans	4,125,275,589	3,066,916,772	2,191,261,307
Derivative liabilities	111,905,226	169,649,309	125,598,519
Other financial liabilities	2,767,730	3,762,760	2,204,698
Deferred tax liabilities	771,676,662	635,580,672	465,668,755
Lease liabilities	691,346,806	672,462,395	635,954,871
Non-current provisions	338,733,799	400,219,768	351,129,768
Other non-current liabilities	66,686,192	63,565,200	80,914,604
Total liabilities	16,414,881,456	15,521,420,416	13,620,741,052

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EQUITY (Unit: KRW 1,000)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Classification	Term57	Term58	Term59
Capital	667,228,925	667,228,925	667,228,925
Capital surplus	3,922,985,820	3,922,985,820	3,922,985,820
Retained earnings	12,223,861,482	13,185,243,308	13,361,761,537
Accumulated other comprehensive income	1,064,772,256	879,377,598	989,424,461
Treasury stock	(112,464,715)	(112,464,715)	(112,464,715)
Total equity	17,766,383,769	18,542,370,936	18,828,936,028
Total liabilities and equity	34,181,265,225	34,063,791,352	32,449,677,080

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7.2 Statement of Changes in Equity

2021 (Unit: KRW 1,000)

Term 57: Jan 1 2021 to Dec 31 2021

Classification	Equity					
	Capital stock	Capital surplus	Retained earnings	Accumulated other comprehensive income	Treasury stock	Total equity
Jan 1 2021 (Beginning Equity)	667,228,925	3,922,985,820	10,882,248,103	1,042,539,813	(112,464,715)	16,402,537,946
Total comprehensive profit Net income (loss)	-	-	1,382,033,671	-	-	1,382,033,671
Profit or loss of financial asset measured at fair value through other comprehensive income	-	-	(255,333)	2,535,664	-	2,280,331
Valuation profit and loss of financial derivatives	-	-	-	19,696,779	-	19,696,779
Remeasurement of net defined benefit liabilities	-	-	25,607,911	-	-	25,607,911
Transactions with shareholders directly reflected in equity						
Dividends	-	-	(65,772,870)	-	-	(65,772,870)
Dec 31 2021 (Ending equity)	667,228,925	3,922,985,820	12,223,861,482	1,064,772,256	(112,464,715)	17,766,383,769

2022 (Unit: KRW 1,000)

Term 58: Jan 1 2022 to Dec 31 2022

Classification	Equity					
	Capital stock	Capital surplus	Retained earnings	Accumulated other comprehensive income	Treasury stock	Total equity
Jan 1 2022 (Beginning Equity)	667,228,925	3,922,985,820	12,223,861,482	1,064,772,256	(112,464,715)	17,766,383,769
Total comprehensive income						
Total comprehensive profit Net income (loss)	-	-	969,789,791	-	-	969,789,791
Profit or loss of financial asset measured at fair value through other comprehensive income	-	-	-	(190,502,470)	-	(190,502,470)
Valuation profit and loss of financial derivatives	-	-	-	5,107,812	-	5,107,812
Remeasurement of net defined benefit liabilities	-	-	123,137,773	-	-	123,137,774
Transactions with shareholders directly reflected in equity						
Dividends	-	-	(131,545,739)	-	-	(131,545,739)
Dec 31 2022 (Ending equity)	667,228,925	3,922,985,820	13,185,243,308	879,377,598	(112,464,715)	18,542,370,936

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2023 (Unit: KRW 1,000)

Term 59: Jan 1 2023 to Dec 31 2023

Classification	Equity					
	Capital stock	Capital surplus	Retained earnings	Accumulated other comprehensive income	Treasury stock	Total equity
Jan 1 2022 (Beginning Equity)	667,228,925	3,922,985,820	13,185,243,308	879,377,598	(112,464,715)	18,542,370,936
Total comprehensive income						
Total comprehensive profit Net income (loss)	-	-	364,354,790	-	-	364,354,790
Profit or loss of financial asset measured at fair value through other comprehensive income	-	-	-	130,813,360	-	130,813,360
Valuation profit and loss of financial derivatives	-	-	-	(20,766,497)	-	(20,766,497)
Remeasurement of net defined benefit liabilities	-	-	(56,290,821)	-	-	(56,290,821)
Transactions with shareholders directly reflected in equity						
Dividends	-	-	(131,545,739)	-	-	(131,545,739)
Dec 31 2022 (Ending equity)	667,228,925	3,922,985,820	13,361,761,537	989,424,461	(112,464,715)	18,828,936,028

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7.3 Statement of Cash Flows

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Cash flows from operating activities (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Cash flows from operating activities	1,636,437,625	2,212,199,723	1,837,549,848
Cash flows created from operating activities	1,947,729,327	2,762,506,092	2,461,594,660
Net income	1,382,033,671	969,789,791	364,354,790
Addition of expenses without cash outflow	2,740,446,828	2,582,408,620	2,142,186,863
Deduction of expenses without cash inflow	(291,714,744)	(334,140,186)	(342,685,790)
Change in operating assets and liabilities	(1,883,036,428)	(455,552,133)	297,738,797
Increase in sales and other receivables	(544,345,823)	19,131,290	9,584,299
Increase in inventory	(1,711,770,181)	(28,066,646)	408,785,554
Decrease (increase) in other current financial assets	15,274,210	2,845,648	(19,434,609)
Decrease (increase) in other current assets	(16,447,119)	15,392,650	26,685,240
Decrease in (non-current) financial assets	(11,696,411)	(67,540,578)	(36,911,756)
Decrease (increase) in other noncurrent assets	-	-	(13,400,000)
Increase (decrease) in account payable or other payables	595,053,371	(93,756,678)	632,855
Increase (decrease) in other current payables	29,333,655	(141,546,585)	(25,976,216)
Increase (decrease) in current provisions	(3,493,725)	(4,852,726)	(753,858)
Increase (decrease) in other (non-current) financial liabilities	20,000	(5,000)	5,000
Decrease in other noncurrent liabilities	2,470,116	(3,120,992)	17,349,405
Increase (decrease) in derivative assets and liabilities	(14,374,711)	4,254,316	-
Decrease in provisions	(83,881,420)	(123,601)	(2,476,688)
Severance pay	(59,557,674)	(34,978,176)	(75,451,162)
Decrease (increase) in plan assets	(79,620,716)	(123,185,053)	9,100,733
Interest received	12,013,742	32,796,698	67,877,075
Dividend received	41,670,779	37,750,260	64,145,200
Interest paid	(270,653,565)	(285,928,451)	(324,123,242)
Corporate tax refund (payment)	(94,322,658)	(334,924,876)	(431,943,845)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Cash flows from investment activities (Unit: KRW 1,000)

Classification	Term57	Term58	Term59
Cash flows from investment activities	(619,141,955)	(933,575,611)	(31,041,587)
Cash inflows from investment activities	7,798,987,208	7,326,591,833	3,498,958,204
Decrease in short-term financial instruments	1,352,352,503	701,958,083	1,234,857,900
Disposal of financial assets measured at fair value through profit or loss	6,412,345,936	6,339,495,250	2,060,481,742
Disposal of financial assets measured at fair value through other comprehensive income	6,417,076	10,340	0
Disposal of assets held for sale	12,249,169	277,642,919	192,685,437
Disposal of tangible assets	11,110,233	6,729,862	10,933,125
Disposal of intangible assets	4,512,291	166,500	0
Disposal of investment property	-	588,879	0
Cash outflows from investment activities	(8,418,129,163)	(8,260,167,444)	(3,529,999,791)
Increase in short-term financial instruments	(1,083,518,753)	(882,649,177)	(1,419,544,364)
Acquisition of financial asset measured at fair value through profit or loss	(6,379,266,685)	(6,434,406,285)	(1,347,138,394)
Acquisition of financial asset measured at fair value through other comprehensive income	(5,942,510)	(12,270)	(164,410)
Acquisition of shares in subsidiary companies	(23,000,000)	-	(42,604,400)
Acquisition of shares in joint ventures	-	-	-
Cash outflow from split-off	-	-	-
Acquisition of tangible assets	(846,592,444)	(937,177,303)	(716,466,123)
Acquisition of intangible assets	(79,808,771)	(5,922,410)	(4,082,100)

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7.4 Statement of Comprehensive Income

Cash Flows from Financing Activities (Unit: KRW 1,000)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Classification	Term57	Term58	Term59
Cash flows from financing activities	(588,434,580)	(930,676,402)	(1,964,718,496)
Cash inflows from financing activities	3,430,659,120	1,877,676,102	3,134,579,981
Acquisition of short-term loans	710,503,909	967,615,013	1,454,622,642
Issuance of corporate bonds	926,918,520	548,021,640	348,693,240
Acquisition of long-term loans	1,793,236,691	282,237,647	765,515,541
Disposal of treasury stock	-	-	-
Settlement of derivatives	-	79,801,803	565,748,558
Cash outflows from financing activities	(4,019,093,700)	(2,808,352,504)	(5,099,298,477)
Repayment of short-term loans	(696,901,845)	(354,725,988)	(1,519,912,811)
Repayment of current bonds	(840,000,000)	(1,170,000,000)	(1,220,000,000)
Repayment of long-term current loans	(2,146,491,830)	(1,085,428,579)	(1,396,980,053)
Repayment of current lease liabilities	(60,990,821)	(66,539,340)	(71,761,907)
Dividend payments	(65,772,870)	(131,545,739)	(131,545,739)
Repayment of long-term loans	(208,936,334)	-	(225,000,000)
Settlement of derivatives	-	(112,858)	(534,097,967)
Effect of FX changes on cash and cash equivalents	(960,000)	-	573,304
Net increase (decrease) in cash and cash equivalents	427,901,090	347,947,710	(157,636,931)
Cash and cash equivalents at the beginning of the term	638,170,897	1,066,071,987	1,414,019,697
Cash and cash equivalents at the end of the term	1,066,071,987	1,414,019,697	1,256,382,766

Statement of Comprehensive Income (Unit: KRW 1,000)

