

KOREA ZINC Sustainability Report 2024



**TROIKA
DRIVE**

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Reporting Frameworks and Principles

This report has been prepared in accordance with the GRI (Global Reporting Initiative) Standards 2021. For industry-specific data disclosures, it follows the industry standards set by the SASB (Sustainability Accounting Standards Board) and incorporates the recommendations of the TCFD (Task Force on Climate-related Financial Disclosures). Regarding financial data, it complies with the consolidation standard of the Korean version of International Financial Reporting Standards (K-IFRS).

Reporting Period and Scope

This report covers the period from January 1, 2024, to December 31, 2024. Some meaningful information from the first half of 2025 is also included. The reporting scope applies to Korea Zinc, encompassing its Headquarters and Onsan Refinery.

Adjustments Compared to the Previous Year

Revisions in calculation methods and scope may result in differences in some figures. Such changes are clarified with footnotes on the relevant pages.

Data Assurance

To ensure the independence and reliability of the data, this report has undergone third-party verification by an independent verifier, BSI (British Standards Institution), in accordance with AA1000AS Type 1 Moderate.

Report Distribution and Stakeholder Inquiries

You can download this report from our website. For any inquiries regarding the report, please reach out via the contact details below.

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Chairman's Message



Dear esteemed stakeholders,

We are navigating the tremendous tide of change characterized by the emergence of critical mineral issues, intensifying trade disputes, often likened to a second Cold War, and the AI-driven Fourth Industrial Revolution. This paradigm is shifting international relations from mutual reciprocity to escalating competition among nations to create new value.

At this critical juncture, I am proud to say, as an executive, that our businesses, meticulously prepared for this rapidly evolving market, have risen to prominence. Despite the turbulent global landscape marked by geopolitical uncertainty and deteriorating supply chain disruptions, we have achieved remarkable success, recording a surplus for 100 consecutive quarters, which is attributed to your unwavering trust and support. Furthermore, we take great pride in our unparalleled technological prowess, cultivated over the past half-century, which has positioned us as a production hub for critical minerals indispensable to cutting-edge industries in this era of supply chain restructuring. The challenges we face are a call for action for faster transformation and sustainability. We firmly believe this is a challenge and opportunity we must meet with bold determination, as a company leading the way, fueled by our vision and growth engine, Troika Drive, which has been prepared for years.

Living up to the expectations of all our stakeholders, including investors, all-out efforts are in full swing to establish a transparent, advanced governance that places outstanding business performance and shareholder value enhancement at its core. Refusing to rest on our laurels as the No.1 player

in the smelting industry, we have geared up, ensuring we are ready to play a pivotal role on the global stage, answering the pressing questions posed by this new era. Now, it is Korea Zinc's time. Even at this very moment, Korea Zinc is making strides as a global troubleshooter in the supply chain, particularly in critical minerals, and as a future-ready enterprise committed to sustainability through our growth driver, Troika Drive.

Defining our new mission and translating core values into action to embed sustainability into our operations

Marking the 50th anniversary of our inception in August 2024, we established our new mission through discussions with employees, incorporating their insights into the decision, and have since put it into action.

"Our mission is to transform diverse raw materials and energy sources into the forms of materials and energy the world needs, utilizing them in the safest, most environmentally responsible, and most efficient way possible."

With a strong emphasis on safety and environmental responsibility, this mission serves as our blueprint for the next half-century, embracing new green businesses, including renewable energy such as green hydrogen, and resource circulation. It also signals our declaration of commitment to driving ESG management, guided by our ESG philosophy. The mission, shaped by the collective voices of our employees, along with the core values designed to fulfill it, will serve as a guiding compass to navigate the path toward fully-fledged sustainable management.

Sustainable future through Troika Drive's new businesses

With an aim to serve two purposes, sustainable management and corporate growth, we have constantly propelled our new growth engine, Troika Drive, forward.

In the renewable energy and hydrogen sector, we have built a meaningful track record, including proactive investments in the MacIntyre project, one of the largest onshore wind farms in Australia, which has led to its successful partial operation, along with the establishment of a water electrolysis facility with a capacity of 1MW. Additionally, the installation of hydrogen fueling stations and the pilot operation of hydrogen fuel cell forklifts at the Onsan Refinery also mark significant achievements.

On the resource circulation front, our globally best-in-class smelting technology has enabled us to maximize resource recovery from waste and by-products, which has culminated in the acquisition of the SGS mark, an international recognition of our copper and silver, produced entirely from 100% recycled materials.

In the realm of secondary battery materials, we are on track to proactively gear up for the future, driven by the anticipated surge in demand for batteries for electric vehicles (EVs), with a range of initiatives. These include the commer-

cialization of copper foil production and the mass production of high-nickel precursors. Additionally, the construction of an all-in-one nickel refinery, slated for completion in 2026, is in the pipelines.

As such, Troika Drive's new businesses will chart a path for Korea Zinc, the No.1 global refining player, towards green progress in the era of carbon neutrality while creating greater synergy.

Our path to carbon neutrality and sustainable climate action

In a proactive response to the climate crisis, Korea Zinc, an energy-intensive industry with significant carbon emissions, has thoroughly explored pathways to reaching net-zero by 2050 and has made every necessary effort. As part of our strategy to overcome domestic challenges, where natural conditions and geographical constraints make sourcing renewable energy difficult, we have been on track to introduce green hydrogen through the development of overseas renewable energy projects. With support from the Australian government, we have collaborated with our local subsidiary on SunHQ, a demonstration project on green hydrogen production and mobility applications.

Staying true to our commitment to carbon neutrality, we will sustainably pursue carbon mitigation through the shutdown of fossil fuel power facilities and fuel transitions, alongside equipment upgrades, process improvements, and enhanced energy efficiency. These concerted efforts have already led to an approximately 11% reduction in GHG emissions since 2021, and we remain committed to further cutting our GHG footprint with phased plans by 2030. Our dedication to climate action will never waver with continued carbon mitigation endeavors.

We promise to repay our stakeholders, whose unwavering support and encouragement have fueled our journey, with both outstanding growth and sustainable progress, just as we have demonstrated over the past 50 years. Through this report, we share our sustainability journey.

We refine today to create the value of tomorrow.

Thank you very much.

Executive Chairman of Korea Zinc Yun B. Choi

A handwritten signature in black ink, appearing to read 'Yun B. Choi', written in a cursive style.

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Korea Zinc at a Glance

Company Profile

Introduction

As Korea's premier non-ferrous metal smelting company, Korea Zinc has broadened its business scope into renewable energy, including green hydrogen, resource circulation, and secondary battery materials, built on a foundation of experience and expertise gained over the past five decades.

Category	Details
Name	Korea Zinc Co., Ltd
Date of Establishment	August 1, 1974
CEO	Ki D. Park, Tae W. Jung
Headcount	1,944
HQ Location	Grand Seoul Tower 1, 33, Jong-ro, Jongno-gu, Seoul, Republic of Korea
Refinery Location	139, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
Key Businesses	Total non-ferrous metal smelting
Website	www.koreazinc.co.kr/en/

*This figure refers to the no. of employees stated in the business report, excluding resigned employees and registered executives, as of December 31, 2024. As a result, there is a disparity between this number and the employee count presented in the 'Social' data section of this report.

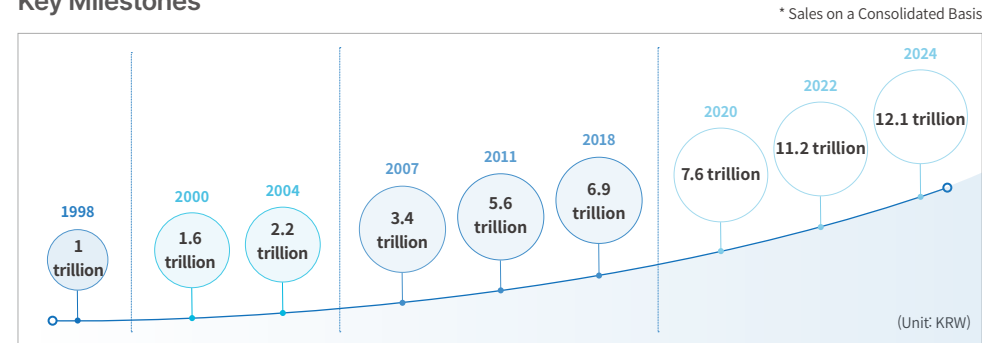
Management Philosophy

- Philosophy** - Korea Zinc, through innovation, discovering and nurturing growth engines for the future, is raising our corporate value.
- Mission** - To transform diverse raw materials and energy sources into the forms of materials and energy the world needs, utilizing them in the safest, most environmentally responsible, and most efficient way possible.
- Core Values**
 - Integrity
 - Commitment
 - Agility
 - Communication
 - Teamwork

In commemoration of our 50th anniversary in 2024, we have established a new mission with the full participation of all employees.

[Our Mission \(KZ Mission\)](#)

Key Milestones



Foundation and Business Growth 1974~1990	Business Growth 1991~2004	Worldwide Advancement 2005~2019	Global Broadening 2020~
<ul style="list-style-type: none"> 1974 Korea Zinc Founded 1978 Constructed a Zinc Smelter 1982 Completed Copper Plant 1986 Constructed a Lead Smelter 1988 Registered Zinc Slab Ingot LME 1990 Listed on the Korea Stock Exchange 	<ul style="list-style-type: none"> 1992 Constructed DRS Lead Smelter 1993 Constructed Combined heat and power Plant 1994 Constructed Direct Leaching Plant 1995 Constructed No.1 Fumer Plant 1996 Established Sun Metals Corporation in Australia 2000 Constructed a TSL Plant 2004 Constructed a Copper Smelter Completed Indium Plant 	<ul style="list-style-type: none"> 2011 Completed Refinery and Precious Metal Factory 2015 Constructed 2nd Non-Ferrous Metals Complex 2016 Acquired SteelCycle Established Townsville Logistics 2017 Established ZOC Vietnam Established KEMCO Co., Ltd 2018 Established Townsville Marine Logistics 2019 Started Investment to Rationalize Zinc Leaching Process 	<ul style="list-style-type: none"> 2020 Established KZAM Co., Ltd. 2021 Established Ark Energy Completed LNG Combined Power Plant 2022 Troika Drive Management Declaration Established PedalPoint Holdings Acquired Epuron Acquired SteelCycle SC Corporation Acquired Igneo Holdings, LLC Established Korea Precursor Corporation 2023 Began the Construction of an All-in-One Nickel Refinery 2024 Acquired Kataman Metals Designated as a National Core Technology and National Strategic High-Tech by the Government for its Original Precursor Technology

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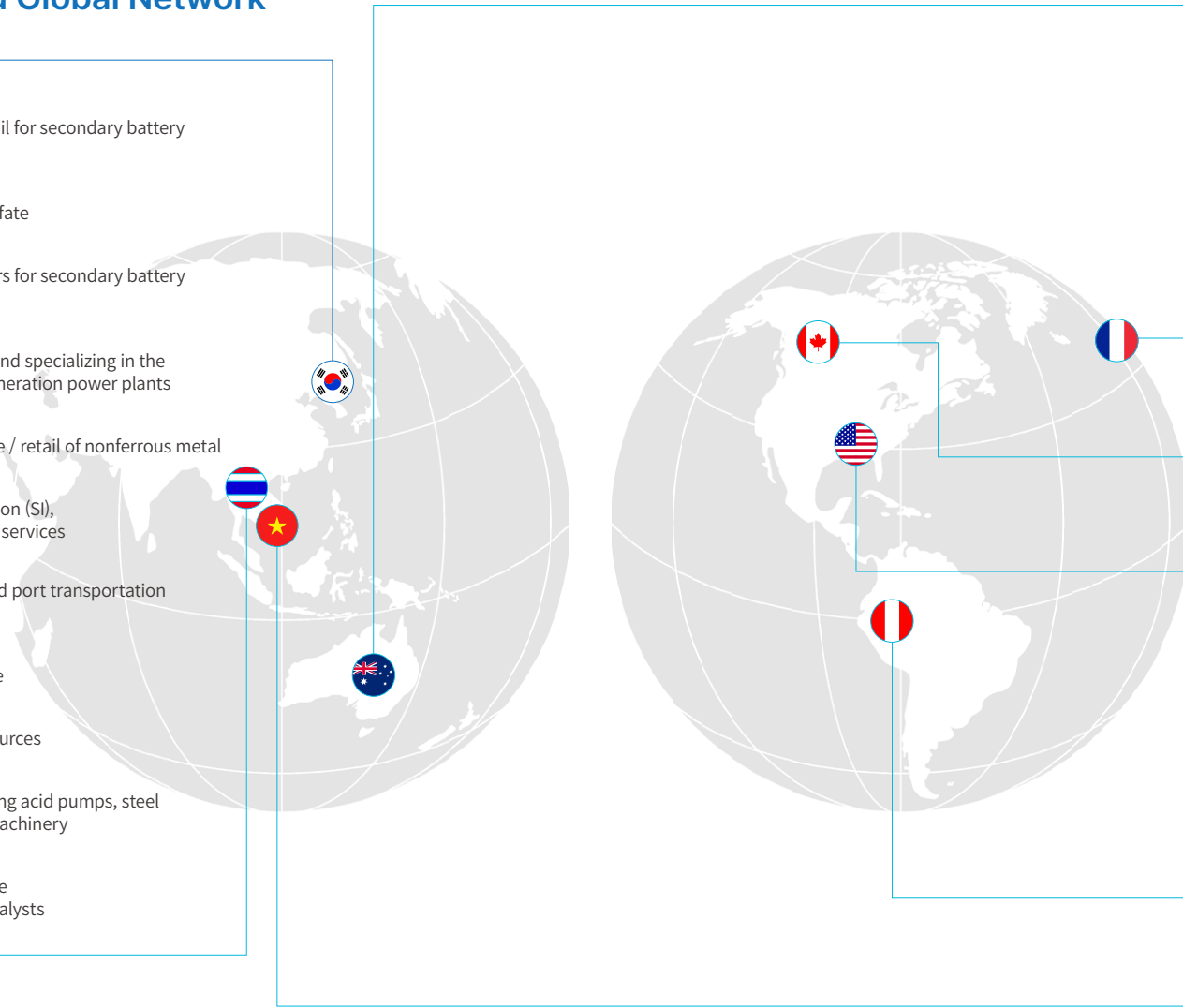
Our Domestic and Global Network

Domestic

- KZAM**
Manufacturing and selling copper foil for secondary battery applications
- KEMCO**
Manufacturing and selling nickel sulfate
- Korea Precursor Company (KPC)**
Manufacturing and selling precursors for secondary battery cathodes
- KZ Green Tech**
Offering energy diagnosis services and specializing in the construction and operation of cogeneration power plants
- KZ TRADING**
Engaging in the trade and Wholesale / retail of nonferrous metal
- Sorin Information Technology**
Providing network, System Integration (SI), IT solution, software, and hardware services
- KZX**
Providing comprehensive freight and port transportation services
- SteelCycle**
Manufacturing and selling zinc oxide
- SteelCycle SC**
Pre-treatment of Cu secondary resources
- KZ Precision**
Designing, manufacturing and trading acid pumps, steel structures, and general industrial machinery
- Alantum**
Manufacturing alloy forms for engine emission controls and industrial catalysts

Thailand

- Zinc Oxide Corp. Thailand**
Sourcing secondary raw materials



Australia

- Sun Metals Corporation**
Smelting, manufacturing and selling zinc, sulfate, and other materials
- Ark Energy Corporation**
Developing renewable energy, hydrogen and power business
- Townsville Logistics / Townsville Marine Logistics**
Providing zinc · zinc concentrate transportation services

France

- PedalPoint Igneo France**
Pyrolysis business for waste PCB scrap

Canada

- Pan-Pacific Metal Mining Corporation**
Engaging in mine development

USA

- PedalPoint Holdings / PedalPoint Igneo Holdings**
U.S. HQ for Korea Zinc's resource recycling business
- PedalPoint Igneo Technologies**
Securing and trading Cu raw materials in the U.S.
- PedalPoint evTerra Recycling**
E-waste collection and pre-treatment

- Kataman Metals**
Non-ferrous metals trading

Peru

- ICM Pachapaqui**
Engaging in mine development

Vietnam

- Zinc Oxide Corp. Vietnam**
Manufacturing and selling zinc oxide

*The list on this page consists of companies with strong connectivity to Korea Zinc's sustainable management. Accordingly, this list differs from the list of our subsidiaries on a consolidated basis as presented in the annual report. Please refer to the annual report for the complete list of our subsidiaries.

[Annual Report](#)

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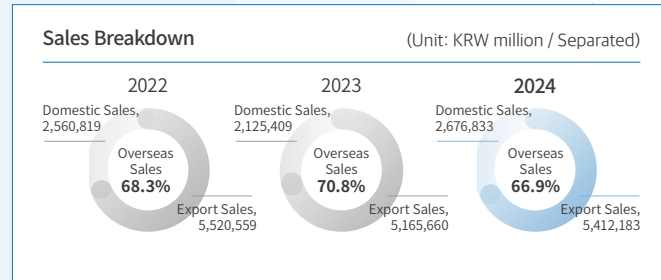
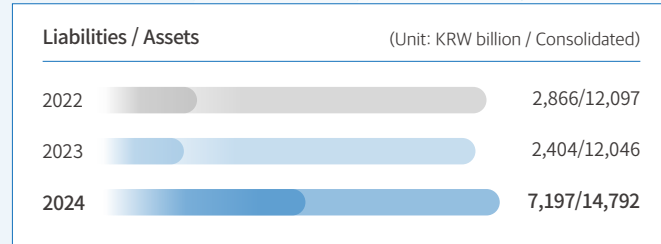
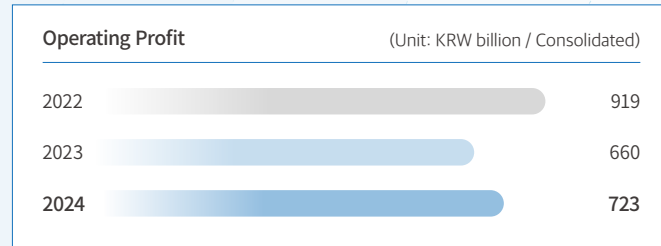
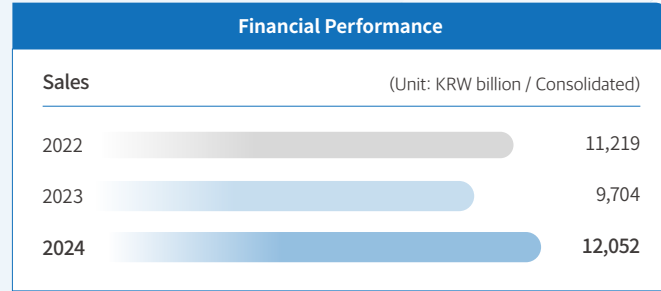
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Key Business Milestones

Performance Dashboard



Technology / Innovation

Designated as National Core Technology

Precursors, an essential component of secondary batteries, have been designated as National Core Technology and National High-Tech Strategic Technology.

Two Innovation Awards Conferred at CES 2025

Our subsidiary, ROBOne, received Innovation Awards in the Smart City and Sustainability, Energy & Power Generation sectors for its AI-driven waste sorting robot, ROBin, at CES 2025.

An efficient waste management system has been established through the integration of robotics engineering and AI technology, and is slated for phased adoption across six hubs, including Igneo, evTerra, and Chicago Hub.






Minister of Trade, Industry and Energy Awards Bestowed

Our subsidiary, Steel Cycle, was honored with the Minister of Trade, Industry and Energy Award in recognition of its achievement in transforming Electric Arc Furnace Dust (EAFD) into valuable resources.

Sustainable Management

ESG Performance Evaluation

 KCGS <small>(Korea Institute of Corporate Governance and Sustainability)</small> Achieved an overall rating of B+ (Environmental: B+, Social: A, Governance: B+)	 SUSTINVEST AA in the first half, A in the second half	 KRESG <small>한국 ESG 연구소</small> Korea ESG Research Institute A+ in the first half, A in the second half
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Environmental

SGS-Recognized Copper and Silver Made from Recycled Materials
Our copper and silver products, which are made from 100% recycled materials, recognized by Global certification body SGS

Carbon Footprint Labels Obtained
Acquired Carbon Footprint Labels from Carbon Trust for our zinc, silver, copper, lead, gold, and semiconductor-grade sulfuric acid

Selected as an Exemplary Green Mobility Business Site
Our eco-friendly mobility business site recognized by the Nakdonggang River Drainage Basin Area Environment Center as a best practice for sustainable operations

Social

Opened a Cutting-Edge Safety Training Center
Invested a total of KRW 284.1 billion in safety and health, and equipment improvements, leading to the achievement of LEED Silver

Achieved the Top Rating in Corporate Social Responsibility in the Community
For two consecutive years, received the highest rating in Corporate Social Responsibility in the Community, an evaluation co-hosted by the Ministry of Health and Welfare and the Korea National Council on Social Welfare

Government

Launched ESG Committee
Established an ESG Committee under the Board of Directors to advance governance for sustainable management

Appointed Independent Director as Chairman of the Board
Created the first governance structure led by a female independent director since our inception

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Troika Drive, our new growth engine comprising renewable energy, secondary battery materials, and resource recycling businesses, has propelled us toward sustainable growth. We have laid the foundation for a new leap forward, evolving from a global smelter equipped with a customized, all-in-one nickel refinery into a green business enterprise. We remain steadfast in our commitment to sharpening our low-carbon business competitiveness and fulfilling our responsibility to drive global carbon mitigation efforts as a global leader.

Input

Financial (Consolidated)		
Total Assets	Total Equity	
KRW 14.792 trillion	KRW 7.595 trillion	
Intellectual		
R&D Workforce	R&D Spending	
118	KRW 11.2 billion	
Social		
Social contribution Expenses		
KRW 7.79 billion 		
Human		
Total Workforce	No. of New Hires	Education Expenses
1,944	195	KRW 1.9 billion
Environmental		
Energy Consumption	Environmental Investment	
1,202,354 TOE	KRW 55.8 billion	
Manufactural (Consolidated)		
Cost of Goods Sold		
KRW 7.93 trillion 		

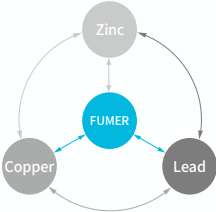
Creating New Value through Top-notch Global Technology

Process Innovation

Integrated Process
An integrated process, combining all refining, enables maximized recovery of valuable metals and supports sustainable smelting and manufacturing

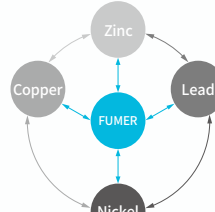
Organic Integrated Process

→ Optimized to maximize recovery rates and minimize waste generation



All-in-One Nickel Refinery Construction (scheduled for completion in 2026)

→ An integrated process to be established for non-ferrous metals, zinc, lead, copper, and nickel



Copper: KZAM, Nickel: KEMCO/KPC

Scaling Up Production of Non-Ferrous and Rare Metals

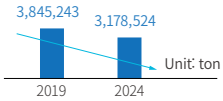
Manufacturing Four Non-Ferrous Metals

Nickel is being added to the existing refining process, which currently covers zinc, lead, and copper, to establish an integrated production system for four non-ferrous metals, recognizing nickel as a critical metal

Manufacturing Rare Metals

Rare metal production, including indium, antimony, bismuth, and tellurium in addition to the four non-ferrous metals

Output

Financial (Consolidated)		
Sales	Operating Profit	Dividend payout
12.053 trillion KRW	723.5 billion KRW	341.8 billion KRW <small>(KRW 17,500 per share)</small>
Intellectual		
Identifying New Growth Engine	Building Differentiated Capabilities in New Business	
Embarking on TroikaDrive Business	Secondary battery material manufacturing technologies recognized as National Core & High-Tech Strategic Technologies	
Social		
No. of Employees Engaged in Social Contribution	173	Total Hours of Social Contribution Activities 829 hours
Human		
Human Capital ROI	Ratio of Female Employees	Total Amount of Wages and Employee Benefits
4.2	5.4% → 5.7% → 6.1%	KRW 226.8 billion
Environmental		
GHG Reduction in 2024 Compared to the 2019 Level		
666,719 tons	17.34%	
Manufactural (Consolidated)		
Key Product Manufacturing Volume		Sustainable Sales*
Zinc 630Kt, Lead 450Kt, Copper 30Kt	KRW 2.77 trillion	

*Sales from Verified Products Made from 100% Recycled Materials (Copper and Silver)

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Troika Drive: Korea Zinc's New Growth Engine

Drive for Our Sustainable Future

Troika Drive is a clear demonstration of our roadmap for a green future business. It comprises renewable energy, resource circulation through recycling, and the secondary battery materials business, guiding us through market transformations, such as the green transition, to uncover new opportunities. Established in 2022, this strategy serves as our new growth engine, propelling us toward sustainable progress in the global arena. At the same time, it embodies our future vision, one that harmonizes with our existing non-ferrous metal refining business and evolves into a model that enables both the company and society to thrive together. We strive to maximize resource recycling in every aspect and reduce the use of primary raw materials, meaning natural resources. These efforts are where Korea Zinc excels beyond all competitors while also serving as a key growth driver that aligns with the needs of this era. To solidify our competitiveness in the global market, we will continue to focus on R&D and strategic investments, leading the way in green innovation and driving sustainable growth.

Renewable Energy and Green Hydrogen Business

Pursuing 100% green metal with zero carbon emissions by expanding renewable energy and green hydrogen business



Resource Recycling Business

Generating new value by recycling resources like Electric Arc Furnace Dust (EAFD), E-waste, and discarded solar panels

Secondary Battery Materials Business

Building a seamless value chain that integrates nickel sulfate, precursors, and electrolytic copper foil manufacturing, extending to waste battery recycling for a fully integrated process

Renewable Energy and Green Hydrogen Business

Carrying the Renewable Energy Business Forward

- Completed the construction of a solar power plant (124MW) in 2018, leading to the supply of clean power to our subsidiary, SMC
- Producing and developing renewable energy through our subsidiary, Ark Energy
- Acquired a 30% stake in the assets of the MacIntyre onshore wind farm (923MW) in 2024, securing clean power starting in 2026

Embarking on a Green Hydrogen Production Project

- Initiating green metal production with green hydrogen generated in Australia, set to begin after 2030

Secondary Battery Materials Business

Nickel Sulfate Manufacturing

- Producing high-purity nickel sulfate to ensure a stable supply of materials for EV batteries

Precursor Manufacturing

- Targeting an annual production of 20,000 tons of precursors

Electrolytic Copper Foil Manufacturing

- Manufacturing electrolytic copper foil, a core component for battery anodes, leveraging our refining technology

Resource Recycling Business

Forging a Circular Economy Between Smelting and Steelmaking

- Establishing a circular economy by transforming Electric Arc Furnace Dust from steelmakers into reusable resources while supplying crude zinc oxide to Korea Zinc and Direct Reduced Iron (DRI) to steelmakers through our subsidiary, SteelCycle

Building a Circular Economy for Municipal Waste

- Collecting, preprocessing, and smelting end-of-life waste from consumers, including E-waste, discarded solar panels, and lead-acid batteries, to repurpose them into new products

Creating a Circular Economy for Secondary Batteries (scheduled)

- Recovering core metals such as lithium, nickel, and cobalt from used batteries and transforming them into electrolytic copper foil and precursors for supply to battery manufacturers

Financial Outlook for New Business Opportunities

Category	Renewable Energy Business	Secondary Battery Materials Business	Resource Recycling Business
Projected Sales for 2033	KRW 0.9 trillion	KRW 5.3 trillion	KRW 6.0 trillion
Accumulated CAPEX (2024-2033)	KRW 8.3 trillion	KRW 2.1 trillion	KRW 1.5 trillion

* Based on materials from the 2023 Korea Zinc Investor Day

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Renewable Energy and Green Hydrogen Business

Business Model for Renewable Energy and Green Hydrogen

The rise of carbon neutrality has brought renewable energy and hydrogen into the global spotlight as future energy sources. In line with this trend, Korea Zinc has expanded its renewable energy business. To address the high energy consumption of the smelting industry and ensure sustainability, we have ratcheted up the share of renewable energy, with the goal of gradually phasing out fossil fuels. Starting with the establishment of Sun Metals Solar Farms (124MW) in Australia in 2018, we acquired a 30% stake in the assets of the MacIntyre onshore wind farm (923MW) in 2024, highlighting our expansion of clean power.

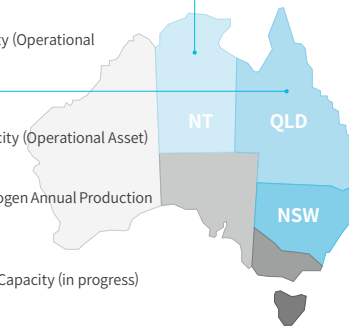
We have paved the way for large-scale green hydrogen manufacturing by securing a stable power supply through renewable energy development in Australia. The SunHQ Project, led by our Australia-based renewable energy subsidiary, Ark Energy Corporation, represents our first initiative in this field. Through this project, we aim to produce approximately 140 tons of green hydrogen annually using a 1MW PEM electrolyzer, with commercial operation planned for 2025. Furthermore, the expansion of a green hydrogen value chain is in full swing through the Korea-Australia H2 Consortium, established in partnership with both external and internal business partners. Based on this, we plan to introduce more than one million tons of green ammonia annually (equivalent to approximately 200,000 tons of green hydrogen) to Korea to accelerate the energy transition across domestic business sites, with the ultimate goal of revitalizing the hydrogen economy and carving out a new market.

Green Hydrogen Production Process

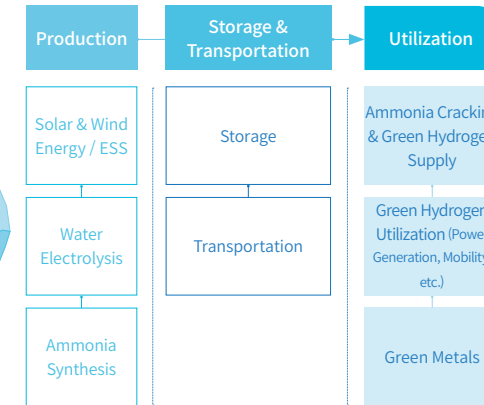
Green hydrogen is produced during the course of electrolyzing water using renewable energy and does not emit carbon, making it a special energy source. Taking advantage of Australia's abundant renewable energy resources, Korea Zinc has broadened the boundaries of its green hydrogen business by utilizing solar and wind power. Additionally, we have addressed fluctuations in renewable energy generation through the adoption of an Energy Storage System (ESS) to ensure efficient power usage. All these combined efforts will come together to establish a green metal production system, completely free of carbon emissions throughout the entire life cycle of its products, by 2050.

Renewable Energy Operations and Development Assets

- 7MW**
NT Solar Capacity (Operational Asset)
- 124MW**
SMC Solar Capacity (Operational Asset)
- 140Ton**
QLD Green Hydrogen Annual Production (in progress)
- 277MW**
MacIntyre Wind Capacity (in progress)



Green Hydrogen Value Chain



Milestones and Roadmap for Renewable Energy and Green Hydrogen Business

Renewable Energy	Green Hydrogen	ESS
<ul style="list-style-type: none"> Sep. 2018 Construction of the Sun Metals Solar Farm in Australia Jan. 2021 Established Ark Energy Corporation Feb. 2021 Secured a 30% stake in the MacIntyre* wind power project Mar. 2022 Ark Energy Corporation acquired renewable energy development company Epuron Apr. 2024 Secured a 30% stake in the MacIntyre wind farm Oct. 2024 Commenced partial operations of the MacIntyre wind farm 	<ul style="list-style-type: none"> Sep. 2022 Launched Korea-Australia H2 Consortium in partnership with Ark Energy Corporation, Hanwha Impact, and SK gas Oct. 2023 Began construction of a hydrogen fueling station for hydrogen fuel cell forklifts Nov. 2023 Embarked on the PoC of SunHQ* Aug. 2024 Completed the construction of the hydrogen fueling station at Onsan Refinery and initiated hydrogen fuel cell forklift demonstration project 2025 SunHQ commercial operations to be initiated and green hydrogen to be produced (140 tons annually) 2030- Green hydrogen and ammonia to be adopted in Korea, and green metals to be manufactured 	<ul style="list-style-type: none"> Apr. 2018 Completed the construction of ESS (Energy Storage System) (32.5MW/150MWh) at Onsan Refinery Mar. 2025 Signed a contract with Hanwha Energy on the BESS supply for the Richmond Valley BESS* project (275MW/2,200MWh)

* MacIntyre (Queensland, Australia): A 923MW wind power project, in which Ark Energy Corporation acquired a 30% stake as a joint venture

* SunHQ (Queensland, Australia): Green mobility PoC project utilizing solar power and 1MW of water electrolysis

* Richmond Valley BESS Project (NSW): Solar power-related ESGG business operated under the BOO (Build-Own-Operate) method

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Secondary Battery Materials Business

Secondary Battery Materials Business Model

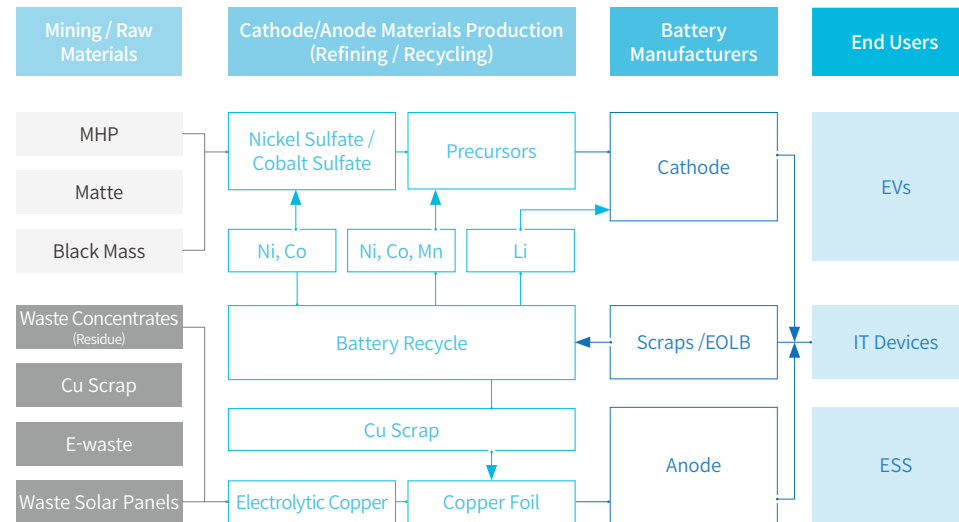
We scale up our core battery materials business to solidify our competitive advantage in the global battery industry. Following the production of copper foil by our subsidiary KZAM and nickel sulfate by KEMCO, Korea Precursor Co. (KPC) began full-fledged mass production of high-nickel precursors in January 2025. Notably, Precursor manufacturing technology has been designated as both a “national core technology” and a “national advanced strategic technology,” accelerating technological self-sufficiency within Korea’s battery industry.

In 2024, marking our 50th anniversary, we set a goal to increase the share of revenue from renewable energy and battery materials businesses to 50% within the next decade. To this end, we are continuously expanding production capacity for copper foil, precursors, and nickel. At the same time, we have established an integrated production system for the four major non-ferrous metals, including zinc, lead, copper, and now nickel, to reinforce the competitiveness of our traditional metals business. By leveraging our nickel smelting technology and linking it with our resource circulation business, we aim to maximize cost competitiveness and build a stable materials supply chain, thereby establishing a sustainable business structure.

Our secondary battery materials business is expanding through a comprehensive value chain that spans nickel sulfate, precursors, copper foil, and waste battery recycling, built upon our world-class smelting technologies accumulated over the past 50 years. We are harnessing our full company-wide capabilities to secure next-generation growth engine and elevate corporate value, positioning ourselves as a leader in the industries of tomorrow.

Secondary Battery Value Chain

We refine and process essential raw materials in producing cathode and anode materials for rechargeable batteries. Leveraging our unparalleled technology and large-scale production capabilities, we aim to play a pivotal role in eco-friendly mobility sectors, including electric vehicles (EV), IT devices, and energy storage systems (ESS). These efforts enable us to deliver sustainable energy solutions and continue to sharpen our competitiveness in the global battery market.



Milestones and Roadmap for Secondary Battery Materials Business

KEMCO (nickel sulfate)	KPC (precursors)	KZAM (copper foil)
<ul style="list-style-type: none"> Jan. 2017 Established KEMCO Feb. 2018 Completed KEMCO plant construction Nov. 2023 Held groundbreaking ceremony for integrated nickel smelter 2023 Signed raw material supply and investment agreement with Trafigura 2027 Integrated nickel smelter slated to begin operations 	<ul style="list-style-type: none"> Aug. 2022 Established KPC Oct. 2022 Broke ground for KPC plant Mar. 2024 Completed KPC plant construction Jan. 2025 Commenced mass production of precursors 2027 Expansion of second KPC plant (30 kt) targeted 	<ul style="list-style-type: none"> Mar. 2020 Established KZAM Mar. 2022 Started operation of KZAM Plant Jul. 2023 Completed approvals and mass production readiness 2025 Mass production scheduled to begin 2028 Copper foil production capacity to reach 60 kt targeted

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Resource Recycling Business

Resource Recycling Business Model

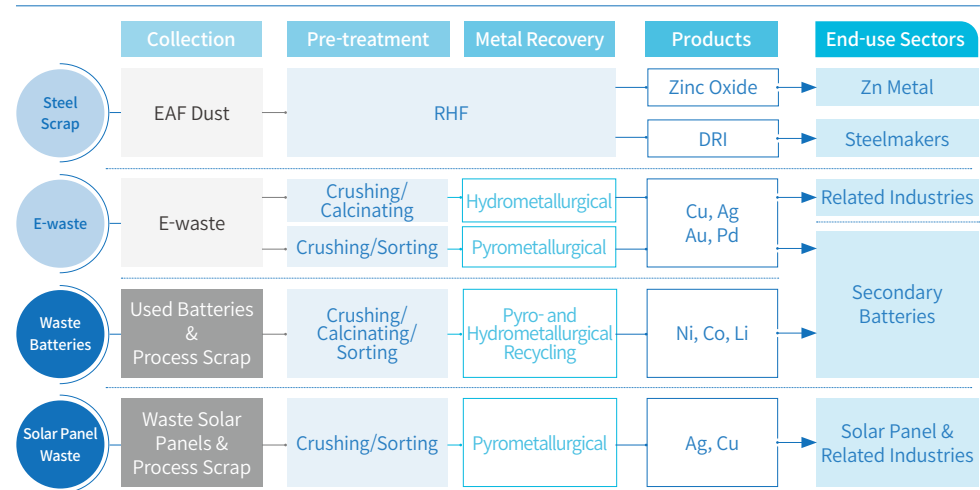
Korea Zinc has established a sustainable business model through waste recycling, actively addressing both resource depletion and environmental burdens. By converting a wide range of waste, including electric arc furnace dust (EAFD), electronic waste (e-waste), and used batteries, into reusable raw materials, we extract valuable metals and recycle them into materials such as secondary battery components. Our proprietary urban mining technology, which enables the recovery of valuable metals from waste, consumes fewer resources and less energy than conventional mining and maximizes metal recovery rates. As such, it is recognized as a sustainable alternative that supports both resource preservation and climate action.

As part of our resource recycling initiative, we are actively expanding copper production, aiming to raise annual production of 100% recycled copper to 150,000 tons by 2028. We are planning to sequentially convert the existing fumer facilities at the Onsan Smelter into copper-dedicated pyrometallurgical furnaces (Cu Smelters), investing in the first unit scheduled to commence operation in the second half of 2025.

In parallel with increasing recycled product output, we are making strategic investments to secure raw materials for the recycling business. In 2022, we acquired the U.S.-based e-waste recycling company Igneo through our subsidiary PedalPoint Holdings. In 2024, we acquired Kataman, a scrap and non-ferrous metal trading company, to secure secondary raw materials for copper production. These strategic moves underpin our plan to establish a stable supply chain and a circular economy. We will continue to pursue mergers, acquisitions, and partnerships, with the goal of expanding our global resource circulation network. The Cu Smelter will serve as the core infrastructure of our resource recycling business.

In this way, we have internalized the value chain that not only converts waste into raw materials through collection, sourcing, and preprocessing, but also includes the final sale of products manufactured using 100% recycled materials.

Resource Recycling Value Chain



Milestones and Roadmap for Resource Recycling Business

Expansion of 100% Recycled Copper Production Capacity		E-waste & Metal Scrap		End-of-Life Solar Panels		Waste Batteries	
2024	Hydrometallurgical total production capacity: 40,000 tons/year	Jun. 2022	Acquired Steelcycle SC	Jun. 2024	Commenced trial operation of preprocessing facilities (evTerra: 1,700 tons, Onsan: 1,200 tons collected)		
2025	Conversion of Fumer Unit 1 to Cu Smelter #1 (Additional feedstock processing: 100,000 tons, copper production capacity increase: about 30,000 tons)	Jul. 2022	Acquired Igneo (E-waste 84kt, MHF 24kt)				
		Apr. 2024	Acquired Kataman	2026	Advancement of waste solar panel treatment technology		
2026	Hydrometallurgical total production capacity: 50,000 tons/year (Expansion by 10,000 tons per year)	Sep. 2024	Acquired robotics solution company ROBOne	2028	Expansion of waste solar panel recycling plant		Plan the entry into overseas battery recycling business
2027	Conversion to Cu Smelter #2 (Additional feedstock processing: 150,000 tons, copper production capacity increase: 35,000 tons)	Nov. 2024	Installed waste-sorting robot 'ROBin' and evTerra Chicago Hub				
2028	Conversion to Cu Smelter #3 (Additional feedstock processing: 150,000 tons, copper production capacity increase: 35,000 tons)	Jan. 2025	ROBOne received two CES Innovation Awards				
		2026	Expand first-stage E-waste base				
		2030	Expand second-stage E-waste base				

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Our Mission (KZ Mission)

Our New Mission and Core Values

Since pioneering the non-ferrous metal smelting business in 1974, Korea Zinc has unwaveringly pursued a single, purposeful path for the past 50 years. We are convinced that the unparalleled expertise and capabilities we have built over the decades will serve as a powerful competitive edge amid the transformation of future materials and energy industries. With unwavering confidence, we are now embarking on a bold new journey, our Troika Drive, focused on renewable energy and green hydrogen, secondary battery materials, and resource circulation. Amid this transformation, our newly defined mission and core values will serve as a guiding compass, helping us navigate challenges and realize the future we envision

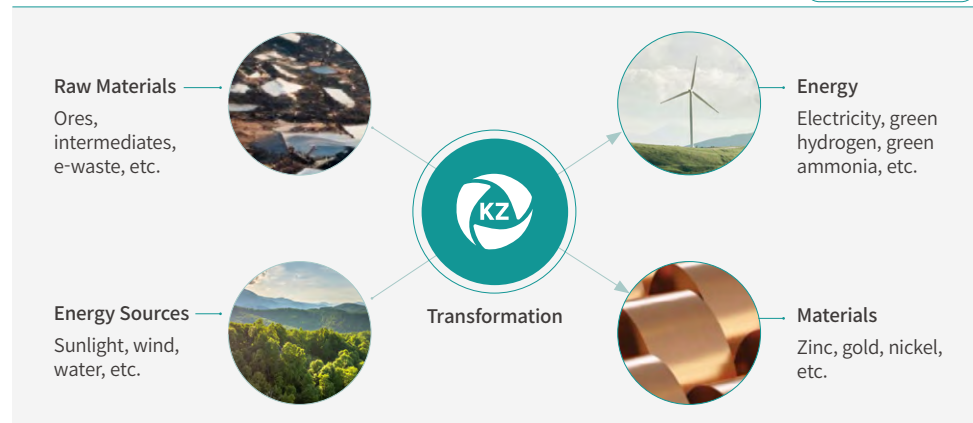
Our mission, “to transform diverse raw materials and energy sources into the forms of materials and energy the world needs, utilizing them in the safest, most environmentally responsible, and most efficient way possible” encapsulates not only the nature of our work, but also the values we must uphold and prioritize. We are committed to ensuring that all employees share in our mission and dedication to Sustainable management. Together, we will do our part to create a better world and a more sustainable future.

KZ Mission

Our mission is to transform diverse raw materials and energy sources into the forms of materials and energy the world needs, utilizing them in the safest, most environmentally responsible, and most efficient way possible.

Achieving our mission through materials and energy transition

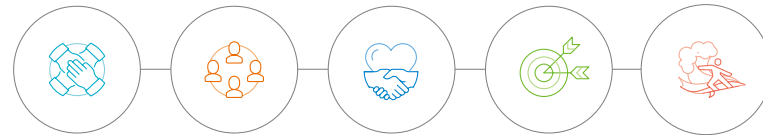
KZ MISSION BOOK [📖](#)



Core Values

Our mission encompasses our direction, goals, and the preconditions for achieving them, listed in order of importance. We will only achieve our mission through the safest, most environmentally responsible, and most efficient methods.

We have defined five core values as the guiding principles for achieving our mission. Our mission and core values will play a vital role in our daily work and in the journey toward realizing our shared vision.



<p>Teamwork: Connect diverse talents together to create powerful synergy</p>	<p>We work as “one team” in everything we do. We believe that “communication” is vital, and trust forms the foundation of our teamwork, making “honesty” essential. Each member is deeply committed and embraces flexible thinking, creating the strongest synergy as “One Team, Korea Zinc.”</p>
<p>Communication: Engage in open discussions and accept without judgments</p>	<p>We avoid making important decisions based on a one-sided perspective and regard communication as a core principle. We strive for the best decisions through active communication across all levels and mutual respect.</p>
<p>Integrity: Face issues fairly and honestly</p>	<p>We embrace honesty with courage, believing it leads us to the best solutions. By approaching our work with integrity at all times, we uphold our professional ethics, earning trust and respect as a company.</p>
<p>Commitment: Achieve excellence through dedication</p>	<p>Honesty helps us face the core of any challenge. But it is dedication that moves us toward solutions and progress. With unwavering commitment, we pursue the most constructive and reasoned results, delivering outstanding performance every time.</p>
<p>Agility: Think broadly and act swiftly</p>	<p>When we are deeply immersed in our work, we may sometimes become fixated on a single method or path. However, in an unpredictable and ever-changing market, we remain agile and flexible in both our thinking and actions, even as we stay fully committed to what we do.</p>

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Strategies for Sustainable Management

Sustainability Management Framework

Sustainability Strategy

Under the mission of “continuous innovation, development of new growth engines, and enhanced sustainability through ESG management,” we operate our business based on four strategic directions; Advanced Governance, Advanced People-centered Management, Advanced Eco-friendly Management, and Advanced Safety Management. Our goal is to elevate corporate value while simultaneously generating meaningful social and environmental impact.

Mission	Continuous Innovation, Identification of New Growth Engines, and Enhancement of Sustainability through ESG Management
Strategic Goal	Improving Corporate Value and Creating Social and Environmental Value

Strategic Direction

Advanced Governance	Advanced People-centered Management	Advanced Eco-friendly Management	Advanced Safety Management
<ul style="list-style-type: none"> Establish ESG decision-making system Enhance Board diversity and independent director autonomy Strengthen compliance system Implement integrated risk management 	<ul style="list-style-type: none"> Foster a corporate culture of co-prosperity and collaboration Protect stakeholder human rights Realize a great workplace (GWP) 	<ul style="list-style-type: none"> Expand use of renewable energy Reduce energy use and greenhouse gas emissions Minimize environmental impact from business activities 	<ul style="list-style-type: none"> Achieve zero serious accidents Introduce a smart safety system Reinforce site-centered safety culture Establish a risk management system for suppliers

Integrated Risk Management System

Korea Zinc takes a comprehensive approach to both financial and non-financial risks in its business operations. In 2025, we established the Compliance Division to lay the foundation for integrated risk management. This initiative strengthens governance, the backbone of sustainable management, by overseeing not only the CEO’s internal control practices but also broader compliance and audit-related risks. To further enhance independence and expertise in enterprise-wide risk oversight, we have established several committees under the Board, including the Audit Committee, the Nomination Committee, the Remuneration Committee, the Internal Transaction Committee, and the ESG Committee, to proactively monitor financial and non-financial risks. Non-financial risks have an impact on corporate reputation, brand image, and overall business performance. These are managed collaboratively across relevant departments, including Sustainability Management Division, Safety & Environment Division (safety/environment), Talent Management Division (human rights), Raw Materials Division (supply chain), Compliance Division (ethics/compliance), and IR Team (governance).

[Sustainability Risk Management Policy](#)

Market Risks	Financial Risks	Environmental Risks	Social Risks	Governance Risks
Market and price volatility	Exchange rate and interest rate fluctuations	Environmental regulations, environmental accidents, climate change, water resources	Safety, supply chain, human rights	Governance regulations, business ethics, crisis management

Sustainability Management System

Our Sustainability Management Division consists of ESG Management Team, Communication Team, and Public Coordination Team. The division’s sustainability-related activities are regularly reported to the Sustainability Promotion Committee, an advisory body to the management. The Sustainability Promotion Committee was established in February 2025 to succeed and expand upon the role of the Sustainability Management Committee, which had been in operation since 2022. With the launch of the ESG Committee under the Board in December 2024, the Sustainability Promotion Committee also assumed responsibility for reviewing agenda items to be submitted to the ESG Committee. With an aim to enhance its expertise, the committee appointed external advisors specializing in environmental, social, and governance area at its inaugural meeting in February 2025.

Reporting System



Sustainability Management Committee and Sustainability Promotion Committee Meetings

Meeting	Date	Agenda items
1st Sustainability Management Committee Meeting	Feb. 19, 2024	Resolution Appointment of vice chair of the social contribution subcommittee
		Report 1 2023 sustainability performance
		Report 2 2024 sustainability plan
2nd Sustainability Management Committee Meeting	May 3, 2024	Report 1 Q1 sustainability performance
		Report 2 Q2 sustainability plan
3rd Sustainability Management Committee Meeting	Aug. 7, 2024	Report 1 H1 sustainability performance
		Report 2 H2 sustainability plan
4th Sustainability Management Committee Meeting	Nov. 6, 2024	Resolution Approval of revised regulations for the Sustainability Management Committee
		Report 1 Q3 2024 performance and Q4 plan by division
		Report 2 Mid- to long-term ESG evaluation improvement tasks
		Report 3 Carbon neutrality roadmap update
		Report 4 Expansion of sustainability management in subsidiaries and affiliates
1st Sustainability Promotion Committee Meeting	Feb. 20, 2025	Resolution Approval of regulations for the Sustainability Promotion Committee
		Report 1 2025 sustainability management plan
		Report 2 2024 social contribution results and 2025 plan
2nd Sustainability Promotion Committee Meeting	Apr. 30, 2025	Report 1 ESG Management Team progress update
		Report 2 Q1 2025 performance and annual plan by division
		Report 3 Sustainability progress in subsidiaries and affiliates

Materiality Assessment

Overview of Materiality Assessment

Advancing Materiality Assessment Process

In alignment with the double materiality principle defined by the European Sustainability Reporting Standards (ESRS), Korea Zinc evaluates the materiality of sustainability issues not only from a financial perspective but also in the perspective of their environmental and social impacts. This year, we enhanced our existing methodology to enable more comprehensive and robust analysis. The advancement of our assessment process focused on three key areas; refining the issue pool, systematically identifying IROs (impacts, risks, and opportunities), and expanding stakeholder engagement.

Refinement of the Issue Pool

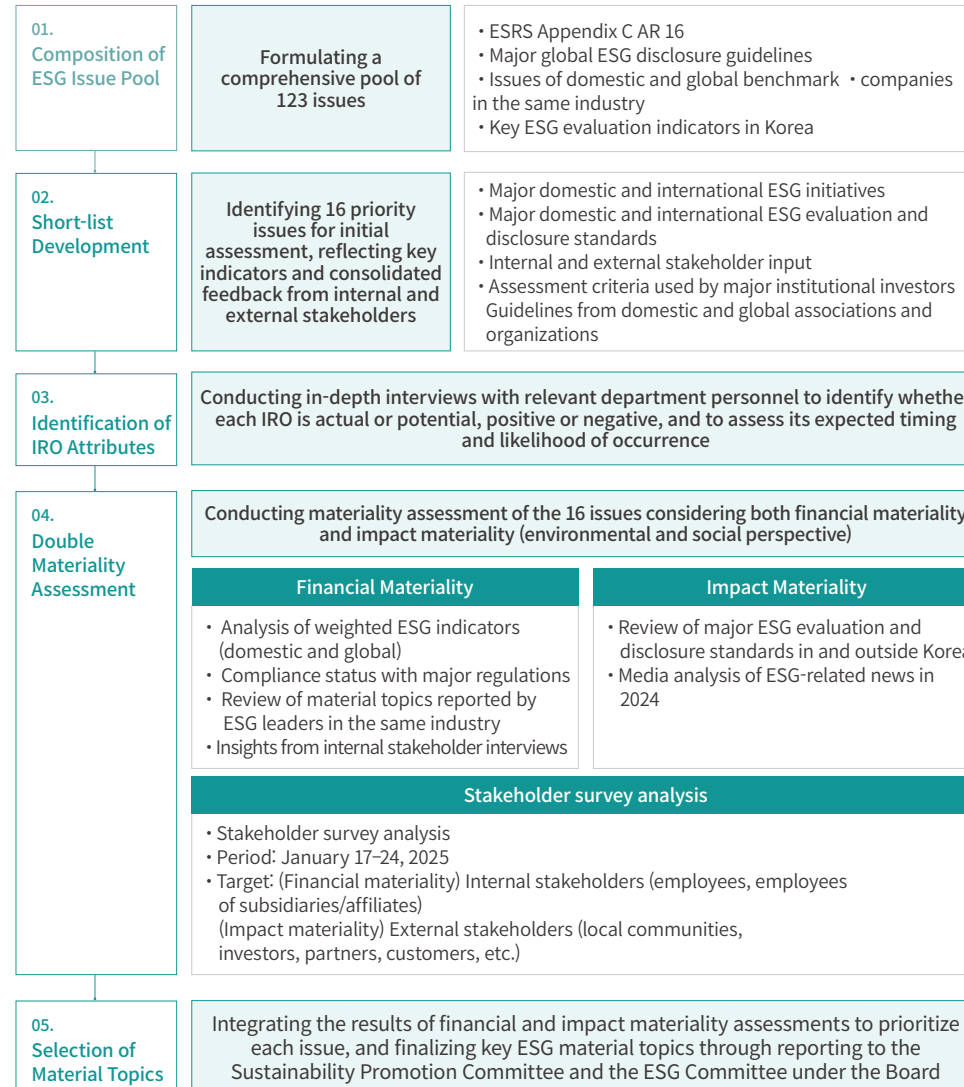
We derived an issue pool this year with a total of 123 basic sustainability topics by integrating multiple sources, including the ESRS Appendix C AR16 topic list, the GRI Standards for Mining, and disclosures from benchmark companies in our industry. This approach ensured that no critical issues were overlooked from the outset of the analysis. Based on major assessment and disclosure indicators, as well as stakeholder feedback from the previous year, a short-list of priority issues was selected for further review.

Identification of IROs

In regard to each issue in the short-list, we identified its associated impacts, risks, and opportunities (IROs). In order to assess the actual or potential nature of each IRO and its positive or negative implications, we conducted in-depth interviews with key personnel from relevant departments. This process enabled both quantitative and qualitative evaluations of the material topics in terms of business relevance and significance.

Broadened Stakeholder Engagement

This year, we broadened stakeholder engagement to reflect a richer diversity of perspectives and voices. By mapping key stakeholder groups across our value chain, we sought input at multiple stages of the assessment process not only from internal stakeholders such as relevant departments and employees, but also from external parties including business partners, local communities, and investors.



Materiality Assessment

Materiality Assessment Results

IROs (Impact, Risk, Opportunity) for Each Material Topic

The analysis of impacts, risks, and opportunities (IROs) associated with each identified material topic was reported to the ESG Committee under the Board. The ESG Committee conducted a thorough review of the IROs for each material issue, ensuring that ESG-related risks and opportunities are effectively incorporated into our strategic decision-making. This process enabled our highest decision-making bodies to reaffirm the strategic direction and operational consistency of our ESG initiatives, thereby enhancing the accountability and effectiveness of our sustainability management. Compared to the previous year, two new topics were added to the materiality list; stakeholder engagement and human rights management. We are committed to proactively responding to the identified IROs and managing them seamlessly to ensure no gaps in oversight.

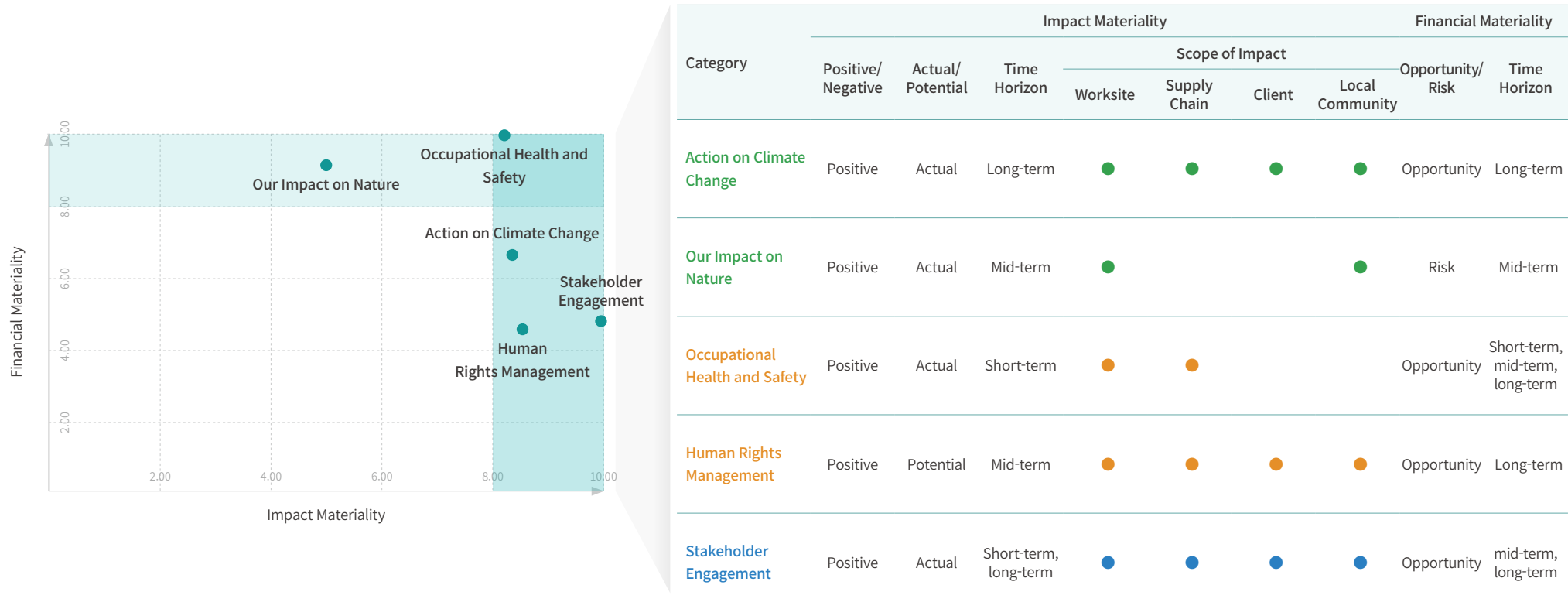
Material Topic	Impact		Risk	Opportunity
	Positive Impact	Negative Impact	Risk Factors	Opportunities
Occupational Health and Safety	<ul style="list-style-type: none"> Reduction in industrial accidents through workplace safety improvements Ensuring employee health and safety by fostering a safe working environment 	<ul style="list-style-type: none"> Insufficient safety management can lead to increased risk of safety incidents and industrial accidents. 	<ul style="list-style-type: none"> Legal sanctions such as fines and penalties resulting from safety incidents Corporate reputational risk 	<ul style="list-style-type: none"> Prevention of workplace accidents and avoidance of operational disruptions through tightened occupational health and safety systems
Action on Climate Change	<ul style="list-style-type: none"> Contribution to carbon neutrality by mitigating GHG emissions through energy transition infrastructure within workplaces 	<ul style="list-style-type: none"> Failure to reduce direct and indirect GHG emissions may contribute to the acceleration of climate change. 	<ul style="list-style-type: none"> Rising financial burden due to carbon credit purchases Higher export costs driven by tightening global carbon regulations Growing operational costs due to energy price hikes 	<ul style="list-style-type: none"> Revenue generation through the sale of carbon credits Advanced product competitiveness and sales opportunities through low-carbon technology adoption in the course of production and facilities Cost savings through improved energy efficiency
Our Impact on Nature	<ul style="list-style-type: none"> Improvement of local environmental conditions through refinery facility upgrades and enhanced monitoring and control of key pollutants 	<ul style="list-style-type: none"> Inadequate site management may increase the likelihood of air, water, and soil pollutant leakage, potentially worsening the surrounding environmental conditions. 	<ul style="list-style-type: none"> Increased capital and operating expenses for pollution control facilities in response to stricter environmental regulations Potential penalties, remediation costs, or business suspension resulting from legal violations such as pollutant leaks 	<ul style="list-style-type: none"> Enhanced corporate value and sales opportunities through positive customer perception of environmentally responsible companies
Stakeholder Engagement	<ul style="list-style-type: none"> Advancement of industry-wide sustainability through active participation in industry associations Revitalization of the local economy through community engagement activities Expansion of stakeholder engagement by responding to sustainability-related expectations from shareholders and investors 	<ul style="list-style-type: none"> Lack of participation in domestic and international initiatives, as well as insufficient communication with local governments where facilities are located, may result in the failure to reflect stakeholder expectations and weaken public support for sustainability management. 	<ul style="list-style-type: none"> Loss of investment attraction opportunities due to declining trust and credibility Difficulties in project execution due to opposition from local communities and government authorities 	<ul style="list-style-type: none"> Elevated corporate credibility through active stakeholder engagement, such as holding shareholder and investor briefings Facilitation of business development through engagement with local communities and public institutions
Human Rights Management	<ul style="list-style-type: none"> Enhancement of employee awareness of human rights and protection of human rights for employees, partners, and local communities through the efforts for human rights management 	<ul style="list-style-type: none"> Insufficient protection of human rights across workplaces, supply chains, or local communities can result in negative outcomes such as human rights violations, workplace harassment, or discrimination. 	<ul style="list-style-type: none"> Loss of talent resulting from failure to address human rights issues early and improve working conditions Decline in productivity and increased recruitment costs 	<ul style="list-style-type: none"> Boosted productivity and innovation driven by higher employee satisfaction and improved labor relations Enhanced awareness of human rights through implementation of internal policies and programs that exceed legal requirements such as the Labor Standards Act

Materiality Assessment

Materiality Assessment Results

Selected Material Topics

We finalized the selection of material topics by quantifying the financial and impact materiality of each candidate issue and applying a defined threshold. Financial materiality was evaluated in terms of potential opportunities and risks in financial performance, cash flow, and asset value, while impact materiality was assessed based on the severity and likelihood of Korea Zinc’s effects on external stakeholders and the environment. We also identified the stakeholder impact scope for each of the five key material topics, aiming to transparently disclose our current management approaches, ongoing initiatives, and future response strategies.



Materiality Assessment

Current Management and Future Plans for Key Material Topics

We have transparently outlined our response measures, regarding major actions, and both current and future goals for the five most critical material issues.

Material Topics	Response Measures	Our Actions	Page	Goals and Plans
Environmental	Action on Climate Change <ul style="list-style-type: none"> Operating renewable energy and green hydrogen businesses Transitioning to hydrogen-powered, eco-friendly workplaces Enhancing the accuracy and sophistication of GHG emissions data Reduction of GHG emissions 	<ul style="list-style-type: none"> Operating and expanding solar and wind power facilities in Australia and initiating domestic adoption Deploying hydrogen fueling stations and forklifts Refining Scope 3 emissions accounting to better track and curb GHG emissions within our value chain Formulating and executing the carbon neutrality roadmap 	p.22-27	<ul style="list-style-type: none"> Goal: Achieving RE100 by 2050 Plan: Building a green hydrogen value chain and expanding renewable energy production
	Our Impact on Nature <ul style="list-style-type: none"> Curtailing emissions of air pollutants Managing water resources responsibly Controlling chemical substances Minimizing waste generation 	<ul style="list-style-type: none"> Defining internal reduction targets for SOx, NOx, and TSP emissions Achieving a 36% reduction in total air pollutants by 2024 through voluntary commitments, compared to 2016 levels Scaling up rainwater filtration systems Elevating expertise of our internal hazardous chemical handlers through compliance and training Optimizing production processes and broadening the transition to recycling 	p.28-34	<ul style="list-style-type: none"> Goal: Minimizing impact on the natural environment Plan: Mitigating emissions of air pollutants (SOx, NOx, TSP) by 10% in 2025 compared to 2024 level
Social	Occupational Health and Safety <ul style="list-style-type: none"> Reinforcing risk controls for occupational health and safety Embedding a culture of shared responsibility for safety Cultivating an on-site safety mindset across employees and partners Advancing safety and health systems through expanded investment 	<ul style="list-style-type: none"> Revising internal safety Golden Rules Raising safety awareness by holding company-wide safety culture events Completing a state-of-the-art safety training center and offering hands-on safety training programs Running councils to reinforce safety and health capacity of suppliers and evaluating their status Operating whistleblowing and suggestion systems to encourage reporting of environmental and safety concerns 	p.40-47	<ul style="list-style-type: none"> Goal: Making zero serious accidents, maintaining combined accident rate at 0.45 or below across own operations and partners in 2025 Plan: Enhancing management standards through safety and health evaluations and audits, creating a pleasant work environment and strengthening the prevention of exposure to hazardous substances, and promoting field-oriented safety culture activities
	Human Rights Management <ul style="list-style-type: none"> Proactively identifying and resolving human rights issues involving employees, suppliers, and local communities Fostering a healthy organizational culture Raising accessibility to human rights protection and tightening the protection level 	<ul style="list-style-type: none"> Updating the human rights policy Diagnosing potential risks through human rights impact assessments and devising improvement plans Institutionalizing formal grievance handling system Conducting surveys on employee engagement and stress levels Offering professional counseling services Achieving 37 consecutive years as a strike-free workplace 	p.48-51	<ul style="list-style-type: none"> Goal: Putting a complete human rights management system in place Plan: Establishing an anonymous online human rights reporting channel and evaluating the effectiveness of risk mitigation measures
Governance	Stakeholder Engagement <ul style="list-style-type: none"> Establishing systematic sustainability management policies Increasing the transparency of public disclosures Upholding corporate social responsibilities 	<ul style="list-style-type: none"> Consolidating and publicly sharing our sustainability management policies Introducing a digital approval system for disclosure checklists Enhancing governance transparency by implementing cumulative voting and capping the number of directors in the Board Joining the UN Global Compact and fulfilling its principles Securing top-tier recognition in Corporate Social Responsibility in the Community for two consecutive years Spearheading donation efforts, cultivating talent, and managing carbon-neutral forest projects Carrying out donation campaigns, talent development initiatives, and creating a forest for carbon neutrality 	p.63-74	<ul style="list-style-type: none"> Goal: Building an advanced governance system, strengthening shareholder return policies, and diversifying community engagement programs Plan: Maintaining an average total shareholder return ratio at 40% or higher and a retention ratio at 8,000% or below by 2026, expanding social contribution and eco-friendly programs across subsidiaries

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Action on Climate Change

Materiality of the Issue

As climate change rises to the forefront of global priorities, a structured shift toward carbon neutrality has emerged as a core pillar of corporate strategy. With an aim to sharpen our competitiveness, we are fulfilling our environmental responsibilities by accelerating the adoption of eco-friendly technologies and intensifying efforts to reduce GHG emissions.

Impact Materiality

Driving progress in GHG mitigation and supporting the realization of carbon neutrality targets

Financial Materiality

Boosting product competitiveness through low-carbon technology adoption while staying ahead of financial risks posed by increasingly stringent environmental regulations

Key Achievements

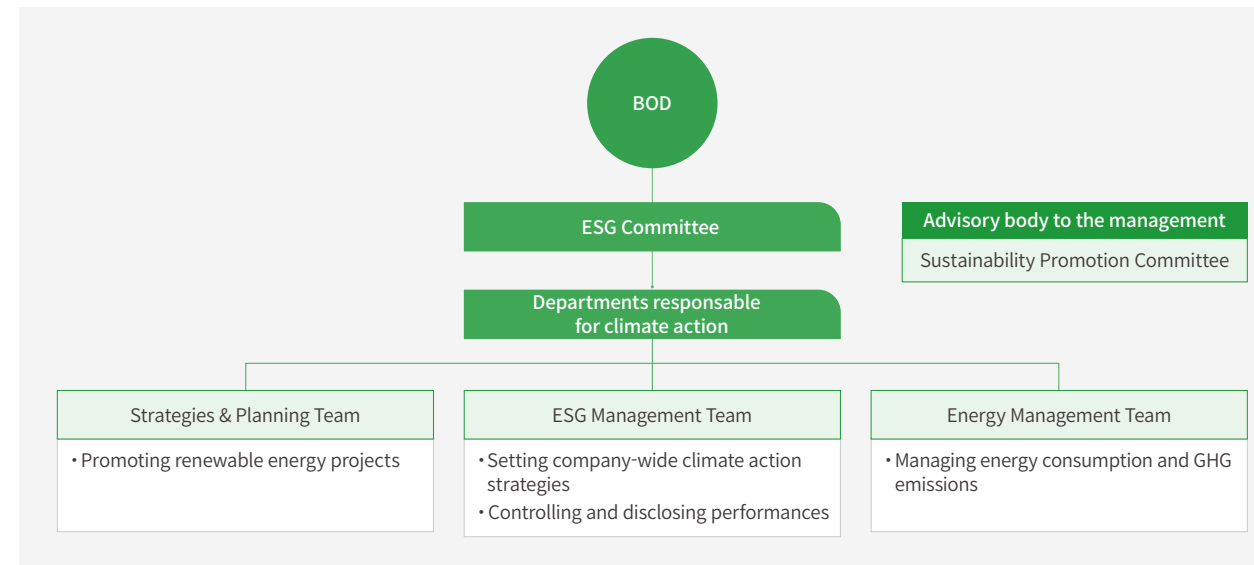
- Securing a pipeline of renewable energy development projects totaling 9GW in Australia
- Introducing hydrogen charging stations and hydrogen fuel cell forklifts

Future Plans

- Establishing a Korea-Australia green hydrogen value chain
- Promoting the Richmond Valley BESS (Battery Energy Storage System) project
- Adding 25 more hydrogen-powered forklifts in 2025

Governance

The Board of Directors (BOD), the highest decision-making body of Korea Zinc, reviews climate-related risks and opportunities. The ESG Committee, a sub-committee of the Board, receives regular reports on energy and GHG strategies, performance, and plans developed by relevant departments, including the Strategies & Planning Team, Energy Management Team, and ESG Management Team. Separately, the Sustainability Promotion Committee, an advisory body to the management, is responsible for reviewing key ESG-related issues before they are submitted to the ESG Committee. In 2024, we reported our carbon mitigation plans as part of our agenda item on ESG management at the 4th regular board meeting. We will maintain regular reporting to the Board on our climate action plans and the progress of their implementation.



Environmental

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Action on Climate Change

Strategy

Korea Zinc has classified climate impacts into physical and transition risks to respond strategically. Physical risks refer to natural disasters that stem from extreme climate events while transition risks are posed by evolving pertinent policies and regulations. To keep pace with tightening regulations on GHG emissions and the global shift toward a low-carbon economy, Korea Zinc has formulated and executed a range of countermeasures, including improvements in energy efficiency and the adoption of green technologies.