Term 57: As of 31 Dec 2021
Term 58: As of 31 Dec 2022
Term 59: As of 31 Dec 2023

Classification	Term57	Term58	Term59
Sales	19,991,486,623	23,666,889,995	21,609,416,275
Cost of sales	16,786,091,540	21,171,332,090	19,828,254,890
Gross profit	3,205,395,083	2,495,557,905	1,781,161,385
Selling, general & administrative expenses	905,595,850	1,030,819,440	1,130,777,209
Operating profit	2,299,799,233	1,464,738,465	650,384,176
Financial income	(146,297,538)	(182,549,233)	(158,019,872)
Financial profit	253,680,363	312,303,311	368,837,870
Financial costs	(399,977,902)	(494,852,544)	(526,857,742)
Other income	(209,470,683)	(21,523,620)	(29,895,635)
Other profit	192,644,420	297,512,802	233,083,991
Other costs	(402,115,103)	(319,036,422)	(262,979,626)
Net profit before income tax expense	1,944,031,012	1,260,665,612	462,468,669
Income tax expense	561,997,341	290,875,821	98,113,879
Net profit (loss)	1,382,033,671	969,789,791	364,354,790
Other comprehensive income	47,840,354	(62,256,884)	53,756,042
Items subsequently reclassified to net profit			
Gains or losses from the Valuation of Derivatives	19,696,779	5,107,812	(20,766,497)
Items subsequently not reclassified to net profit			
Remeasurement of defined benefit pension liabilities	25,607,911	123,137,774	(56,290,821)
Other Comprehensive Income: Unrealized gains or losses on financial assets measured at fair value	2,535,664	(190,502,470)	130,813,360
Total comprehensive income	1,429,874,025	907,532,906	418,110,831
Earnings per share			
Basic earnings per share (Unit: KRW)	10,506	7,372	2,770

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8.1 Environmental Performance

8.1.1 Environmental Targets[1)]

Classification	Unit	2020	2021	2022	2023
GHG emissions (Scope 1, 2)	1,000 tCO_2e	30,692	29,266	29,268	29,162
Energy consumption	TJ	112,320	169,920	168,840	167,200
Water consumption	million m^3	56.5	48.7	57.2	53.4
By-product generation	1,000 tonnes	10,659	10,432	10,424	10,491
Recycling amount	1,000 tonnes	10,476	10,312	10,162	10,231
Recycling rate	%	98.3	98.9	97.5	97.5

1) The GHG emission and energy consumption targets have been set conditional to complying with the total emission allowances under the emission trading scheme (ETS) for that year

8.1.2 Environmental Investment

Indicator	Unit	2020	2021	2022	2023
Environmental operation costs[1)]	KRW 100 million	2,995	3,132	3,745	4,200
Environmental investment costs		1,528	449	1,214	1,438
Environmental benefits[2)]		1,772	2,164	2,359	2,211

1) Environmental operation costs: Costs associated with operating facilities that prevent environmental pollution (e.g., electricity, labor, maintenance)
2) Environmental benefits: Includes cost savings, revenue from the sale of by-products, and tax incentives

8.1.3 GHG Emissions Scope 1 & 2[1) 2) 3) 4)]

Indicator	Unit	2020	2021	2022	2023
Scope 1	1,000 tCO_2e	25,967	25,857	25,907	26,679
Scope 2		2,657	2,633	2,594	2,590
Total (Scope 1 + Scope 2)		28,624	28,489	28,501	29,269

1) In accordance with Article 2, Item 9 of FRAMEWORK ACT ON LOW CARBON GREEN GROWTH, includes CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6
2) GHG emissions are reported according to the "Guidance for Reporting and Certifying Emissions from GHG Emissions Trading Scheme" and have completed the compliance assessment by the Ministry of Environment
3) Since 2021, a benchmark approach has been applied, which provides incentives for companies with high emissions efficiency
4) The annual total GHG emission may differ from the sum of Scope 1 and Scope 2 emissions. The total amount is calculated by aggregating rounded emission amounts at the business site level

8.1.4 GHG Emissions Scope 3[1)]

Classification	Unit	2020	2021	2022	2023
Purchased goods and services[2)]	1,000 tCO_2e		617.45	655.82	764.83
Emissions from capital goods[3)]			n/a	n/a	2.39
Fuel- and energy-related activities not included in Scope 1 or Scope 2[4)]			292.63	277.83	279.26
Upstream transportation and distribution[5)]			677.24	589.83	1,339.78
Waste generated in operations[6)]			n/a	31.55	99.65
Business travel[7)]			n/a	2.60	4.08
Employee commuting[8)]			n/a	22.93	9.71
Upstream leased assets[9)]			n/a	n/a	0.82
Downstream transportation and distribution[10)]			n/a	n/a	14.67
Processing of sold products			n/a	n/a	n/a
Use of sold products			n/a	n/a	n/a
Dispose of sold products[11)]			n/a	177.56	222.68
Leased assets[12)]			n/a	n/a	0.14
Franchises[13)]			n/a	n/a	n/a
Investments[14)]			n/a	733.64	749.36
Total Scope 3 emissions			1,587.32	2,491.36	3,487.37

1) Only includes categories that were validated by a third party
2) Purchased goods and services: Calculation of the purchase volume of key raw materials and water withdrawal quantities (Additional data collection items compared to the previous year include quicklime and water)
3) Capital goods: Calculation for production facilities acquired in 2023
4) Fuel-and energy-related activities: Impact of upstream activities on purchased LNG and electricity
5) Upstream transportation and distribution: Calculation of transportation volumes for key raw material purchases and transportation services for sold products (Additional data collection items compared to the previous year include transportation services for sold products)
6) Waste generated in operations: Impact by treatment method on waste generated at domestic sites (Data standards have changed compared to the previous year, with enhanced accuracy of emission factors for detailed sub-items)
7) Business travel: Expense data for domestic and international business trips
8) Employee commuting: Calculation based on contracted commuting bus routes for domestic employees and an employee survey regarding personal vehicle use for commuting (Change in data collection method compared to the previous year includes conducting surveys)
9) Upstream leased assets: Calculation using statistical data on energy consumption per building among leased assets
10) Downstream transportation and distribution: Calculation for products sold without transportation services provided
11) End-of-life treatment of sold products: Calculated based on waste treatment statistics (Change in data standard compared to the previous year includes sales volume of products)
12) Leased Assets: Calculation using statistical data on energy consumption per building among leased assets
13) Franchises: Not Applicable
14) Investments: Calculation for affiliates subject to the Emissions Trading System or Target Management System in Korea

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8.1.5 Energy Consumption[1)2)3)]

Classification	Unit	2020	2021	2022	2023
Fuel	TJ	67,436	113,039	110,226	113,673
Electricity		54,683	54,934	54,118	54,066
Steam		145	135	132	75
Total		122,210	168,099	164,466	167,803
Electricity consumption rate	%	45	33	33	32

1) Energy consumption is reported in accordance with the "Guidance for Reporting and Certifying Emissions from GHG Emissions Trading Scheme" and has completed the the compliance assessment by the Ministry of Environment
2) The annual total energy consumption may differ from the sum of fuel, electricity and steam consumption. The total amount is calculated by aggregating rounded consumption figures at the business site level
3) Emissions related to the use of by-product gas were reclassified from "emissions from processes (steel production)" to "emissions from stationary combustion (gaseous fuel)" according to the "Guidelines for the GHG Emissions Monitoring Plan for the 3rd Planning Period (2021)"
- Energy consumption in 2020, when converted to gaseous fuel combustion due to the reclassification of by-product gas emission activities: 168,207 TJ

8.1.6 GHG and Energy Intensity[1)]

Classification	Unit	2020	2021	2022	2023
GHG intensity	tCO_2e/tonnes	1.35	1.36	1.44	1.43
Energy intensity	GJ/tonnes	5.78	8.05	8.33	8.19

1) Intensity: GHG emissions and energy consumption per unit of production

Steel and Product Volume

Production	Classification	Unit	2020	2021	2022	2023
Steel production	Blast furnace/ Converter	1,000 tonnes	12,270	11,905	11,828	12,396
	Electric arc furnace	1,000 tonnes	7,313	7,386	6,699	6,556
	Blast furnace/ Converter ratio	%	62.7	61.7	63.8	65.4
	Electric arc furnace ratio	%	37.3	38.3	36.2	34.6
	Total steel production	1,000 tonnes	19,583	19,291	18,528	18,952
Production volume	Production volume of other products	1,000 tonnes	1,552	1,596	1,045	1,546
	Total production volume	1,000 tonnes	21,135	20,887	19,573	20,498

8.1.7 Water Withdrawal[1)]

Classification		Unit	2020	2021	2022	2023
Industrial water withdrawal	Dangjin	1,000 m^3	45,217	43,191	42,794	44,822
	Incheon		2,666	2,765	2,739	2,793
	Pohang		1,771	1,940	1,851	1,801
	Suncheon		3,433	3,374	3,826	3,266
	Ulsan		157	172	160	95
	Total		53,244	51,442	51,370	52,777
Waterworks withdrawal[2)]	Dangjin		2,927	3,378	3,732	3,818
	Incheon		1,137	1,291	1,335	1,222
	Pohang		347	312	389	368
	Suncheon		0	0	0	0
	Ulsan		87	51	56	75
	Total		4,498	5,032	5,512	5,483
Total			57,742	56,474	56,882	58,261

1) Based on government-issued water bills
2) Waterworks consumption equals the amount of waterworks withdrawal

8.1.8 Water Consumption

Classification		Unit	2020	2021	2022	2023
Industrial Water Consumption[1)]	Dangjin	1,000 m^3	39,958	37,914	37,578	39,545
	Incheon		2,666	2,765	2,739	2,793
	Pohang		1,771	1,940	1,851	1,801
	Suncheon		3,432	3,050	3,522	3,216
	Ulsan		157	172	160	95
	Total		47,984	45,841	45,850	47,450
Waterworks Consumption[2)]	Dangjin		2,927	3,378	3,732	3,818
	Incheon		1,137	1,291	1,335	1,222
	Pohang		347	312	389	368
	Suncheon		0	0	0	0
	Ulsan		87	51	56	75
	Total		4,498	5,032	5,512	5,483
Total			52,482	50,873	51,362	52,933

1) Amount of water processed for production use after pre-treatment (such as purification) following withdrawal (data differ from the last year due to changes in categorization)
2) Waterworks consumption equals the amount of waterworks withdrawal

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8.1.9 Wastewater Treatment

Classification		Unit	2020	2021	2022	2023
Water recycling volume[1]	Dangjin	1,000 m^3	4,749	4,077	4,664	5,071
	Incheon		276	356	0	0
	Pohang		825	939	901	161
	Suncheon		0	0	0	0
	Ulsan		0	0	0	0
	Total		5,850	5,372	5,565	5,232
Discharge volume[2]	Dangjin		18,826	15,314	17,282	17,060
	Incheon		472	606	92	65
	Pohang		121	63	50	47
	Suncheon		2,164	2,356	2,279	2,458
	Ulsan		70	84	71	13
	Total		21,653	18,423	19,774	19,643
Total			27,503	23,795	25,339	24,875