Risk Type	Category		Climate-related Opportunities and Risks	Impact of Climate Opportunities and Risks		Response Measures and Applications
	Opportunities	Risks		Financial Impact	Environmental and Social Impact	
Physical Risks	Floods	●	Risk of production facility flooding and shutdowns, arising from increasingly intense precipitation	<ul style="list-style-type: none"> Escalating costs incurred by equipment restoration and production disruptions Potential sales decrease arising from supply chain instability 	<ul style="list-style-type: none"> Spread of damage across local communities and ecosystems Leaks of industrial waste and pollutants 	<ul style="list-style-type: none"> Upgrading drainage and disaster prevention systems
	Typhoons	●	Equipment damage and power outages, incurred by strong winds and heavy precipitation	<ul style="list-style-type: none"> Soaring costs stemming from equipment restoration and replacement Production disruptions caused by unstable power supply 	<ul style="list-style-type: none"> Increasing frequency of natural disasters posed by climate change Undermined stability of business sites 	<ul style="list-style-type: none"> Forging equipment and power systems, with strengthened operational management Intensifying workplace safety and health inspections, and expanding emergency response drills
	Abnormal temperatures	●	Degraded working conditions and rising energy use, derived from extreme heat waves and cold spells	<ul style="list-style-type: none"> Rising cooling and heating costs Increasing operational expenses derived from undermined productivity 	<ul style="list-style-type: none"> Threats to workers' health and safety Rising carbon emissions associated with increased power consumption 	<ul style="list-style-type: none"> Introducing energy-efficient facilities Strengthening preventive measures against heat-related illnesses among workers
Transition Risks	Legal and Policy	●	Soaring prices of carbon credits and electricity, and tighter environmental regulations	<ul style="list-style-type: none"> Growing carbon credit procurement costs Rising electricity purchase costs 	<ul style="list-style-type: none"> Increasing pressure to reduce GHG emissions 	<ul style="list-style-type: none"> Ameliorating processes for GHG reduction Reducing power costs and enhancing energy independence through the operation of Energy Storage Systems (ESS) and LNG combined cycle power plants Securing Certified Emission Reductions (CERs) via CDM projects
	Reputation	●	Strengthened stakeholder trust, driven by proactive climate initiatives	<ul style="list-style-type: none"> Boosted investments Sales increase driven by elevated brand value 	<ul style="list-style-type: none"> Enhanced corporate competitiveness over the long term 	<ul style="list-style-type: none"> Establishing RE100 goals and carbon neutrality targets
	Technology	●	Heightened product competitiveness, driven by growing consumer demand for low-carbon products	<ul style="list-style-type: none"> Expanding market share underpinned by technological competitiveness 	<ul style="list-style-type: none"> Contributions toward reaching net-zero through reduction of product carbon footprints 	<ul style="list-style-type: none"> Installing a hydrogen fueling station at the Onsan Refinery and expanding hydrogen infrastructure through proof-of-concept (PoC) hydrogen fuel cell forklift initiatives Broadening the range of products covered by carbon footprint certification, while strengthening upstream carbon emissions management
Market	●	Supply chain restructuring, arising from shrinking carbon-intensive markets, sourcing disruptions, and mounting costs	<ul style="list-style-type: none"> Unstable sourcing of raw materials leading to product disruptions and delivery delays Securing new suppliers to remediate supply chain risks, with associated rising contract costs 	<ul style="list-style-type: none"> Risk of transferring burdens arising from soaring procurement costs to customers Fair transition pressures placed on workers of suppliers in high-carbon industries 	<ul style="list-style-type: none"> Signing long-term contracts with key suppliers and supporting improvements in their ESG capabilities 	

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Strategy

Transition to Renewable Energy

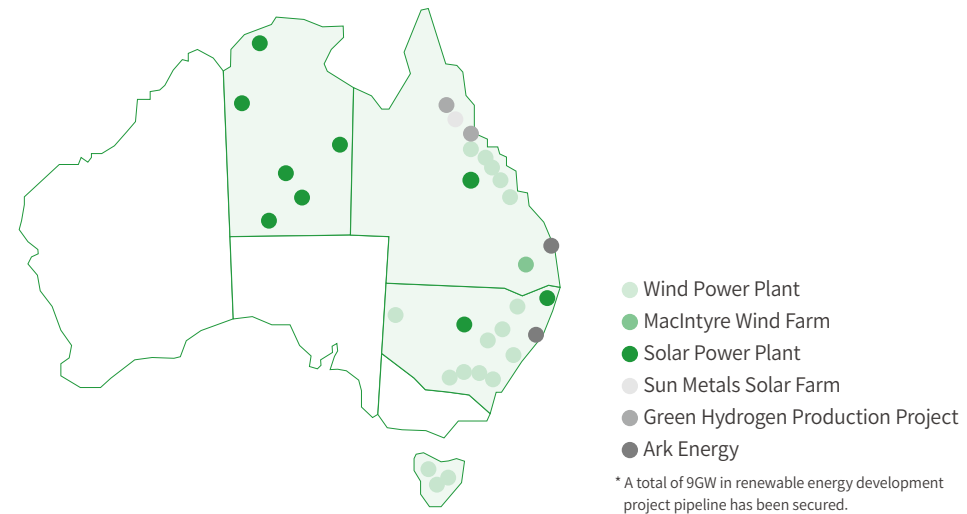
Our roadmap to achieving 100% transition to green energy for power generation by 2050 begins with electricity generation at overseas renewable energy plants. This electricity is used to produce green hydrogen, which will serve as a power source for our Onsan Refinery.

To enable this transition, we have consistently invested in our overseas subsidiaries to build a foundation for sustainable energy sourcing. Considering current domestic power market conditions, such as rising electricity prices, Korea Zinc has explored rational approaches to expanding renewable energy. At the same time, we are committed to ongoing investments in energy procurement that prioritize long-term sustainability over short-term gains, thereby fulfilling our environmental responsibilities.

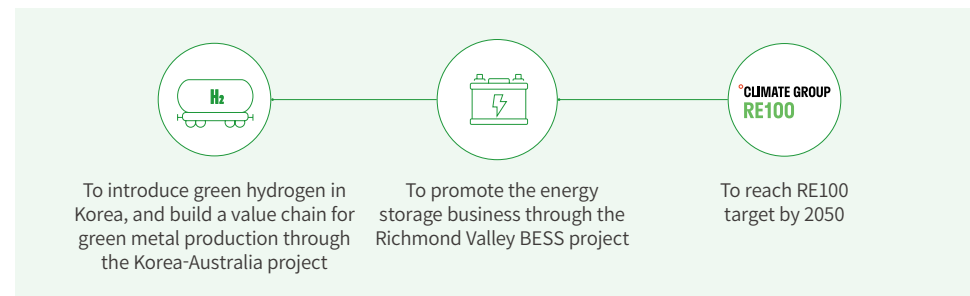
Key Investments

- 2018 Constructed the 'Sun Metals Solar Farm,' the largest industrial-scale solar power facility in Australia, with a capacity of 124MW
- 2021 Established Ark Energy
- 2022 Ark Energy acquired 'Epuron,' a renewable energy developer
- 2023 Made an equity investment in 'Amogy,' a U.S.-based firm specializing in ammonia cracking* technology
- Broke ground on 'SunHQ (SunHQ Hydrogen Hub),' an integrated green hydrogen production and fueling facility
- 2024 Secured a 30% stake (277MW) in the MacIntyre Wind Farm with a capacity of 923MW, and initiated partial operations
- 2025 Acquired a 33.3% stake in 'Hanwha Shinhan Terawatt Hour,' a renewable energy power trading company

* It refers to a core process that enables the conversion of green ammonia, produced in Australia and imported into Korea, into hydrogen.



Next Steps



Cumulative Renewable Energy Investments*

Unit	2018	2019	2020	2021	2022	2023	2024
KRW million**	182,048	-	23,372	7,923	367,507	49,255	566,561

* Adjustments made to investments in MacIntyre in 2021 compared to the previous year's disclosure data, with investments in Amogy added in 2023.

** Investment amounts denominated in foreign currencies (USD, AUD) are converted based on the exchange rate on the report date (May 12, 2025).

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Risk Management

The establishment of our net-zero roadmap, along with the implementation of accompanying measures, is a testament to our commitment to climate action. A range of GHG mitigation initiatives, such as equipment upgrades, process rationalization, and new installations, are already in full swing. In addition, various approaches are currently under review, including fuel transition and the adoption of renewable energy.

Improving Data Measurement

Product Carbon Footprint Calculation

Korea Zinc has calculated the carbon footprints of its key products through LCA assessments, which serve as the foundation for identifying product-level environmental impacts and reducing emissions throughout the manufacturing process. In pursuit of green metal production, we will continue to manage product carbon footprints and transform the transition to a low-carbon product market into a growth opportunity.

Investing in ERP-linked System for Scope 1 and 2 Calculation

In a bid for efficient management of GHG emissions, we decided to invest in an ERP-linked automated calculation system for Scope 1 and Scope 2 emissions data in the second half of 2024. The system is scheduled to be adopted in 2025 following its development and review.

Bolstering Scope 3 Data Accuracy

Korea Zinc has transparently disclosed data on indirect emissions (Scope 3) across the entire supply chain, supported by multifaceted efforts to ensure the integrity and reliability of emission calculations. To this end, we conducted interviews with departments responsible for logistics and procurement to review actual operational data, leading to improved accuracy in the calculated results.

Managing Emission Permits

Korea Zinc, as an entity eligible for the allocation of emission permits, actively responds to the Emission Trading System by adjusting both its credit sales volume and allowance carryover annually, based on its GHG emissions and granted allowances. To gear up for the Emission Trading System Phase 4, which covers the years 2026 through 2030, we engaged in emission credit transactions with the aim of achieving the largest carryover volume in 2024. As part of our strategic response to tightening policies surrounding emission trading, such as reductions in permit allocations required to meet Korea's NDC, we have meticulously managed both our GHG emissions and emission permits.

Paving the Way for Carbon Reduction with Hydrogen Station and Forklift Deployment

The installation of a hydrogen fueling station for hydrogen fuel cell forklifts along with the adoption of these forklifts in the national industrial complex within the Plant 1 of Onsan Refinery in Ulsan in 2024, marked a pioneering milestone in reducing carbon emissions. The station accommodates 55 kg of hydrogen per hour, enabling charging of up to 12 hydrogen fuel cell forklifts per hour. This station is an off-site facility, where hydrogen produced externally is supplied through pipelines. It underwent technical inspections by the Korea Gas Safety Corporation, confirming its operational safety. The hydrogen-powered forklifts currently in operation at the Onsan Refinery are models equipped with hydrogen fuel cells, and they produce zero CO₂ emissions, making them an eco-friendly mode of transportation. With a goal of adopting 30 units, a total of five forklifts were brought in during the first round in August 2024, with an additional 25 units scheduled for introduction in 2025. Considering that a diesel-fueled forklift emits approximately 80 kg of CO₂ per day on average, the use of 30 hydrogen-powered forklifts reduces emissions by around 2.4 tons per day, equivalent to about 880 tons of CO₂ annually.



Investing in Energy Saving Solutions

Since 2022, Korea Zinc has invested in a range of energy-saving initiatives. A total of KRW 40.7 billion is being allocated to these activities.

(Unit: KRW million)

Initiative	Timeline	Investment
Integrated management of outdated facilities for power saving	Feb. 2022 ~ Feb. 2024	27,281
Transition to hydrogen-fueled forklifts from diesel-powered models, resulting in GHG emissions reduction	Dec. 2022 ~ Aug. 2024	5,106
Power saving driven by the deployment of high-efficiency cooling tower fans (Phase 1)	Sep. 2023 ~ Oct. 2023	144
Comprehensive assessments on energy utilization and analysis of energy efficiency improvements across all facilities	Apr. 2024 ~ Nov. 2024	202
Power saving driven by the deployment of high-efficiency cooling tower fans (Phase 2)	Aug. 2024 ~ Mar. 2025	610
Replacement of obsolete equipment with high-efficiency, large-capacity systems, leading to power saving	Sep. 2024 ~ Jun. 2025	6,204
Adoption of a cutting-edge monitoring system for energy use optimization	Oct. 2024 ~ May 2025	523
LNG consumption reduction through reuse of waste heat from exhaust gas	Dec. 2024 ~ Jul. 2025	599
Total		40,669

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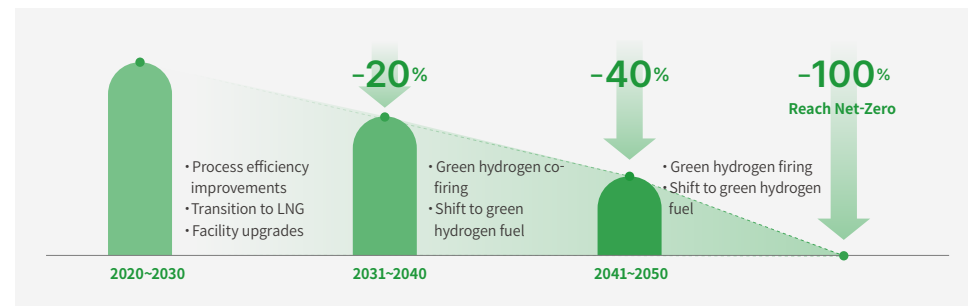
Targets/Metrics

Roadmap for Carbon Neutrality

In 2023, Korea Zinc established its net-zero roadmap, setting decade-by-decade reduction targets and implementation plans. Based on its GHG emissions in 2019, the roadmap sets a goal to reduce emissions by 20% from 2020 through 2030, cut by 40% from 2031 through 2040, and achieve net-zero emissions from 2041 to 2050, ultimately reaching carbon neutrality by 2050.

To this end, we have phased in multifaceted reduction strategies, spanning process efficiency improvements, facility upgrades, fuel transition, and the adoption of green hydrogen-based co-firing and hydrogen firing for power generation. Furthermore, by incorporating GHG emissions into our KPIs, we have seamlessly managed annual targets and progress.

2024 saw remarkable progress, with about 670,000 tons of emissions reduced against the baseline, representing a 17.3% reduction that far exceeded the trajectory outlined in our initial roadmap. In the coming years, we will place climate action at the heart of our sustainable growth strategies and implement effective mitigation measures, thereby driving carbon neutrality. In addition, we disclose our annual progress through our sustainability report and submit responses to CDP Climate Change each year.



Annual Scope 1 + 2 Emissions Target

Category	Unit	2022	2023	2024	2025*
Target Emissions	tCO ₂ eq	3,496,212	3,408,593	3,174,527	3,452,376
Actual Emissions	tCO ₂ eq	3,450,416	3,277,964	3,178,524	-
Year-on-Year Reduction	tCO ₂ eq	103,009	172,452	99,440	-
Target Achievement Rate	%	101	104	99.9	-

* Target emissions have been raised in response to the new operations of copper resource recycling equipment and the increased facility operation rates for recovering valuable metals from smelting by-products.

GHG Emissions and Intensity

Category	Unit	2022	2023	2024	
Scope 1*	Headquarters	173	226	245	
	Onsan Refinery	2,343,708	2,574,200	2,572,422	
	Sub-total	2,343,881	2,574,427	2,572,667	
Scope 2*	Headquarters	253	286	264	
	Onsan Refinery	1,106,283	703,253	605,594	
	Sub-total	1,106,536	703,539	605,858	
Scope 1+2**	Total**	3,450,416	3,277,964	3,178,524	
Scope 3***	Category 1. Purchased Goods and Services	1,439,329	1,456,758	1,389,849	
	Category 2. Capital Goods	33,809	15,727	445,582	
	Category 3. Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	230,939	243,958	238,822	
	Category 4. Upstream Transportation and Distribution	207,803	249,870	75,299	
	Category 5. Waste Generated in Operations	32,726	31,490	33,028	
	Category 6. Business Travel	684	979	707	
	Category 7. Employee Commuting	1,901	2,053	2,121	
	Category 9. Downstream Transportation and Distribution	149,399	159,750	52,735	
	Category 10. Processing of Sold Products	2,655,653	2,431,864	2,292,211	
	Category 11. Use of Sold Products	32,071	25,846	-	
	Category 13. Downstream Leased Assets	-	-	1,074	
	Category 15. Investments	75,700	75,182	78,531	
	Total	4,860,014	4,693,476	4,609,959	
	Emission Intensity****	Scope 1	0.21	0.26	0.21
		Scope 2	0.10	0.07	0.05
Scope 1+2		0.31	0.34	0.26	
Scope 3		0.43	0.47	0.38	

* The calculation was conducted in accordance with Article 27(3) of the 「Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crises」, Article 21(5) of its Enforcement Decree, and Article 24(1) of the 「Act on the Allocation and Trading of Greenhouse Gas Emission Permits」.

** Discrepancies may occur between site-level GHG emissions and the total sum due to site-level rounding down.

*** The emission factor applied to Category 4 has been updated, and Category 13 has been newly added to expand data coverage.

**** Based on the sales (consolidated) of the relevant year.

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Targets/Metrics

Reducing Energy Consumption

Korea Zinc has defined an annual energy consumption target and incorporated it into KPIs. We have consistently strived to achieve this goal through a range of activities, including the installation of high-efficiency equipment, replacement of obsolete systems, waste heat reuse, and energy efficiency assessments. These efforts led to a reduction of 19,916 TOE in energy use in 2024 compared to the previous year.

Annual Energy Use Target

Category	Unit	2022	2023	2024	2025
Target Emissions	TOE	1,252,991	1,230,126	1,240,679	1,325,189
Actual Emissions	TOE	1,259,038	1,222,270	1,202,354	-
Year-on-Year Reduction	TOE	-32,774	36,768	19,916	-
Target Achievement Rate	%	99.5	101	103	-

Energy Consumption and Intensity

Category	Unit	2022	2023	2024	
Energy Consumption by Business Site*	Headquarters	8	9	9	
	Onsan Refinery	TJ	49,773	46,565	44,416
	Total		49,781	46,574	44,425
Energy Intensity**	Headquarters	TJ / KRW billion	0.00071	0.00093	0.00066
	Onsan Refinery		4.44	4.8	3.69
	Total		4.44	4.8	3.69

* Based on the GHG emissions statement. / ** Based on the sales (consolidated) of the relevant year.

Energy Consumption Outside the Organization (Scope 3)*

Category	Unit	2022**	2023**	2024
Category 3. Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	TJ	230,939	243,958	238,822

* This refers to energy data collected and managed for Scope 3 emissions calculation, limited to Category 3.

** Corrections were made for data entry errors in the 2022 and 2023 reports.

Green Vehicle Share*

Category	Unit	2024	Remarks
Headquarters	%	43.59	1 unit out of 23 owned vehicles, and 16 units out of 16 rental cars
Onsan Refinery	%	34.48	1 unit out of 17 owned vehicles, and 9 units out of 12 rental cars
Total	%	39.71	

* This category includes only corporate-owned and rented vehicles.

Recognized as an Outstanding Performer in KEEP 30

Korea Zinc has joined forces with the Korea Energy Efficiency Partnership 30 (KEEP 30) and the Voluntary Energy Efficiency Target System led by the Korean government. Through participation in these initiatives, we have significantly improved energy efficiency, earning recognition as an energy-saving excellent company by the Ministry of Trade, Industry and Energy and the Korea Energy Agency in 2024. Our improvement rate of 3.2% far exceeded the 1% annual intensity reduction target set for the first implementation year (2023) of KEEP 30, earning us a Grade S rating. This achievement is attributed to our multi-pronged approach to energy efficiency, such as the installation of a new integrated cooling tower and enhancements to steam traps and condensate traps across all plants. This recognition as an excellent company reflects our commitment to implementing efficient and sustainable management policies. We have already submitted the 2024 implementation performance report. In the years ahead, our all-out efforts to improve energy efficiency will continue.

Yearly Reduction in Energy Consumption via Efficiency Measures

Activity	Unit	2023	2024	Remarks
Installed a new integrated cooling tower at Plant 1	TOE	649	2,595	Reduction in power consumption
Repaired and replaced leaking steam traps across all plants	TOE	123	1,472	Expansion of self-power generation and reduction in electricity purchases from KEPCO through steam leak prevention
Installed a new absorption chiller	TOE	159	953	Reduction in power consumption
Enhanced condensate traps of compressed air receiver tanks	TOE	63	108	Prevention of air loss
Installed energy-saving cooling tower fans	TOE	33	100	Reduction in power consumption
Constructed a hydrogen fueling station to support hydrogen fuel cell forklift operations	TOE	-	148	Reduction in diesel consumption
Installed pump inverters and magnetic couplings	TOE	-	273	Reduction in power consumption

Waste Heat Recovery System

The installation of a waste heat boiler enables us to recover waste heat from exhaust gases generated during the process, producing steam and forming a circular energy system. The use and sale of steam generated from reused waste heat contributes to reducing fuel consumption and enhancing energy efficiency.

Category	Unit	2022	2023	2024
Steam Production*	Ton	3,919,637	4,122,823	3,744,471
Sales Volume	Ton	1,151,578	851,888	832,770
Usage	Ton	2,768,059	3,270,935	2,911,701

* It is limited to steam generated from process waste heat.

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Issue Materiality

Factoring in the impact on the natural environment is an integral part of sustainable corporate growth. Excellence in environmental impact management is a determining factor in long-term business viability. Korea Zinc strives to minimize our environmental footprint, including intensifying pollutant management and transforming our processes to be greener.

Impact Materiality

Protecting the surrounding environment of business sites and preventing environmental risks by reducing pollution

Financial Materiality

Building systems utilizing eco-friendly technologies and facilities, thereby responding to the evolving global market and regulations

Key Milestones

- Invested a total of KRW 55.8 billion in environmental facilities
- Introduced RO (Reverse Osmosis) technology for stormwater reuse

Next Steps

- To reduce total air pollutant emissions (SOx, NOx, TSP) by 210 tons by 2026 compared to 2023 levels
- To secure a daily stormwater filtration capacity of 3,000 tons

Governance

Korea Zinc has put in place a structured governance system for managing environmental impacts, with the Safety & Environment Management Division taking general charge of these affairs under the guidance of Onsan Refinery. In 2024, we reshuffled the division to improve efficiency. A new Environment Management Team 3 was launched, and Part 1 and Part 2 under the former Environment Management Team 1 were separated to form Environment Management Team 1 and Environment Management Team 2, respectively, allowing for more specialized work segmentation. As of now, we have put in place Environment Management Team 1, Environment Management Team 2, Environment Management Team 3, and Water Treatment Team, each responsible for managing pollutant substances according to their specific areas of expertise.

The Environment Management Team 1 is responsible for managing air pollutants and waste, as well as planning and operating environmental systems, including the Integrated Environmental Permit System. The Environment Management Team 2 is in charge of minimizing environmental risks, with a focus on chemicals, water quality, and soil contaminant management. The Environment Management Team 3 coordinates schedules related to compliance with the Integrated Environmental Permit System and takes charge of leading investments in facilities designed to mitigate and prevent pollutants. The Water Treatment Team is responsible for operating wastewater treatment facilities to manage water quality, and overseeing equipment maintenance processes, such as purification systems for reducing contaminants generated during production, along with the management of stormwater (rainwater) ponds.

To ensure the stable operation of institutions and systems related to environmental impact, each team under the Safety Environment Division works closely with personnel responsible for environmental affairs in each operation division. Through this collaboration, we have successfully minimized pollutant emissions and made structured efforts toward sustainable environmental management. All activities and performance are regularly monitored, with outcomes reported to both the Director of the Safety Environment Division and the Head of Onsan Refinery. These results are followed by thorough management and continuous improvement measures. This systematic approach has enabled us to lay a robust foundation for long-term, sustainable environmental management.

Head of Onsan Refinery						
Safety & Environment Management Division				Operation Divisions 1-3		
Environment Management Team 1	Environment Management Team 2	Environment Management Team 3	Water Treatment Team	Environmental officer	Environmental officer	Environmental officer
Handling the Integrated Environmental Permit System, and managing air pollutants and waste	Managing chemical substances, water quality, and soil contaminants	Integrated Environmental Permit System compliance schedule coordination and investments in pollution prevention and mitigation facilities	Operating wastewater treatment facilities	Carrying out maintenance and repair work on environmental equipment within each operation division, while also supporting the implementation of relevant systems and institutional measures		

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Strategy

Korea Zinc has identified potential risks associated with the natural environment and analyzed their possible impacts. As environmental regulations become more stringent, the need for timely and effective responses has grown in importance. We've therefore formulated and taken proactive management measures.

Risk Type	Category		Opportunities and Risks	Impact of Opportunities and Risks		Response Measures and Applications
	Opportunities	Risks		Financial Impact	Environmental and Social Impact	
Air		● Exceeding allowable air pollutant emission limits	<ul style="list-style-type: none"> • Litigation costs incurred • Burden of costs resulting from production rate adjustments • Soaring investments in pollution-reduction facilities and their operating expenses 	<ul style="list-style-type: none"> • Deteriorating air quality adversely impacting the health of workers and local communities • Eroded trust from environmental regulatory bodies and surrounding communities 	<ul style="list-style-type: none"> • Adopting cutting-edge air pollution prevention facilities • Developing emissions reduction technologies • Strengthening monitoring through the installation of a stack remote monitoring system and additional measuring instruments • Setting and implementing air pollution reduction targets 	
		● Leakage of fugitive dust	<ul style="list-style-type: none"> • Litigation costs incurred • Escalating costs for improving shop floor environments 	<ul style="list-style-type: none"> • Deteriorating air quality adversely impacting the health of workers and local communities • Eroded trust from environmental regulatory bodies and surrounding communities 	<ul style="list-style-type: none"> • Installing equipment designed to reduce fugitive dust • Reinforcing legal environmental compliance and overhauling the legal response process 	
Water Quality		● Insufficient management of water contaminant discharge	<ul style="list-style-type: none"> • Fines incurred for exceeding pollutant discharge limits and corresponding disciplinary actions • Increasing costs for legal compliance 	<ul style="list-style-type: none"> • Undermined corporate brand image and reputation • Eroded trust from environmental regulatory bodies and surrounding communities 	<ul style="list-style-type: none"> • Installing liquid mixing tanks for managing non-point source pollution 	
Chemical Substances		● Risk of hazardous chemical leaks	<ul style="list-style-type: none"> • Costs incurred for responses to chemical leaks and environmental restoration • Rising operating costs due to more stringent toxic substance management requirements • Increasing costs for legal compliance 	<ul style="list-style-type: none"> • Negative impact on corporate safety management assessments • Potential concerns raised regarding the health of employees and nearby residents 	<ul style="list-style-type: none"> • Tightening standards for toxic substance handling • Establishing a system for accident prevention • Conducting emergency drills for chemical substance accidents 	
Waste	●	Expanded use of recycled raw materials	<ul style="list-style-type: none"> • Reduction in raw material procurement costs • Green product competitiveness secured 	<ul style="list-style-type: none"> • Contribution to revitalizing the resource recycling economy • Impact on waste reduction 	<ul style="list-style-type: none"> • Reducing waste generation during production and boosting recycling EAF dust • Expanding the scope of high-value waste recycling model, such as those for E-waste and solar panels • Receiving verification for recycled material usage from global certification bodies 	
		● Inadequate treatment of smelting byproducts	<ul style="list-style-type: none"> • Rising waste disposal costs • Escalating legal compliance costs • Damage to corporate brand image and reputation 	<ul style="list-style-type: none"> • Eroded trust from environmental regulatory bodies and surrounding communities 	<ul style="list-style-type: none"> • Developing advanced recycling technologies • Introducing valuable metal recovery methods using industrial byproducts and waste • Minimizing waste through the utilization of industrial aggregates, a final byproduct 	
Natural Capital	●	Increased use of recycled materials and maximization of recovery rates	<ul style="list-style-type: none"> • Increasing profitability in urban mining, such as waste batteries and waste cables 	<ul style="list-style-type: none"> • Reduction in final waste generation resulting from improved recovery rates • Decline in mine destruction and pollution due to reduced demand for natural resource extraction 	<ul style="list-style-type: none"> • Building a network for waste resource collection • Setting voluntary recovery rate targets and reporting them externally 	
		● Supply risks	<ul style="list-style-type: none"> • Growing scarcity of mineral resources and price fluctuations due to changing supply and demand 	<ul style="list-style-type: none"> • Exposure to geopolitical and ethical risks in regions where key mines are located 	<ul style="list-style-type: none"> • Establishing a responsible mineral sourcing system and reinforcing supply chain due diligence 	

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Managing Emissions Within Air Control Zones

Korea Zinc ensures that its environmental management system exceeds legal requirements by setting emissions targets for SOx, NOx, and TSP at levels within 30% of the legal allowance. In line with this approach, we have strengthened self-monitoring and measurement practices, supported by continuous investment in air pollution prevention facilities to drive ongoing improvement.

In 2024, we installed 11 canopy structures to reduce fugitive dust from slag storage areas, along with nine additional prevention facilities, a clear demonstration of our commitment to investing in diverse environmental initiatives.

In accordance with the 「Special Act on the Improvement of Air Quality in Air Control Zones」, we have actively implemented the Total Air Pollution Load Management System. Our business sites, as operators under total volume control in the southeastern region, have been allocated total permissible emission volumes for SOx, NOx, and TSP, and we strictly abide by these limits. Our efforts have extended beyond emissions reduction to include partial sales and carryover of permissible emission volumes for more efficient management, ensuring that our actual emissions remain well within the allocated quota.

On top of that, we signed the 2025 Voluntary Agreement on Fine Dust Reduction, led by Ulsan City and the Nakdonggang River Drainage Basin Area Environment Office, followed by the establishment of a two-year roadmap aimed at reducing air pollutant emissions (SOx, NOx, TSP) by 10% by 2026. In addition, we independently set a target to reduce emissions by 10% compared to the 2024 level, representing our intensified mitigation efforts. Air pollutant-related performance indicators, including ‘compliance with environmental laws,’ ‘whether permissible emission levels are exceeded,’ ‘pollutant emissions reduction,’ and ‘operational status of prevention facilities,’ are incorporated into the performance evaluations of executives, team leaders, and members of the Safety & Environment Management Division. This clearly defines the roles and responsibilities of those in charge.

Water Resource Management

Korea Zinc uses approximately 40,000 tons of raw water per day on average. All of this water is purchased from the Korea Water Resources Corporation, the industrial water supplier for the Onsan National Industrial Complex. This means we do not consume any other water sources beyond industrial water. Most of the raw water is used to replenish cooling tower water, and to produce purified water at the water treatment facility. Smelting operations typically require high-temperature furnace cooling and flue gas treatment, along with substantial amounts of cooling water for product cooling and wet scrubbers. Additionally, through our district energy operations, we supply steam within the Onsan National Industrial Complex. To enable this, we convert raw water into purified water at our water treatment facility to generate steam for industrial customers.

Water Consumption

Category	Unit	2022	2023	2024	
Headquarters	Water use (tap water)	m ³	3,452	4,590	6,662
Onsan Refinery	Water withdrawal (Korea Water Resources Corporation)	m ³	13,505,918	14,389,650	14,719,258
	Water use*	m ³	10,619,466	11,573,904	11,778,205
	Water discharge (Onsan Wastewater Treatment Plant)	m ³	2,886,452	2,815,746	2,941,053
Total	Water use	m ³	10,622,918	11,578,494	11,784,867
	Intensity	m ³ /KRW billion	946.8	1,193.1	977.8

* Water use is calculated by subtracting the volume of water discharged from the total water withdrawn, while adding the amount lost through evaporation. The previous year's data has been corrected.

Water Resource Management Targets

Category	2022	2023	2024
Water use target	-3% YoY	-3% YoY	-3% YoY
Actual change rate	-1% YoY	+7% YoY	+3% YoY

Water Resource Risk Management

With the objective of regularly managing water resource risks, Korea Zinc has assessed current water risk exposure in the region where its Onsan Refinery operates using the WRI Aqueduct Tool. We identified water stress levels across future scenarios through now, 2030, and 2050. Based on these findings, we have actively managed industrial water consumption at the Onsan Refinery, with additional management activities now in the pipeline to minimize our impact on the local community.

Key Business	Location	Water Stress		
		Present(2025)	2030	2050
Onsan Refinery	Ulju-gun, Ulsan	Medium-High	• Optimistic: Medium-High (20-40%) • Pessimistic: Medium-High (20-40%)	• Optimistic: Medium-High (20-40%) • Pessimistic: Medium-High (20-40%)
No. of business sites		2 (Headquarters, Onsan Refinery)		
No. of business sites located in high water stress regions		0		
Amount of water consumed in high water stress regions		0		

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Chemical Substance Management

Our continuous monitoring of relevant laws and regulations enables us to proactively respond to legal changes and ensure effective chemical management. We consistently adhere to both domestic and international regulations, including the 「Act on the Registration and Evaluation, etc. of Chemical Substances」 (hereinafter referred to as 'K-REACH'), the 「Chemical Substances Control Act」 and EU REACH. Internal regulations are regularly reviewed and updated to ensure structured compliance. In 2024, we established and amended internal standards for chemical handling, resulting in strengthened work procedures and improvements to our document management system. To date, we have maintained a spotless record of zero chemical spills, and we remain committed to upholding this level of meticulous management.

In addition, chemical substances generated during the manufacturing process are monitored and tracked in real time through dedicated facilities. The environmental data collected is disclosed to local communities and stakeholders via the ENV-INFO System. Furthermore, product Material Safety Data Sheets (MSDS) are available on our website.

For newly introduced chemical substances, we conduct thorough assessments throughout the entire process from procurement to disposal in accordance with applicable regulations, such as K-REACH and the Chemical Substances Control Act. In addition, we carry out a range of activities aligned with handling standards for facilities receiving and releasing chemicals, recordkeeping, and managing process changes, including the extension or shutdown of chemical handling facilities, a testament to our comprehensive approach to chemical substance management.

Our management scope also extends to subcontractors at the Onsan Refinery. We inspect their chemical management practices, including PPE (Personal Protective Equipment) usage, emergency response systems, and environmental education. Furthermore, we continue to monitor their operations to help strengthen their overall chemical management performance.

Chemical Safety Training

To help our employees sharpen their safe chemical control capabilities, we provide education on chemical substances. As part of this initiative, we regularly train employees from chemical-related departments, such as those in chemical procurement and handling, as well as subcontracted workers involved in chemical management.

Moreover, our employees and suppliers receive training on the handling of toxic chemical substances and related operations. In 2024, in partnership with the Korea Environmental Engineers Association, we provided intensive training programs for handlers covering in-depth education on hazardous materials and hands-on practice in wearing chemical protective clothing. These efforts helped enhance employees' safe chemical handling capabilities. Additionally, the Environment Management Team and the relevant departments jointly conducted a total of 10 emergency response drills throughout the year. Employees from the environmental, safety, and production departments have clearly grasped their roles and responsibilities and strengthened their response capabilities for chemical leak emergencies.

Training on Hazardous Chemical Control*

Category		Unit	2022	2023	2024
Hazardous chemical handler training	Recipients(employees)	Headcount	1,081	780	959
	Recipients (suppliers)	Headcount	687	324	217
	Training hours	Hour	16	16	16
Hazardous chemical worker training	Recipients (employees)	Headcount	92	94	103
	Recipients (suppliers)	Headcount	108	205	223
	Training hours	Hour	2	2	2

* Online training and in-person group sessions included.

Chemical Substance Registration

Chemical substances manufactured in Korea or imported are subject to registration with the Ministry of Environment prior to production or import, pursuant to K-REACH regulations. In adherence to these requirements, we have successfully completed the registration of 42 chemical substances. For existing chemicals, we submitted pre-registration within the designated grace period to ensure timely compliance. EU REACH is a comprehensive chemical substance management system that requires the registration, evaluation, and approval of all chemicals manufactured or imported into the European Union in quantities of 1 ton or more per year, depending on their distribution volume and toxicity. As an exporter to Europe, we have completed the registration of chemical substances contained in our products sold in the EU, including zinc, lead, and silver.

Korea's Registration Timeline for Existing Chemical Substances

In the case of manufacturing or importing existing chemicals in quantities of 1,000 tons or more per year	~December 31, 2021
In the case of manufacturing or importing existing chemicals in quantities between 100 tons and less than 1,000 tons per year	~December 31, 2024
In the case of manufacturing or importing existing chemicals in quantities between 10 tons and less than 100 tons per year	~December 31, 2027
In the case of manufacturing or importing existing chemicals in quantities between 1 ton and less than 10 tons per year	~December 31, 2030

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Waste Management

Korea Zinc has put in place a waste management system in line with the detailed guidelines of its internal environmental management policy and has operated it with the aim of minimizing waste generation at its business sites while promoting recycling and reuse. In order to further reduce waste output, we have stepped up our operational processes to recover additional metal resources through in-process re-treatment, effectively limiting waste generation at its source. In addition, we are actively engaged in resource circulation efforts to increase the recycling rate of waste. These include strengthening waste segregation at the source and reviewing the legality and feasibility of recycling waste that would otherwise be landfilled or incinerated, converting such waste to recyclable materials wherever possible. As a result of these endeavors, we successfully diverted 1,659 tons of waste previously destined for landfill or incineration to recycling in 2024, achieving a cost saving of KRW 230 million in annual waste treatment expenses.