1) Water recycling volume: Amount of used water that is reused for other facilities or purposes (excluding simple cooling water circulation)
2) Discharge volume: Amount of wastewater discharged from the company via discharge outlets
3) Net water consumption: Amount of water consumption based on water withdrawal minus water discharge

Clssification	Unit	2020	2021	2022	2023
Net water consumption	1,000 m^3	36,089	38,051	37,108	38,618

8.1.10 Water Consumption and Wastewater Intensity[1]

Classification	Unit	2020	2021	2022	2023
Water consumption per production amount	m^3/tonnes	2.48	2.44	2.60	2.58
Wastewater treatment per production amount		1.30	1.14	1.28	1.21

1) Intensity: Water consumption and wastewater treatment per unit of production (data differ from the last year due to changes in categorization)

8.1.11 By-Products Generation[1]

Classification		Unit	2020	2021	2022	2023
Specific Classification	Slag	1,000 tonnes	6,705	6,467	6,556	6,718
	Dust		512	502	495	489
	Refractory waste		141	137	138	131
	Sludge		690	617	643	628
	Others		2,278	2,127	2,120	2,195
	Total		10,326	9,850	9,952	10,162
Type	General waste	1,000 tonnes	10,173	9,722	9,828	10,029
	Hazardous waste		153	128	124	133
	Total		10,326	9,850	9,952	10,162

1) Based on the business site waste emission and treatment performance report

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8.1.12 Recycling[1)]

Classification	Unit	2020	2021	2022	2023
General waste recycled	1,000 tonnes	10,115	9,624	9,601	9,954
Hazardous waste recycled		121	124	120	125
Total waste recycled		10,236	9,748	9,721	10,079
Recycling rate	%	99.1	99.0	97.7	99.2

1) Based on the business site waste emission and treatment performance report (including recycling amounts within the facility)

8.1.13 Waste Treatment[1)]

Classification		Unit	2020	2021	2022	2023
Landfill	General waste	1,000 tonnes	50	66	63	69
	Hazardous waste		27	0	0	3
Incineration	General waste		8	6	6	6
	Hazardous waste		5	4	4	5
Others	General waste		0	26	158	0
	Hazardous waste		0	0	0	0
Total			90	102	231	83

1) Based on the business site waste emission and treatment performance report

8.1.14 Air Pollutant Emissions[1) 2) 3)]

Classification	Unit	2020	2021	2022	2023
Dust	tonnes	293	291	285	329
Nitrogen Oxides (NOx)		9,269	9,362	8,760	8,646
Sulfur Oxides (SOx)		4,984	3,739	5,507	5,877

1) Dust: Based on TMS (Tele Monitoring System)
2) NOx and SOx: Based on total amounts according to SPECIAL ACT ON THE IMPROVEMENT OF AIR QUALITY IN AIR CONTROL ZONES (for emissions over 4 tonnes annually)
3) Applied changes in calculation standards for NOx and SOx (figures may differ from the previous year's report)

8.1.15 Air Pollutants Intensity[1)]

Classification	Unit	2020	2021	2022	2023
Dust	kg/tonnes	0.014	0.014	0.014	0.016
Nitrogen Oxides (NOx)		0.439	0.448	0.443	0.422
Sulfur Oxides (SOx)		0.236	0.179	0.279	0.287

1) Intensity: Air pollutant emissions per unit production

8.1.16 Water Pollutant Emissions[1) 2) 3)]

Classification	Unit	2020	2021	2022	2023
Suspended Solids (SS)	kg	34,803	45,023	36,089	29,018
Chemical Oxygen Demand (COD)		239,419	245,163	n/a	n/a
Total Organic Carbon (TOC)		n/a	n/a	80,171	89,848
Biochemical Oxygen Demand (BOD)		32,107	70,295	116,736	118,125

1) Based on TMS (Tele Monitoring System) and proprietary measurement
2) According to WATER ENVIRONMENT CONSERVATION ACT, the indicator for organic substances in water pollutants was changed from COD to TOC (COD was used until 2021, and TOC has been used since 2022)
3) Missing BOD data has been supplemented (figures may differ from the previous year's report)

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8.1.17 Water Pollutant Emissions Concentration[1)]

Classification	Unit	2020	2021	2022	2023
Suspended Solids (SS)	kg/tonnes	0.002	0.002	0.002	0.001
Chemical Oxygen Demand (COD)		0.011	0.012	n/a	n/a
Total Organic Carbon (TOC)		n/a	n/a	0.004	0.004
Biochemical Oxygen Demand (BOD)		0.002	0.003	0.006	0.006

1) Intensity: Water pollutant emissions per unit of production

8.1.18 Chemical Substance Emissions[1)]

Classification	Unit	2020	2021	2022	2023
Chemical Substance Emissions	tonnes	55.0	59.8	49.9	59.6

1) Based on research of chemical substance emissions

8.1.19 Hazardous Chemical Usage[1) 2)]

Classification	Unit	2020	2021	2022	2023
Hazardous Chemical Usage	1,000 tonnes	26,094	25,591	25,006	25,914

1) Based on research of hazardous chemical substance usage (excluding sales)
2) Changed calculation method (figures differ from last year's report)

8.1.20 Violations of Environmental Regulations[1) 2)]

Classification	Unit	2020	2021	2022	2023
No. of violations of environmental regulations	case	0	1	0	0
Fines	KRW 100 million	0	0.2	0	0
Environment-related liabilities		0	0	0	0

1) Violation of environmental laws: fines in excess of KRW 10 million per case
2) The number of environmental regulation violations and penalty amounts are applied retroactively upon final confirmation of payment

8.1.21 Eco-friendly Purchasing[1)]

Classification	Unit	2020	2021	2022	2023
Purchasing contract for eco-friendly certified products	KRW million	1,219	2,499	3,177	3,877

1) Scope of eco-friendly products: GR (Good Recycled) certification, Environmental mark certification, and low-carbon products

8.1.22 Eco-friendly Sales[1)]

Classification	Unit	2020	2021	2022	2023
Sales of eco-friendly goods and services	KRW million	1,412,610	3,910,205	4,537,419	4,749,663

1) Scope of eco-friendly products: GR (Good Recycled) certification, Environmental mark certification, and low-carbon products

8.1.23 Use of Recycled Materials

Classification	Unit	2020	2021	2022	2023
Use of key raw materials[1)]	1,000 tonnes	34,428	36,205	34,706	35,615
Use of recycled materials[2)]		7,785	9,117	8,330	7,574

1) Key raw materials: iron ore, coal, steel scrap
2) Recycled materials: steel scrap

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8.2 Social Performance

8.2.1 Employee Demographics

Classification		Unit	2020	2021	2022	2023
All employees[1]	Employees	persons	11,544	11,499	11,623	11,835
Gender	Male		11,139	11,103	11,185	11,358
	Female		405	396	438	477
Job Group	General·Research		3,261	3,294	3,469	3,653
	Technical		7,773	7,735	7,892	7,927
	Others		510	470	262	255
Employment type	Permanent		11,133	11,122	11,238	11,444
	Male		10,868	10,867	10,932	11,094
	Female		265	255	306	350
	Contract[2]		411	377	385	391
	Male		271	236	253	264
	Female		140	141	132	127
Diversity	Empolyee with disabilities[3]		246	221	204	202
	Foreigner[4]		7	7	7	7
	Empolyee with national merits		334	341	326	326
Age	30 and below		1,609	1,457	1,520	1,588
	31 to 40		4,728	4,638	4,406	4,186
	41 to 50		2,800	2,957	3,186	3,500
	51 to 54		1,091	1,159	1,187	1,107
	55 and above		1,316	1,288	1,324	1,454
Newly hired employees	Total	persons	340	611	751	671
Gender	Male		271	529	638	554
	Female		69	82	113	117
Age	30 and below		181	486	577	517
	31 to 40		61	74	109	88
	41 to 50		20	10	7	10
	51 to 54		2	1	1	1
	55 and above		76	40	57	55

1) Based on the 2023 business report. Excludes local hires by region (Asia: 588 persons, America: 254 persons, Europe: 220 persons)
2) Includes direct contract employees supporting administrative, temporary technical roles. The number of contract and permanent employees aligns with the 2023 business report, differing from last year's figures.
3) Individuals with disabilities defined in the ACT ON WELFARE OF PERSONS WITH DISABILITIES and ACT ON THE HONORABLE TREATMENT OF AND SUPPORT FOR PERSONS OF DISTINGUISHED SERVICE TO THE STATE
4) Newly hired foreign employees by year:
2020: Brazil (female, one person), Spain (female, two persons)
2021: USA (male, one person), China (female, one person)
2022: Japan (female, one person), Kenya (female, one person)
2023: Côte d'Ivoire (female, one person)

Classification		Unit	2020	2021	2022	2023
Workers who are not employees[5]	Total	persons	9,954	10,019	10,098	9,408
	Male		9,762	9,856	8,949	8,321
	Female		192	163	1,149	1,087
Percentage of open positions filled by internal candidates		%	82	74	58	58
Turnover rate			3.2	3.8	3.8	3.1
Voluntary turnover rate			1.1	1.5	1.6	0.7

5) Dispatched workers who support administrative and secretarial works

Female Executives by Job Level

Classification	Unit	Executive[6]	Junior Executive[7]	Top Executive[8]	Sales Department[9]	STEM Department[10][11]
2023	%	10	21	14	13	11
2024 target		12	23	22	13	13

6) Permanent general/research employees
7) Permanent general/research employees below the job grade of G2/R2
8) Registered executives as per the 2023 business report
9) General/research employees in the Business Division Sales Department
10) Research employees
11) STEM: Science, Technology, Engineering, Mathematics

Non-Korean Employees by Nationality (Domestic Operations)