Total Waste Generated		(Unit: Ton)	Waste Intensity		(Unit: Ton/KRW billion)
2022		717,602	2022		64.0
2023		761,498	2023		78.5
2024		657,016	2024		54.5

We classify all waste based on its source in accordance with the Wastes Control Act and consign it to licensed transportation and treatment service providers under formal contracts. Throughout this process, we utilize the Allbaro system to comprehensively manage the entire waste lifecycle. In line with our internal waste management guidelines, we conduct annual evaluations of waste treatment contractors to ensure legal compliance and proper handling, and we strive to work only with qualified service providers. We also set annual waste management targets and track actual changes to effectively monitor our performance in waste reduction.

Waste Management Target*

Category	Unit	2022	2023	2024
Reduction target	%	3% reduction YoY	3% reduction YoY	3% reduction YoY
Actual change rate	%	-12.6	6.1	-13.7

* Applicable to Onsan Refinery only

Soil Pollution Management

Metal smelting inevitably generates byproducts, such as sludge and residue, which are typically either disposed of or stored in containment facilities known as ‘ponds.’ We have established a smelting system that does not rely on ponds by adopting the Top Submerged Lance (TSL) technology. TSL maximizes the recovery of valuable metals from various forms of byproducts generated during non-ferrous metal smelting. It also stabilizes the remaining residue into ‘clean slag,’ thereby minimizing the generation of waste that could cause soil contamination.

However, the nature of continuously operating production facilities leads to the constant generation of process byproducts, which require temporary storage prior to resource recovery. Accordingly, we introduced process liquid management tanks to preemptively eliminate soil contamination risks associated with traditional pond storage method and to ensure safer and more efficient process control.

Tailings Management

We acknowledge the critical importance of safe tailings management in preventing adverse impacts on human health, biodiversity, groundwater and surface water resources, and the surrounding environment. Therefore, we have developed a tailings management policy, actively working to ensure its effective implementation. Our policy is grounded in international standards, including the Global Industry Standard on Tailings Management (GISTM) developed by the International Council on Mining and Metals (ICMM), the United Nations Environment Programme (UNEP), and the UN Principles for Responsible Investment (UN PRI). We also make sure the policy reflects relevant legal and regulatory requirements in the regions where we operate.

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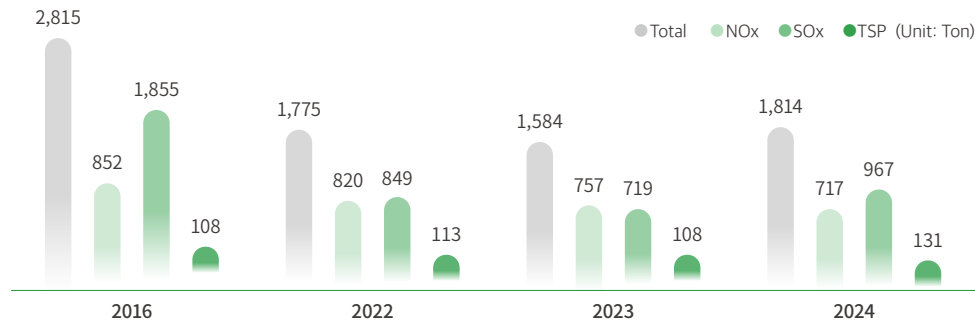
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Targets/Metrics

Air Pollutant Mitigation Efforts

In response to the Special Act on the Improvement of Air Quality in Air Control Zones, we signed the 2025 Voluntary Agreement for Fine Dust Reduction, led by Ulsan Metropolitan City and the Ministry of Environment, and developed a two-year phased roadmap to mitigate fine dust emissions. Using 2023 as the baseline year, we aim to reduce total emissions of air pollutants (SOx, NOx, and TSP) by 10% by 2026. This new agreement builds on our earlier commitment to reduce SOx, NOx, and TSP emissions by 36% from 2016 levels by 2024, a target that has already been successfully achieved.

We began operating our facilities in accordance with strengthened environmental control standards for emissions and prevention systems, following the approval of our Integrated Environmental Permit in December 2022. Emissions of nitrogen oxides (NOx), a primary contributor to fine particulate matter (PM2.5), were reduced by more than 5% compared to the previous year. However, emissions of sulfur oxides (SOx) increased due to the addition of new emission sources. As a corrective measure, we are making concentrated investments in multiple air pollution control systems, including scrubber-type dust collectors and wet scrubbers, with implementation beginning in late 2024. These systems are expected to mitigate pollutant emissions. We will sustain these efforts to ensure that our reduction targets are achieved by 2026.



Air Pollutant Emissions

Category	Unit	2022	2023	2024
NOx	Ton	819.7	757.3	716.6
SOx*	Ton	842.7	718.6	966.9
VOC	Ton	2.5	7.8	2.2
TSP	Ton	112.8	108.4	130.9
Total	Ton	1,777.7	1,592.0	1,816.6
Year-on-year emissions	%	-13	-11	14

* The 2022 SOx data has been corrected due to an error in the previously disclosed figures for the prior year.

Water Pollutant Reduction Efforts

Wastewater generated from our processes is treated through physico-chemical methods and discharged to the Onsan Water Quality Improvement Office in accordance with our internal standards, which are set at less than 80% of the legal limits for water pollutants. In order to prevent environmental contamination caused by leaks of process solutions used in hydrometallurgical operations, we have installed protective infrastructure such as upper covers and acid-resistant flooring.

Water Pollutant Emissions

Category	Unit	2022	2023	2024
TOC	Ton	32.6	20.5	17.9
SS	Ton	103.9	120.3	41.8
BOD	Ton	8.2	6.0	7.7
T-N	Ton	150.7	141.9	130.9
T-P	Ton	0.06	0.1	0.2
Total	Ton	295.5	288.8	198.6
Year-on-year emissions	%	158	-2	-31

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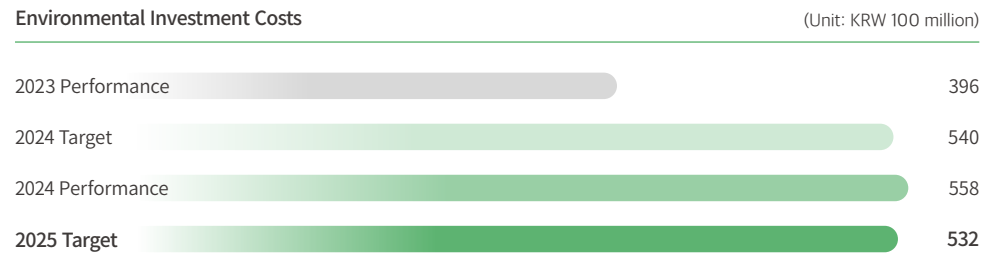
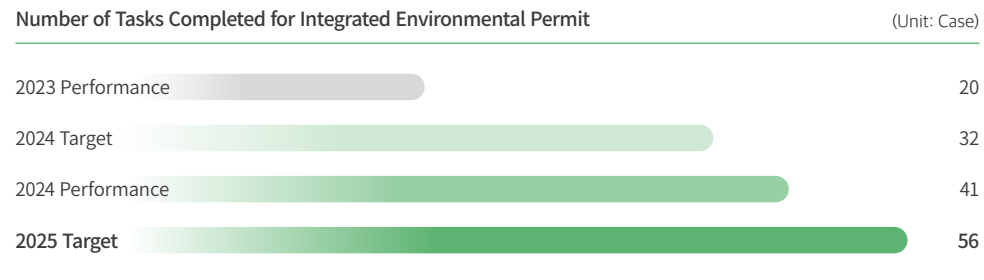
Targets/Metrics

Propelling Integrated Environmental Permit Forward

With the objective of fulfilling the requirements of the integrated environmental permit, we are working to complete a total of 85 tasks across various environmental areas, including air, waste, and water, between 2023 and 2027. As of the end of 2024, we have completed a cumulative total of 41 tasks, achieving a completion rate of 48%.

In 2024, we completed 21 tasks and invested KRW 55.8 billion in environmental facilities during the process. Key initiatives included the installation of a spraying facility in the concentrate storage, an air curtain system, and a roof cover over the slag storage yard. These measures are expected to help minimize fugitive dust emissions.

Our goal for 2025 is to complete 15 additional tasks and plan to invest more than KRW 53.2 billion in environmental infrastructure. Major investments will focus on the installation of additional air pollution control systems, including wet electrostatic precipitators, bag filters, and scrubbers, which are expected to further reduce air pollutant emissions.



Environmental Investment

In 2024, we carried out environmental investments totaling KRW 55.8 billion across various sectors to minimize environmental impact. In the air sector, key initiatives included the installation of a spraying facility at concentrate storage, air curtain systems, a roof cover over the slag storage yard, and a spraying system at the raw material input hopper, all of which contributed to the reduction of fugitive dust emissions. In the water sector, we introduced reverse osmosis (RO) technology to promote rainwater reuse. Currently, through the RO filtration system, up to 1,000 tons of rainwater are filtered per day. An additional RO system is undergoing commissioning as of April 2025 and is expected to filter up to 3,000 tons of rainwater per day once it becomes fully operational.

In the first quarter of 2025, a major investment of KRW 25 billion was made in process solution management tanks at the Onsan Refinery. These tanks were installed to replace the traditional ponds and are designed to safely store and manage intermediate process byproducts, thereby preemptively preventing long-term soil contamination risks. On top of that, a new concentrate storage facility is planned at the reclaimed pond site where the tanks are located. This will increase on-site storage capacity at the refinery and is expected to contribute to greater cost efficiency.

Environmental Investment Costs

Category	Unit	2022	2023*	2024
Air	KRW million	9,593	27,893	11,722
Water	KRW million	2,085	10,866	38,126
Chemicals	KRW million	660	854	5,977
Total	KRW million	12,338	39,613	55,825

* The 2023 environmental investment costs have been corrected from the previously disclosed data for the prior year.

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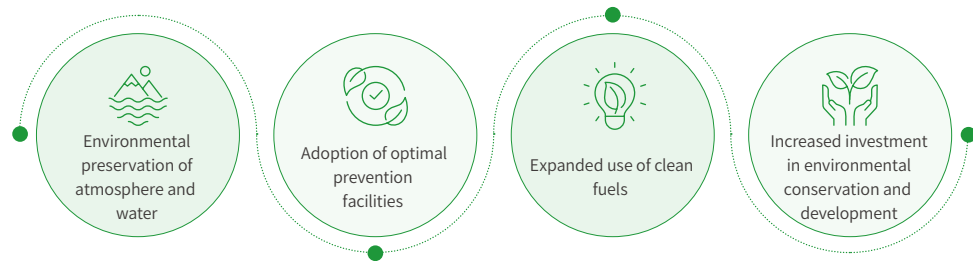
Environmental Management

Internal Environmental Policies

Korea Zinc has established its own environmental policies as a concrete action plan to realize its vision of becoming the world's most environmentally friendly non-ferrous metal smelting company. Centered on the Environmental Management Policy, we systematically address key environmental issues such as energy and GHG mitigation, water resource conservation, and the management of hazardous substances and waste. Water, a vital resource for production, is efficiently managed through our Water Policy. We have also developed a Mineral Waste Management Policy that reflects international standards, and a Biodiversity Policy to protect endangered species and conserve ecosystems around our business sites in compliance with global conservation area guidelines. In addition, a Deforestation Prevention Policy has been adopted across all business activities to contribute to forest preservation through the designation of restricted development zones, restoration initiatives, and cooperation with civil society organizations. With an aim to reinforce environmental responsibility across our supply chain, we operate a Sustainable Procurement Policy that promotes the purchase of certified green products, thereby advancing environmental values even in the material sourcing process. Guided by our environmental policies, we are committed to building a cleaner world where humanity and nature can coexist. We will continue to improve and set stronger environmental goals through regular reviews and enhancement efforts.

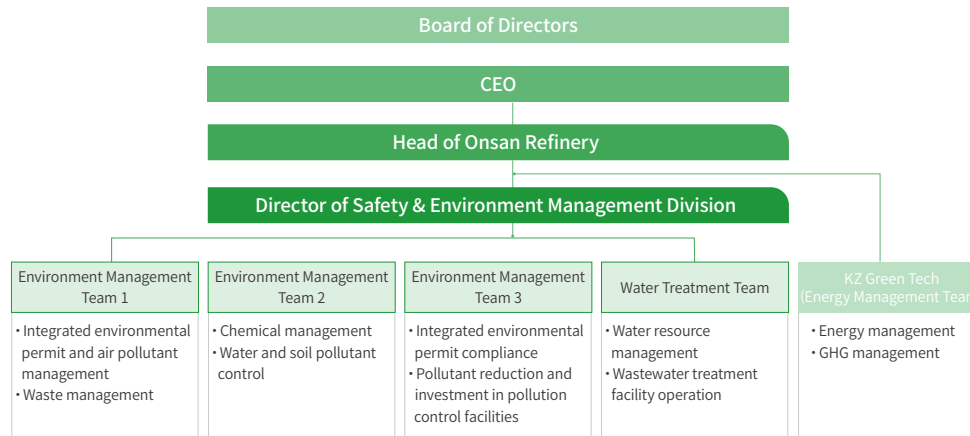
- Environmental Management Policy [↗](#)
- Mine Waste Management Policy [↗](#)
- Deforestation Prevention Policy [↗](#)
- Biodiversity Policy [↗](#)
- Water Policy [↗](#)
- Sustainable Procurement Policy [↗](#)

Four Key Goals for Environmental Management



Environmental Management Organization

Our environmental impacts and compliance with environmental regulations are managed by dedicated environmental management units under the Safety Environment Division at the Onsan Refinery. Environment Management Team 1, 2, and 3, which operate under the division, are responsible for minimizing the environmental load of the refinery through integrated environmental permitting, air pollutant management, hazardous chemicals and waste handling, and investment in pollution control facilities. Water Treatment Team oversees the management of industrial water, including procurement, purification, reuse, and discharge. In addition, Energy Management Team at our subsidiary KZ Green Tech plays a key role in enhancing our expertise in climate action and energy efficiency by managing energy savings and greenhouse gas emissions. Since the ESG Committee was established under the Board of Directors in December 2024, the status of environmental management has been regularly reported to the Board.



Environmental Management System

The Onsan Refinery, which accounts for 86%* of our domestic business sites, first acquired ISO 14001 certification in 2015. This certification, which serves as the international standard for environmental management systems, has been maintained through regular renewals. The refinery undergoes annual audits by accredited third-party institutions to assess and improve its environmental management system, ensuring its continued effectiveness.

* Based on the number of employees in 2024 (Onsan employees / Korea Zinc's total employees)

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Green Procurement

In accordance with our Sustainable Procurement Policy, we are actively reviewing measures to facilitate green procurement practices. The scope of applicable items includes all materials purchased throughout our business operations, such as consumables, maintenance, repair and operations (MRO) supplies, and civil engineering materials. We are committed to expanding the adoption of environmentally friendly products by incorporating sustainability considerations across all stages of our operations.

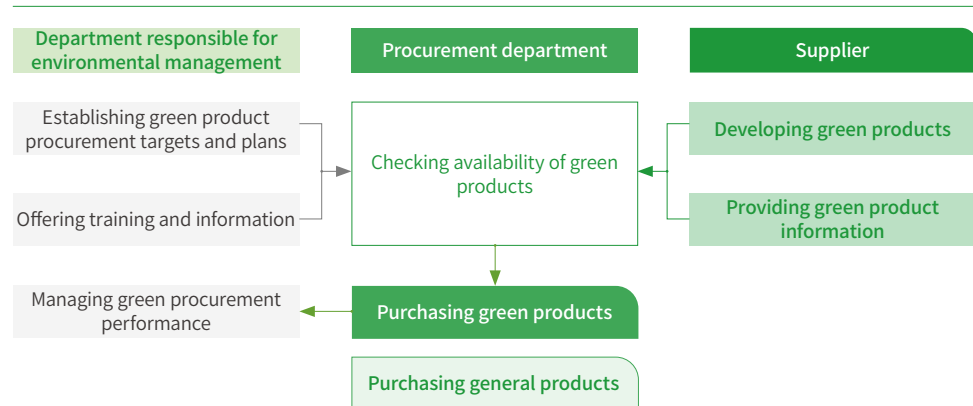
Green Procurement Criteria

For domestically produced products, we recognize those certified under Article 66, Paragraph 4 of the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis as green products. Accordingly, products with certifications such as the Korea Eco-Label Certification, Low Carbon Product Certification, and Good Recycled (GR) Product Certification are classified as green products. For products with international certifications, we determine their eligibility for green procurement through an internal review process.

[Sustainable Procurement Policy](#)



Green Procurement Process



Biodiversity Protection

We have established a Biodiversity Policy and applied it across all our business sites. We have also set policies aimed at preventing deforestation and safeguarding ecosystems, ensuring that we do not operate in ecologically sensitive or internationally recognized protected areas. In accordance with our internal policies, we plan to conduct preliminary assessments of local flora and fauna, including the presence of endangered species, prior to the operation of any new business sites. For existing sites, we regularly monitor pollution levels and, if necessary, collaborate with professional organizations to carry out further investigations and implement appropriate measures.

[Biodiversity Policy](#)

[Deforestation Prevention Policy](#)

Local Ecosystem Protection Program

We have financially contributed and participated in the 'Carbon Neutral Culture and Arts Project: Writing the Sea,' led by Fe01 Regenerative Complex Cultural Space. Our employees and other participants took part in a beachcombing* activity at Ganjeolgot in Ulju-gun, Ulsan, collecting marine debris and creating artworks using waste materials. Through this experience, they also shared ideas and deepened their understanding of carbon neutrality. We plan to continue supporting community programs that contribute to ecosystem preservation.

*Beachcombing: the act of collecting driftwood or litter along the shore as if combing the beach

Habitat Restoration Program: 'Forest of Connection'

Through our ongoing commitment to the 'Forest of Connection' initiative, we strive to restore ecosystems and promote biodiversity where it matters most. In collaboration with specialized organizations, we select planting sites and tree species that are ecologically suitable and aligned with the characteristics of each region, thereby contributing to both ecological conservation and the revitalization of local economies.

In 2023, we planted 10,000 tulip trees in Uljin, an area devastated by the longest and most severe wildfire on record in Korea. Tulip trees are known for their thick bark and high moisture content in their leaves, offering excellent fire resistance and aiding in the restoration of fire-damaged ecosystems.

As part of our overseas restoration efforts, we planted 20,000 coffee trees in Lombok, Indonesia, where landslides and deforestation have been prevalent. These trees are expected to absorb approximately 216 tons of CO₂ and 440 kg of fine dust annually, while also providing a source of income for the local community. In 2024, we planted 15,000 mangrove trees in the Lembongan area of Indonesia. As natural carbon sinks and coastal buffers, mangroves play a critical role in mitigating greenhouse gas emissions and protecting shorelines. The degradation of these ecosystems can lead to increased climate and physical risks such as global warming and soil erosion. As a responsible global company, we are committed to supporting habitat restoration in Korea and beyond through diverse support activities.

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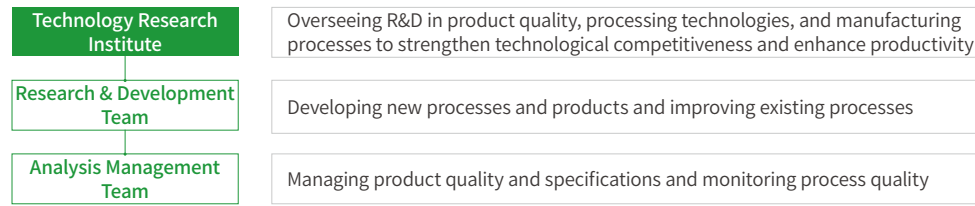
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R&D and Intellectual Property Rights

R&D

Since 1982, we have been operating our Technology Research Institute to enhance product quality and to develop innovative technologies and processes, steadily expanding our R&D investments. Through these efforts, we have successfully advanced a wide range of technologies, from improving process efficiency in our smelting operations to developing precursor manufacturing technologies for secondary batteries. In 2024 alone, we developed a total of 30 technologies, of which 21 have been either registered or filed for patents.

Notable achievements include the development of eco-friendly recycling technologies for smelting byproducts, core all-in-one nickel smelting technology, manufacturing technologies for both large- and small-particle precursors, high-strength copper foil, and green ammonia-based hydrogen storage and transport solutions. Going forward, we aim to further reinforce our competitive edge by developing recovery technologies for strategic metals essential to national industry and economic security, as well as low-carbon, eco-friendly smelting technologies.



Category	Unit	2022	2023	2024
R&D expenses	KRW 100 million	76	106	112

Intellectual Property Rights

We immediately pursue international patent applications upon completing domestic filings to ensure full protection of our intellectual property rights. As of the end of 2024, we hold a total of 10 trademark rights and 34 patents. In particular, our proprietary and cost-effective nickel smelting process, registered in 2020, has strengthened our competitiveness in the rechargeable battery materials business. In 2024, we secured nine new patents, including one for a method of producing high-purity refined iron oxide from iron oxide by-products generated during the zinc smelting process. We will continue to actively invest in research and development and protect our intellectual property rights to maintain and enhance our competitiveness in both our traditional smelting operations and our Troika Drive businesses.

National Core Technology and National Strategic Technology

In November 2024, our High-Ni precursor manufacturing technology was designated as a National Core Technology in the electrical and electronics sector by the Ministry of Trade, Industry and Energy under the Act on Prevention of Divulgence and Protection of Industrial Technology. The technology was also recognized as a National Strategic Technology under the Act on Special Measures for Strengthening the Competitiveness of, and Protecting, National High-Tech Strategic Industries. This differentiated technology enhances energy density and output by increasing the nickel content in precursors, which are the base materials used to manufacture cathode materials, a key component in rechargeable batteries, to over 80 percent. These designations have laid the groundwork for us to establish a stable domestic supply chain for battery precursors using fully homegrown technologies.

In January 2025, our technology for manufacturing and processing metal compounds for cathode materials related to nickel sulfate was designated as a National Strategic Technology under the Act on Restriction on Special Cases Concerning Taxation, making it eligible for tax credits on facility investments. In May 2025, our proprietary high purity zinc refining process known as the ‘hematite processing’ was preliminarily designated as a National Core Technology (as per MOTIE Announcement No. 2025-356), further strengthening our role as a key player in national strategic and foundational industries. The hematite processing maximizes zinc recovery rates to over 98.5 percent during the refining stage while efficiently and economically removing iron impurities. Compared to conventional iron removal processes used at other smelters, this process minimizes the loss of zinc and valuable metals, making it a uniquely differentiated technology exclusive to us. In parallel, we are in the process of applying for National Core Technology designation for our rare metal recovery technology, which enables the production of strategic critical minerals such as antimony, bismuth, indium, and tellurium with a purity of 99.99 percent or higher.

We have demonstrated our advanced technological capabilities not only in our core smelting operations but also in the field of rechargeable battery materials, leveraging these key technologies. In particular, we are helping to enhance national economic security by reducing the domestic battery industry's dependence on China and supporting the development of an independent domestic supply chain.

Environmental Compliance

We monitor and disclose environmental law violations across all business sites, including our headquarters and the Onsan Refinery. The number of violations was two in 2021 (fines totaling KRW 2.08 million), two in 2022 (fines and penalties totaling KRW 51.44 million), and three in 2023 (fines totaling KRW 4.00 million). In 2024, there were five non-monetary sanctions and one monetary sanction (fine of KRW 2.40 million). We submitted corrective action plans and follow-up reports as required by the authorities and are strengthening facility investments and monitoring to prevent recurrence. We remain committed to closely monitoring and complying with all environmental regulations moving forward.

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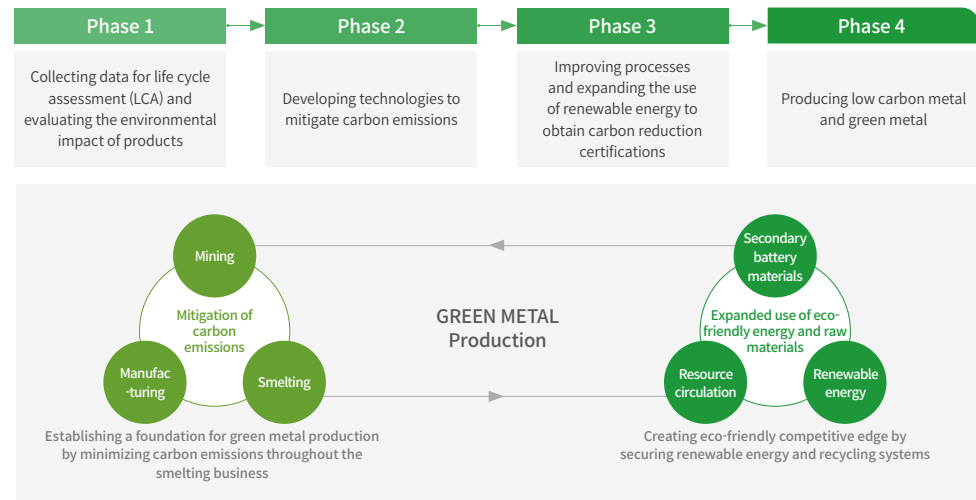
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Green Metal

We aim to achieve 'green metal' production by 2050, eliminating carbon emissions throughout the entire life cycle of our products. To this end, we have established a four-phase production roadmap and are gradually advancing our technologies to meet this goal. We are currently developing green hydrogen projects using renewable energy sources such as solar and wind power. Our ultimate goal is to produce green metal using green hydrogen and to achieve carbon neutrality.

[Green Metal webpage](#)



Product Carbon Footprint Assessment

In 2023, we completed product carbon footprint assessments for zinc, silver, and copper based on Life Cycle Assessment (LCA) and obtained Product Carbon Footprint (PCF) certification from Carbon Trust.

In 2024, we expanded the scope to include semiconductor sulfuric acid, gold, and lead. As a result, we obtained additional PCF certifications for semiconductor-grade sulfuric acid in December 2024 and for gold and lead in April 2025. Semiconductor sulfuric acid is a by-product generated during the smelting process and serves as a critical material used to remove impurities from wafer surfaces. Korea Zinc currently supplies approximately 65 percent of the domestic demand for this material.

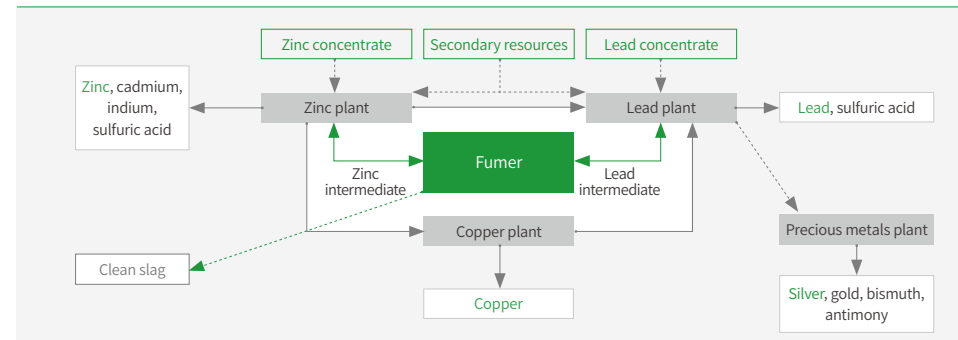
In 2025, we plan to renew the PCF certifications for zinc, silver, and copper and conduct a carbon footprint assessment for sulfuric acid.



Eco-friendly Products

We are committed to minimizing the environmental impact of our products and classify those manufactured using recycled materials as 'eco-friendly products.' Currently, our copper and silver products fall under this category, having been officially certified by SGS (Société Générale de Surveillance), a global certification body, as being produced entirely with post-industrial recycled (PIR) materials. Accordingly, the full sales revenue from these products is recorded as the revenue from eco-friendly products.

Integrated Process Diagram



Copper Produced entirely using recycled materials recovered from byproducts generated during zinc and lead smelting processes, as well as printed circuit boards (PCBs) from waste electronic equipment, without purchasing separate copper concentrate

Silver Produced using 100% Pb slime, a byproduct generated from zinc and lead smelting processes



Revenue from Eco-friendly Products

(Consolidated basis)

Category	Unit	2022	2023	2024
Copper	KRW million	297,510	343,877	389,411
Silver	KRW million	1,836,115	1,924,177	2,383,624
Total	KRW million	2,133,625	2,268,054	2,773,035
Percentage of eco-friendly product revenue to total sales	%	19	23	23

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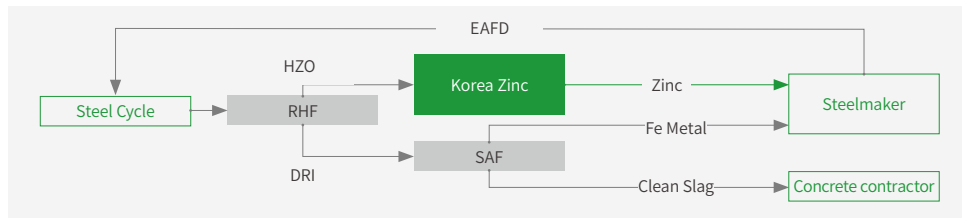
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Resource Recycling

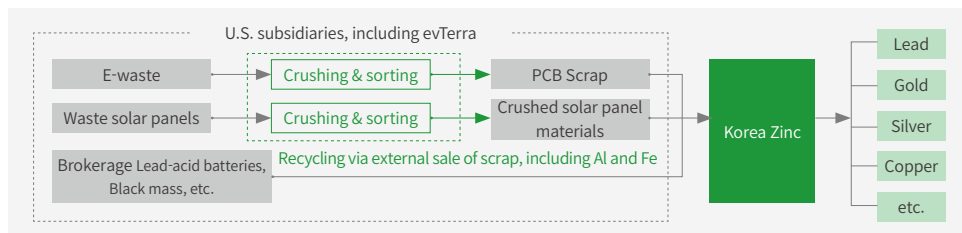
Circular Economy between Refining and Steelmaking Industries

We take the lead in resource circulation through our unparalleled technology in waste recycling. Through our subsidiaries, Steel Cycle and Steel Cycle SC, we recover waste materials such as electric arc furnace dust generated in steelmaking processes and recycle them into crude zinc oxide, a raw material used in zinc smelting. This crude zinc oxide is reintroduced into the smelting process to produce recycling zinc. Additionally, direct reduced iron (DRI), a byproduct of the crude zinc oxide production process, can be reused as a raw material in steelmaking. Leveraging our smelting expertise, we have created a cross-industry circular system that flows from steelmaking to smelting and back again. This closed-loop system reduces landfill costs and raw material mining demands, ultimately contributing to safeguarding the global environment.



Circular Economy for Municipal Waste

Since the acquisition of Igneo in July 2022, we have been actively advancing into the municipal waste recycling business, also known as the urban mining sector. Building on its existing network, Igneo initially focused on collecting and preprocessing (crushing & sorting) electronic waste to supply PCB scrap to us. Its business has since expanded to include the handling of end-of-life solar panels, lead-acid batteries, and black mass. In addition to sourcing a variety of municipal waste streams based on market demand, Igneo plays a pivotal role by converting these waste materials into secondary raw materials suitable for our processing operations.



Use of Raw Materials

The materials used in our production processes are classified and managed as primary, secondary, and auxiliary raw materials. Primary raw materials are non-renewable resources extracted directly from nature. Secondary raw materials refer to recycled inputs such as byproducts from mines or smelters, or materials recovered and processed by recycling companies, including sludge, slag, scrap, and discarded printed circuit boards (PCBs). Auxiliary raw materials are not the main inputs but are essential for supporting the production process.

Major Raw Material Consumption*

Category	Unit	2022	2023	2024	
Raw materials	Zinc concentrate	Ton	1,129,947	1,176,475	1,080,762
	Lead concentrate	Ton	590,258	542,586	599,661
	Silver concentrate	Ton	11,772	24,869	26,173
	Total	Ton	1,731,976	1,745,953	1,708,620
	Secondary raw materials	Total	Ton	494,719	517,698
Proportion of eondary raw materials		%	22	23	21
Auxiliary raw materials	Petroleum coke	Ton	303,326	329,345	278,911
	Anthracite	Ton	178,181	181,969	144,182
	Limestone	Ton	79,566	83,142	91,565
	Mixed alkali	Ton	149,377	181,970	85,844
	Caustic soda	Ton	19,814	29,924	48,091

* Due to changes in data collection and classification criteria in 2024, there are differences from the figures disclosed in the previous year.

Product Recalls

There were zero product recalls at Korea Zinc in 2024. As a B2B-oriented company, our business model inherently involves no product recalls. In the smelting industry, product exchanges typically occur due to concerns over quality variations or discoloration. However, our core products are 99.9% pure and free of hazardous substances, making the likelihood of a recall virtually nonexistent.

Even when customers raise quality-related concerns, issues are generally resolved through re-refining processes. Since our plants operate continuously, such reprocessing can be carried out smoothly without incurring financial loss. As a result, we consistently maintain a 100% product sales rate, and product recalls do not apply to our business model.

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Issue Materiality

Occupational health and safety management is an essential component of our business operations, aimed at protecting the lives and well-being of all our employees, and it is a core pillar of our sustainable management approach. Given the inherent risks in the smelting industry, creating a safe working environment and preventing industrial accidents are not merely legal obligations but critical social responsibilities for the company. We have set up and operated a systematic occupational health and safety management system that aligns with international standards, putting worker safety at the heart of all our business activities and decision-making processes.

Impact Materiality

Creating a safe working environment by continuously improving safety practices, preventing industrial accidents, and enhancing employee health.

Financial Materiality

Securing business continuity through accident prevention and mitigating risks related to legal liabilities and regulatory penalties.

Key Milestones

- Achieved an accident rate below the 2024 target
- Invested about KRW 284.1 billion in process and facility stabilization
- Completed construction of a state-of-the-art safety training center and obtained LEED (Leadership in Energy and Environmental Design) Silver certification as a eco-friendly building

Next Steps

- Pursue a target of zero serious accidents
- Maintain an integrated accident rate below 0.45 in 2025

Governance

Policies and Guidelines for Health and Safety

We place the highest priority on health and safety, with the core objective of ensuring that all stakeholders, including employees, partner companies, and customers, can work in a safe and comfortable environment. Through our health and safety management and process safety management systems, we comply with all relevant requirements, identify and eliminate potential hazards, and continuously strengthen our risk management framework.

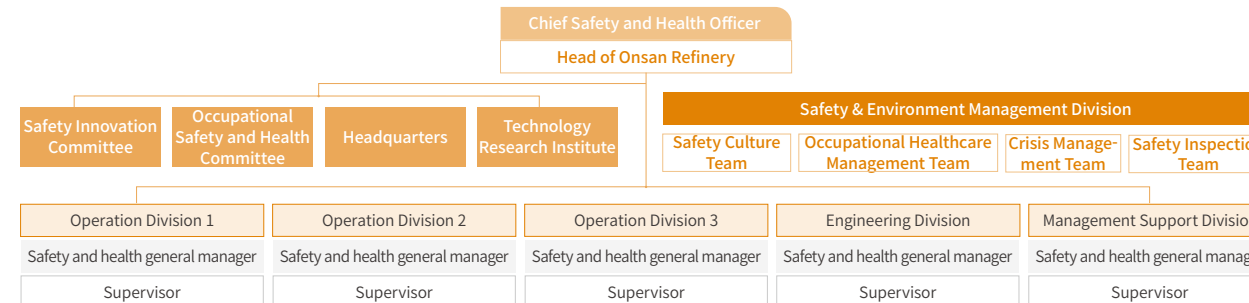
We also focus on enhancing the safety capabilities of all personnel through ongoing training and resource investment, underpinned by active employee participation. In parallel, we support our partner companies in establishing robust health and safety systems to foster mutual growth.

In 2025, we revised our safety golden rules to designate three critical areas that must be recognized and strictly followed; prevention of falls, entrapment, and asphyxiation. These priorities are part of our reinforced efforts to prevent serious industrial accidents.