Classification	Unit	USA	China	Japan	Kenya	Côte d'Ivoire
2023	persons	1	3	1	1	1

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8.2.2 Talent Development

Classification			Unit	2020	2021	2022	2023
Total training hours[1]			hours	199,045	307,770	403,763	464,476
Total training investment			KRW million	3,587	5,158	5,939	6,496
Gender	Male	Total training hours	hours	186,726	300,019	379,398	432,090
		No. of employees	persons	11,139	11,103	11,185	11,358
		Average training hours	hours	17	27	34	38
	Female	Total training hours	hours	12,711	14,058	24,364	32,386
		No. of employees	persons	405	396	438	477
		Average training hours	hours	31.4	35.5	56	68
Age	30 and below	Total training hours	hours	33,815	38,543	70,349	84,591
		No. of employees	persons	1,609	1,457	1,520	1,588
		Average training hours	hours	21	26	46	53
	31 to 40	Total training hours	hours	91,743	140,198	167,124	161,043
		No. of employees	persons	4,728	4,638	4,406	4,186
		Average training hours	hours	19	30	38	38
	41 to 50	Total training hours	hours	49,408	85,220	122,242	137,861
		No. of employees	persons	2,800	2,957	3,186	3,500
		Average training hours	hours	18	29	38	39
	51 to 54	Total training hours	hours	13,347	24,257	30,418	48,460
		No. of employees	persons	1,091	1,159	1,187	1,107
		Average training hours	hours	12	21	26	44
	55 and above	Total training hours	hours	10,732	19,553	24,751	32,522
		No. of employees	persons	1,316	1,288	1,324	1,454
		Average training hours	hours	8	15	18	22
Job level[2]	Senior manager	Total training hours	hours	1,633	2,440	4,057	6,198
		No. of employees	persons	104	109	113	112
		Average training hours	hours	16	22	36	55
	Middle manager	Total training hours	hours	12,969	14,547	12,253	21,596
		No. of employees	persons	332	332	343	357
		Average training hours	hours	39	44	36	60
	Non-manager	Total training hours	hours	184,443	290,783	387,453	436,682
		No. of employees	persons	11,108	11,058	11,167	11,366
		Average training hours	hours	17	26	35	38

1) Total training hours: Includes all training courses, such as job-specific and industry training, as well as legally mandatory training (e.g., sexual harassment prevention, anti-discrimination, safety, and security)
2) Senior manager: Executives and heads of Group or higher
Middle manager: Team leads and heads of Department
Non-manager: Other staff members

8.2.3 Social Contribution Performance

Classification	Unit	2020	2021	2022	2023
Social contribution investment[1]	KRW million	10,541	11,867	15,060	17,118
Volunteering input cost[2]	KRW million	82	61	179	274
Other operational costs	KRW million	50	0	0	0
Employee participation fund	KRW million	361	338	317	292
Volunteer participation rate[3]	%	45	43	47	40
Volunteer participation hours[4]	hours	3,193[4]	2,317	6,701	9,732

1) Includes company-wide donations and budget for public interest activities
2) Calculated as Volunteering hours X Average hourly wage of employees (excluding weekend input costs)
3) Percentage of employees participating in volunteering and fundraising activities relative to the total workforce
4) Excludes volunteering hours on weekends

8.2.4 Employee Engagement

Classification	Unit	2020	2021	2022	2023
Engagement[1]	points	59.2	60.8	64.8	65.4
Survey participation rate[2]	%	100	100	100	100

1) Engagement: Scores related to engagement (goals, organizational structure, policies, job experiences, company satisfaction) from the annual Hyundai Motor Group organizational culture assessment
2) Survey participation rate: based on general and research employees (including executives)

8.2.5 Retirement Pension (DB, DEFINED BENEFIT PLAN)

Classification	Unit	2020	2021	2022	2023
Pension fund	KRW million	736,188	758,535	845,860	956,112
Pension holders	persons	11,461	11,085	10,549	11,846

8.2.6 Startup Support Program

Classification		Unit	2020	2021	2022	2023
Support for small and medium-sized steel enterprises	No. of supported companies	No. of companies	4	26	49	40
	Support amount[1]	KRW million	2,815	5,235	4,705	6,163
Support for social ventures recycling coffee grounds	No. of supported companies[2]	No. of companies	5	4	7	0
	Support amount	KRW million	46	75	40	0

1) Support provided to businesses within 7 years of startup based on criteria recognized by the Win-win Growth Committee.
2) Companies selected in the Coffee Grounds Recycling Self-Reliance Model Construction Competition

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8.2.7 Parental Leave

Classification		Unit	2020	2021	2022	2023
Employees on parental leave	Total	persons	102	120	188	168
	Male		79	96	156	140
	Female		23	24	32	28
Employees who return from parental leave			89	118	143	115
Employees working for 12 months after returning			8	29	122	156
Employees working shortened hours			11	10	11	10

8.2.8 Union Participation Rate[1) 2) 3) 4)]

Classification	Unit	2020	2021	2022	2023
Domestic	%	70.0	94.0	94.6	94.1[5)]

1) Includes general employees, researchers, and technicians working domestically
2) Appied to all employees (100%) based on the collective agreement
3) The 70% participation rate in 2020 represents the ratio of union members to the total number of employees
4) Since 2021, calculated as the ratio of actual union members to those eligible based on the collective agreement
5) 7,371 employees joined the union among 7,834 eligible employees

8.2.9 Violations of Company Rules and Disciplinary Actions[1)]

Classification		Unit	2022[2)3)]	2023[4)]
Anti-corruption/Bribery	Minor disciplinary actions	persons	5	0
	Major disciplinary actions		11	3
Discrimination/Harassment	Minor disciplinary actions		0	2
	Major disciplinary actions		5	4
Customer Privacy data	Minor disciplinary actions		0	0
	Major disciplinary actions		0	0
Conflicts of interest	Minor disciplinary actions		0	0
	Major disciplinary actions		0	0
Money laundering/Insider trading	Minor disciplinary actions		0	0
	Major disciplinary actions		0	0
Information security	Minor disciplinary actions		0	6
	Major disciplinary actions		1	0
Code of conduct	Minor disciplinary actions		3	33
	Major disciplinary actions		13	33

1) Hyundai Steel advocates a zero-tolerance policy towards executives and employees who violate laws and the code of ethics
2) Classification of disciplinary actions has changed since 2022
3) One case of dismissal due to a violation of ethical management in 2022
4) Two cases of dismissal due to a violation of ethical management in 2023

8.2.10 Occupational Injury Rate

Classification		Unit	2020	2021	2022	2023
No. of fatalities	Employees	persons	1	1	1	0
	Contractors		0	0	1	1
	Total		1	1	2	1
Lost-Time Injury Frequency Rate (LTIFR)[1)]	Employees	cases/ million hours worked	2.69	3.80	3.78	3.08
	Contractors		2.03	2.36	3.80	3.00
	Total		2.28	2.98	3.79	3.04

1) Lost-Time Injury Frequency Rate (LTIFR): the number of lost-time injuries per million hours worked, representing the frequency of industrial accidents

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8.3 Economic Performance

8.3.1 Board of Directors

Classification	Unit	2020	2021	2022	2023
No. of regular board meetings	cases	4	4	4	4
No. of special board meetings		5	5	2	6
Total No. of board meetings		9	9	6	10
No. of agenda items discussed		30	30	23	28

8.3.2 Board of Directors Remuneration[1)]

Classification		Unit	2020	2021	2022	2023
Inside director	No. of directors	persons	4	4	4	5
	Total amount paid	KRW million	2,249	3,188	5,547	5,884
Outside director	No. of directors	persons	5	5	6	5
	Total amount paid	KRW million	380	421	403	437
Employee remuneration	Median	KRW million	83	93	107	89
	Average		79	95	107	90
CEO[2)]	Remuneration		692	1,159	1,647	1,510
Highest remuneration[3)]	Remuneration received		692	1,159	1,647	1,510

1) Based on 2023 business report (including retired executive directors)
2) Compensation for the previous CEO has been calculated for 2023. The current CEO has been elected on November 17, 2023 and received KRW 115 million in 2023.
3) Retirement income excluded

8.3.3 Economic Performance Distribution

Classification	Unit	2020	2021	2022	2023
Distributed amount	KRW 100 million	156,886	185,775	194,498	159,740

8.3.4 Key Economic Performance Distribution

Classification		Unit	2020	2021	2022	2023
Shareholders and investors	Dividends and interests	KRW 100 million	3,923	4,378	4,812	5,503
Government	Corporate income tax, other taxes and dues		(529)	6,556	3,235	1,018
Local communities	CSR investment		105	119	151	171
Suppliers	Purchase cost and win-win growth support		144,216	163,724	173,800	142,124
Employees	Total salary		9,171	10,998	12,500	10,654

8.3.5 Total Association Membership Fees

Classification	Unit	2020	2021	2022	2023
Korea Iron & Steel Association	KRW 100 million	13	12	11	12
World Steel Association		5	5	5	5
Korea Enterprises Federation		2	2	2	2
Dangjin Chamber of Commerce and Industry		2	2	2	2
Suncheon Chamber of Commerce and Industry		1	1	1	1
Others		7	12	21	18
Total payment		30	34	42	40

8.3.6 Donation/Contribution Expenses[1)]

Classification	Unit	2020	2021	2022	2023
Associations and tax-exempt organizations	KRW 100 million	30	34	42	40
Lobbying and interest groups		0	0	0	0
Political donations, campaigns		0	0	0	0
Others		0	0	0	0
Total donation/ contribution cost		30	34	42	40

1) Donation/contribution expenses: In accordance with the POLITICAL FUNDS ACT of Korea and the Ethical Management Principles of Hyundai Steel, donation or support for political purposes using company assets or budget is strictly prohibited

8.3.7 R&D Investment

Classification	Unit	2020	2021	2022	2023
Investment cost	KRW million	142,536	200,542	245,572	253,966
Ratio of R&D budget to revenue	%	0.8	0.9	0.9	1.0

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8.3.8 Suppliers[1)]

Classification	Unit	2020	2021	2022	2023
Total number of Tier 1 suppliers[1)]	No. of companies	813	844	715	539
Total number of significant Tier 1 suppliers[2)]		151	165	177	155
Purchase amount from Tier 1 suppliers	KRW 100 million	143,180	162,753	172,866	141,239
Purchase amount of significant Tier 1 suppliers		61,102	86,987	112,058	95,772
Share of purchases from Tier 1 suppliers	%	100	100	100	100
Share of purchases from significant Tier 1 suppliers		42.7	53.4	64.8	67.8

1) Refers to all suppliers managed within the supply chain (excludingthose below a certain size and one-time transaction vendors)
2) Criteria for classifying significant suppliers (core supply chain):
- Consider factors such as the size of the transaction, the significance of the items involved, and the replaceability of the suppliers
- Include major raw material suppliers such as iron ore and steel scrap, as well as equipment/logistics companies and suppliers of ancillary materials

8.3.9 Support for Win-Win growth

Classification		Unit	2020	2021	2022	2023
Direct support	Management funding	KRW 100 million	342	276	254	218
Indirect support	Network loans		91	91	66	55
Mixed support	Win-Win Growth Fund & Steel ESG Win-Win Fund		600	600	600	600
Special support	Contribution of investment resources		3	3	14	12
Total			1,036	971	934	885

8.3.10 Procurement from Suppliers

Classification		Unit	2020	2021	2022	2023
Key raw materials (including iron ore, coal, steel scrap, etc.)	Amount	KRW 100 million	76,516	119,934	138,373	106,772
	Ratio	%	53	73	80	76
Others	Amount	KRW 100 million	66,664	43,359	34,493	34,467
	Ratio	%	47	27	20	24
Total	Amount	KRW 100 million	143,180	162,753	172,866	141,239
	Ratio	%	100	100	100	100

8.3.11 Customer Satisfaction

Classification	Unit	2020	2021	2022	2023
Ratio of Satisfied Responses (66.6 or above)	%	61.8	69.0	63.0	n/a[1)]

1) Will be conducted in the second half of 2024 due to the change in the timing of customer satisfaction survey

8.3.12 Anti-Corruption & Fair Competition Violations[1)]

Classification	Unit	2020	2021	2022	2023
Anti-competition fines	KRW 100 million	0	0	0	2
Anti-corruption and bribery cases	cases	0	0	0	0

1) Fines were retrospectively reflected in the data based on payment dates, following final decisions

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8.4 Performance of Subsidiaries and Overseas Entities in the EU region

Integrated data from seven domestic subsidiaries (Hyundai BNG Steel, Hyundai Special Steel, Hyundai Steel Pipe, Hyundai IFC, Hyundai ITC, Hyundai ISC, Hyundai IMC) and two EU region subsidiaries (HSCZ in the Czech Republic, HSSK in Slovakia). This includes 9 of the 27 consolidated subsidiaries in the 2023 business report.

8.4.1 Environmental Performance

: Integrated data of 3 domestic subsidiaries with production business sites (Hyundai BNG Steel, Hyundai Special Steel, Hyundai IFC) and 2 overseas subsidiaries in EU (HSCZ Czech subsidiary, HSSK Slovakia subsidiary) with processing business sites

*Environmental performance of Hyundai Steel Pipe, established in October 2023, newly incorporated as a subsidiary, is reflected in Hyundai Steel's 2023 data

GHG Emissions [1)]

Classification	Unit	2023
Direct emission (Scope 1)	thousand tCO_2e	173
Indirect emission (Scope 2)		203
Total (Scope1 + Scope2)		376

1) based on three domestic subsidiaries with production facilities (Hyundai BNG Steel, Hyundai Special Steel, Hyundai IFC)

Energy Consumption

Classification	Unit	2023
Fuel	TJ	2,960
Electricity		4,256
Steam		0
Total		7,216

Water Consumption

Classification	Unit	2023
Industrial water consumption	1,000 m^3	641
Waterworks consumption		957
Total		1,598

Wastewater treatment[1)]

Classification	Unit	2023
Recycling volume	1,000 m^3	209
Discharge volume		1,030
Total		1,239

1) Discharge volume: based on Hyundai BNG Steel and Hyundai Special Steel (Hyundai IFC and 2 overseas subsidiaries in EU are zero discharge business sites)

By-product Generation

Classification	Unit	2023
General waste	tonnes	58,987
Hazardous waste		18,105
Total		77,092

Recycling

Classification	Unit	2023
General waste recycling volume	tonnes	56,298
Hazardous waste recycling volume		15,356
Total recycling volume		71,653
Recycling rate	%	92.9

Waste Treatment

Classification	Unit	2023
General waste treatment	tonnes	2,689
Hazardous waste treatment		2,750
Total		5,439

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Air Pollutant Emissions

Classification	Unit	2023
Dust	kg	21,459
Sulfur Oxides (SOx)		8,085
Nitrogen Oxides (NOx)		205,825

Water Pollutant Emissions[1)]

Classification	Unit	2023
Suspended Solids (SS)	kg	5,801
Total Organic Carbon (TOC)		6,454
Biochemical Oxygen Demand (BOD)		1,934

1) Based on Hyundai BNG steel and Hyundai Special Steel (Hyundai IFC and its two overseas subsidiaries in the EU are zero-discharge business sites)

8.4.2 Social, Economic Performance

Employee Demographics

Classification		Unit	2023
All employees	Employees	persons	8,102
Gender	Male		7,930
	Female		172
Job Group	General·Research		750
	Technical		6,842
	Others		510
Employment type	Permanent		7,622
	Contract		480
Age	30 and below		1,115
	31 to 40		3,101
	41 to 50		2,480
	51 to 54		612
	55 and above		794
Diversity	Empolyees with disabilities		177
	Empolyees with national merits		43
Newly hired employees[1)]	Total	persons	1,734
Rate of internal recruitment		%	5.3
Turnover rate			3.7
Voluntary turnover rate			1.9

1) Includes number of new hires of Hyundai Steel Pipe (establisehd in October 2023)

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Talent Development[1)]

Classification			Unit	2023
Total training hours			hours	164,063
Total training investment			KRW million	2,213
Gender	Male	Total training hours	hours	160,335
		No. of employees	persons	7,930
		Average training hours	hours	20
	Female	Total training hours	hours	3,728
		No. of employees	persons	172
		Average trainng hours	hours	22
Age	30 and below	Total training hours	hours	21,972
		No. of employees	persons	1,115
		Average trainng hours	hours	20
	31 to 40	Total training hours	hours	55,712
		No. of employees	persons	3,101
		Average trainng hours	hours	18
	41 to 50	Total training hours	hours	55,683
		No. of employees	persons	2,480
		Average trainng hours	hours	22
	51 to 54	Total training hours	hours	13,460
		No. of employees	persons	612
		Average trainng hours	hours	22
	55 and above	Total training hours	hours	17,236
		No. of employees	persons	794
		Average trainng hours	hours	22
Job level	Senior manager	Total training hours	hours	904
		No. of employees	persons	48
		Average trainng hours	hours	19
	Middle manager	Total training hours	hours	7,068
		No. of employees	persons	273
		Average trainng hours	hours	26
	Non-manager	Total training hours	hours	156,092
		No. of employees	persons	7,781
		Average trainng hours	hours	20

1) Hyundai Steel Pipe caculated training hours after its establishment from November 1st of 2023 to December 31st of 2023.

Parental Leave

Classification		Unit	2023
Employees on parental leave	Total	persons	121
	Male		111
	Female		10
Employees who return from parental leave			118
Employees working for 12 months after return			41

Union Participation Rate[1)]

Classification	Unit	2023
Domestic	%	81.5

1) Based on 7 domestic subsidiaries

Occupational Injury Rate

Classification	Unit	2023
No. of fatalities	persons	1
Lost-Time Injury Frequency Rate (LTIFR)	cases/ million hours worked	2.55

Anti-corruption & Competition Violations

Classification	Unit	2023
Anti-competition fines	KRW 100 million	0
Anti-corruption and bribe	case	0

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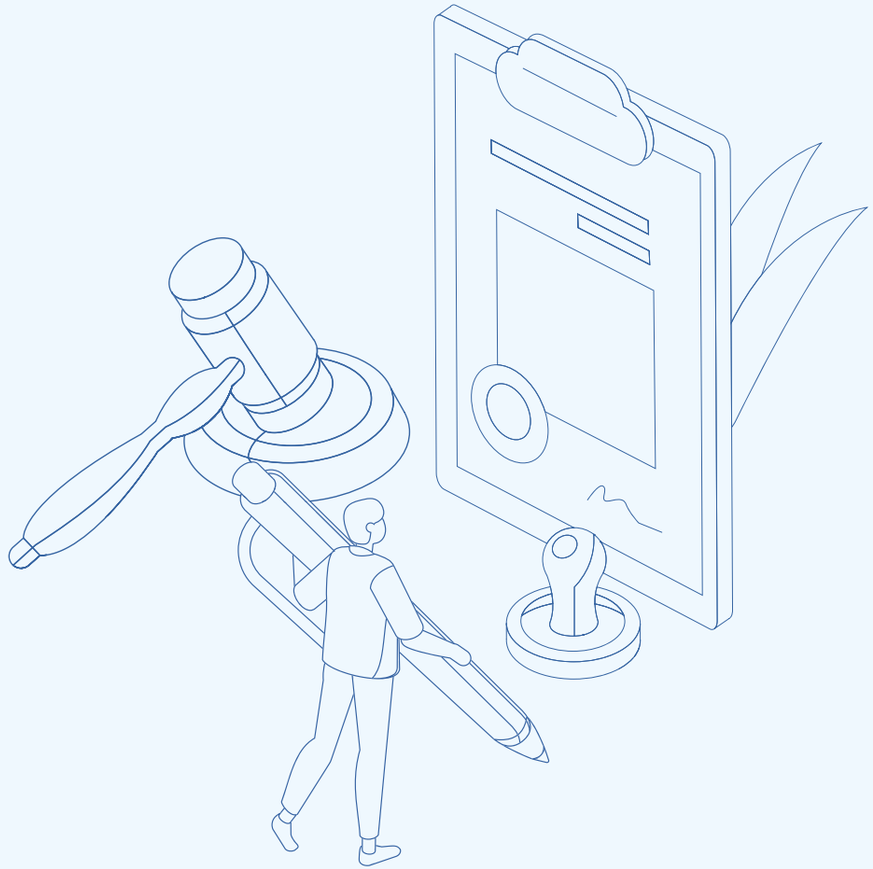

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For additional information about Hyundai Steel, please visit our website. For further details, please contact us at the following:

Phone: +82-31-510-2114
E-mail: sustainable@hyundai-steel.com
Website: https://www.hyundai-steel.com

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9.1 ESG Policy

POLICIES LINK

- Environment Management Policy
- Biodiversity Policy
- Deforestation Prohibition Policy
- Human Rights Policy
- Diversity and Inclusion Policy
- Anti-Discrimination and Harrassment Policy
- Framework for Local Community Engagement
- Donation and Sponsorship Policy
- Health and Safety Policy
- Guideline upon Independence and Diversity of Independent directors
- Tax Strategy
- Supply Chain Strategy
- Supplier Code of Conduct
- Ethics Charter & Code of Conduct

All sustainable management policies will be disclosed after approval by the C-level executives (business unit heads) in each policy area and reporting to the board (Transparent Management Committee).