[Safety & Health Policy](#)

Occupational Health and Safety Governance

We have appointed the Head of Onsan Refinery as the company-wide Chief Safety and Health Officer and established the Safety & Environment Management Division as a dedicated organization responsible for health and safety. This structure enables us to systematically carry out various safety initiatives and focus our efforts on preventing workplace accidents. In particular, each division director is designated as the safety and health general manager in charge of their respective division. These directors are responsible for analyzing potential hazards and establishing tailored preventive measures, ensuring a more detailed and effective approach to risk management. The CEO develops and reports the company's annual health and safety plan to the Board of Directors for approval. Beginning in 2025, the ESG Committee under the Board will regularly receive and monitor reports on the company's safety management performance.



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Governance

Safety Innovation Committee and Occupational Safety and Health Committee

The Safety Innovation Committee consists of internal and external experts, labor union representatives, and representatives from partner companies. The committee has been convened regularly since 2021. It plays a key role in thoroughly reviewing health and safety activities, discussing domestic and international health and safety-related risks and key issues, and deriving improvement measures.

In particular, since May 2024, the participation of external experts in the field of health has significantly contributed to addressing our vulnerabilities in health management. Improvement measures identified by the Safety Innovation Committee are promptly reflected in our health and safety management system.

In addition, the Occupational Safety and Health Committee, composed of representatives from both management and the labor union, convenes on a quarterly basis. Through this committee, labor and management share health and safety information and identify areas for improvement. The committee plays a key role in fostering a safety culture and seeking collaborative solutions to health and safety issues. Moving forward, we will continue to advance related initiatives to strengthen field-oriented safety management and achieve tangible results.

Safety Innovation Committee Meeting Overview

Date	Key Agendas
Feb 28, 2024	<ul style="list-style-type: none"> Review of 2023 health and safety issues and major activities Review of external inspection results from external institutions
May 27, 2024	<ul style="list-style-type: none"> Launch ceremony of the 2nd Safety Innovation Committee and presentation of appointment letters
Jul 3, 2024	<ul style="list-style-type: none"> Review of the first half of 2024 health and safety issues and major activities
Aug 5, 2024	<ul style="list-style-type: none"> Discussion on improvements in health management and development of safety measures for foreign workers
Oct 8, 2024	<ul style="list-style-type: none"> Appointment of new chairperson and review of health and safety activities
Dec 10, 2024	<ul style="list-style-type: none"> Review of the second half of 2024 health and safety issues and major activities

Health and Safety Management System

Korea Zinc's Onsan Refinery maintains ISO 45001 certification, a global safety and health management system standard, and KOSHA-MS certification, a representative domestic standard. The scope of the health and safety management system covers all Korea Zinc employees and supplier workers at the Onsan Refinery.

Scope of Application for the Health and Safety Management System

Category	Unit	2022	2023	2024
Korea Zinc (Onsan Refinery)	%	100	100	100
Suppliers	%	100	100	100

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Strategy

Identification of Health and Safety Risks and Opportunities

Korea Zinc has identified factors and impacts related to health and safety risks and opportunities. The most important risk we have identified is regulatory risk. In response to more stringent industrial safety-related laws and regulations, we plan to prepare response plans to proactively manage regulatory risks

Type	Category		Health and Safety Opportunities and Risks	Impacts of Opportunities or Risks		Our Responses and Utilization Measures
	Opportunity	Risk		Financial Impacts	Environmental and Social Impacts	
Regulation		●	Legal sanctions and fines for violating safety and health regulations	<ul style="list-style-type: none"> Increased financial burden due to fines and penalties Revenue loss caused by suspension of production activities Higher operating costs due to increased insurance premiums Reduced investment due to declining corporate credibility 	<ul style="list-style-type: none"> Risk of worker injuries and health issues due to inadequate health and safety management Decline in corporate credibility in the event of an accident 	<ul style="list-style-type: none"> Advancement of the health and safety management system Strengthened internal management and safety training to ensure regulatory compliance Expansion of investment in occupational health and safety
	Supplier	●	Risk of accidents caused by inadequate safety practices of suppliers	<ul style="list-style-type: none"> Increased production disruptions and costs due to accidents Damage to corporate image and credibility in the event of a safety accident Potential increase in legal liability 	<ul style="list-style-type: none"> Safety threats to supplier workers Increased concerns among local communities and stakeholders in the event of an accident Undermining of safety culture within the supply chain 	<ul style="list-style-type: none"> Signing of agreements to provide suppliers with follow-up support and consulting systems for health and safety management Enhanced supply chain due diligence and development of evaluation criteria Provision of incentives to suppliers that comply with safety standards
Productivity	●		Increased productivity through the establishment of a zero-accident workplace	<ul style="list-style-type: none"> Reduced operating costs through accident prevention Improved worker productivity and reduced rate of absenteeism 	<ul style="list-style-type: none"> Improved employee satisfaction through the creation of a safe working environment Increase in long-term employee retention Establishment of a strong corporate safety culture 	<ul style="list-style-type: none"> Increased investment in safety technologies and automation equipment Reinforcement of health and safety training programs and promotion of company-wide safety campaigns
		●	Production interruptions due to insufficient workplace safety	<ul style="list-style-type: none"> Revenue loss due to production suspension Increased medical and compensation expenses due to accidents 	<ul style="list-style-type: none"> Threats to workers' health and lives Increased employee dissatisfaction due to deteriorating working conditions Potential decline in recruitment of new employees 	<ul style="list-style-type: none"> Upgrading of personal protective equipment (PPE) and safety devices Strengthened safety inspections and implementation of preventive maintenance Budget increase to scale up health and safety investments and reinforce execution capabilities
Emergency	●		Strengthened organizational responsiveness through emergency response training	<ul style="list-style-type: none"> Ensured business continuity and stabilization through prompt response Minimization of legal risks 	<ul style="list-style-type: none"> Ensuring community safety Strengthened corporate trust and reputation 	<ul style="list-style-type: none"> Construction completion of a state-of-the-art safety training center and expansion of hands-on training Updating emergency response manuals and conducting regular drills
		●	Damage to production facilities due to natural disasters or fires	<ul style="list-style-type: none"> Escalating recovery costs following accidents Operational shutdowns due to facility damage Potential cascading disruptions across the supply chain 	<ul style="list-style-type: none"> Potential harm to workers and local communities Expansion of corporate social responsibility issues in the event of an accident Undermined stakeholder trust due to inadequate emergency response systems 	<ul style="list-style-type: none"> Reinforced emergency response systems and regular inspections Securing insurance coverage and disaster response budgets and strengthening implementation capabilities

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Risk management

Process Safety Management (PSM)

Korea Zinc undergoes evaluation of its process safety report implementation status in accordance with the Occupational Safety and Health Act every four years. We were recognized for safety across 12 PSM elements, including process safety data, risk assessment, facility inspection and maintenance, contractor safety management, and self-audit, and received a grade of S (good) in 2023.

We operate PSM training in detail and improve the level of PSM management by enhancing our computer system. In 2024, we expanded our training scope by providing PSM specialized training, such as risk assessment, to personnel in relevant departments, while supporting unrelated departments in creating process safety data to comply with the PSM requirements. By conducting self-audits of operational departments on 12 PSM requirements, we support the establishment of improvement plans for items that have not yet been addressed. By utilizing the computer system, we conduct a thorough review and improvement of supplementary matters.

We also conduct company-wide emergency response drills on a quarterly and semiannual basis. Each department is responsible for independently selecting and developing emergency scenarios tailored to its specific operations, and all departments carry out structured response training based on these scenarios under the supervision of the safety department.

Health and Safety Training

Establishment of Safety Training Center

In February 2025, Korea Zinc completed the construction of a state-of-the-art Safety Training Center at the Onsan Refinery. The center consists of six zones and 39 types of experiential training facilities. In addition to existing safety training setups, the center includes field-oriented hands-on facilities for scenarios such as gas explosions, falls, and fire evacuations, allowing for a wide range of safety training programs. The center plans to provide focused support for customized programs based on educational purposes, with expectations for substantial improvement in educational effectiveness.

Meanwhile, the center achieved LEED Silver certification, receiving excellent evaluation in terms of environmental friendliness from the design and construction stages through to overall post-completion operations. Our safety training center, certified as an eco-friendly building, is expected to play an important role in promoting the creation of a safe working environment for employees through various experiential education while enhancing energy-saving efficiency.

Onsan Refinery Safety Training Center



LEED Silver certification



Operation of Experiential Safety Training Center

We provide various experiential training programs to bolster the safety capabilities of our employees and suppliers. In 2024, we conducted experiential health and safety training for 1,620 employees and 944 supplier workers, helping to raise awareness of health and safety practices across our workforce. Starting in 2025, with the completion and operation of the safety training center, we plan to enhance health and safety awareness among all members through substantial, customized education utilizing our expanded experiential training facilities.

Zone	Experiential training programs
Fall safety	Fall safety training (safety belt fall)
Fire / machine safety	① Accident reporting and fire extinguishers training ② Pinch point simulation (conveyor belt pinching, entanglement) ③ Crane wire rope display
PPE / chemical safety	① PPE training (safety shoes, hard hats impact) ② Safety glasses training ③ Chemical leaks and Lock Out Tag Out (LOTO) training

Qualification Training

We provide both statutory and in-house qualification training. Through four internal qualification courses; closed system monitoring, fire surveillance, conductor (signalman), and crane operation, we have trained a total of 3,014 certified personnel, including repeat trainees and supplier workers. In 2025, we introduced additional forklift safety training and qualification programs for all forklift operators, including those of our suppliers, to enhance safety awareness. We remain committed to continuously developing qualification training programs to strengthen professional competencies in health and safety and to improve safety in the workplace.

Health and Safety Training Status

Category	Unit	2022	2023	2024	
Total	Total training hours*	Hour	70,823	68,223	64,901
	No. of regular employees	Person	1,638	1,731	1,759
	Average training hours per person**	Hour	43	39	37
Legally mandated training	Total training hours	Hour	48,378	50,290	49,624
Non-mandatory training	Total training hours	Hour	22,445	17,933	15,277

* Total training hours (training hours × number of participants) by course

** Total training hours / number of regular workers. The number of participants by training course may include multiple counts and supplier employees. The average per-person figure is calculated based on Korea Zinc's regular employee count.

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Risk management

In-house Safety Awareness Events

Korea Zinc planned various in-house events to promote a culture of safety and raise awareness of occupational safety and health. The winning entries from each event are actively utilized as educational materials and promotional materials.

Company-wide Safety Practice Campaign, 'Begin Again: Safety'

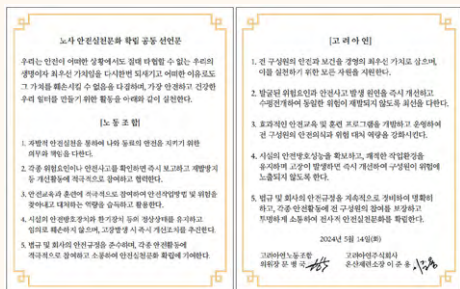
The Begin Again campaign, launched in April 2024 with the goal of establishing a safety practice culture, embodies the 'Back to the Basic' commitment to comply with basic safety rules once again. The campaign focuses on spreading safety culture through voluntary participation of all employees. Considering accident cases that occurred over the past two years and seasonal characteristics, five safety practice themes were established; 'Traffic accident prevention, Prevention of five major safety accidents, Health management practice, Fostering healthy lifestyle habits, and Securing basic safety,' and specific implementation measures were promoted.



Joint Declaration Ceremony for Establishing Labor-Management Safety Practice Culture

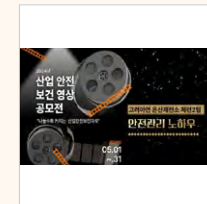
On May 14, 2024, we held a joint declaration ceremony to promote a culture of safety practices through labor-management cooperation. The event aimed to set shared goals for creating a healthy and safe work environment, reaffirm our commitment to safety as our top priority, and strengthen every member's resolve to put safety into action.

The Head of Onsan Refinery and company executives attended alongside the labor union chairman and union members, pledging to embed a safety-first mindset through continuous collaboration.



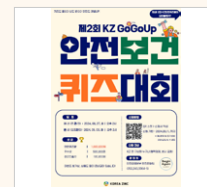
KZ Health and Safety Video Contest

We annually hold a video contest to raise health and safety awareness among all employees and spread safety practice culture. In 2024, creative and high-quality works on various themes such as compliance with safety rules, risk prevention, and safety culture promotion were submitted. In particular, the 'Safety Management Know-how' video by Smelting Team 2 advanced to the finals of the Ministry of Employment and Labor's video contest, contributing to promoting our excellence in safety management externally.



2nd KZ GO GO UP Health and Safety Quiz Competition

Under the slogan, 'Go Solve the Quiz! Go Win a Prize! Level Up Your Safety!' we hosted the 2nd KZ GO GO UP Health and Safety Quiz Competition in 2024, with active participation from both Korea Zinc and supplier employees. Out of 134 preliminary participants, 40 advanced to the finals. The entire event was broadcast live online, enabling employees who could not attend in person to watch the competition, enhance their safety knowledge, and strengthen their awareness of health and safety practices.



Family-Participatory Poster Contest, 'Drawing KZ Safety'

The 'Drawing KZ Safety' contest held in 2024 welcomed participation from both Korea Zinc and supplier employees, as well as their families. A total of 108 entries were submitted, 50 in the family category and 58 in the employee category, with 65 Korea Zinc employees and 43 supplier employees participating. All submitted works were fairly evaluated through both online and offline voting, and 18 entries, including the grand prize winner, were selected for awards.



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Occupational Health and Safety

Risk management

Health Care Activities for Employees

We actively promote health management activities to improve the well-being of our employees and those of our contractors. Since 2017, we have run an annual in-house smoking cessation program as part of our practical health care efforts, recognizing employees who successfully quit smoking through award ceremonies.

We also spare no effort in supporting the physical and mental health of our employees. To monitor workplace stress, we conduct a standardized job stress assessment once a year. For high-risk individuals, we provide follow-up care such as one-on-one phone counseling, stress management training, and the distribution of 'mind kits.' In 2024, 1,594 employees at the Onsan Refinery and 597 employees from 28 in-house partner companies participated in the assessment.

We provide comprehensive health checkups for our employees and their spouses. In addition, general health screenings are offered to workers from in-house partner companies, and those exposed to hazardous substances, such as lead, cadmium, and indium, receive special medical examinations.

In 2024, we expanded the scope of our health care efforts by conducting biological monitoring and medical checkups for approximately 700 workers from external partners for the first time.

We also provide essential personal protective equipment (PPE), such as safety helmets and safety shoes, to all workers at the Onsan Refinery, including those from in-house partners. For employees working in areas where noise levels exceed 85 dB, we conduct ear fit tests to identify the most suitable earplugs or earmuffs for each individual, helping manage noise exposure and reduce the risk of hearing loss.

Meanwhile, we operate a return-to-work program that not only supports treatment and recovery for workers returning after an industrial accident, but also assesses their fitness to resume work duties.

Health Care Activities Overview

Smoking Cessation Campaign	Job Stress Assessment	Comprehensive and Special Health Checkup for Employees and Spouses
Biological Monitoring	Provision of PPE	Ear fit Testing
Distribution of Medical Supplies During Extreme Heat		

Bolstering Safety Capabilities of Suppliers

Korea Zinc supports the establishment of autonomous safety and health management systems for partner companies based on the belief that our supplier staff's health and safety are directly linked to our own. To this end, we operate a Supplier Health and Safety Council and a Safety Personnel Working Group on a monthly basis, and provide technical support throughout the entire KOSHA-MS certification process from acquisition to operation and post-assessment. We operate a mobile platform that shares the latest health and safety information in real-time, including major accident cases and hazard alerts, to approximately 130 internal and external suppliers using a mobile communication platform, Naver Band. Additionally, to strengthen safety management at supplier sites, we supported the creation and revision of Safe Work Procedures (SWP) for 26 partner companies.

Additionally, in 2024, to proactively respond to the expansion of the Serious Accidents Punishment Act's scope of application, we conducted inspections of 26 subcontractors with fewer than 50 employees who lacked capacity, using a checklist that reflected 13 items including Article 4 and Article 5 of the Serious Accidents Punishment Act. We identified 174 issues in the first half and 200 issues in the second half of the year, and supported improvements through continuous follow-up management. We are also supporting the strengthening of legal response capabilities by distributing inspection result reports to in-house subcontractors. Through such systematic support for supplier health and safety management, we are contributing to strengthening win-win cooperation with partner companies and preventing industrial accidents.

Partner Companies Health and Safety Management

Korea Zinc conducts health and safety evaluations twice a year for both new and existing partner companies. In 2024, we evaluated 134 suppliers in the first half and 132 in the second half. The assessment consists of 17 criteria, including accident management and on-site management. Suppliers that demonstrate outstanding performance are recognized with awards, while those that fall below a certain score may face restrictions, such as bidding limitations, to encourage continuous improvement in safety management. For new suppliers working at the Onsan Refinery, Korea Zinc conducts an evaluation using a New Subcontractor Registration Assessment Form, which reviews safety-related factors such as industrial accident history, presence of on-site supervisors, and ISO / KOSHA / OHSAS certification status. Only suppliers that meet the required standards are eligible for registration as in-house partners. In 2024, two new subcontractors were evaluated under this process.

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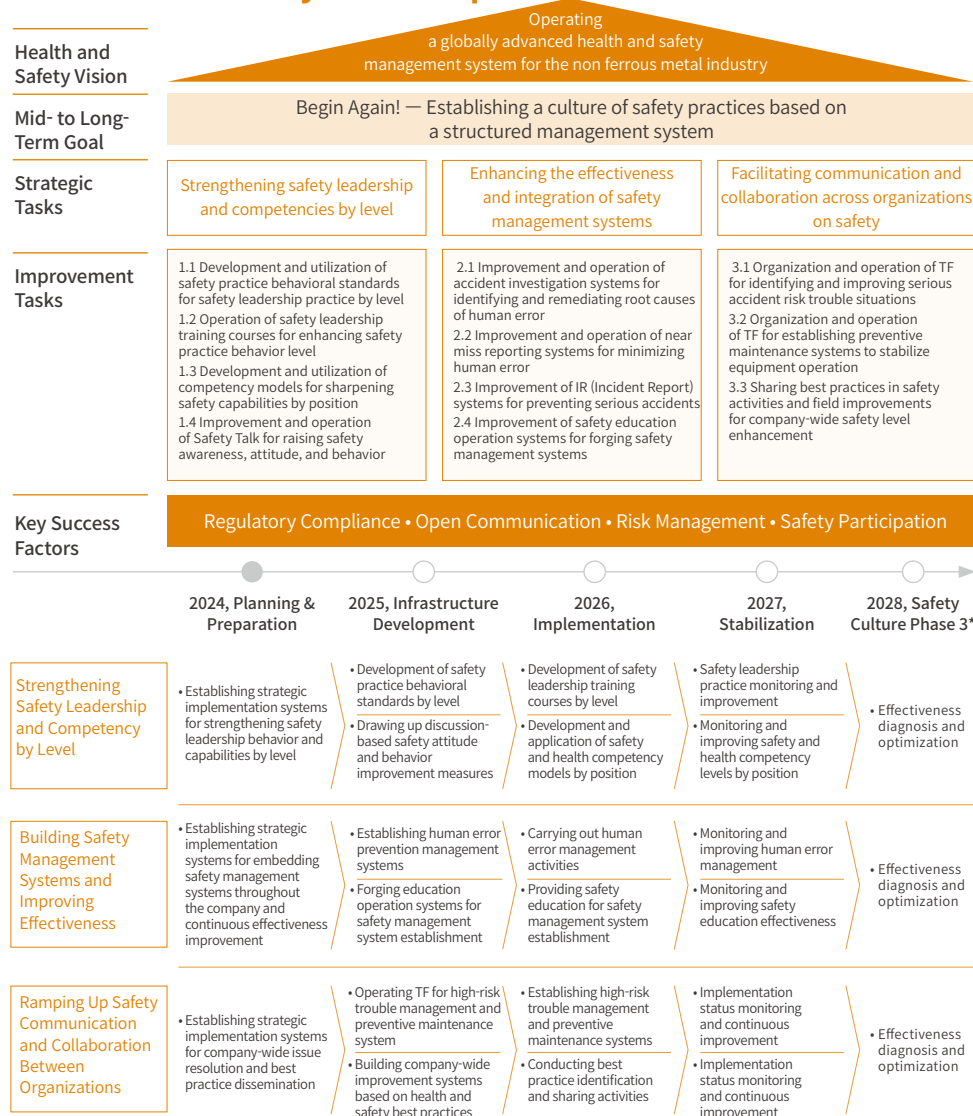
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Occupational Health and Safety

Targets/Metrics

Health and Safety Roadmap



Occupational Safety Indicators

Korea Zinc sets annual accident rate goals, and manages performance in order to achieve zero serious accidents in the workplace. The 2024 health and safety target was to keep the total occupational accident rate (including both Korea Zinc and its suppliers) below 0.59%, and we successfully achieved a rate of 0.53%. The target for 2025 is to further reduce the rate to 0.45% or lower.

Indicator	Unit	2022	2023	2024	
No. of Accidents	Injuries and illnesses	Korea Zinc	8	10	8
		Suppliers	16	9	11
No. of workers injured	Injuries and illnesses	Korea Zinc	8	10	9
		Suppliers	16	9	11
Lost Work Hours		Korea Zinc	6,296	6,944	7,712
		Suppliers*	13,728	5,416	69,320
		Total*	20,024	12,360	77,032
No. of Near Miss Cases**		Korea Zinc	869	525	145
		Suppliers	0.49	0.58	0.51
Injury Rate		Suppliers	0.76	0.42	0.55
		Total		0.49	0.53
Severity Rate	Lost work hours per 1,000 hours worked	Korea Zinc	0.20	0.22	0.23
		Suppliers	0.34	0.13	1.82
		Total	0.28	0.17	1.07
Total Recordable Injury Frequency Rate (TRIFR)	No. of recordable injuries per 1,000,000 hours worked	Korea Zinc	2.04	2.41	1.90
		Suppliers	2.96	1.74	2.31
		Total	2.56	2.04	2.11
Lost-Time Incident Rate (LTIR)	No. of lost time incidents per 200,000 hours worked	Korea Zinc	0.41	0.48	0.38
		Suppliers	0.63	0.35	0.46
		Total	0.53	0.41	0.42
Near Miss Frequency Rate (NMFR)	No. of near misses per 1,000,000 hours worked	Korea Zinc	221.05	126.37	34.35

* Corrected figures due to error in previous year's report
 ** Number of near misses submitted and adopted after review through the 'Korea Zinc Suggestion Management System'

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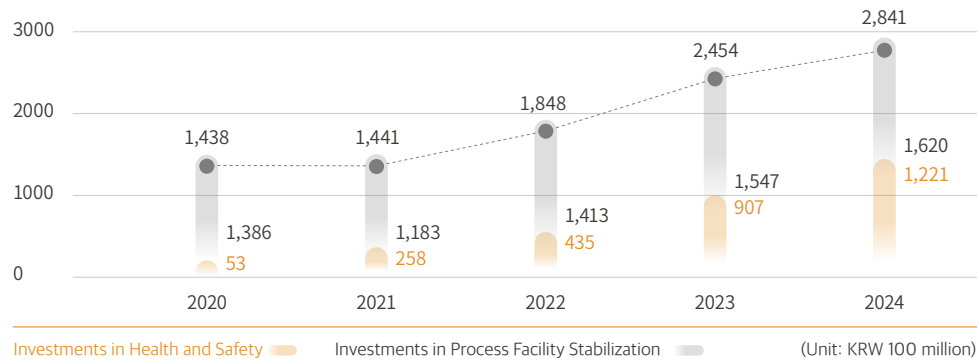
* Safety Culture Stages
 Phase 2: Passive safety participation focused on post-incident response | Phase 3: Situational safety participation centered on system compliance | Phase 4: Active safety participation based on proactive prevention

Occupational Health and Safety

Targets/Metrics

Health and Safety Investment

Placing employee health and safety at its heart as a top value, Korea Zinc has scaled up its investments in this area. In 2024, we invested KRW 122.1 billion in health and safety, and KRW 162 billion in process equipment stabilization, resulting in a total investment of KRW 284.1 billion, which exceeded the original plan by KRW 24.2 billion. For 2025, Korea Zinc plans to invest KRW 72.1 billion in health and safety and KRW 157.2 billion in process equipment stabilization. Although the total planned investment is lower than the previous year's actual spending, we will focus on building a more advanced health and safety system by leveraging the impact of previous investments and ensuring efficient budget allocation.



Safety e-Report and Suggestion Management System Up and Running

Korea Zinc operates a Safety e-Report platform to gather feedback from employees and suppliers and facilitate communication and participation, and publishes its operational performance. Additionally, to prevent and remediate even minor risks in advance, Korea Zinc also runs a 'Suggestion Management System,' which allows suggestions submission related to health and safety improvements or report near miss incidents. Submissions are reviewed, and individuals whose suggestions are selected for implementation are rewarded. This initiative promotes active reporting of risk factors and fosters a strong culture of safety practices.

Status of Safety e-Report Handling

Category	Unit	2022	2023	2024
No. of cases reported	Case	8	45	52
No. of cases processed	Case	8	45	52
Processing rate	%	100	100	100

Near Miss Suggestion and Review Status

Category	Unit	2022	2023	2024
No. of Suggestions Submitted	Case	1,097	659	325
No. of Suggestions Reviewed and Accepted	Case	869	525	145

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Issue Materiality

Corporate human rights management is an essential business element for protecting and respecting the fundamental rights of all stakeholders while nurturing a fair and transparent corporate culture. Korea Zinc is embedding human rights respect principles that align with global human rights standards throughout its business operations, formulating policies and strengthening management activities to protect the human rights of various stakeholders including employees, partners, and local communities.

Impact Materiality

Raising human rights awareness among employees and strengthening human rights protection for stakeholders including partners and local communities

Financial Materiality

Improving productivity through enhanced employee satisfaction and improved labor-management relations, and ensuring proactive management of cost burdens incurred by talent loss and productivity decline

Key Milestones and Plans

- Revision of human rights policy
- Implementation of human rights impact assessment
- Employee stress survey

Next Steps

- Establishment of an online anonymous human rights reporting channel
- Effectiveness evaluation of human rights impact assessment in 2025

Governance

Human Rights Policy

Korea Zinc practices human rights management based on respect for labor principles recommended by the International Labour Organization (ILO) and ratified by the country. Since 2022, we have been publicly disclosing policies that reflect international human rights standards as specified in the UN Human Rights Council's 'Universal Declaration of Human Rights,' 'Guiding Principles on Business and Human Rights,' 'OECD Guidelines for Multinational Enterprises,' and 'ILO Conventions.' The human rights policy includes principles for protecting vulnerable groups such as women, children, persons with disabilities, indigenous peoples, and security personnel, and explicitly states efforts to respect local communities based on ILO conventions and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

In December 2024, the policy was revised for more systematic human rights management practice. The policy applies to all employees at business sites under Korea Zinc's operational control as well as external stakeholders including suppliers, and all employees share responsibility for policy compliance.

[Human Rights Policy](#)

Implementation Principles of the Human Rights Policy

① Non-discrimination	② Humane treatment
③ Prohibition of forced labor	④ Women and child labor
⑤ Working hours	⑥ Wages and benefits
⑦ Freedom of association and collective bargaining	⑧ Health and safety assurance
⑨ Community respect and participation	⑩ Security personnel and human rights

Organizational Structure for Human Rights Management



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Strategy

Identification of Human Rights Risks and Opportunities

Korea Zinc has identified key opportunities and risks related to human rights management and analyzed their impacts accordingly. As strengthening human rights protection within partners and workplaces has emerged as an important challenge, we are preparing response measures to enhance human rights awareness among employees and partners and continuously improve working conditions.

Type	Category		Health and Safety Opportunities and Risks	Impacts of Opportunities or Risks		Responses and Utilization Measures
	Opportunity	Risk		Financial Impacts	Environmental and Social Impacts	
Working Environment	●		Stable labor-management relations and strengthened mutual trust	<ul style="list-style-type: none"> Increased revenue through long-term employment and enhanced productivity Reduced fines and litigation risks by meeting legal requirements 	<ul style="list-style-type: none"> Respect for employee human rights and improvement of workplace environment Enhanced corporate image through fulfilling social responsibilities Creation of positive organizational culture through increased trust between labor and management 	<ul style="list-style-type: none"> Continuous collection of employee opinions Operation of working environment improvement programs Expanded opportunities for direct communication with management Operation of programs to boost labor-management cooperation
		●	Talent loss due to deteriorating working conditions	<ul style="list-style-type: none"> Legal litigation and fines incurred by human rights issues Escalating recruitment costs and decreased work efficiency arising from talent loss Decreased productivity stemming from anxiety 	<ul style="list-style-type: none"> Occurrence of conflicts such as discrimination and harassment, and spread of negative corporate image Degraded trust with partners and local communities Undermined social trust owing to unstable organizational atmosphere Weakened competitiveness due to brain drain 	<ul style="list-style-type: none"> Strengthened education to prevent workplace harassment and discrimination Establishment of a rapid response system when problems occur Enhanced communication to alleviate anxiety Strengthened welfare programs to prevent talent loss
Grievance Handling	●		Improvement of the grievance handling system and establishment of transparent communication channels	<ul style="list-style-type: none"> Enhanced employee satisfaction through the improved grievance handling system Reduced litigation and dispute risks 	<ul style="list-style-type: none"> Improved fairness and transparency in the workplace Increased employee trust through respect for human rights 	<ul style="list-style-type: none"> Improvement of the grievance handling system Expansion of reporting and consultation channels Ensuring transparency in the handling process Proactive responses to resolve job-related complaints
Organizational Culture	●		Horizontal organizational culture and strengthened communication between management and employees	<ul style="list-style-type: none"> Increased productivity through improved job satisfaction among employees Enhanced employee sense of belonging and improved teamwork 	<ul style="list-style-type: none"> Creation of positive atmosphere within the organization through mutual respect and enhanced communication Increased social trust through respect for human rights 	<ul style="list-style-type: none"> Enhanced mutual understanding and activated communication within the organization Strengthened communication between management and employees Emphasis on leadership of mutual respect
		●	Spread of negative organizational culture such as workplace discrimination and harassment	<ul style="list-style-type: none"> Decreased productivity due to increased workplace complaints Customer churn derived from spread of negative organizational culture image 	<ul style="list-style-type: none"> Social problems arising from negative workplace Increased mental stress among employees due to organizational anxiety Decreased job satisfaction among employees 	<ul style="list-style-type: none"> Planning and implementation of organizational culture improvement programs Organizational diagnosis and establishment of an employee stress management system Development of employee growth plans and learning support

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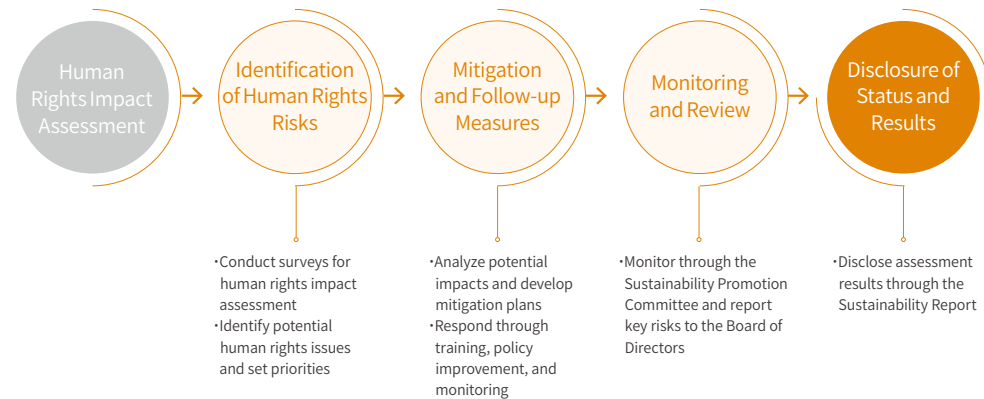
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Risk management

Human Rights Impact Assessment Process

Korea Zinc conducts annual human rights impact assessments to proactively identify and systematically manage human rights risks. During this process, surveys are conducted targeting key stakeholders including our employees as well as the workers from subcontractors, and local communities. The assessment results are analyzed to identify potential human rights issues. Identified risks are prioritized with reference to international human rights standards, and practical mitigation measures are prepared through education, policy improvements, and monitoring. In particular, we are stepping up the level of human rights protection by assessing the potential impact on the human rights of all stakeholders, including vulnerable groups such as women, partners, local residents, and customers. Assessment results and improvement measures are reviewed through the Sustainability Promotion Committee, and major issues are reported to the Board of Directors. Additionally, we transparently disclose our human rights management status through annual sustainability reports and strengthens communication with stakeholders to realize sustainable human rights management.



Human Rights Impact Assessment

Korea Zinc conducts a regular annual human rights impact assessment for all employees across the company in Korea. The survey is designed to collect information on job position, tenure, and gender (with an option to opt out of answering the gender question), allowing analysis of responses from potentially more vulnerable groups, such as non-managerial staff, junior employees, and women. To ensure objectivity and anonymity, the survey is conducted via an external online platform. The survey items are designed to comprehensively evaluate human rights awareness and risks, consisting of ‘level of human rights management system establishment,’ ‘level of human rights violation prevention efforts,’ ‘identification of human rights risk factors,’ and ‘human rights respect culture and human rights violation experience.’ Based on the assessment results, we identified the need to improve organizational culture and refine our human rights management framework. Accordingly, we established plans to enhance internal systems, including strengthening anonymous reporting mechanisms and expanding education and training to reinforce its human rights management and grievance handling system.

Period	January 24, 2024 - February 7, 2024
Objectives	<ul style="list-style-type: none"> • Assess internal awareness and current practices of human rights management • Understand the status of the human rights management system • Identify areas for improvement
Scope (Korea)	<p>Human Rights Impact Assessment (Online Survey) A total of 255 participants (223 employees, 27 suppliers, 5 other stakeholders)</p> <p>Interviews with Relevant Departments 4 departments (HR Team, People & Culture Team, Legal & Compliance Team, Audit Team)</p>

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Risk management

Human Rights Risk Mitigation and Improvement Measures

Based on the human rights impact assessment results, Korea Zinc establishes improvement measures and promotes continuous human rights risk improvement through remediation and mitigation measures for identified negative impacts. In 2024, we revised our human rights policy to detail our purpose, scope of application, implementation principles, and execution plans, and established a grievance handling mechanism to prepare remedial procedures for measures and protection regarding human rights violations and grievances.

Furthermore, we are working toward launching an online anonymous human rights reporting channel that ensures the safety and anonymity of reporters, which was selected as a major human rights risk improvement task for 2024, with the goal of opening it within 2025. The reporting channel will be accessible to anyone through our website, and when a report is received, the HR team will review it and take action according to internal procedures, while thoroughly ensuring anonymous protection for reporters. This is expected to secure the reliability and anonymity of the reporting system, and we plan to enable users to track the status of their reports via the channel. Additionally, after the human rights impact assessment scheduled for 2025, effectiveness evaluations will be conducted on mitigation measures for identified risks to strengthen the effectiveness of human rights impact assessments.



Employee Work Engagement and Stress Survey

We conduct an employee work engagement survey every two years to diagnose and improve organizational culture. The survey consists of questions related to employee engagement and work practices from an organizational perspective, aiming to gather employee feedback and analyze trends in positive response rates. The results serve as a basis for establishing organizational culture goals aligned with the pursuit of a Great Work Place (GWP) and for planning related initiatives.

In 2024, a separate survey was conducted to assess how external issues affected employees' stress levels and their ability to stay engaged at work. Based on the findings, we took measures to alleviate employee anxiety.

Provision of Professional Counseling Services (EAP, Employee Assistance Program)

We provide professional counseling services conducted by specialized counselors to help employees and their families resolve concerns they may encounter in daily life and work. The program assists our employees in finding emotional stability and happiness by offering comfortable consultation on various topics ranging from stress from work and interpersonal relationships to psychological states such as depression and anxiety, as well as family and child-related issues, and financial or legal advice.

Targets/Metrics

Prevention of Human Rights Risks

Through 2024, Korea Zinc has pursued advanced human rights management system development with goals including human rights policy revision, establishment of human rights impact assessment improvement procedures, and institutionalization of grievance handling procedures. In 2025, we aim to complete our human rights management system through the establishment of online anonymous human rights reporting channels, measurement of the effectiveness of human rights risk mitigation measures, and establishment of human rights management governance. Additionally, in the medium to long term, we plan to expand the scope of human rights due diligence and strengthen human rights education programs to internalize human rights awareness.