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10.1 International Standards and Initiative

10.1.1 GRI CONTENT INDEX

Topic	Index	Reporting Page	Cause of Omission	Additional Information
Statement of use	Hyundai Steel reports sustainability management-related information for the period between January 1, 2023 and December 31, 2023, in accordance with GRI standards.			
GRI 1 used	GRI 1: Foundation 2021			
Applicable GRI Sector Standard	There is no applicable GRI Sector Standards.			
General Disclosures				
GRI 2: General Disclosures 2021	2-1 Organizational details	p.7-8/ Business report p.3		
	2-2 Entities included in the organization's sustainability reporting	p.7/ Business report p.8-9		
	2-3 Reporting period, frequency and contact point	p.4		
	2-4 Restatements of information	p.4		
	2-5 External assurance	p.146-147		
	2-6 Activities, value chain and other business relationships	p.8		
	2-7 Employees	p.128		
	2-8 Workers who are not employees	p.128		
	2-9 Governance structure and composition	p.88		
	2-10 Nomination and selection of the highest governance body	p.89-91		
	2-11 Chair of the highest governance body	p.89-91		
	2-12 Role of the highest governance body in overseeing the management of impacts	p.10		
	2-13 Delegation of responsibility for managing impacts	p.10, 88		
	2-14 Role of the highest governance body in sustainability reporting	p.10, 12, 88/ Business report p.269-271		
	2-15 Conflicts of interest	p.91		
	2-16 Communication of critical concerns	p.10, 88/ Business report p. 268-272		
	2-17 Collective knowledge of the highest governance body	p.90		
	2-18 Evaluation of the performance of the highest governance body	p.93		
	2-19 Remuneration policies	Business report p.286-291		
	2-20 Process to determine remuneration	Business report p.286-291		
	2-21 Annual total compensation ratio	p.131		
	2-22 Statement on sustainable development strategy	p.6		
	2-23 Policy commitments	p.137		
	2-24 Embedding policy commitments	p.18, 30, 38, 52, 59, 64, 70, 81, 104, 105		
	2-25 Processes to remediate negative impacts	p.54, 71, 98-101		
	2-26 Mechanisms for seeking advice and raising concerns	p.54, 71		
	2-27 Compliance with laws and regulations	p.127, 132		
	2-28 Membership associations	p.131		
	2-29 Approach to stakeholder engagement	p.17		
	2-30 Collective bargaining agreements	p.130		

10.1.1 GRI CONTENT INDEX

Topic	Index	Reporting Page	Cause of Omission	Additional Information
GRI 3: Material Topics 2021	3-1 Process to determine material topics	p.12		
	3-2 List of material topics	p.13-17		
Material Topic 1	Climate change response			
GRI 3: Material Topics 2021 GRI 305: Emissions	3-3 Management of material topics	p.14-17		
	305-1 Direct (Scope 1) GHG emissions	p.123		
	305-2 Energy indirect (Scope 2) GHG emissions	p.123		
	305-3 Other indirect (Scope 3) GHG emissions	p.123		
	305-4 GHG emissions intensity	p.124		
	305-7 Nitrogen Oxides (NOx), Sulfur Oxides (SOx), and other significant air emissions	p.126-127		
Material Topic 2	Occupational safety and health			
GRI 3: Material Topics 2021 GRI 403: Occupational Health and Safety	3-3 Management of material topics	p.14-17		
	403-1 Occupational health and safety management system	p.30-31		
	403-2 Hazard identification, risk assessment, and incident investigation	p.32-34, 36		
	403-3 Occupational health services	p.33-34		
	403-4 Worker participation, consultation, and communication on occupational health and safety	p.33-34		
	403-5 Worker training on occupational health and safety	p.35		
	403-6 Promotion of worker health	p.35		
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p.33-34		
	403-8 Workers covered by an occupational health and safety management system	p.30, 35		
	403-9 Work-related injuries	p.135		
Material Topic 3	Supply chain management			
GRI 3: Material Topics 2021	3-3 Management of material topics	p.14-17		
GRI 308: Supplier Environmental Assessment	308-2 Negative environmental impacts in the supply chain and actions taken	p.39		
GRI 414: Supplier Social Assessment	414-2 Negative social impacts in the supply chain and actions taken	p.39		
Material Topic 4	Pollutants management			
GRI 3: Material Topics 2021	3-3 Management of material topics	p.14-17		
GRI 306: Waste	306-1 Waste generation and significant waste-related impacts	p.44-45, 48-50		
	306-2 Management of significant waste-related impacts	p.44-45, 48-50		
	306-3 Waste generated	p.125		
	306-4 Waste diverted from disposal	p.126		
	306-5 Waste directed to disposal	p.126		
Material Topic 5	Compliance and ethical management			
GRI 3: Material Topics 2021	3-3 Management of material topics	p.14-17		
GRI 205: Anti-corruption	205-1 Operations assessed for risks related to corruption	p.55		
	205-2 Communication and training about anti-corruption policies and procedures	p.52, 55		
	205-3 Confirmed incidents of corruption and actions taken	p.55, 132		
GRI 206: Anti-competitive Behavior	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	p.132		

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Topic	Index	Reporting Page	Cause of Omission	Additional Information
Topic of Interest 1	Human rights management			
GRI 406: Non-discrimination	406-1 Incidents of discrimination and corrective actions taken	p.130		
GRI 407: Freedom of association and collective bargaining	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	None		
Topic of Interest 2	Energy management			
GRI 302: Energy	302-1 Energy consumption within the organization	p.124		
	302-3 Energy intensity	p.124		
Topic of Interest 3	Risk management			
Non-GRI	-			
Topic of Interest 4	Diversity and inclusion			
GRI 401: Employment	401-1 New employee hires and employee turnover	p.128		
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	p.75		
	401-3 Parental leave	p.130		
GRI 405: Diversity and Equal Opportunity	405-1 Diversity of governance bodies and employees	p.128		
Topic of Interest 5	Topic of Interest 5			
GRI 303: Water	303-1 Interactions with water as a shared resource	p.25		
	303-2 Management of water discharge-related impacts	p.25, 51		
	303-3 Water withdrawal	p.124		
	303-4 Water discharge	p.125		
	303-5 Water consumption	p.124		
Topic of Interest 6	Resource circular economy activities			
GRI 301: Materials	301-2 Recycled input materials used	p.127		
Topic of Interest 7	Labor relations			
Non-GRI	-			
Topic of Interest 8	Quality and Productivity			
Non-GRI	-			
Topic of Interest 9	Environmental management system			
Non-GRI	-			
Topic of Interest 10	Tax transparency			
GRI 207: Tax	207-1 Approach to tax	p.104		

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Topic	Index	Reporting Page	Cause of Omission	Additional Information
Other GRI Index				
GRI 201: Economic Performance	201-1 Direct economic value generated and distributed	p.117-135		
	201-3 Defined benefit plan obligations and other retirement plans	p.129		
GRI 304: Biodiversity	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	p.64-65		
	304-2 Significant impacts of activities, products and services on biodiversity	p.67-68		
GRI 404: Training and Education	404-1 Average hours of training per year per employee	p.129		
	404-2 Programs for upgrading employee skills and transition assistance programs	p.76		
	404-3 Percentage of employees receiving regular performance and career development reviews	p.80		
GRI 413: Local Communities	413-1 Operations with local community engagement, impact assessments, and development programs	p.86		

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10.1.2 SASB

To communicate the financial impact of sustainable management to investors and customers, Hyundai Steel discloses key ESG information based on the Sustainability Accounting Standards Board (SASB) standards for the steel industry. This year, we are reporting on some metrics according to SASB standards, and we plan to gradually expand the scope of disclosure in line with SASB standards in the future.

SUSTAINABILITY DISCLOSURE TOPICS & ACCOUNTING METRICS

Classification	Code	Indicator	Unit	Hyundai Steel's Current Status
Greenhouse gas emissions	EM-IS-110a.1	Total Scope 1 emissions	1,000 tCO_2e	26,679
		Percentage of Scope 1 emissions subject to emission restriction regulations (e.g., K-ETS)	%	100
	EM-IS-110a.2	Short- and long-term strategies and plans for managing Scope 1 emissions, emissions reduction targets, and performance	-	Refer to p.18-29
Air pollutant emissions	EM-IS-120a.1	NOx emissions	tonnes	8,646
		SOx emissions	tonnes	5,877
		TSP emissions	tonnes	329
Energy management	EM-IS-130a.1	Total energy consumed	TJ	167,803
		Electricity	TJ	54,066
		Steam	TJ	75
	EM-IS-130a.2	Total fuel consumed	TJ	113,673
Water management	EM-IS-140a.1	Total amount of water withdrawal	1,000 m^3	58,261
		Total amount of water consumed	1,000 m^3	52,933
Waste management	EM-IS-150a.1	Total amount of waste generated	1,000 tonnes	10,162
		Percentage of waste reused, recycled, and reprocessed	%	99.2

ACTIVITY METRICS

Code	Indicator	Unit	Hyundai Steel's Current Status
EM-IS-000.B	Total iron ore production	tonnes	None
EM-IS-000.C	Total coking coal production	tonnes	None

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10.1.3 WEF

Stakeholder Capitalism Metrics

Principle of Governance (6 Indicators)

Theme	Metrics	Page	Note
Governing purpose	Setting purpose	p.6, 8	
Quality of governing body	Governance body composition	p.88	
Stakeholder engagement	Material issues impacting stakeholders	p.14-17	
Ethical behavior	Anti-corruption	p.130, 132	
	Reporting mechanisms	p.52	
Risk and opportunity oversight	Integrating risk and opportunity into business process	p.98	

Planet (4 Indicators)

Theme	Metrics	Page	Note
Climate change	Greenhouse Gas (GHG) emissions	p.123	
	TCFD implementation	p.144	
Nature loss	Land use and ecological sensitivity	p.64-65	
Freshwater availability	Water consumption and withdrawal in water-stressed areas	p.27	

People (6 Indicators)

Theme	Metrics	Page	Note
Dignity and equality	Diversity and inclusion	p.75	
	Pay equality	p.80	
	Wage level	p.80	
	Risk for incidents of child, forced or compulsory labor	p.70, 72	
Health and wellbeing	Health and safety	p.30-37	
Skills for the future	Training provided	p.129	

Prosperity (5 Indicators)

Theme	Metrics	Page	Note
Employment and wealth generation	Absolute number and rate of employment	p.128	
	Economic contribution	p.131	
	Financial investment contribution	p.131	
Innovation of better products and services	Total R&D expenses	p.131	
Community and social vitality	Total tax paid	p.131	

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10.1.4 TCFD

Hyundai Steel supports the TCFD and proactively implements the following actions in response to climate change, aligning with the TCFD recommendations. These actions encompass governance, strategy, risk management, metrics and targets.

Classification	Item	Details
Governance	Role of the Board	• The Board plays an oversight role in addressing climate change, reviewing and guiding strategies and risk management policies, monitoring progress on targets and performance, and making ESG-related decisions through the establishment of the Transparent Management Committee.
	Role and responsibility of executive board	• Global trends and issues are shared through the 'Carbon Neutrality Strategic Meeting', a department head administrative council led by the CEO to inspect corporate carbon neutrality directions and implementation strategies, and make decisions on key agendas.
	Status of dedicated team operations	• The Carbon Neutrality Group serves as a control tower, comprehensively addressing GHG reduction with the participation of major operating departments, R&D departments, and strategic departments. The ESG Administrative Council sets and promotes annual goals and manages external ESG assessments, while the ESG Directors' Council reviews these goals and their performance.
Strategy	Roadmap for 2030 Reduction Targets	• Develop and implement investment plans for GHG reduction and environmental improvement from a mid- to long-term perspective, in alignment with the government's GHG reduction roadmap by 2030. This includes a KRW 1.2 trillion investment in CDQ facilities and coke desulfurization and denitrification facilities from 2016 to 2025.
	Production, R&D, and strategic tasks	• Production department: Low-carbon raw material supply and production process improvement for carbon neutrality R&D department: Assessment and implementation of emission reduction technology Strategy department: Establishment of reduction goals reflecting internal and external impacts, policy response for price risk mitigation of emission rights, emission rights transactions
Risk management	Analysis of risks and opportunities	• The Strategy departments establish an integrated strategy based on global and domestic trends. The operation departments at each business site set and implement reduction targets by considering the cost of reduction and financial risk, assessed based on the average price of carbon credits. The R&D departments create a mid- to long-term technology development roadmap to address risks and opportunities associated with climate change, monitor performance, and provide reports to the CEO through a quarterly TF.
	Investment and expenses	• Invest KRW 1.2 trillion over 10 years (2016-2025) to introduce CDQ facilities, coke desulfurization, and denitrification facilities to improve the environment and reduce GHG emissions
		• Operation of CFP analysis system using LCA and obtaining EPD certification
	Specific activities	• Develop and implement tasks for GHG reduction: Advancement of the Hy-Cube for low-carbon product production, development of low-carbon product technologies, and establishment of a plan to transition to a net-zero production system
		• Secure overseas carbon credits: participate in GHG reduction projects outside of Korea (cooking stoves, etc.) to secure carbon credits
		• Participate in 'Keep 30', a Korean energy efficiency innovation partnership to establish energy management system and conduct innovation activities (2023~2027)
	Participation in global initiatives	• Hyundai Steel participates in the annual CDP to disclose climate change related items
Metrics and reduction targets	2030 target	• Achieving net-zero carbon emissions by 2050 through decarbonization of products and carbon reduction in processes
		• Plan to reduce carbon emissions at all sites by 12% compared to 2018 levels by 2030 through the implementation of the "electric arc furnace-blast furnace combined process" and other carbon reduction activities within the production process

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10.1.5 UNGC INDEX

Since joining the UN Global Compact in 2008, Hyundai Steel has integrated the 10 Principles in the four areas of human rights, labor, environment, and anti-corruption into our business activities. Furthermore, we have incorporated the "Universal Declaration of Human Rights" and the "UN Guiding Principles on Business and Human Rights (Ruggie Framework)" of the UN Commission on Human Rights. Through these commitments, we strive to respect the human rights of both our external stakeholders as well as all our employees.

Area	Principle	Page
Human rights	1. Businesses should support and respect the protection of internationally proclaimed human rights	p.70-73
	2. Businesses should make sure that they are not complicit in human rights abuses	p.70-73
Labor	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	p.80
	4. Businesses should uphold the elimination of all forms of forced and compulsory labor	p.70-73
	5. Businesses should uphold the effective abolition of child labor	p.70-73
	6. Businesses should uphold the elimination of discrimination in respect of employment and occupation	p.70-73
Environ-ment	7. Businesses should support a precautionary approach to environmental challenges	p.59-61
	8. Businesses should undertake initiatives to promote greater environmental responsibility	p.59-61
	9. Businesses should encourage the development and diffusion of environmentally friendly technologies	p.18-29
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery	p.52

10.1.6 UN SDGS INDEX

Hyundai Steel conducts the following activities in order to achieve the UN SDGs (Sustainable Development Goals). Moving forward, we aim to enhance the efficiency of such activities by establishing tasks and action plans for each goal.

Area	SDGs indicator	Page
Goal 1	Ending poverty in all its forms everywhere	p.81-86
Goal 3	Ensuring healthy lives and promoting well-being for all at all ages	p.81-86
Goal 4	Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all	p.74-80
Goal 5	Achieving gender equality and empowering all women and girls	p.70-73
Goal 6	Ensuring availability and sustainable management of water and sanitation for all	p.25-28
Goal 7	Ensuring access to affordable, reliable, sustainable and modern energy for all	p.18-29
Goal 11	Making cities and human settlements inclusive, safe, resilient, and sustainable	p.81-86
Goal 12	Ensuring sustainable consumption and production patterns	p.81-86
Goal 13	Taking urgent action to combat climate change and its impacts	p.18-29
Goal 17	Strengthening the means of implementation and revitalizing the global partnership for sustainable development	p.4

10.1.7 EU TAXONOMY

Hyundai Steel is revewing related regulations and detailed disclosure standards for the EU Taxonomy. While confirming the legal scope of the taxonomy, Hyunda Steel will proactively identify sales, capital expenditures, operating expenses related to eligible/suitable business activities in advance. If necessary, we intend to disclose this information in our Integrated Report. In addition, Hyundai Steel's steel manufacturing business is classified under the EU Taxonomy as "Manufatcturing of iron and steel." The relevant NACE code is recognized as follows.

24.10 - Manufacture of basic iron and steel and of ferro-alloys
24.20 - Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
24.33 - Cold forming or folding
28.15 - Manufacture of bearings, gears, gearing and driving elements

Therefore, we initially analyzed Hyundai Steel's eligible sales for as follows.

| Percentage of Eligible Business Activities as of 2023[1)]

Classification	Total Value	Eligible	%	Not Eligible	%
Sales	KRW 25,914,760 million	KRW 25,914,760 million	100	-	-

1) based on Bloomberg Terminal data

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11.1 Third Party Assurance Statement

To: The Stakeholders of Hyundai Steel Co., Ltd

Overview

BSI (British Standards Institution) Group Korea (hereinafter referred to as the "Assurer") was requested to verify the HzYUNDAI STEEL COMPANY 2024 Integrated report (hereinafter referred to as the "Report"). The Assurer is independent of the HYUNDAI STEEL COMPANY and has no major operational financial interest other than the assurance. This assurance opinion statement is intended to provide information related to the assurance of the HYUNDAI STEEL COMPANY report relating to the environment, social and governance (ESG) to the relevant stakeholders and may not be used for any purpose other than the purpose of publication. This assurance opinion statement was prepared based on the information presented by the HYUNDAI STEEL COMPANY and the assurance was carried out under the assumption that presented the information and data were complete and accurate.

HYUNDAI STEEL COMPANY is responsible for managing the relevant information contained within the scope of assurance, operating the relevant internal control procedures, and for all information and claims contained in the report. Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to HYUNDAI STEEL COMPANY only.

The Assurer is responsible for providing HYUNDAI STEEL COMPANY management with an independent assurance opinion containing professional opinions derived by applying the assurance methodology to the scope specified, and to provide the information to all stakeholders of HYUNDAI STEEL COMPANY. The Assurer shall not bear any other responsibility, including legal responsibility, to any third party other than HYUNDAI STEEL COMPANY in providing the assurance opinion and shall not be liable to any other purpose, purpose or stakeholders related thereto for which the assurance opinion may be used.

Scope

The scope of engagement agreed upon with HYUNDAI STEEL COMPANY includes the following:

- Reporting contents during the period from January 1st to December 31st 2023 included in the report, some data included the half of 2024.
- Major assertion 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.
- In Accordance with the four principles of AA1000 AccountAbility in the report, based on the type of Sustainability Assurance based on AA1000AS v3 and if applicable, the reliability of the sustainability performance information contained in the report.

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.

The assurance levels and types are as follows;

- Moderate level based on AA1000 AS and Type 2 (confirmation to the four principles as described in the AA1000 Accountability Principle 2018 and quality and reliability of specific performance information published in the report.)

Description and sources of disclosures covered

Based on the scope and methodology of assurance applied, the assurer reviewed the following Disclosures based on the sampling of information and data provided by HYUNDAI STEEL COMPANY.

[Universal Standards]

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

[Topic Standards]

201-1, 201-3, 205-1~3, 206-1, 207-1, 301-2, 302-1, 302-3, 303-1~5, 304-1~2, 305-1~4, 305-7, 306-1~5, 308-2, 401-1~3, 403-1~9, 404-1~3, 405-1, 406-1, 407-1, 413-1, 414-2

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;

- A top-level review of issues raised by external parties that could be relevant to organizations policies to provide a check on the appropriateness of statements made in the report.
- Discussion with managers and staffs on organization's approach to stakeholder engagement.
- Review of the supporting evidence related to the material issues through interviews with senior managers in the responsible departments.
- 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
- Verification of data generation, collection and reporting for each performance index and document review of relevant systems, policies, and procedures where available
- An assessment of the company's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000 AccountAbility Principles Standard (2018).
- Visit of the HYUNDAI STEEL COMPANY Pangyo Office to confirm the data collection processes, record management practices.

Limitations and approach used to mitigate limitations

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.

Competency and Independence

BSI (British Standards Institution) is a leading global standards and assessment body founded in 1901. BSI 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 globally. No member of the assurance team has a business relationship with HYUNDAI STEEL COMPANY. 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.

Opinion Statement

The assurer was carried out by a team of sustainability report assurors in accordance with the AA1000 Assurance Standard v3. Assurer planned and performed this part of our work to obtain the necessary information and explanations assurer considered to provide sufficient evidence that HYUNDAI STEEL COMPANY's description of their approach to AA1000 Assurance Standard and their self-declaration of compliance with the GRI standards were fairly stated.

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. We believe that the economic, social and environment performance indicators are accurate and are supported by robust internal control processes.

Conclusions

The Report is prepared in accordance with the GRI Standards. (Reporting in accordance with the GRI standards). The detailed reviews against the AA1000 AccountAbility Principles of Inclusivity, Materiality, Responsiveness and Impact and the GRI Standards are set out below.

Inclusivity: Stakeholder Engagement and Opinion

HYUNDAI STEEL COMPANY defined customers, employees, suppliers, shareholders/investors, local communities and NGOs/government/media as a Key Stakeholder Groups. In order to collect opinions by each stakeholder groups in the context of sustainability, operated the stakeholder engagement process. HYUNDAI STEEL COMPANY conducted a review of the stakeholder engagement process at the governance level in order to reflect the major issues derived through the stakeholder engagement process in sustainability strategy and goals. HYUNDAI STEEL COMPANY disclosed the results related to the process in the Report.