Human Rights Education

We enhance employees' awareness of human rights through mandatory legal training, including sexual harassment prevention, workplace bullying prevention, and disability awareness education. In line with the mid- to long-term goals for human rights management, Korea Zinc plans to expand its human rights education programs.

Category	Unit	2022	2023	2024
No. of Participants	Person	1,637	1,860	1,949
Total Training Hours	Hour	5,798	6,831	6,981
Completion Rate	%	100	100	100

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Supply Chain Sustainability

Supply Chain Management System

Supply Chain Management Policy

Korea Zinc established a 'Supply Chain Management Policy' in 2024 to build a sustainable supply chain based on trust with its suppliers. The policy aims to establish a fair and transparent trading culture through mutual growth and win-win cooperation with suppliers, and to realize sustainable value throughout all transaction processes. Additionally, we established a Supplier Code of Conduct and is obtaining voluntary consent from its suppliers. It provides direction for suppliers to conduct responsible management in various areas including ethics, human rights, safety, and environment, and all suppliers must comply with these standards during transaction processes.

[Supply Chain Management Policy](#)

[Supplier Code of Conduct](#)

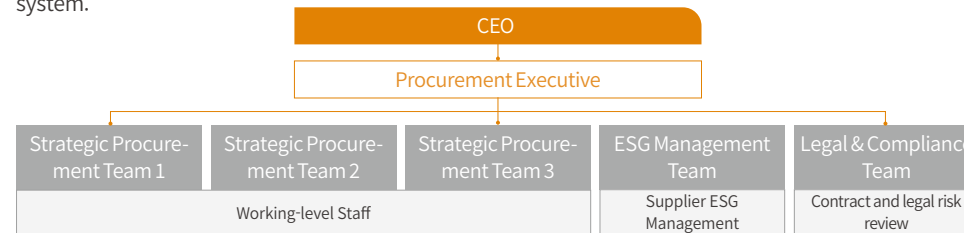
Supplier Code of Conduct

Human Rights and Labor Protection	Prohibition of forced labor, protection of minor workers, compliance with working hours, adherence to wage policies, humane treatment, non-discrimination, respect for freedom of association
Health and Safety	Accident prevention, emergency preparedness, prevention of industrial accidents and diseases, provision of clean working environment, health and safety communication
Environmental Protection	Compliance with environmental laws, establishment of environmental management objectives, development of eco-friendly products and services, climate change response, waste pollution prevention, natural capital management
Ethical Management	Maintenance of clean business practices, fair trade, information security, intellectual property protection, whistleblower protection
Responsible Minerals	Establishment of responsible sourcing processes, supply chain risk identification, supply chain management



Supply Chain Management Governance

Korea Zinc has established and operates a procurement management system centered around the executive in charge of procurement, with working-level departments taking responsibility for system implementation. Our Procurement Team ensures transparency and fairness in transactions with suppliers, while the ESG Management Team supports suppliers in managing ESG-related matters and achieving sustainable business practices. The Legal & Compliance Team is responsible for reviewing contracts and legal risks. We will continue to work closely with suppliers to promote their sustainable growth and ensure strict internal control, while continuously improving the supply chain management system.



Supply Chain Management Process

To enhance the sustainability of our supply chain, we conduct ESG assessments of our suppliers. Through these assessments, we strengthen the suppliers' capacity to respond and effectively mitigate associated risks.

Key Supply Chain Selection	Self-Assessment	On-site Inspection	Improvement Support
<ul style="list-style-type: none"> Selected considering transaction volume, replaceability, business relevance, internal opinions, etc 	<ul style="list-style-type: none"> Evaluation of suppliers' ESG management status based on items provided by Korea Zinc Confirmation of risk levels by ESG area and identification of high-risk suppliers 	<ul style="list-style-type: none"> Visit selected suppliers based on self-assessment results and conduct substantial risk checks Derive improvement measures through analysis 	<ul style="list-style-type: none"> Establish ESG improvement plans based on self-assessment and on-site inspection results Support improvement measures for major non-conformities (including provision of educational materials and consulting)

Key Evaluation Items		
Environmental	Social	Governance
Environmental management system, waste, water resources, energy, biodiversity, etc.	Employment, human rights, health and safety, social contribution, fair trade, information protection, etc.	Ethical management, information disclosure, auditing, etc.

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Supply Chain Management System

Supply Chain Management Direction

Korea Zinc is enhancing its supply chain management by expanding the scope of ESG oversight, building a systematic management framework, and supporting the development of actionable implementation plans. Moving forward, ESG evaluations will gradually be extended to cover all business partners, enabling more comprehensive ESG risk management. In addition, by establishing supply chain management standards and upgrading management systems, we plan to operate ESG assessments and improvement actions more effectively. We will also support suppliers in developing action plans based on ESG assessment results, thereby advancing the overall sustainability level across the supply chain.

Supply Chain and Value Chain Analysis

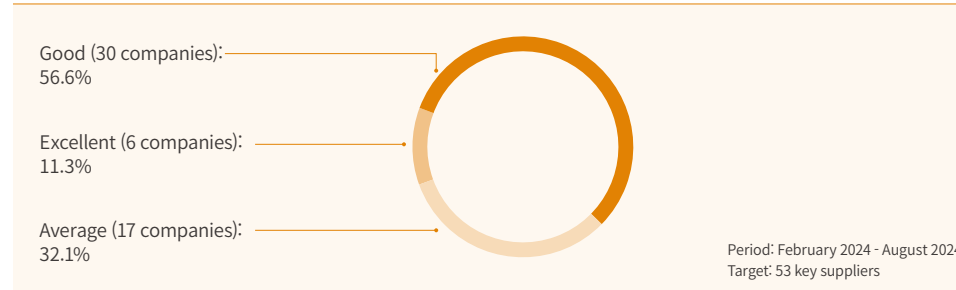
Value Chain Stage	Supplier Industry	Relevant ESG Issues
Upstream	Procurement Raw material suppliers	- Conflict minerals, supply stability - Supply chain human rights / environmental / safety issues
	Transportation & Storage Maritime, land transportation service providers Logistics and storage service providers	- Scope 3 carbon emissions
Downstream	Distribution & Sales Customers in semiconductor, battery, construction, steel industries, etc	- Customer ESG requirements - Product quality responsibility, regulatory compliance
	Waste and By-product Treatment Sludge, other heavy metal by-products, waste treatment companies	- Hazardous waste management - Resource circulation and recycling

Supply Chain ESG Assessment

With an aim to strengthen ESG risk management within the supply chain, we expanded the scope of self-assessments and on-site inspections in 2024. Building upon the first assessment experience and accumulated data from 2023, we conducted self-assessments and identified priority suppliers for enhanced management according to internal criteria. In addition to expanding the number of suppliers evaluated, we improved the convenience of the process by utilizing an online platform for data collection. Based on assessment results, it also provided management support programs and ESG guidebooks.

In 2024, we completed assessments for 53 companies through self-assessment and 10 companies through on-site inspections. The evaluation results identified 6 companies as excellent, 30 companies as good, and 17 companies as average. In the ESG management diagnosis of suppliers, legal requirement indicators such as human rights, employment, and safety showed high scores, but relatively low performance was observed in raw material management and social requirement areas.

Supply Chain ESG Assessment Results



Area	Items requiring improvement
Environmental	Raw material usage efficiency systems, eco-friendly product / service management
Social	Social contribution operation plans, fair trade policies
Governance	Establishment of dedicated ESG teams and reporting systems, risk identification and management

Supplier Support Programs

We operate various support programs to strengthen suppliers' sustainable management capabilities. We are expanding education and communication channels to enhance supply chain diagnosis and management measures, increase supplier participation, and help them recognize the importance of ESG management and diagnosis. In particular, we aim to alleviate management burdens by providing support for ESG information disclosure and organizational operations areas that are difficult for suppliers to implement in practice.

To this end, we are promoting participation in external management support programs to help resolve suppliers' management difficulties. In 2024, we encouraged participation of 2 suppliers in the FKI Center for Large and Small Business Cooperation's 'Management Doctor System.' The Management Doctor System is a management consulting program that supports participating suppliers in increasing profitability, reducing procurement costs, securing crisis management capabilities, and improving corporate culture.

Additionally, we produced and distributed a guidebook in the fourth quarter of 2024 to enhance suppliers' ESG awareness and strengthen their self-management capabilities, thereby supporting suppliers in independently establishing sustainable management systems.

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Responsible Minerals Management System

Responsible Minerals Policy

Korea Zinc recognizes the negative impacts on society and the environment, including human rights violations, environmental destruction, and terrorism, that occur during the mineral extraction process, and is working to eliminate the negative impacts of conflict minerals. We actively support the conflict minerals prohibition activities promoted by the Responsible Minerals Initiative (RMI) to prevent business transaction profits from flowing to rebel groups, thereby reducing violence and exploitation in conflict zones and enhancing consumer awareness and transparency regarding conflict minerals.

Our responsible minerals policy applies to all our business sites and stakeholders in business relationships with us. As a non-ferrous metal refining company, we have expanded our responsibility to manage not only the conflict minerals 3TG (tantalum, tin, tungsten, gold) but also our main products including zinc, lead, silver, and copper. We manage minerals based on the OECD Due Diligence Guidance* for responsible supply chain management, and do not trade with suppliers who do not comply with conflict minerals management principles and standards based on OECD Guidelines Annex II.

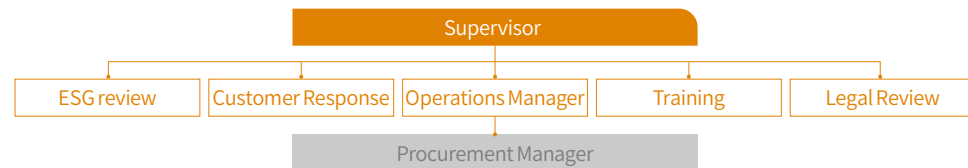
* OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas

- 1 We refrain from engaging in severe abuses associated with mining, transporting, or trading minerals.
- 2 We abstain from using minerals that directly or indirectly support non-state armed groups.
- 3 We abstain from sourcing minerals that provide direct or indirect support to public or private security forces.
- 4 We eschew minerals acquired through bribery and fraudulent misrepresentation of their origin.
- 5 We avoid minerals acquired through non-payment of taxes, fees, and royalties to governments.
- 6 We steer clear of minerals acquired through money laundering and the financing of terrorism.

[Responsible Minerals Policy](#)

Responsible Minerals Governance

Korea Zinc manages conflict and responsible minerals primarily through the Raw Materials Division. We established a responsible minerals governance system by clearly assigning roles across key functions, including procurement manager, education, customer response, and monitoring.



Responsible Mineral Management Process

Korea Zinc manages its supply chain responsibly based on the OECD Due Diligence Guidance. We ensure that minerals used in our products are ethically sourced and requires the same level of compliance from our suppliers. Self-assessment questionnaires are collected from suppliers to gather information on mineral origin, final suppliers, logistics flow, presence of risks within the supply chain, and whether the suppliers have a responsible minerals policy in place. Based on the results of the self-assessment, we evaluate supplier risk levels, and address identified risk factors through on-site audits and the development and management of corrective action plans.



Stage	Details
Stage 1 Supplier Awareness Enhancement	<ul style="list-style-type: none"> Require Tier-1 suppliers to sign an agreement to not use minerals from conflict-affected and high-risk areas (CAHRAs) Distribute raw material guidelines related to conflict and high-risk areas and provide internal training support Require confirmation letters on the non-use of specific minerals from lower-tier suppliers (e.g., Tier-2 suppliers)
Stage 2 Investigation of Raw Materials from Conflict and High-Risk Areas in the Supply Chain	<ul style="list-style-type: none"> Conduct surveys and monitoring of Tier-1 suppliers regarding the use of minerals from CAHRAs and current status within the supply chain
Stage 3 Systematic Due Diligence and Verification of Survey Results	<ul style="list-style-type: none"> Conduct on-site inspections based on checklists submitted by suppliers
Stage 4 Identification and Assessment of Risks within the Supply Chain	<ul style="list-style-type: none"> Identify risk factors based on on-site inspection results and implement follow-up management
Stage 5 Prevention of Recurrence by Vulnerable Suppliers and Related Information Reporting	<ul style="list-style-type: none"> Impose restrictions on business dealings with suppliers based on on-site inspection outcomes Operate a VOC (Voice of Customer) system on the company website for reporting on responsible supply chain management policies and practices

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Responsible Minerals Risk Management

Risk Area Identification

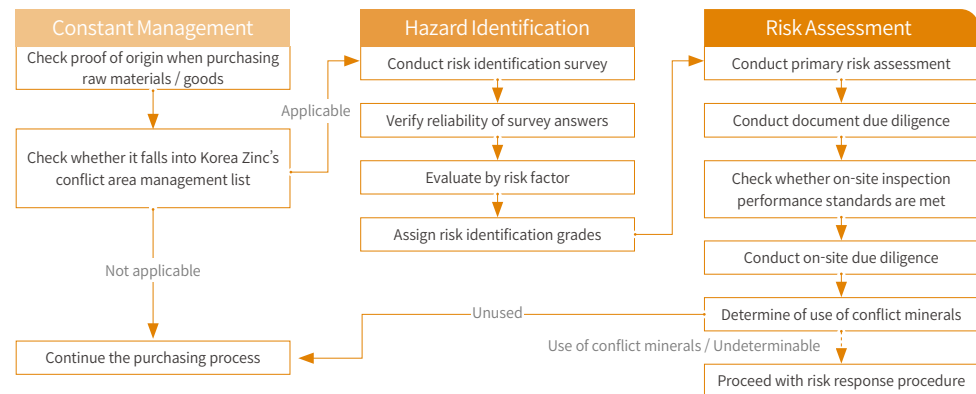
Korea Zinc identifies danger area (CAHRA*) according to global initiative (RMI, LME, LBMA) guidance. In 2024, we updated CAHRA based on a total of 6 criteria. We primarily checked the Dodd-Frank Act and EU CAHRA List for money laundering and terrorist financing support reviews, and additionally set risk areas based on governance, financial risks, human rights risks, and conflict risks. We also categorize risk areas into 2 levels according to risk level. High-risk areas are classified as Red Flag for countries defined as conflict zones under the Dodd-Frank Act, while risk areas are designated as CAHRA according to global initiative standards. We reflect risk factors identified during the mineral procurement process in our internal approval system, categorize them by risk level, and establish and implement strategies for risk mitigation based on this.

[Responsible Minerals Report](#)

* CAHRA: Conflict-Affected and High-Risk Areas

Supply Chain Risk Assessment

Korea Zinc recommends receiving compliance pledges for responsible minerals principles from suppliers during raw material procurement for responsible minerals risk management, and supports the distribution of mineral guides and education for the supply chain. We operate regular and ad-hoc monitoring systems to strengthen supply chain risk management. For sanctions risks, we are enhancing management intensity by utilizing screening tools and internal self-assessment evaluation checklists, and closely monitor international situations to prevent procurement disruptions due to sanctions, responding with due diligence when necessary.



Responsible Minerals Partnership

Korea Zinc's zinc and lead products are registered with the London Metal Exchange (LME). As a company with internationally recognized brand credibility, we are committed to responsible mineral sourcing and minimizing social and environmental impacts in our supply chain. To this end, we are building a responsible minerals management system in collaboration with global companies and participating in various partnerships through consultative bodies for certification standardization. As part of these efforts, we are undergoing evaluation for gold under the Responsible Minerals Assurance Program (RMAP) by the Responsible Mineral Initiative (RMI), and we publish annual sourcing due diligence reports. Additionally, we receive and maintain certification for Responsible Silver Guidance from the London Bullion Market Association (LBMA). Furthermore, we are pursuing membership in the Copper Mark initiative, which requires protection of the environment and human rights throughout all processes from copper raw material mining to product manufacturing and sales, with the goal of obtaining certification by 2025.

[LME Approved Brand](#)



LBMA Responsible Silver Certificate



RMI Gold Recognition Certificate

Responsible Minerals Training

We provide training on the fundamental concepts of responsible minerals, conflict minerals, and sustainability for executives and employees responsible for conflict and responsible minerals. Through this training, we strengthen our internal capabilities by understanding the current status of responsible minerals management in the international community and our company's response measures. In 2024, we developed and distributed online video training materials based on OECD guidance to provide regular education on conflict minerals and responsible minerals to our supply chain. This training is mandatory for personnel involved in responsible minerals-related work, and we have uploaded it to our online education platform, KZ School, making it accessible to all employees who wish to take the course.

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Supply Chain Sustainability

Shared Growth

Korea Zinc, which has made remarkable progress over the past 50 years, lends multifaceted support to advance the values of shared growth and co-prosperity with its suppliers. This commitment is grounded in a structured framework for promoting shared growth.

To further this vision, we have established a Shared Growth Committee, chaired by the President of the Refining Business Unit, which actively drives various initiatives by assigning dedicated personnel in the areas of finance, management, and technology. Since introducing financial support for our partners, we have continued to operate a shared growth fund totaling KRW 40 billion. In 2024, we signed new and renewed agreements with 79 partners and implemented various support programs.

Shared Growth Committee		
Chairperson	President of Refining Business Unit	
Vice Chairperson	Head of Onsan Refinery	
Committee Members	Head of Compliance Division, Head of Procurement Division, Head of Safety Environment Division	
Administrative Secretary	Legal & Compliance Team Head, Onsan General Affairs Team Head	
Financial Department	Management Department	Technical Department
Strategic Procurement 1 Onsan Subteam Leader, Strategic Procurement Team 1 Leader, Finance Team Leader, Onsan Accounting Team Leader	GA & EA Team Leader, Onsan General Affairs Team Leader, HR Team Leader, Onsan HR Team, Onsan Industrial Relation & Culture Team Leader, Environment Management Team 1 Leader, Environment Management Team 2 Leader, Safety Culture Team Leader, Crisis Management Team Leader	Production Planning Team Leader, Smelting Technology Team Leader

Win-Win Cooperation Program for Partner Safety and Health

In 2024, Korea Zinc participated in the Safety and Health Win-Win Cooperation Project between Large-, Medium- and Small-sized Enterprises, supporting approximately 130 internal and external partners. We provided specialized safety and health training, personal protective equipment (PPE), wage support for safety managers, and incentives for achieving zero-accident milestones.

Since 2021, we have supported our internal partners in obtaining and maintaining their KOSHA-MS safety and health management systems certification and follow-up management support, and have offered consulting and technical support to help them earn and sustain risk assessment excellent recognition.

To promote the operational stability of our partners and achieve meaningful co-prosperity initiatives, we continue to expand support programs across financial, management, and technical areas. We are also working to build a sustainable partnership ecosystem rooted in mutual trust.



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Human Resources Management

Talent Recruitment

Korea Zinc is committed to recruiting outstanding talent and fostering a positive organizational culture that enhances the professional capabilities of each employee. In 2024, we expanded our talent selection criteria beyond our existing focus on engagement, innovation, and flexibility, incorporating alignment with our newly defined five core values. This approach aims to strengthen organizational adaptability and cohesion with existing employees. To ensure fair hiring practices, we base our recruitment process solely on job-related competencies, excluding elements such as religion, physical characteristics, marital status, or family background from application documents. We also verify applicants' age to prevent child labor, requesting only essential information required for legitimate hiring purposes. In addition, we conduct annual campus recruiting programs to discover talent with diverse skills and potential and actively promote internal training and welfare programs to cultivate and retain key talent.

Ideal Talent and Core Values for Korea Zinc

Engagement		Innovation		Flexibility	
Being deeply engaged in even the smallest tasks and finding joy in overcoming challenges.		Driving innovation through ongoing education and a fresh perspective.		Valuing diversity and striving to foster flexible communication and collaboration.	
					
Face issues fairly and honestly Integrity	Achieve excellence through dedication Commitment	Think broadly and act swiftly Agility	Engaging in open discussions and accept without judgements Communication	Connect diverse talents together to create powerful synergy Teamwork	

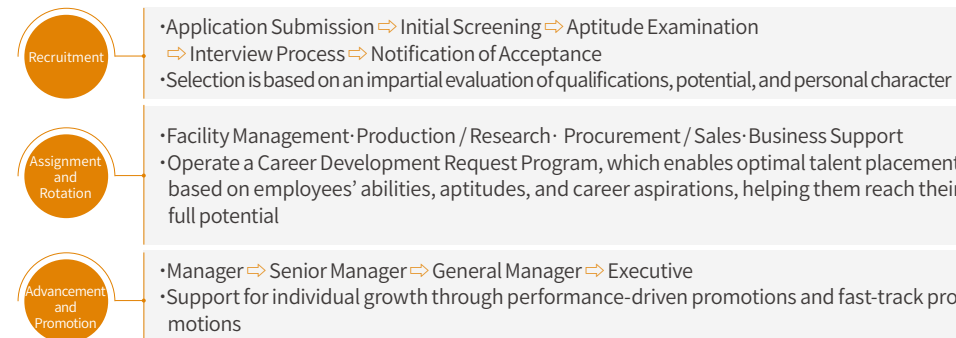
New Employees Recruitment

Category	Unit	2022	2023	2024
No. of new employees	Person	296	239	195
By gender	Male	258	206	178
	Female	38	33	17
By age	Under 30	213	144	130
	Age 30-50	79	93	65
	Over 50	4	2	0

Human Resources Management Process

Korea Zinc secures excellent talent at the right place and time through regular public recruitment and rolling recruitment by job group. The hiring process provides preferential treatment to socially vulnerable groups such as veterans and the disabled. Through this, we protect the livelihoods of vulnerable groups and facilitate diversity within the organization. The evaluation of applicants is conducted based on competency-based recruitment, and we strive to evaluate applicants through a three-dimensional and multifaceted process, including aptitude tests and structured interviews.

Assignment after recruitment takes into account individual characteristics, such as the employee's abilities, aptitude, and desired department. The operation of a job rotation system helps employees discover and develop their aptitudes. Advancements and promotions for employees are based on evaluations of their individual abilities and achievements to ensure fairness.



Industry-Academia Collaboration Program

Korea Zinc partners with UNIST, a university located in Ulsan where its operations are based, to run industry-academia collaboration programs. In 2024, we participated in UNIST's Co-Op (Co-Operative Education Program), offering internship opportunities to enrolled students. Following the signing of an MOU in 2023 for cooperation on carbon neutrality, we have been carrying out joint projects, such as the international energy research program and the development of technologies to improve secondary battery recycling.

We will keep ramping up practical collaboration by expanding research talent and technology exchange and fostering customized professionals, aiming to build an industry-academia model that drives shared growth with the local community.

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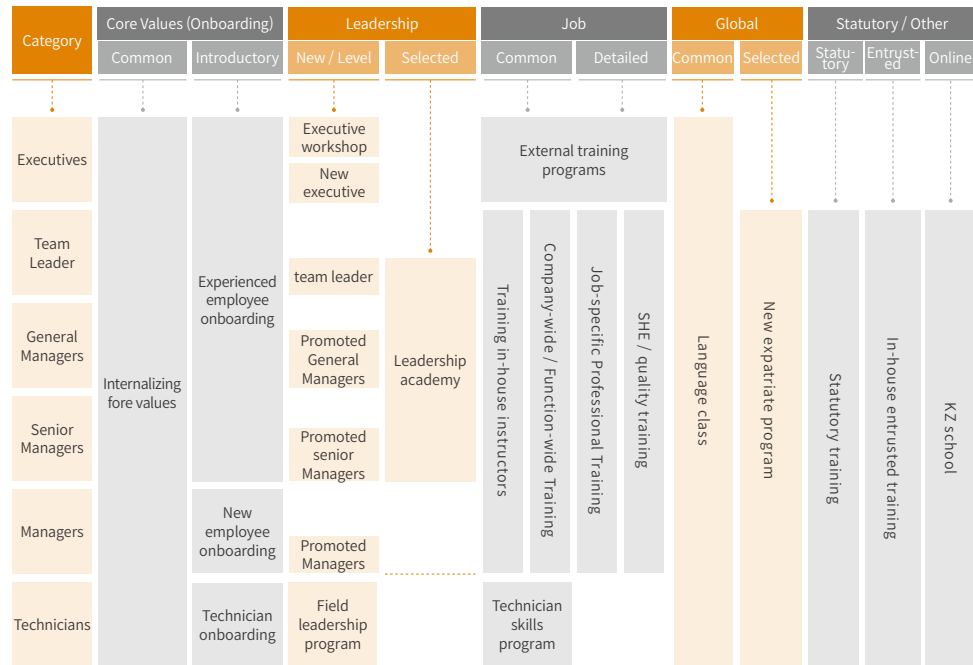
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Talent Development and Capacity Building

Korea Zinc enhances its competitiveness by strengthening employees' leadership and job-related competencies and providing language training. We also support the smooth integration of new hires through a structured onboarding program.



Leadership Training

Korea Zinc runs various leadership programs that empower employees to embrace their roles as leaders and develop their leadership competencies. Every year, we provide basic leadership competency training for team leader. We offer leadership and coaching programs for newly appointed leaders and provide promotion training to help newly promoted employees understand their expected roles and develop the competencies required for their new positions.

2024 Key Leadership Training

Category	Subject	No. of Trainees	Details
Newly Appointed Executive Training	Newly Appointed Executives	3 people	Recognizing the role of an executive Enhancing leadership competencies and cultivating business insights
Newly Appointed Team Leader Training	Newly Appointed Team leaders	9 people	Recognizing the role of a team leader Strengthening capabilities in talent development, performance management, decision-making, and communication
Training for Promoted Managers	Newly promoted general manager / Senior manager / managers	48 people	Recognizing changed role Learning the necessary competencies for each role

Job Training

Korea Zinc actively supports the improvement of employees' job competencies by deriving required competencies for each job and providing necessary training. Through in-house instructor training, we accumulate job-related knowledge and skills and disseminate them within the company.

Training for Global Operations

Korea Zinc provides online and offline language learning programs to enhance global business capabilities of employees. Employees are free to select and apply for the courses they want to take. In addition, we support employees' smooth adaptation to overseas assignments by providing training programs for newly appointed expatriates.

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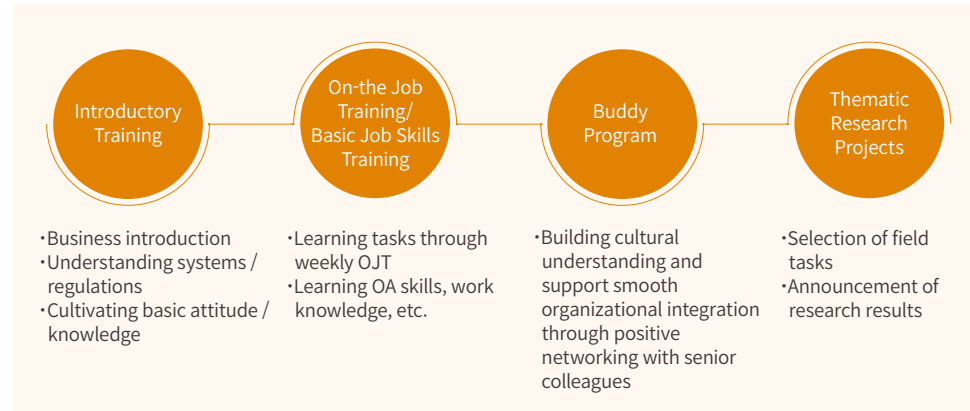
Talent Development and Capacity Building

New Employee Onboarding Training

Korea Zinc operates new employee onboarding programs to support new employees' adaptation to the organization and career development. During the introductory training period, new employees learn Korea Zinc's history and business and acquire the knowledge and skills required for new employees. New employees can have an opportunity to understand Korea Zinc's culture and sharpen their work capabilities through various programs for one year.

For experienced employees, we actively support the adaptation of experienced employees by providing time for networking with existing members as well as time to understand the company, business, system, and field.

New Employee Onboarding Process



YouTube Channel, Korea Zinc TV

Korea Zinc New Hires Orientation Video

Supporting Career Development and Self-development Training

Korea Zinc supports various training programs to develop employees' careers. Employees can establish a self-development plan and apply for the training they need. We operate an online learning platform where employees can learn anywhere, including on PCs and smartphones. Individuals are free to take courses if they deem it necessary. By supporting outsourced training and domestic degree programs, we strive to build a culture where employees can grow on their own.

Support for Domestic Degree Programs

Category	Unit	2022	2023	2024
No. of Recipients	Person	8	17	15

Retiree Training

Korea Zinc implements training programs aimed at assisting retiring employees. In 2024, we delivered a comprehensive program comprising 18 hours of career and life planning education for 15 retirees. Furthermore, a dedicated 1:1 employment consulting service was provided over a period of approximately 5 months. This service encompassed financial support for post-retirement career exploration, guidance in establishing new career objectives, and facilitation of job placement opportunities.

Overview of Retiree Training

Category	Time / Period	Content
Life Design Education for Retirees	18 hours	Change Management (Acceptance of Change, Need for Future Planning), Unemployment
		Financial / Asset Management, Career Exploration (Reemployment, Entrepreneurship, Rural Migration)
		Career Planning Internship, Health Management
1:1 Career Consulting & Learning Support	5 months	Career Goal Setting (Self-exploration, Competency Analysis)
		Career Goal Execution (Resume Clinic, Job Search Strategies, etc.)
		Job Placement Support (Employment Agency Connection, Course Recommendation)

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Talent Development and Capacity Building

Training Provided*

Category		Unit	2022	2023	2024
Total training expenses		KRW 1,000	1,584,000	2,924,266	1,930,379
Total no. of trainees		Person	1,742	1,881	1,969
		%	100	100	100
By gender	Male	Person	-	1,779	1,851
	Female	Person	-	110	118
By position	Managerial position	Person	-	147	123
	Non-managerial position	Person	-	1,742	1,846
Total training hours (accumulated hours)		Hour	84,582	107,929	101,149
Average training hours per person		Hour	49	57	51
By gender	Male	Hour	-	56	50
	Female	Hour	-	81	71
By position	Managerial position	Hour	-	78	47
	Non-managerial position	Hour	-	56	52
Average training cost per person		KRW 1,000	909	1,555	980
Human capital ROI		%	6.40	4.26	4.16

*Gender and rank-specific data management began in 2023.

Performance Evaluation and Compensation

Performance Evaluation

Korea Zinc applies the OKR (Objectives and Key Results) system to help employees set ambitious annual goals. Progress on each key result is monitored regularly with continuous feedback. This ongoing feedback serves as a reference for the year-end performance review, helping to ensure fairness in the evaluation process. The final evaluation process begins with a self-assessment by each employee, followed by a first-round review by their team leader. A calibration process at the division level ensures objectivity in the final evaluation results. Employees may raise objections regarding their final evaluations. Performance evaluation results are reflected in base salary, performance bonuses, and promotion mileage, ensuring that contributions and efforts are fairly rewarded through a differentiated compensation system.

Multi-Rater Assessment

Korea Zinc conducts multi-rater assessments to comprehensively evaluate employee competencies. This process allows employees to gain objective insight into areas for improvement and supports their continuous growth and development. Team members receive peer feedback once a year on the company's core values and job competencies, while team leaders and executives undergo biannual upward and downward feedback on their leadership competencies. The HR Team reviews the assessment results and provides development programs, including training, for those needing improvement.

Regular Performance Evaluations*

Category		Unit	2022	2023	2024
Total		%	93.0	94.2	91.4
Percentage of employees subject to regular performance evaluations	By gender	Male	%	93.6	95.2
		Female	%	82.8	75.7
		Under 30	%	89.8	94.6
By age	Age 30-50	%	95.9	94.5	92.9
	Over 50	%	88.8	92.0	91.1

* Employees who joined in the second half of the year, assistants, contract-based employees, and those on leave are not subject to the regular performance evaluation.

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Performance Evaluation and Compensation

Fair Compensation Policy

Korea Zinc revised its fair compensation policy to ensure that all directly employed workers receive at least a living wage that reflects the cost of living in their respective regions. The revised policy explicitly states that a living wage applies not only to all employees at our business sites but also to all forms of workers providing labor to the company.

[Fair Compensation Policy](#)

Employee Compensation

Category	Unit	2022	2023	2024	
Average wage per person	Total	KRW million	95	102	111
	Male	KRW million	98	105	114
	Female	KRW million	49	60	67
Ratio of CEO compensation to the average employee compensation excluding the CEO	Times	12.6	13.7	8.9	
Ratio of the CEO's pay increase to the median pay increase of all employees excluding the CEO	Times	6.0	3.6	-4.6	
Ratio of female to male base salaries (new hires)	%	100	100	100	
Ratio of entry-level salary to the statutory minimum wage	Male	%	231	230	226
	Female	%	231	230	226

* The CEO compensation is based on the average compensation of the CEO at the end of the fiscal year, and the compensation of executives, including the CEO, is disclosed in the Annual Report (p.387).

Employee Diversity

Category	Unit	2022	2023	2024	
Percentage of female employees in management positions *	All managers	%	3.20	5.26	6.27
	Percentage of female among top management positions	%	2.92	2.61	3.66
	Percentage of female among junior management positions	%	3.38	6.91	7.78
	Percentage of female among team leaders	%	0	1.32	1.47
Percentage of female manager by business location	Headquarter	%	7.69	11.59	13.45
	Onsan Refinery	%	0.47	0.85	1.15
Percentage of female in revenue-generating departments**	%	1.34	1.25	1.73	
Percentage of female in STEM departments***	%	11.10	17.91	16.18	
No. of employees by nationality****	Unites States	Person	-	-	3
	Australia	Person	-	-	3

* Manager: Senior manager level or above (Top management position: executive and general manager level or higher, Junior management position: the level of senior manager)

** Revenue-generating department: A department that manufactures products directly, or a department that sells products through sales activities, etc.

*** STEM department: A department that engages in technology and research-related functions

**** Number of employees by nationality management began in 2024

HR System and Employee Benefits

Korea Zinc assists all employees in achieving a healthy work-life balance through a wide range of employee benefits programs.

HR System

Flexible working hours	We implement flextime that allows employees to voluntarily adjust their working hours and types. Employees maximize work efficiency by selecting various options: Staggered Schedule, Flexible Time, Substituted Holiday.
Family-friendly Policies	We operate a range of family-friendly policies, including maternity leave, paternity leave, parental leave, reduced working hours for childcare, and family care leave, to support childbirth, parenting, and family care responsibilities.

Employee Benefits

Scholarship Support	Korea Zinc covers tuition not only for its employees but also for their children. We cover a certain amount of the employee's graduate school tuition, as well as childcare allowances, school admission congratulatory fees, and tuition incurred during the child's transition from kindergarten to college.
Medical Expenses	Korea Zinc covers the medical expenses of employees and their families (spouse and children) and provides comprehensive checkups every two years to employees and their spouses over the age of 30.
Company Housing and Dormitories	Korea Zinc operates a residential-commercial apartment complex capable of housing a total of 762 households as company housing for the Onsan Refinery. We provide self-development programs such as pottery classes and yoga classes for employees who live in the company housing. Meanwhile, we operate in 25-unit company housing located in Nowon-gu.
Workplace Daycare Center	Korea Zinc operates an on-site daycare center at the Onsan Refinery apartment complex for employees with children aged 3 to 5
Housing Loan Support	Korea Zinc provides housing loans of up to KRW 100 million at low interest rates to support employees' housing stability
Employee Stock Ownership Association	Korea Zinc operates an Employee Stock Ownership Association to help employees build wealth and share in the company's growth. We offer benefits such as company loans and income tax deductions
Summer Leave	Korea Zinc provides 5 days of paid annual leave to support employee rest and refreshment

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HR System and Employee Benefits

Group Insurance and Retirement Pensions

Korea Zinc has signed up for group insurance to prepare for injuries, diseases, or accidents that may occur in the course of performing work and to provide reasonable compensation. In addition, we have operated both defined benefit (DB) and defined contribution (DC) retirement pension systems to help employees maintain a stable life after retirement.

Parental Leave*

Category		Unit	2022	2023	2024
Use of parental leave	No. of parental leave users **	Male Person	10	6	9
		Female Person	7	6	8
		Total Person	17	12	17
	No. of people scheduled to return	Male Person	8	4	7
		Female Person	5	3	4
		Total Person	13	7	11
Return after parental leave	No. of people returning to work	Male Person	8	3	7
		Female Person	4	1	3
		Total Person	12	4	10
	Return rate	Male %	100	75	100
		Female %	80	33	75
		Total %	92	57	91
Continued employment after parental leave	No. of employees retained for 12 months after returning from parental leave ***	Male Person	1	8	3
		Female Person	3	4	1
		Total Person	4	12	4
	Percentage of employees in continuous employment	Total %	100	100	100

* Based on the parental support system disclosed in the Annual Report.

** Number of parental leave users: Employees who took parental leave during the reporting year.

*** Employees retained for 12 months after returning from parental leave: Employees who returned from leave in the previous year and remained employed for at least 12 months during the reporting year.

Labor-management Relations

Korea Zinc recognizes the right to form and join labor unions in accordance with the Trade Union and Labor Relations Adjustment Act. We have achieved a 37-year dispute-free workplace as of 2024, and this was made possible by the various discussions and activities to promote labor-management relations. As of 2024, the labor union membership rate is 59.4% of all employees, and we conclude a collective agreement and determine the wage increase rate through collective bargaining with the labor union.

Current Status of Labor Union Membership

Category	Unit	2022	2023	2024
No. of employees affiliated with the labor union	Person	1,052	1,147	1,169
Percentage of employees affiliated with the labor union*	%	60.4	61.0	59.4

* Employees eligible for union membership and collective agreement: Technicians

Establishment of Organizational Culture & Great Workplace (GWP) Initiatives

Fostering Organizational Culture

We promote internal and external communication by organizing experiential activities for employee engagement, events for employees and their families, and employee walking programs. These initiatives also support employees in maintaining a healthy work-life balance. We encourage open dialogue between leadership and employees by creating opportunities for candid conversations. In addition, we launched a new workshop program where senior management and new hires engage in joint activities. This activity helps new employees gain a deeper understanding of the company and foster a sense of belonging, while leadership has an opportunity to engage in meaningful conversations across generations.

Workplace Environment Enhancements & Wellness Facilities

We have improved our workplace environment by relocation of its headquarters, enhancing employee engagement and satisfaction. We installed height-adjustable electric desks in the office to support ergonomic work practices tailored to employees' physical needs and work conditions, and expanded meeting spaces. In collaboration with other building tenants, we also introduced fitness and relaxation facilities within the office complex, providing employees with convenient access to wellness services.

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Stakeholder Engagement

Issue Materiality

Proactive engagement and collaboration with stakeholders is key to enhancing corporate sustainability and ensuring long-term growth. We actively identify and incorporate the expectations and needs of diverse stakeholders in our business operations, thereby strengthening our role as a responsible corporate citizen and driving the creation of social value. We particularly focus on fulfilling our social responsibility through industry associations and enhanced investor communications, promoting sustainable management.

Impact Materiality

Advancing industry-wide sustainability through participation in industry associations and global initiatives, Fostering mutual growth with local communities

Financial Materiality

Enhancing shareholder and investor trust through improved disclosure, securing business stability by addressing stakeholder demands

Key Milestones

- Published an integrated the Sustainability Policy Package covering all areas of ESG
- Revised Disclosure Management Regulations and reinforced disclosure control processes
- Expanded multi-stakeholder engagement through joining the UNGC, industry associations, forums, and exhibitions
- Achieved the highest rating for 'Community Contribution Recognition Program' for the second consecutive year

Next Steps

- Upgrade internal training and processes to prevent disclosure risks in advance
- Expand affiliate participation in community contribution
- Broaden eco-friendly community activities and raise social awareness through initiatives linked to new businesses

Stakeholder Communication Channels

Korea Zinc actively shares its business updates through channels tailored to stakeholder interests. With an aim to improve accessibility and transparency, we leverage a variety of digital platforms, including our official website and YouTube channel. The Board of Directors and its committees reflect stakeholder feedback, gathered through these channels, in key management decisions, supporting sustainable growth and social responsibility. Looking ahead, we will continue to diversify our communication channels to strengthen stakeholder engagement. Through this, we aim not only to identify and mitigate internal and external risks but also to drive more sustainable business practices.

Stakeholder	Main Interest	Communication Channel	Common	Frequency of Management
Shareholders / Investors	<ul style="list-style-type: none"> • Highest decision-making structure • Management strategy and investment plans • Compliance • Financial and non-financial performance • Risk management etc. 	General meeting of shareholders	<ul style="list-style-type: none"> Website Sustainability Report Instagram YouTube (Korea Zinc TV) 	Regular
		IR (Investors Relation)		Regular
		Public notice		As needed
Employees	<ul style="list-style-type: none"> • Work-life balance • Labor-management relations • Benefits package • Assessment and rewards • Capacity enhancement 	Labor-Management Council	As needed	
		Work engagement survey	Regular	
Customers	<ul style="list-style-type: none"> • Product quality and safety • Competitiveness of product prices • Terms of contracts for products • Brand reputation 	Voice of Customers (Korea Zinc homepage)	At any time	
		Shared growth program	Regular / As needed	
Partners	<ul style="list-style-type: none"> • Fairtrade • Shared growth • Win-win collaboration • Supply chain management policies 	Seminars / Education	As needed	
		Safety and Environment Ombudsman (Korea Zinc homepage)	At any time	
Local Communities	<ul style="list-style-type: none"> • Effects on local communities • Social contributions (donations and sponsorship) • Responses to climate change • Participation in government policies • Activation of industrial ecosystems 	Local communities / Governments	At any time	
		Association / Institutions / Organizations	At any time	

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Strengthening Shareholder Communication

Information Disclosure Organization

Korea Zinc’s information disclosure and shareholder communication are managed by the Finance & Accounting Division and the Sustainability Management Division. The IR Team within the Finance & Accounting Division plays a key role in this process, overseeing public disclosures, investor relations (IR) sessions, and the publication of investment information on our website. The IR Team also gathers inquiries and feedback from shareholders and institutional investors, while collaborating with the ESG Management Team on non-financial disclosures to ensure investors receive information they need. In addition, the Communication Team manages communication with a wider range of stakeholders through media relations.



Integration of the Sustainability Policy Package

In order to help shareholders and other stakeholders clearly understand and easily access Korea Zinc’s sustainability management principles, Korea Zinc consolidated its various sustainability policies into a single Sustainability Policy Package in 2024. The policy book covers the three pillars of environmental, social, and governance, outlining our core principles and strategic direction. Topics range from environmental management and responsible minerals policies to Board expertise and diversity, and non-financial risk management.

We remain committed to transparent disclosure and responsible management, guided by these policies. We will also continue to foster open dialogue with all stakeholders, working together toward a more sustainable future.

[Korea Zinc Policy Package](#)

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Strategy

Strengthening Shareholder Communication Strategy and Identifying Opportunities and Risks

Korea Zinc implements a range of strategies to enhance communication with shareholders. Key initiatives include strengthening IR activities and information disclosure, refining internal disclosure response processes, and improving information transparency through our website. We also work to protect minority shareholders through institutional safeguards, improve corporate governance, and enhance shareholder value through shareholder return policies. These efforts reflect our commitment to building trust-based management and delivering sustainable corporate value.

Type	Category		Opportunity / Risk Factors	Impact of Opportunities or Risks		Response & Action Plan
	Opportunity	Risk		Financial Impact	Environmental and Social Impact	
Disclosure	●		Strengthen investor relations and disclosure of sustainability performance	<ul style="list-style-type: none"> Enhance corporate credibility and increase investment attraction Improve assessments by financial institutions and credit rating agencies 	<ul style="list-style-type: none"> Strengthened corporate transparency and responsible management Greater public awareness of sustainability efforts 	<ul style="list-style-type: none"> Regular investor briefings and disclosure of IR materials Broader integration of shareholder and investor feedback Enhance ESG disclosures and improve information accessibility
		●	Risk of incomplete or inconsistent disclosure due to increasing complexity and diversity of requirements	<ul style="list-style-type: none"> Potential penalties and fines 	<ul style="list-style-type: none"> Decrease stakeholder trust and heightened reputational risks 	<ul style="list-style-type: none"> Strengthen disclosure systems and improve information management processes to ensure accuracy and timeliness of disclosures
General Meeting of Shareholders	●		Expand direct communication with shareholders and incorporate their feedback	<ul style="list-style-type: none"> Establish a foundation for long-term investment attraction Increase shareholder trust 	<ul style="list-style-type: none"> Enhance management transparency through increased shareholder participation Demonstrate commitment to sustainable management Build trust with stakeholders 	<ul style="list-style-type: none"> Adopt electronic voting and expand online participation Disclose detailed shareholder meeting materials on the campaign webpage Establish a responsive Q&A system for shareholder inquiries
Protection of Shareholder Rights	●		Strengthen minority shareholder protection and shareholder-centric management	<ul style="list-style-type: none"> Attract long-term investors through improved corporate governance Broaden investor base including global investors Enhance corporate image through strengthened shareholder rights 	<ul style="list-style-type: none"> Build trust with investors and stakeholders Strengthen management transparency and accountability 	<ul style="list-style-type: none"> Strengthen shareholder return policies Establish regular communication channels with shareholders

[Campaign Webpage](#)

Risk Management

Enhanced Disclosure

Korea Zinc actively listens to stakeholders through various channels to assess both the positive and negative impacts of its business activities. We share our management performance and key initiatives. Our official website provides investment information in both Korean and English. Beyond the information disclosed through the electronic filing system, including governance, financials, stock performance, regulatory filings, and quarterly results, we ensure investors have timely and accurate access to our business activities.

We also strengthen communication through social media platforms such as YouTube and Instagram, broadening engagement with local communities, potential customers, and a wide range of stakeholders. These platforms give us an opportunity to listen to stakeholder voices and reflect them in our business decisions. In addition, we publish our annual sustainability management report and operate a digital whistleblower platform, gathering feedback from both employees and external stakeholders.

Ahead of both regular and extraordinary general meetings, we run dedicated campaign pages to explain key agenda items and management performance. These pages address stakeholder questions in detail and clarify any external misunderstandings through fact-checking, helping investors make well-informed, trusted decisions. Looking ahead, we will continue to proactively gather feedback through various channels and provide transparent, reliable information to all stakeholders, reinforcing communication and mutual trust.

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Risk Management

Strengthening Disclosure Policies and Processes

Revision of Disclosure Management Regulations

In 2024, after being designated as an unfaithful disclosure company, Korea Zinc took proactive steps to restore stakeholder trust and strengthen its disclosure practices. As part of these efforts, we comprehensively revised Disclosure Management Regulations to enhance the overall disclosure framework.

The key focus of this revision was to ensure that all disclosures fully comply with legal requirements, reinforcing both their accuracy and timeliness. We thoroughly review our disclosure processes to mitigate the risk of being an unfaithful disclosure company. We also clarified the roles and responsibilities of disclosure control teams, strengthening overall oversight the design, operation, and monitoring of disclosure processes. These improvements include efforts to build a disclosure framework that upholds the accuracy, completeness, fairness, and timeliness of information, ensuring shareholders and investors receive reliable and trustworthy updates.

Implementation of a Disclosure Checklist Review Process

In order to improve the efficiency of disclosure practices and strengthen internal controls, we introduced a disclosure checklist review process within our internal electronic approval system. This process enables a more systematic review of disclosure obligations and Board resolutions, ensuring that relevant departments receive timely and accurate information.

The primary goal of this initiative is to raise awareness among all employees regarding disclosure responsibilities and Board resolutions, while enhancing prompt communication with the IR Team and Legal & Compliance Team for significant business matters. Through these efforts, we aim to reinforce our internal control processes and maximize the efficiency of disclosure management.

The newly introduced checklist is designed to cover key management matters of Korea Zinc and subsidiaries, including corporate operations, sales and production activities, finance and investments, and disclosures required under the Fair Trade Act. The checklist applies the latest fiscal year-end financial standards to determine whether matters require disclosure or Board resolution, helping ensure consistency and credibility in the disclosure process. When a document is submitted through the electronic approval system, the checklist is automatically activated, enabling the responsible personnel to assess whether the matter requires disclosure or Board resolution. The checklist provides clear criteria, based on the most recent fiscal year-end financial statements, to help determine disclosure obligations, Board resolutions, and Internal Transaction Committee resolutions. The responsible team reviews each case accordingly. If a matter is deemed subject to disclosure or Board approval, the system automatically notifies the relevant departments to initiate follow-up procedures.

Through this structured disclosure process, we continuously work to enhance management transparency and deliver timely, accurate information to shareholders and other stakeholders.

Strengthening Disclosure Training and Cross-functional Collaboration

Aiming to minimize disclosure risks, Korea Zinc conducted both online and offline training programs for its employees. In January 2025, we invited representatives from the Korea Exchange to deliver in-person training for 47 executives and team leaders at the Headquarters. The session covered key topics such as the standard disclosure management regulations and the unfaithful disclosure designation. In the second half of 2025, we plan to expand training through the Korea Listed Companies Association providing online sessions for employees of key business units, including the Onsan Refinery. Through these diverse training initiatives, we are building a strong foundation for compliance and enhancing employee expertise in disclosure obligations.

In addition, we have established a collaborative framework between the source departments responsible for disclosure information and the IR disclosure team to strengthen compliance with disclosure regulations. Particularly when determining whether matters require submission to the Board or its committees, close coordination with relevant departments is essential to prevent potential regulatory breaches. Each source department designates a point of contact and maintains continuous communication with the IR Team, ensuring a proactive and continuous collaboration system. We recognize the seriousness of being designated as an unfaithful disclosure company and are committed to restoring trust by transparently sharing our ongoing improvement efforts with investors and stakeholders.

We will continue to closely monitor our disclosure practices and take prompt corrective actions when necessary, further strengthening management transparency and driving sustainable business operations.

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Risk Management

Operation of General Meeting of Shareholders

Voting Rights System

With an aim to protect shareholder rights and ensure transparent decision-making, Korea Zinc applies the ‘one share, one vote’ principle. We disclose the number of votes for and against each key agenda item and separate critical proposals into individual voting items to support fair and transparent voting practices. Resolutions to convene a general meeting of shareholders are typically made four weeks in advance, with detailed notices, including the date, location, and agenda, provided to shareholders. In principle, written notices are sent to all eligible shareholders two weeks before the meeting. However, for the 2025 annual general meeting of shareholders in March, due to a provisional injunction filed by Young Poong Corporation and related court schedules, the resolution and notice were finalized two weeks prior to the meeting. In compliance with the Commercial Act and other relevant regulations, written notices were sent to shareholders holding 1% or more of the shares. Moving forward, we plan to operate general meetings in line with our established schedule and procedures. In accordance with the revised Enforcement Decree of the Commercial Act, we will disclose the business report and audit report via the electronic disclosure system and our website at least one week prior to the meeting, to allow shareholders sufficient time to review the agenda.

Results of General Meeting of Shareholders

We disclose the results of shareholder voting on our official website, ensuring transparent communication of key decisions to shareholders. As a listed company, we diligently fulfill both regular and ad-hoc disclosure obligations in compliance with applicable laws and regulations. To help shareholders clearly understand each agenda item, we also operate a dedicated shareholder meeting campaign page, providing essential information and enhancing accessibility.

At the 50th annual general meeting in 2024, shareholders approved the financial statements and year-end dividend as proposed. All other agenda items were passed, including amendments to the Articles of Incorporation, except for the adoption of the standard provisions on share issuance and allocation, and the election of directors.

At the extraordinary general meeting held in January 2025, several amendments to the Articles of Incorporation were approved, including the introduction of a cumulative voting system, setting a maximum number of directors, stock split, appointment of the Chairperson of the Board from among the independent directors, changes to the dividend record date and the introduction of quarterly dividends. Director elections, based on the revised limit on the number of directors, were also approved. However, following a court ruling, all approved items, except for the adoption of the cumulative voting system, were suspended, and their implementation was temporarily halted.

The annual general meeting, held in March 2025, was conducted under the cumulative voting system approved at the extraordinary meeting. Key resolutions passed included amendments to the Articles of Incorporation, such as setting a cap on the number of directors, appointing an independent director as

Chairperson of the Board, changing the dividend record date, and introducing quarterly dividends. The meeting also approved the election of directors through cumulative voting, based on the director cap, and the appointment of members to the Audit Committee. These decisions marked a significant step forward in enhancing our governance, promoting Board diversity, protecting minority shareholders, and increasing shareholder value.

[General Meeting of Shareholders](#)

[Disclosure of 51st Annual General Meeting Result](#)

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Shareholder-Friendly Management

We are committed to reflecting the voices of minority shareholders and improving information accessibility. The IR Team operates a dedicated phone line, which is always available for shareholder inquiries, and regularly discloses quarterly earnings forecasts and updates performance status on our website, ensuring transparency. We also gather shareholder feedback through our website communication channels and integrate these perspectives into major decision-making processes, maintaining a transparent and balanced governance framework that respects shareholders' legitimate rights and interests. In the reporting year, there were no significant changes in our ownership structure or core businesses, such as mergers, business transfers, spin-offs, or stock exchanges / transfers. If such events occur in the future, we will ensure sufficient shareholder engagement and pursue actions that maximize shareholder value.

[Homepage IR Contact Channel](#)

Adoption of the Cumulative Voting System

We introduced the cumulative voting system to strengthen the rights of minority shareholders. This system allows shareholders to allocate their voting rights proportionally to the number of shares they hold, enabling them to concentrate votes on specific director candidates. As a result, shareholders can exert greater influence over the election of Board members they support. Through this initiative, we aim to enhance shareholder trust by empowering minority shareholders to actively participate in corporate governance and voice their opinions more effectively.

Operation of the Electronic Voting System

To improve the convenience and transparency of shareholder voting, in March 2020, Korea Zinc's Board of Directors resolved to adopt an electronic voting system, which has then been in place since the 46th annual general meeting. This system enables shareholder to exercise their voting rights online without attending the general meeting of shareholders in person. Shareholder may also delegate their voting rights to a proxy if needed.

Category	the 48th Annual General Meeting	the 49th Annual General Meeting	the 50th Annual General Meeting	Extraordinary General Meeting	the 51st Annual General Meeting
General Meeting of Shareholders Date	Mar. 03, 2022	Mar. 17, 2023	Mar. 19, 2024	Jan. 23, 2025	Mar. 28, 2025
Notice Date	Feb. 21, 2022	Feb. 16, 2023	Feb. 19, 2024	Dec. 24, 2024 (Initial Filing)	Mar. 13, 2025 (Initial Filing)
Audit Disclosure	Mar. 15, 2022	Mar. 09, 2023	Mar. 11, 2024	N / A	Mar. 20, 2025
Avoidance of Peak General Meeting Dates	O	O	O	O	X
Written Voting	X	X	X	X	X
Electronic Voting	O	O	O	O	O
Proxy Solicitation	O	O	O	O	O
Cumulative Voting	X	X	X	X	O

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Targets & Metrics

Protecting Shareholder Interests

In October 2024, Korea Zinc announced an enhanced shareholder return policy, expanding on its previous commitment to maintaining a separate dividend payout ratio of at least 30%. Under the new plan, we target a consolidated total shareholder return (TSR) of over 40% on average from 2024 to 2026, keeping a retained earnings ratio below 8,000%. In addition, we aim for an average return on equity (ROE) of 9% over three years and plan to keep our net debt-to-EBITDA ratio below 2 folds, ensuring both expanded shareholder returns and financial soundness.

As part of our enhanced shareholder return strategy, we paid an interim dividend of KRW 205.5 billion in August 2024, delivering KRW 10,000 per share as the interim dividend and KRW 7,500 per share as the year-end dividend. Following shareholder approval at the 2025 annual general meeting, we amended our Articles of Incorporation to introduce quarterly dividends, expanding our payout structure beyond the previously available interim dividends.

Shareholder Return Status

Category	Unit	2020	2021	2022	2023	2024	
Cash dividends	Per value	KRW	5,000	5,000	5,000	5,000	
	Dividends per share	KRW	15,000	20,000	20,000	15,000	
	Total dividends	KRW 100 million	2,651	3,545	3,973	3,027	3,418
	Dividend yield	%	3.63	3.75	3.5	3.0	1.7
	Dividend payout ratio (consolidated)	%	46.3	43.8	50.9	57.4	179.0
Cancellation of treasury stocks	KRW 100 million	0	0	0	1,000	0	
Total shareholder return rate	%	46.3	43.8	50.9	76.4	179.0	

* 2,040,030 treasury shares acquired through a public tender offer in 2024 are scheduled to be canceled in three phases in 2025.

In November 2023, we entered into a KRW 100 billion treasury stock acquisition trust agreement for the purpose of cancellation, completed the acquisition in May 2024 and then cancelled all of them. To further reinforce our commitment for shareholder return, we executed additional acquisition of treasury stocks of approximately KRW 150 billion in May 2024 and KRW 112.5 billion in August 2024, with the intention to cancel the acquired shares.

We are committed to enhancing shareholder value through proactive shareholder returns, aiming to steadily increase TSR within a predictable range. Despite a 63.5% year-over-year decline in net income in 2024, we have raised our share dividend to KRW 17,500, resulting in a record-high TSR of 179%, the highest since our founding.

Looking ahead, we plan to maintain a stable dividend policy while securing investment capital for our new growth engines under the Troika Drive strategy. Through a consistent approach that balances financial stability with long-term growth investments, we will continue to drive sustainable increases in both corporate and shareholder value.

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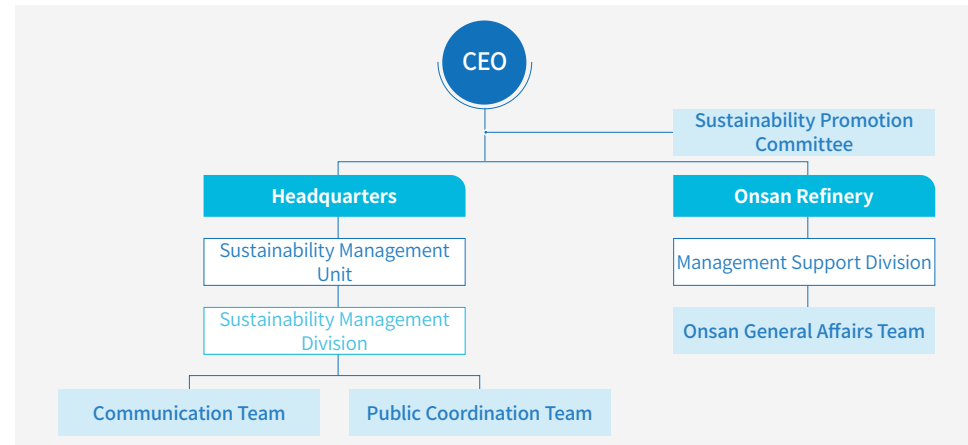
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Organizational Structure for Local Community Engagement

Korea Zinc actively engages with local communities through social contribution projects and participation in relevant associations and forums. Since association activities, forums, and seminars cover various fields, each event is managed by the respective department on a case-by-case basis. Social contribution activities are overseen by the Communication Team at the Headquarters and the Onsan General Affairs Team. These activities are regularly reported to the Sustainability Promotion Committee.



Donation and Sponsorship Policy

Korea Zinc has established a Donation and Sponsorship Policy to ensure that all contributions are made through appropriate procedures. Donations and sponsorships must not be linked to auctions, bids, contract renewals, or any prospective business relationships. We do not engage in donations or sponsorships to gain favorable treatment from organizations, affiliates, or related parties. In addition, domestic laws have been enacted to prevent irregularities related to political contributions. In compliance with these laws, we do not make any political contributions under any circumstances to influence decisions of government officials or to gain undue advantages. Therefore, any form of financial or other support for political purposes—whether direct or indirect—toward politicians, political parties, related organizations, affiliated individuals, or political candidates is strictly prohibited.

[Donation and Sponsorship Policy](#)

Strategy

Korea Zinc has analyzed the opportunities and risks associated with local community engagement and assessed their impacts. To strengthen our sustainability management, we are expanding external cooperations and communication with the local community, while also formulating response plans to implement such activities more efficiently.

Type	Category		Opportunity / Risk Factors	Impacts of Opportunities and Risks		Response & Action Plan
	opportunity	risk		Financial Impact	Environmental and Social Impact	
External Cooperation	●		Expanding participation in industry associations and global initiatives	<ul style="list-style-type: none"> Strengthened regulatory response capabilities and increased likelihood of receiving policy support Improved corporate credibility and potential to attract long-term investments Creation of new business opportunities through association activities 	<ul style="list-style-type: none"> Enhanced sustainability across the industry Strengthened collaboration among companies within the industry Built a positive social image for the company 	<ul style="list-style-type: none"> Actively participate in key associations and international forums Consider joining global initiatives
Policy Support	●		Proactive response to government policies and regulations	<ul style="list-style-type: none"> Securing policy support Strengthening cooperative relationships with government agencies Ensuring operational stability 	<ul style="list-style-type: none"> Align sustainability management direction with government policies Expand eco-friendly policies and improve corporate image Build trust with the government and public institutions 	<ul style="list-style-type: none"> Strengthen policy research and response systems Actively participate in government cooperation programs Provide our opinions on public policies
Local Community Engagement	●		Expanding local community engagement and social contribution projects	<ul style="list-style-type: none"> Increased cooperation with local communities and creation of economic value for companies Co-growth of the local economy and businesses Strengthening the foundation for long-term business operations 	<ul style="list-style-type: none"> Revitalize local economy and strengthen social responsibility Contribute to sustainable development of local communities 	<ul style="list-style-type: none"> Enhance social contribution activities and build local partnerships Collect and reflect local community feedback Operate customized social contribution programs
Stakeholder Communication	●		Gathering and incorporating feedback from various stakeholders	<ul style="list-style-type: none"> Enhanced trust in overall corporate operations Strengthened risk management and proactive response capabilities 	<ul style="list-style-type: none"> Build consensus on sustainability management direction Strengthen cooperation with stakeholders 	<ul style="list-style-type: none"> Strengthen the process of incorporating stakeholder feedback Collect and monitor the implementation of feedback

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Risk Management

Participation in Industry Associations and Forum at Home and Abroad

Korea Zinc is the global top comprehensive non-ferrous metal refining company and a leader in renewable energy, green hydrogen, secondary battery materials, and resource recycling businesses. As a company leading these industries, we actively participate in a variety of domestic and international industry associations and forums.

For refining-related activities, we are a member of the Korea Non-Ferrous Metals Association, the International Zinc Association (IZA), the International Lead Association (ILA), and the International Antimony Association (I2A). Regarding new businesses under the Troika Drive, we are also involved in the Korea Metal Resource Industry Association (KMRIA), the Korea Battery Industry Association (KBIA) and the Korean Hydrogen and New Energy Society. Through participation in these associations, we broaden our industry networks and foster collaboration opportunities, monitor the latest industry trends and market movements, and strengthen our ability to respond to domestic and global policies. In addition, we take part in relevant exhibitions and expos to promote its business and engage with stakeholders.

In 2024, to further our commitment to sustainability, we joined the United Nations Global Compact (UNGC) and pledged to embed its Ten Principles on human rights, labor, environment, and anti-corruption into our business operations. As a member of the Korea Business Council for Sustainable Development (KBCSD), we continue to actively practice sustainable management.

Davos Forum	International Energy Agency (IEA)	H2 MEET	World Climate Industry Expo (WCE)	Interbattery
<p>2023 Officially joined the World Economic Forum (WEF) as a Partner Member</p> <p>2024 Participated in the Davos Forum</p> <p>2025 Chairman Yun B. Choi of Korea Zinc was appointed as a member of the WEF Mining and Metals Governors Steering Committee</p>	<p>2023 Participated in the Critical Minerals and Clean Energy Summit as the only Korean corporate invitee</p> <p>2024 Attended the session on securing critical minerals and clean energy supply chains</p>	<p>2022 Participated in H2 MEET, the World's largest hydrogen-focused exhibition, (KINTEX, Ilsan)</p> <p>2023 Participated in H2 MEET, the World's largest hydrogen-focused exhibition, (KINTEX, Ilsan)</p> <p>2024 Participated in H2 MEET, the World's largest hydrogen-focused exhibition, (KINTEX, Ilsan)</p> 	<p>2023 Participated in the World Climate Industry Expo (BEXCO, Busan)</p> <p>2024 Participated in the World Climate Industry Expo (BEXCO, Busan)</p> 	<p>2022 Participated in Korea's largest Battery industry exhibition (COEX, Seoul)</p> <p>2023 Participated in Korea's largest Battery industry exhibition (COEX, Seoul) for the second consecutive year</p> <p>2024 Participated in Korea's largest Battery industry exhibition (COEX, Seoul) for the third consecutive year</p> <p>2025 Participated in Korea's largest Battery industry exhibition (COEX, Seoul) for the fourth consecutive year</p> 

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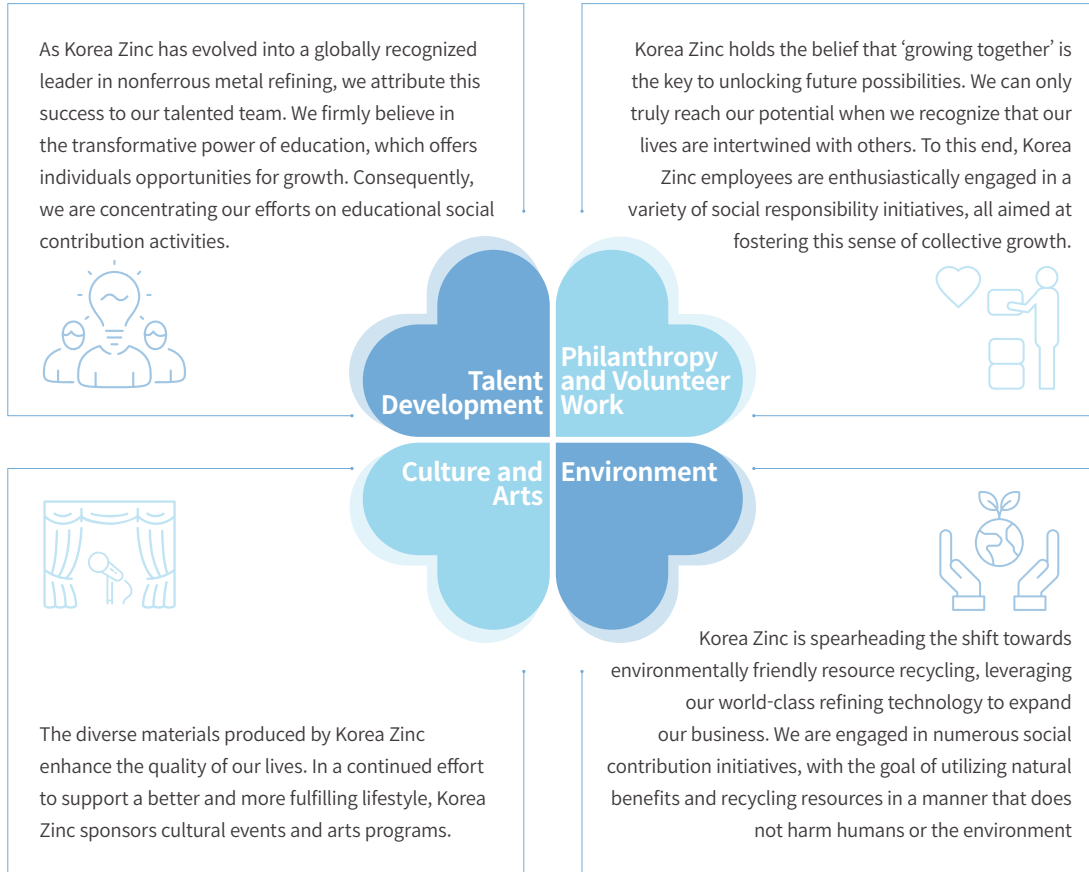
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Risk Management

Contribution activities for local community

Since the launch of KZ Clover, Korea Zinc's social contribution strategy and brand, we have donated approximately 1% of its annual operating profit to support activities in four key areas: volunteer services, talent development, cultural and artistic programs, and eco-friendly initiatives. Our efforts in Ulsan, where our major business sites are located, have been widely recognized, earning the highest grade in the 'Corporate Social Responsibility in the Community' organized by the Ministry of Health and Welfare for two consecutive years from 2023 to 2024. We remain committed to fulfilling its social responsibilities by continuously expanding our contributions and serving as a reliable pillar of support for vulnerable groups in the local community.



KZ Together: Philanthropy and Volunteer Work

Donation of KRW 3 billion to the Community Chest of Korea

Korea Zinc has been donating to the Neighbors Love Fund of the Community Chest of Korea (CCK, Love's Fruit) since 2007. In 2022, we joined the 'Hope Sharing Campaign KRW 30 billion Club.' As of December 2024, the cumulative donations amount to approximately KRW 36.7 billion. These funds are used to support vulnerable groups in society, including children, youth, the elderly, people with disabilities, and households in crisis, through the provision of goods and sponsorship programs.

Donation to Korean Red Cross and Employees' volunteering work

Korea Zinc continues our donation and volunteer activities through the Korean Red Cross. These contributions primarily support the 'Windmill of Hope' Project, a comprehensive, recipient-tailored service aimed at improving the quality of life for our vulnerable neighbors. In addition, our employees have been actively engaged in volunteering work for over ten years, participating various public medical initiatives such as operating Hope clinics. Other ongoing projects include energy-saving campaigns, side dish distribution programs, kimchi sharing, and coal briquette donations.

Support for People with Disabilities through Smart Farm (Purme Social Farm) Sponsorship and Volunteering

Since 2024, Korea Zinc has been donating KRW 50 million annually to the Purme Foundation, an organization supporting people with disabilities. Our volunteer team makes rehabilitative tools for children with speech disabilities, which are delivered to the Purme Foundation Nexon Children's Rehabilitation Hospital. Additionally, volunteers assist with work at the Purme Social Farm, a cherry tomato smart farm operated to help young adults with developmental disabilities achieve financial independence.

Support for the Purme Foundation to aid the independence of people with disabilities and volunteer assistance activities



Supporting vulnerable groups in winter with coal briquette and rice donations, together with employees volunteering



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Local community Contribution Activity

KZ Progress: Fostering talents

Donation to School Development Fund in Ulsan

Korea Zinc's Onsan Refinery, based in Ulsan, has been donating KRW 100 million annually to the school development fund for sister school and local schools since 2008. These funds are used to support student welfare and school development within the Ulsan region.

Supporting Child Fund Korea

Korea Zinc's Onsan Refinery has been supporting the purchase of books for children at local children's centers in Ulsan by donating approximately KRW 70 million annually since 2018.

Starting in 2024, we have also been providing around KRW 80 million to support programs such as local cultural and historical experiences and career exploration for more than 80 children from immigrant backgrounds in Ulsan.

Supporting Huddling Youth Choir

Korea Zinc has been supporting the 'Huddling Youth Choir Festival' for several years, where children from multicultural and non-multicultural families come together to foster a sense of community and belonging through choir activities.

Scholarship Initiative in Nowon-gu, Seoul

Every year, Korea Zinc dedicates KRW 200 million in scholarships to about 170 students from low-income families in Nowon-gu, Seoul. This support aims to help students overcome financial barriers and pursue their academic and career goals with confidence.

Donation to school development fund in Ulsan.



Scholarship program in Nowon-gu, Seoul



KZ Sustainability: Eco-friendly Initiatives

Fostering a Carbon-Neutral Forest, 'Forest of Connection'

In March 2022, Korea Zinc signed a business agreement with the social enterprise TreePlanet to create a 'Forest of Connection,' aiming to raise awareness of carbon neutrality among students near our Onsan Refinery in Ulsan. As part of this effort, we distributed tree-growing kits to local students. Building on this initiative, in April 2023, Korea Zinc planted 10,000 tulip trees in Uljin, Gyeongbuk Province, an area severely affected by wildfires. In August of the same year, 20,000 coffee trees were planted in Lombok, Indonesia. Continuing our commitment to reforestation, in August 2024, we established the third 'Forest of Connection' by planting 15,000 mangrove trees on Lembongan Island near Bali, Indonesia.

Carbon Neutral Culture and Arts Project, 'Writing the Sea'

The 'Resource Recycling Business' is one of the main pillars of Korea Zinc's new growth strategy, the Troika Drive. We strongly resonate with the concept of resource recycling, which upcycles used materials to create new crafts, and beachcombing, the act of collecting debris and waste from beaches as if combing the shoreline. In 2024, we sponsored the 'Carbon Neutral Culture and Arts Project: Writing the Sea,' organized by FE01, a regenerative cultural complex space. Our employees actively participated in the related events, supporting the project's mission to raise awareness and promote sustainability through creative recycling.