Materiality: Identification and reporting of material sustainability topics

HYUNDAI STEEL COMPANY implemented its own materiality assessment process in consideration of the major business and operational characteristics to derive important reporting issues related to sustainability. HYUNDAI STEEL COMPANY conducted benchmarking, media analysis and global sustainability reporting standards/frameworks analysis. HYUNDAI STEEL COMPANY derived 5 material topics through the relevant process, and disclosed GRI topic standards disclosures related to material topics in the Report.

Responsiveness: Responding to material sustainability topics and related impacts

HYUNDAI STEEL COMPANY operated a management process for material topics in the context of sustainability derived from the materiality assessment. HYUNDAI STEEL COMPANY established mid- to long-term sustainability plans and goals in according to the management methodology established to effectively reflect the expectations of key stakeholders. HYUNDAI STEEL COMPANY disclosed material topics achievements such as related performances and improvement measures in the Report.

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

HYUNDAI STEEL COMPANY identified the scope and extent of the impacts to the organization and key stakeholders in the context of the sustainability of the material topics reported. HYUNDAI STEEL COMPANY identified material topics by reflecting the impact of the overall stakeholders. HYUNDAI STEEL COMPANY established sustainability strategies and objectives based on the analysis results of major impacts, including risks and opportunities for material topics, disclosed mid- to long-term plans and strategic system in the Report.

Findings and conclusions concerning the reliability and quality of specified performance information

Among the GRI Topic Standards, the following disclourse were carried out in a assurance Type 2 based on the information and data provided by the reporting organization. In order to verify the reliability and accuracy of the data and information, internal control procedures related to data processing, processing, and management were verified through interviews with the responsible department, and accuracy was verified through sampling. Errors and intentional distortions in sustainability performance information included in the report were not found through assurance processes. The reporting organization manages the sustainability performance information through reliable internal control procedures and can track the process of deriving the source of the performance. Errors and unclear expressions found during the assurance process were corrected during the assurance process and prior to the publication of the report, and the assurer confirmed the final published report with the errors and expressions corrected.

- GRI Topic Standards: 301-2, 302-1, 302-3, 303-3, 303-4, 303-5, 304-1, 304-2, 305-1, 305-2, 305-3, 305-4, 305-7, 306-3, 306-4, 306-5, 308-2, 401-1, 401-3, 403-1, 403-2, 403-3, 403-4, 403-5, 403-6, 403-7, 403-8, 403-9, 404-1, 404-3, 405-1, 414-2

Recommendations and Opportunity for improvement

The assurer will provide the following comments to the extent that they do not affect the result of assurance;

- It may be helpful to advance the sustainability management system by upgrading carbon reduction methodology and management system by year under its carbon neutrality strategy and disclosing related methodologies and achievements transparently.
- It may be helpful to advance the sustainability management system by quantifying the indirect financial value of the impact on the value chain, such as production and sales volume of low-carbon steel products.
- To establish a consolidated disclosure system, It may be helpful to advance the sustainability management system by upgrading the sustainability performance indicator management system and strengthening the completeness of the relevant performance indicators through internal control procedures.

GRI-reporting

HYUNDAI STEEL COMPANY provided us with their self declaration of compliance within GRI Standards. Based on our review, we confirm that social responsibility and sustainable development indicators with reference to the GRI Index. The Assurer confirmed that the Report was prepared in accordance with the GRI Standards and the disclosures related to the Universal Standards and Topic Standards Indicators based on the data provided by HYUNDAI STEEL COMPANY. The sector standard was not applied.

Issue Date: 26/06/2024
For and on behalf of BSI (Brithish Standards Institution): BSI representative

BSI Group Korea Limited: 29, Insa-dong 5-gil, Jongno-gu, Seoul, South Korea Hold Statement Number: SRA 749085

AA1000
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000-4/V3-S0HBI

Jungwoo Lee,
Lead Assurer/ACSAP

Seonghwan Lim,
Managing Director of BSI Korea

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12.1 GHG Assurance Statement

12.1.1 Direct & Indirect GHG emissions (Scope 1 & 2)

This Assurance Statement has been prepared for Hyundai Steel.

Terms of Engagement
LRQA was commissioned by Hyundai Steel to provide independent assurance on its Greenhouse Gas (GHG) Inventory Report for the calendar year 2023 (the report) against "the guidelines on emission reporting and certification under the GHG emissions trading system" and the monitoring plan for the calendar year 2023 using "the verification guidelines for GHG emissions trading system".
The report relates to direct GHG emissions and energy indirect GHG emissions.

Management Responsibility
LRQA's responsibility is only to Hyundai Steel. LRQA disclaims any liability or responsibility to others as explained in the end footnote. The management of Hyundai Steel. is responsible for preparing the report and for maintaining effective internal controls over all the data and information within the report. Ultimately, the report has been approved by, and remains the responsibility of Hyundai Steel.

LRQA's Approach
LRQA's assurance engagement has been carried out in accordance with our verification procedure using "the verification guidelines for GHG emissions trading system" to reasonable level of assurance.

The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:
- Visiting sites and auditing management system to control the data and records regarding GHG emissions and energy uses
- Interviewing the relevant persons responsible for managing and maintaining data and associated records
- Reviewing the historical data and information back to source for the calendar year 2023.

Level of Assurance & Materiality
The opinion expressed in this Assurance Statement has been formed on the basis of a reasonable level of assurance, and at the materiality of the professional judgement of the verifier and at the materiality level of 2%.

LRQA's Opinion
Based on LRQA's approach, we believe that the report is prepared in accordance with "the guidelines on emission reporting and certification under the GHG emissions trading system" and the monitoring plan for the calendar year 2023 using "the verification guidelines for GHG emissions trading system" and the GHG emissions data in the Table 1 is materially correct.

Dated: 13 Jun 2024

Il-Hyoung LeeLRQA
2nd Floor, T Tower, 30, Sowol-ro 2-gil, Jung-gu, Seoul, 04637, Korea

LRQA Reference: SEO6046432

Table 1. Summary of GHG emissions (As of 31st of March 2024)

Scope of GHG emissions	2023
Direct GHG Emissions	26,679,006
Energy Indirect GHG Emissions	2,590,109
Total GHG Emissions	29,269,107

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12.1.2 Other indirect GHG emissions (Scope 3)

About the 2023 GHG inventory of HYUNDAI STEEL COMPANY

This Assurance Statement has been prepared for HYUNDAI STEEL COMPANY in accordance with our contract.

Terms of engagement

LRQA was commissioned by HYUNDAI STEEL COMPANY to provide independent assurance on its GHG emissions inventory for the calendar year 2023 (here after referred to as "the report") against the assurance criteria below to a limited level of assurance and materiality of professional judgement using LRQA's verification procedure, which is in accordance with ISAE 3000 and ISAE 3410. Our assurance engagement covered HYUNDAI STEEL COMPANY's domestic operations and activities, and specifically the following requirements:

- Evaluating conformance with Corporate Value Chain (Scope 3) Accounting and Reporting Standard1
- Evaluating the accuracy and reliability of data and information for other indirect GHG emissions (Scope 3).

The main activities of HYUNDAI STEEL COMPANY include manufacturing of iron and steel products, and the GHG emissions have been consolidated using operational control approach. LRQA's responsibility is only to HYUNDAI STEEL COMPANY. LRQA disclaims any liability or responsibility to others as explained in the end footnote. HYUNDAI STEEL COMPANY's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of HYUNDAI STEEL COMPANY.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that HYUNDAI STEEL COMPANY has not, in all material respects:

- Met the requirements above; and
- Disclosed accurate and reliable data and information as summarized in Table 1 below.

The opinion expressed is formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.
Note: The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

LRQA's approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Interviewing key people of the organization responsible for managing GHG emissions data and records;
- Reviewing processes related to the control of GHG emissions data and records;
- Reviewing whether GHG emissions have been calculated with parameters from recognized sources;
- Visiting HYUNDAI STEEL COMPANY's Pangyo office and reviewing additional evidence made available by HYUNDAI STEEL COMPANY; and
- Verifying historical GHG emissions data and records at an aggregated level for the calendar year 2023.

LRQA's standards, competence and independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021 Conformity assessment – Requirements for bodies providing audit and certification of management systems that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

LRQA is HYUNDAI STEEL COMPANY's certification body for ISO 50001, and verification body for its GHG emissions. We also provide HYUNDAI STEEL COMPANY with a range of training services related to management systems. The verification and certification assessments, together with the training, are the only work undertaken by LRQA for HYUNDAI STEEL COMPANY and as such does not compromise our independence or impartiality.

Dated: 5 June 2024

Byung-Gil Lim
LRQA Lead Verifier On behalf of LRQA Limited
2nd Floor, T Tower, 30, Sowol-ro 2-gil, Jung-gu, Seoul, Republic of Korea

LRQA reference: SEO00001050

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Table 1. Summary of HYUNDAI STEEL COMPANY, GHG Emissions Inventory 2023

Scope of GHG emissions	Tonnes CO_2e
Other Indirect GHG emissions (Scope 3)	
• purchased goods & services – production of iron ore, iron ore pellet, bituminous coal, anthracite, limestone, steel scrap and quicklime.	764,832
• capital goods - production facilities acquired in 2023	2,390
• fuel and energy related activities – upstream emissions of natural gas and electricity purchased	279,260
• upstream transportation and distribution – transportation of iron ore, iron ore pellet, bituminous coal, anthracite, limestone, steel scrap, quicklime, and logistics service purchased by HYUNDAI STEEL COMPANY for sold products	1,339,776
• waste generated in operations – treatment of waste generated from operations	99,650
• business travel – personal cars, buses, trains, domestic and international flights	4,076
• employee commuting – commuting by personal cars and buses	9,715
• upstream leased assets – operation of a building leased by HYUNDAI STEEL COMPANY	821
• downstream transportation and distribution – transportation of sold products excluding logistics service purchased by HYUNDAI STEEL COMPANY	14,665
• end-of-life treatment of sold products – end-of-life treatment of sold products	222,678
• downstream leased assets – operation of a building leased by HYUNDAI STEEL COMPANY	142
• investments – Scope 1 and Scope 2 emissions of six companies in which HYUNDAI STEEL has shares and which are subject to the Emissions Trading System or Targeted Management System in Korea	749,363

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HYUNDAI STEEL