Planting of Korea Zinc's Third Forest of Connection



Carbon Neutral Culture and Arts Project: Writing the Sea



KZ Happiness: Culture and Arts

Metal Artist of the Year Award

Since 2013, Korea Zinc has sponsored creative activities in the shared field of metalwork by supporting the 'Metal Artist of the Year Award.' Each year, we recognize two metal craft artists under the age of 45 who have over ten years of experience. In 2023, we deepened our commitment by hosting the event ourselves, broadening the platform to uplift modern metal artists even further. These efforts were honored in December 2023, when we received the prestigious Minister of Culture, Sports and Tourism Award.

Supporting Other Cultural Arts

In addition to the initiatives mentioned above, Korea Zinc annually provides tens of millions of won in support to opera companies, orchestras, and ensembles. This assistance helps ensure that artists facing financial difficulties can continue their creative work without struggles.

2024 Metal Artist of the Year Award ceremony



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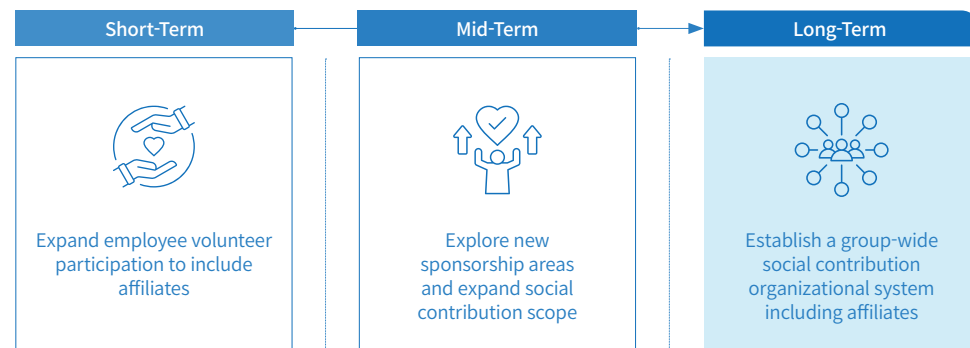
Targets & Metrics

Sharing Management

Korea Zinc aims to expand its scope of social contribution in the mid- to long-term, focusing on neighbors in need across society, including children, the elderly, housing-vulnerable groups, youth transitioning to independence, people with disabilities, single-parent households, and children of incarcerated parents. Our annual goal is to donate approximately 1% of our operating profit to support local communities and vulnerable groups. In 2024, we launched an employee matching grant program to encourage our employees' participation in donations. Under this program, employees who donate 1% of their salary receive a matching contribution of the same amount from the company. Through this initiative, Korea Zinc and its affiliates raised a total of KRW 250 million, which was donated to support underprivileged neighbors by the end of the year.

Starting in 2025, we plan to expand volunteer recruitment beyond our own employees to include those from partner companies. As a company leading renewable energy, green hydrogen, and resource recycling businesses, we also pledge to continue environmental social contribution activities to raise awareness and foster sustainable development in related areas.

Social Contribution Goals



Status of Employee Volunteer Activities

Location	Unit	2022	2023	2024	
Headquarters	Annual Participants	Person	90	56	72
	Total Volunteer Hours	Hour	360	312	288
Onsan Refinery	Annual Participants	Person	20	22	101
	Total Volunteer Hours	Hour	40	77	541
Total	Annual Participants	Person	110	78	173
	Total Volunteer Hours	Hour	400	389	829
	Average Hours per Participant	Hour	3.6	5	4.8

Social Contribution Expenses

Location	Unit	2022	2023	2024
Headquarters	KRW million	7,024	6,994	6,526
Onsan Refinery	KRW million	1,177	940	1,263
Total	KRW million	8,201	7,934	7,790

* Social contribution expense data for 2022 and 2023 have been revised.

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Board-driven Management

Establishment of an Advanced Corporate Governance System

[Corporate Governance Report](#)

Korea Zinc is continuously advancing its responsible governance system which supports corporate sustainability to achieve transparent and trustworthy management. We continue to make institutional improvements to strengthen Board-driven decision-making system and enhance stakeholders' trust by securing independence and diversity of the Board of the Directors.

We revised our Articles of Incorporation to appoint the Chair of the Board from among the independent directors at the 51st Annual General Meeting of Shareholders, aiming to improve the Board's objectivity and reinforce its oversight functions over management. Accordingly, we appointed Independent Director Deog N. Hwang as the new Chair. Chair Hwang is an expert in the fields of law and labor with over forty years of experience and is regarded as the ideal person to elevate our sustainable management to the next level. Moreover, as the first female chair since our inception, her appointment holds great significance for enhancing gender diversity on the Board.

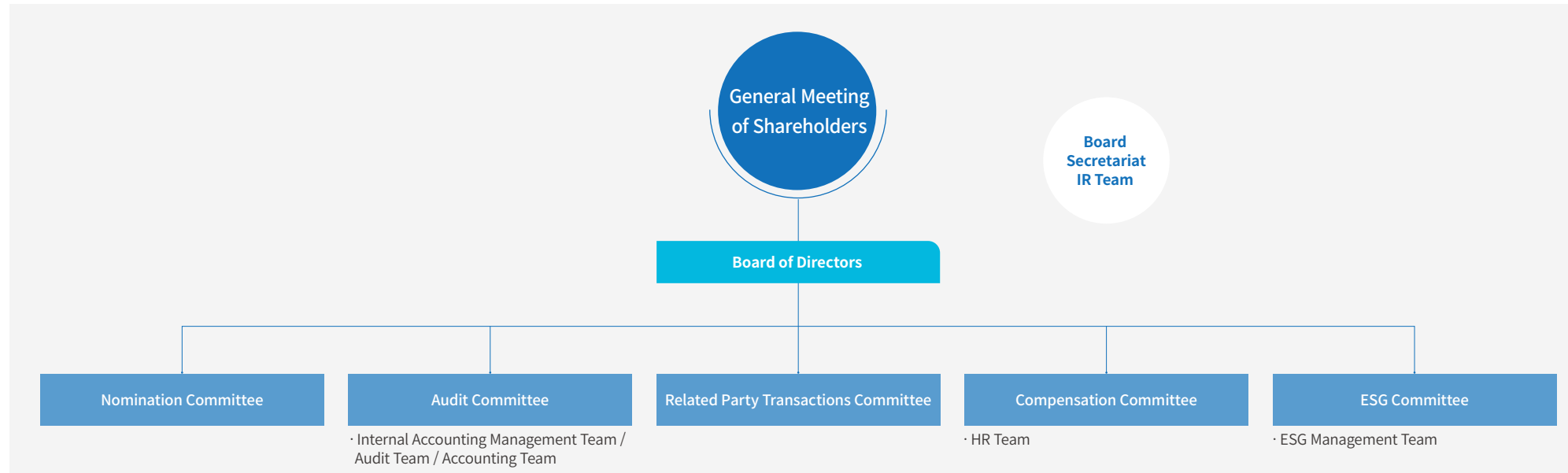
We operate the Board based on an institutional framework including Articles of Incorporation and Board Regulations, and support responsible decision-making grounded in the Board's independence and expertise. We have strengthened the Board's expertise and functionality by establishing and operating a total of five subcommittees: the Audit Committee, Nomination Committee, Related Party Transactions Committee, Compensation Committee, and ESG Committee.

Our Board deliberates not only on financial performance but also on key issues from a sustainable management perspective. The Safety and Health function reports the current year's performance and the following year's plan to the Board annually for approval. With growing interest in climate change and enterprise-wide sustainability management, our Board reporting process has been actively in operation since 2024.

In addition, we disclose key regulations, including the Articles of Incorporation, Board Regulations and Audit Committee Regulations, on our website to ensure transparent governance and to provide clear information to shareholders and other stakeholders. These regulations clearly set out the core principles and procedures for the establishment and operation of the corporate governance system, ensuring that all activities are carried out based on these principles.

Going forward, we plan to respond to external environmental changes flexibly and enhance the Board's oversight functions further. Moreover, we will enhance internal review procedures to promote the expertise and diversity of independent director candidates, and continue to develop our governance system so that the views of external stakeholders and minority shareholders can be more effectively reflected in Board operations.

Organizational Structure of the Board and its Committees



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Board-driven Management

Board Composition and Functions

Korea Zinc's Board of Directors is the highest decision-making body that deliberates on and oversees the establishment of corporate strategy and major management issues, representing the rights and interests of various stakeholders, including shareholders. As of December 2024, the Board comprises three internal directors, seven independent directors and two other non-executive directors, with more than half, 58.3%, being independent directors.

At the regular shareholders' meeting in March 2025, a total of eight directors, Ki D. Park, Bo Y. Kim, Soon B. Kwon, James A. Murphy, Tammy Chung, Kwang S. Kwon, Sung D. Kang, Gwang I. Kim, were newly appointed or reappointed. As a result, the Board is now composed of 19 members; 3 internal directors, 13 independent directors, and 3 other non-executive directors. Thereby, we improved diversity in terms of gender and nationality, as well as increased the proportion of ESG experts.

[Homepage - Korea Zinc Board of Directors](#)

Category	Unit	2022	2023	2024	2025
Total no. of registered directors	Person	11	11	12	19
Board composition	Internal director	Person	4	3	3
	Independent director	Person	6	6	7
	Other non-executive director	Person	1	2	2
	Proportion of independent director	%	54.5	54.5	58.3
Board gender diversity	Male	Person	10	10	10
	Female	Person	1	1	2
	No. of female registered executives not related to controlling shareholders	Person	1	1	2
	Proportion of female directors	%	9.1	9.1	16.7

(As of June 2, 2025)

Category	Name	Position	Gender	Age	Term Endpoint	Initial Election Date
Internal director	Yun B. Choi	Executive Chairperson of Korea Zinc	Male	50	Mar. 19, 2026	Mar. 21, 2014
	Ki D. Park	President and CEO of Korea Zinc	Male	56	Mar. 28, 2027	Mar. 17, 2023
	Tae W. Jung	President and CEO of Korea Zinc	Male	57	Mar. 19, 2026	Mar. 19, 2024
Independent director	Deog N. Hwang	-Chairperson of the Board -Nomination Committee member -Related Party Transactions Committee member -ESG Committee member	Female	57	Mar. 19, 2026	Mar. 19, 2024
	Do H. Kim	-Chairperson of Compensation Committee -Audit Committee member -Related Party Transactions Committee member	Male	54	Mar. 19, 2026	Mar. 20, 2020
	Bo Y. Kim	-Compensation Committee member -ESG Committee member	Female	56	Mar. 28, 2027	Mar. 24, 2021
	Min H. Lee	-Chairperson of Related Party Transactions Committee -Audit Committee member -ESG Committee member	Male	60	Mar. 19, 2026	Mar. 23, 2022
	Dae W. Suh	-Chairperson of Audit Committee -Nomination Committee member	Male	63	Mar. 28, 2027	Mar. 17, 2023
	Soon B. Kwon	-Audit Committee member -Compensation Committee member -Nomination Committee member	Male	56	Mar. 28, 2027	Mar. 17, 2023
	James Andrew Murphy	-	Male	73	Mar. 28, 2027	Mar. 28, 2025
	Tammy Chung	-	Female	64	Mar. 28, 2027	Mar. 28, 2025
	Sang H. Lee	-	Male	52	Mar. 28, 2027	Jan. 23, 2025
	Hyeong K. Lee	-	Male	69	Mar. 28, 2027	Jan. 23, 2025
non-executive director	Kyeong W. Kim	-	Male	66	Mar. 28, 2027	Jan. 23, 2025
	Jai Y. Lee	-	Male	70	Mar. 28, 2027	Jan. 23, 2025
	Kwang S. Kwon	-	Male	61	Mar. 28, 2027	Mar. 28, 2025
	Hyung J. Chang	non-executive directors	Male	78	Mar. 19, 2026	Feb. 26, 2010
	Sung D. Kang	non-executive directors	Male	65	Mar. 28, 2027	Mar. 28, 2025
Gwang I. Kim	non-executive directors	Male	59	Mar. 28, 2027	Mar. 28, 2025	

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Board Operation

Korea Zinc holds regular Board meetings quarterly and convenes extraordinary meetings as needed for material issues. In 2024, a total of 13 Board meetings were held to review and decide on major management agendas such as inspection of internal accounting control system operations, approval of retained earnings appropriation (dividend distribution), and appointment of the compliance officer. Also, ESG management reporting, corporate value enhancement plans, Board regulation revisions and other agendas related to sustainable management and governance improvements were proactively addressed

[Board of Directors Regulations](#)

Current Status of Meetings of the Board and Its Committees

Category	Unit	2022	2023	2024		
Board of Directors	Total no. of meetings held	Session	23	13	13	
	Attendance rate	Internal director	%	95	96.2	100
		Independent director	%	88.2	94.9	87.6
	No. of agenda items	Case	33	28	40	
	ESG-related items	Case	3	-	3	
Audit Committee	Total no. of meetings held	Session	3	4	6	
	Attendance rate	%	88.9	100	100	
Nomination Committee	Total no. of meetings held	Session	1	2	3	
	Attendance rate	%	100	100	83.3	
Compensation Committee	Total no. of meetings held	Session	-	3	2	
	Attendance rate	%	-	100	100	
Related Party Transactions Committee	Total no. of meetings held	Session	-	6	7	
	Attendance rate	%	-	100	96.4	
ESG Committee	Total no. of meetings held	Session	-	-	-	
	Attendance rate	%	-	-	-	

* The Compensation Committee and the Related Party Transactions Committee were established in 2023, and the ESG Committee was established in late 2024. Accordingly, there are no records of meetings in prior years.

Board Evaluation and Compensation*

In accordance with Article 18 of Korea Zinc’s Board Regulations, the Board of Directors oversees overall execution of directors’ duties, receiving reports on the performance of individual directors’ assigned responsibilities and providing supervision accordingly. In addition, since 2023, each director has conducted an annual evaluation of Board activities in line with Article 3 of the Board Regulations. The 2023 evaluation covered 10 criteria, which expanded to 17 criteria in 2024 to allow more detailed assessment of Board operations. The evaluation focuses on three areas: the Board’s roles and responsibilities, the operational efficiency of the Board, and the committees under the Board. The results serve as baseline data to improve governance system and enhance the Board’s capabilities.

We complemented the evaluation criteria by incorporating ESG management needs and strengthened the Board’s role in implementing and overseeing strategies. In the area of the Board’s roles and responsibilities, we added criteria related to management evaluation, oversight and checks-and-balances functions, long-term pursuit of shareholder interests and enterprise risk management. In the area of operational efficiency of the Board, we included criteria such as the relevance of agenda discussions, support for independent directors in fulfilling their duties and follow-up on evaluation results, thereby enhancing overall effectiveness.

Board evaluations are conducted annually, and the results of directors’ performance will be reflected in the following year’s Board compensation, as stipulated in our Board Regulations. Going forward, we plan to review the current evaluation criteria and processes and establish a regular discussion framework within the Board to ensure that corrective actions based on the evaluation results are effectively implemented.

Meanwhile, we pay Board members within the compensation cap approved at the annual general meeting and determines monthly compensation based on their job title, performance and contributions in line with the executive compensation policy. In 2023, we also established the Remuneration Committee to enhance the objectivity and transparency of directors’ compensation and to ensure a systematic deliberation process for the compensation system.

* For more details on executive compensation, please refer to page 386 of the Business Report or the Corporate Governance Report.

[Business Report](#)

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Committees under the Board

Korea Zinc enhances the efficiency of Board operations by establishing various committees. Currently, the Board comprises five committees: the Audit Committee, Nomination Committee, Internal Transaction Committee, Remuneration Committee and ESG Committee. Each committee deliberates on and resolves matters delegated by the Board, supporting prompt and efficient management decision-making and effectively fulfilling both management decision-making and oversight functions.

[Meeting Details of Board Committees](#)

Roles and Composition of Board Committees

(As of June 2, 2025)

Committee	Roles and Responsibilities	Composition
Nomination Committee	Qualifying criteria, assessing competency, and recommending to the board for independent director candidates	3 Independent directors Deog N. Hwang(Chair), Soon B. Kwon, Dae W. Suh
Audit Committee	Auditing accounting and key management operations, evaluating internal accounting control system operations, and overseeing executive duties	4 Independent directors Dae W. Suh(Chair), Do H. Kim, Soon B. Kwon, Min H. Lee
Related Party Transactions Committee	Enhancing management transparency through establishing a fair trade compliance system and managing significant internal transactions among affiliates	3 Independent directors Min H. Lee(Chair), Do H. Kim, Deog N. Hwang
Compensation Committee	Ensuring objectivity and transparency of director compensation, and Reviewing compensation cap for registered executives to be proposed at the General Meeting of Shareholders	3 Independent directors Do H. Kim(Chair), Bo Y. Kim, Soon B. Kwon
ESG Committee	Reporting and approving sustainability management matters, establishing ESG policies and strategies, and setting mid- to long-term goals	3 Independent directors Bo Y. Kim, Min H. Lee, Deog N. Hwang

ESG Committee

Since 2022, Korea Zinc has operated the Sustainability Management Committee as an advisory body to the CEO. On December 23, 2024, we elevated it to the ESG Committee, a committee under the Board as defined by the Commercial Act, and simultaneously established the Sustainability Promotion Committee, as its implementation body. The ESG Committee is positioned as the core decision-making body for ESG management, overseeing the overall direction, performance and major issues of sustainable management across environmental, social and governance sectors.

ESG Committee Meeting Records

Category	Date	Attendance / Total Members	Agenda Items	Status
1st meeting of 2025	Feb. 25, 2025	3 / 3	Resolution: Appointment of the Chair of the ESG Committee* Report 1: 2025 Korea Zinc sustainability management implementation plan Report 2: Results of double materiality assessment and risk & opportunity analysis Report 3: Evaluation results of the Board and committees and improvement measures	Approved

* Independent Director Bo Y. Kim was appointed as the chair of the ESG Committee. However, with the term expiring in March 2025 and reappointment at the regular shareholders' meeting, the position for ESG Committee chair has been vacant as of June.

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Board Independence, Diversity and Expertise

Board Independence

Korea Zinc strengthens the Board’s independence and transparency by separating the roles of CEO and Board Chair. Notably, for the first time since its founding, we appointed an independent director, Attorney Deog N. Hwang, as the Board Chair, further enhancing the Board’s objectivity and checks-and-balances functions. To ensure thorough independence of directors, we carefully review candidates for internal directors from professionals with expertise who meet the legal qualification requirements and have no grounds for disqualification. For independent directors, we comply with the Commercial Act and the Act on Corporate Governance of Financial Companies, and have established independence criteria aligned with global standards. Candidates are deemed independent only if they meet all 10 items of these criteria.

The Nomination Committee, under the Board, conducts a comprehensive review of each candidate’s independence before making a recommendation to the Board. Final appointments are made at the general meeting of shareholders. During this process, the Board considers the overall domestic and international environment, including any significant relationships between the individual directors and the company. We also ensure that independence is maintained after appointment by operating a management system. To this end, the term of office for independent directors is limited to two years, and we actively monitor tenure to prevent excessively long service. Moreover, we eliminate potential conflicts of interest by reviewing whether independent directors have any business relationships with us or our affiliates or hold concurrent executive positions.

Board Diversity

Korea Zinc is a global company that places board diversity at the core of its values. Accordingly, we have established a Board Diversity Policy and evaluate candidates based on their experience and expertise, regardless of nationality, gender, educational background, regional origin, or family backgrounds. In addition, candidates are identified through various nomination channels and we assess whether diversity is reflected in a balanced manner when forming the Board of Directors.

As of late 2024, we had two female independent directors, Bo Y. Kim and Deog N. Hwang, accounting for 16.7% of the Board. Going forward, we will continue our efforts to incorporate more diverse perspectives into the decision-making process by further enhancing gender diversity.

[Policy on Independence Criteria for Independent Directors](#)

Board Expertise

Board Skills Matrix (BSM)*

Korea Zinc’s Board is composed of key personnel with diverse expertise, including leadership and management, the non-ferrous metal industry, finance and accounting, law, audit and risk, management capabilities, ESG and sustainability. As stakeholders increasingly focus on the Board’s ability to fulfill its practical roles, we have developed and disclosed a Board Skills Matrix for clear presentation of each member’s qualifications and areas of specialization.

Category	Name	Leadership / Management	Industry / Technology	Finance / Accounting	Legal	Audit / Risk	Global Capabilities	ESG / Sustainability
Internal director	Yun B. Choi	●			●		●	
	Ki D. Park	●		●				
	Tae W. Jung	●	●					
Independent director	Deog N. Hwang				●	●		
	Do H. Kim	●						
	Bo Y. Kim	●						●
	Min H. Lee							●
	Dae W. Suh			●				
	Soon B. Kwon				●	●		
	James A. Murphy	●		●		●	●	
	Tammy Chung			●		●		●
	Sang H. Lee	●		●			●	
	Hyeong K. Lee				●		●	●
Other non-executive director	Kyeong W. Kim	●				●		
	Jai Y. Lee		●					●
	Kwang S. Kwon			●				
	Hyung J. Chang	●						
	Sung D. Kang	●	●					
	Gwang I. Kim	●		●	●			

* Prepared based on the Board of Directors after the 2025 Shareholders’ Meeting

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CEO Succession Policy

In December 2023, Korea Zinc established and implemented the CEO Succession Policy, which outlines the standards for succession planning and procedures to promptly respond to changes in the management environment and ensure stable leadership transition through systematic nurturing and identification of CEO candidates. The CEO is required to possess strong management skills, including expertise and leadership, to maximize the performance and be capable of communicating the corporate vision to internal and external stakeholders, including shareholders.

To systematically manage executive succession, we annually identify key executive positions under the leadership of the Talent Management Division and operate a corresponding pool of candidates. Each year, major positions are determined based on the business environment and strategic priorities. Candidates are selected according to the qualifications and competencies required for each position, such as expertise, leadership, and potential. The candidate pool is developed through both internal talent identification and external recruitment. Structured evaluation processes are applied to these candidates, and both short- and long-term successors are recommended to the Board. The Board reviews the managerial competencies of the candidates in accordance with Article 389 of the Commercial Act, Article 30 of the Articles of Incorporation, and Article 10 of the Board Regulations. Final appointments are made through a resolution at the general meeting of shareholders.

Directors and Officers (D&O) Liability Insurance

Korea Zinc has obtained directors and officers (D&O) liability insurance for all Board members to ensure protection against potential legal risks. D&O insurance covers legal liability caused by registered executive officers or executive officers to shareholders or third parties during their duty fulfillment due to any violations or negligence. This insurance helps secure management independence and stability, thereby contributing to a sustainable corporate governance system.

Current Status of Training for Independent Directors

Korea Zinc formulates an annual training plan that takes into account the schedules of independent directors and offers various educational programs to enhance their industry knowledge and expertise. Also, we continuously strive to provide sufficient information and resources so that independent directors can perform their duties effectively.

Training Date	Attending Independent Directors	Key Contents
Feb. 5, 2024	All independent directors	2023 Business Performance, 2024 Business Plan, and Compliance Control Standards
Feb. 19, 2024	All independent directors	Internal Accounting Control System Status
Mar. 20, 2024	All independent directors	Understanding Occupational Safety and Health Laws and Trends
May. 3, 2024	All independent directors	2024 Q1 Business Results and Annual Outlook, ESG Management Plan

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Ethics and Compliance

Ethics and Compliance

Ethics and Compliance Policy

Korea Zinc's Ethics Policy provides detailed guidelines that the company and its employees must adhere to, and they serve as ethical references that all members aspire to uphold. We revised the Code of Ethics in 2021 to ensure that it embraces all stakeholders within our new and expanding business scope and region.

Our Fair Trade policy covers customers, suppliers, and competitors, and describes protection of the rights and interests of customers and suppliers and fair competition with competitors, as well as other details. We maintain fair business practices in all transactions through our anti-corruption policy, ensuring compliance with domestic and international anti-bribery and anti-corruption laws and global standards. We have established detailed guidelines to help employees comply with these policies. The scope of the anti-corruption policy encompasses all employees and individuals acting on behalf of the company. We encourage all affiliates and business partners, including suppliers and contractors, to act in accordance with this policy.

To foster a culture of co-existence, we send out a 'No Giving or Receiving of Gifts' letter to all ongoing business partners, including suppliers and service providers. We also deliver our ethical management policy to employees and partners throughout the year, including during holiday seasons, to ensure that no gifts, even small ones, are exchanged.

[Ethics Policy](#)

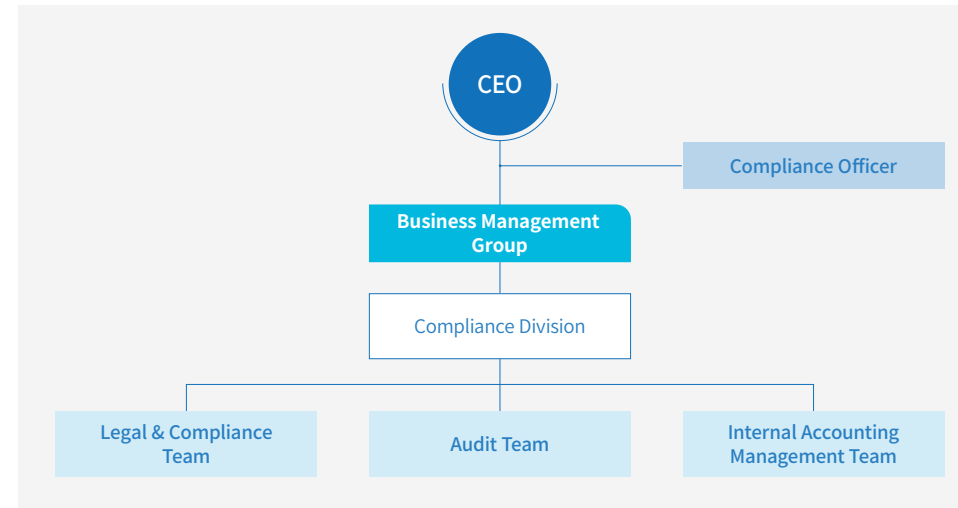
[Fair Trade Policy](#)

[Anti-Corruption Policy](#)

Organizational Structure of Ethics and Compliance Management

Korea Zinc's ethics and compliance management organization consists of the independent Audit Committee under the Board, as well as the Legal & Compliance Team, Audit Team, and Internal Accounting Management Team, all overseen by the Compliance Officer.

The Legal & Compliance Team is responsible for legal affairs, fair trade, and managing our ethical standards. The Audit Team is responsible for identifying corruption risks through internal document audits, on-site audits, and various activities necessary to support our ethical management objectives. The Internal Accounting Management Team establishes and operates the internal accounting management system, monitors our internal control systems, and prevents fraud and accounting errors in business operations. The Compliance Officer, which was appointed since 2023, has established our Compliance Control Standards in 2024, and has been implementing related activities and processes. These standards require the Compliance Officer to report on activities and outcomes of the year to the Board in the following year.



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Ethics and Compliance Risk Management

Advancement of Internal Control System

Korea Zinc is enhancing its internal control system to manage fraud risks. We plan to establish a systematic internal control system starting in 2024 to prevent fraud such as embezzlement and minimize damage if it occurs.

We have established anti-corruption regulations that define acts of non-compliance and unethical conduct, requiring employees to promptly report any suspected violations to the Audit Team. The Audit Team investigates the facts of each case, and disciplinary actions based on the investigation results are determined by the Personnel Committee in accordance with our internal control procedures.

Aiming to ensure compliance with relevant laws regarding interactions with competitors, we have developed and distributed guidelines to all employees and formulated internal regulations. Any violations of these rules are referred to the Personnel Committee for disciplinary review, reinforcing compliance procedures. In addition, we distribute monthly legal and fair trade newsletters to all employees and foster a culture of compliance through regular and specialized compliance training programs.

Site Internal Audit

Korea Zinc conducts annual internal audits to identify ethics and compliance risks. These audits cover both document reviews and on-site inspections at the Headquarters, the Onsan refinery, and subsidiaries. Internal audits play a key role in reviewing overall management practices, identifying areas for improvement in business processes, and recommending enhancements. In addition to regular team audits, the scope of audit activities includes evaluating the effectiveness of capital investments, reviewing safety management practices, assessing document security, and monitoring for corruption risks.

For risk identification, we also operate the 'Cyber Audit' channel on our official website, where reports of unethical behavior, abuse of authority, and fair trade violations can be submitted. All reports received through this channel are investigated by the Audit Team. If violations are confirmed, the results are forwarded to the HR Team, and disciplinary actions are taken in accordance with our policies to prevent recurrence and raise awareness internally.

In 2024, we conducted internal audits at a total of 14 sites* across the company and its subsidiaries and carried out a field inspection at one site to review overall team operations.

* Including subsidiaries other than Korea Zinc business locations

Site Internal Audit

Category	Unit	2022	2023	2024
No. of Business Sites Assessed for Internal Audit	Site	11	12	14
No. of Business Sites that Underwent Field Audits	Site	2	2	1
No. of Cyber Audit Reporting	Case	1	2	2

Ethics and Compliance Training

Korea Zinc established the Code of Ethics in 2003, which is a standard for judging desirable thinking and behavior to which all employees must adhere. Based on the Code of Ethics, all employees submit an annual ethical management pledge. Additionally, we conduct annual ethics management training, including anti-corruption topics, for all employees, including members of the Board and contract workers.

[Ethical Management Pledges](#)

Current Status of Ethics Management Training Completion

Category	Unit	2022	2023	2024
No. of Trainees	Person	1,742	1,881	1,969
Completion Rate	%	100	100	100

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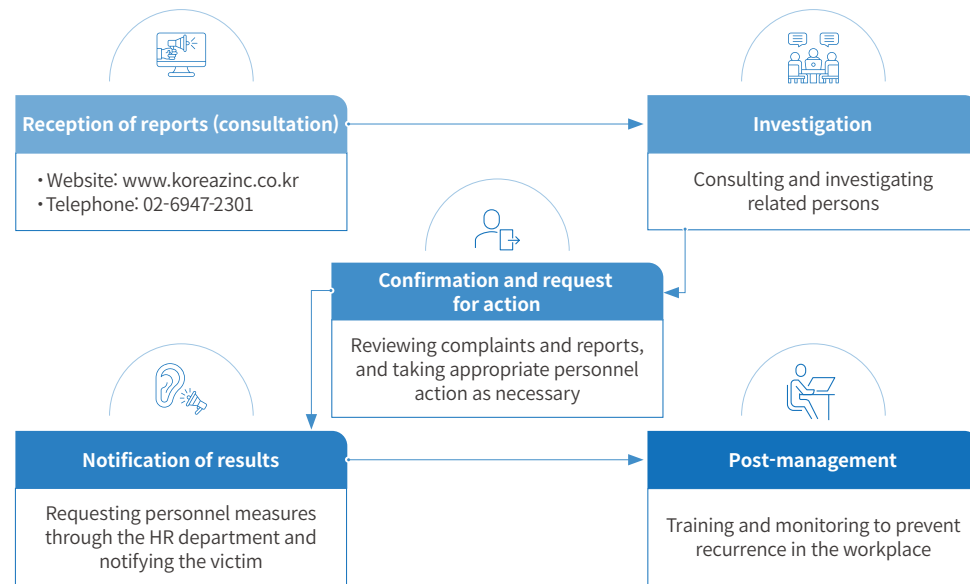
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Reporting Channels and Actions

Korea Zinc operates a reporting process to manage ethics and compliance risks. We investigate the details of reports received through our website or by phone, and thoroughly protect the identity of the reporter in the process. If the facts are confirmed, then the Human Resources Team holds a session of the Personnel Committee, carries out job sanctions and provides ethics training to prevent recurrence.

Reporting Process



Results of the Personnel Committee

Category	Unit	2022	2023	2024
No. of Completed Disciplinary Actions*	Case	1	2	1

* Limited to issues related to ethics / compliance, such as anti-corruption.

Tax Transparency

In order to systematically manage tax risks, Korea Zinc has appointed its CFO (Chief Financial Officer) to oversee tax affairs. Accordingly, the CFO manages our business activities to ensure that proper tax payment is made through compliance with domestic and international tax laws, and reports to the management and the Board of Directors when a tax issue that materially affects the business arises. We transparently manage and disclose tax information in accordance with our own tax principles, and related information can be found in our Sustainable Management Report and website. Through compliance with OECD guidelines and respect for tax authorities, we will continue to do our best to achieve transparent tax management with no tax evasion.

[Tax Policy](#)

Current Status of Tax Payment

(consolidated)

Category	Unit	2022	2023	2024
Profit before Income Tax	KRW million	881,481	728,073	292,511
Income Tax Expense	KRW million	83,216	194,695	97,729
Effective Tax Rate	%	9.4	26.7	33.4
Corporate Income Taxes Paid	KRW million	454,278	201,022	168,788
Paid Tax Rate	%	51.5	27.6	57.7

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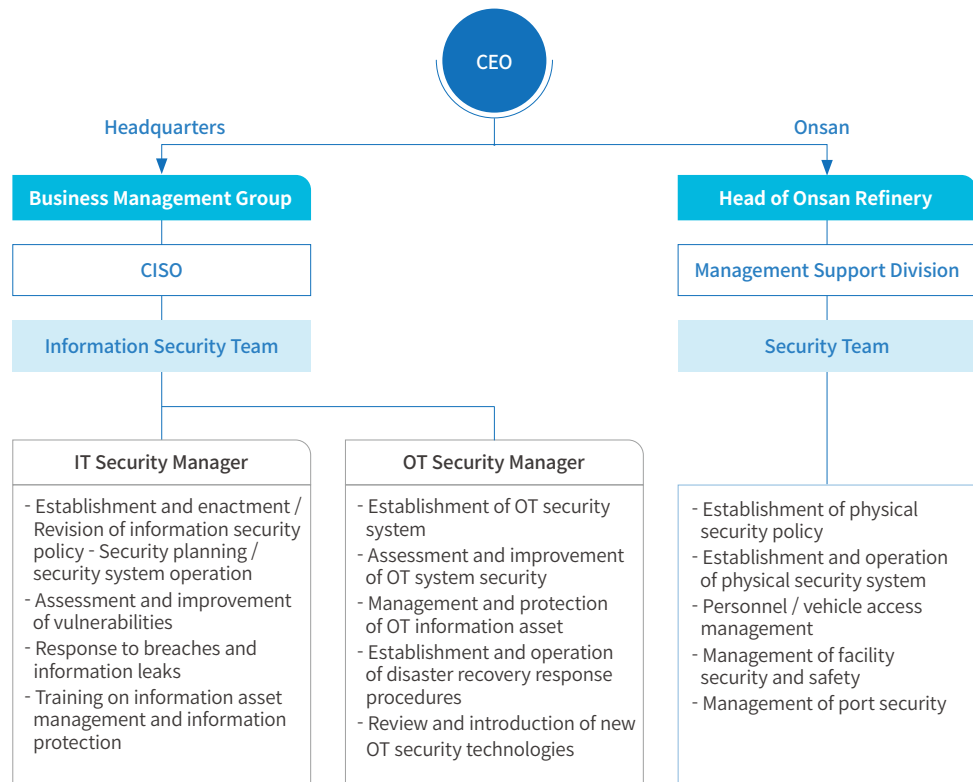
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Information Security

Information Security Organization

Korea Zinc's Information Security Team is based at the Headquarters, and IT and OT security managers are responsible for security. Meanwhile, the Onsan Refinery's security team focuses on physical security.

The Information Security Team at the Headquarters makes efforts to protect internal information by actively responding to increasingly sophisticated intrusion attacks and strengthening access control through detecting and responding to abnormal signs in real time. The Onsan Refinery security team prevents security incidents and responds quickly in emergencies by strictly controlling people entering the refinery through an access control system and with 24-hour CCTV monitoring through the information security center.



Information Security Activities

Korea Zinc conducts annual risk assessments and ad hoc security reviews of its information assets and systems to secure protection against external cyberattacks. We also actively enhance our security activities through initiatives such as bug bounty programs. Since obtaining the European information security certification TISAX Level 3 in 2023, we have continued to maintain this certification.

In 2024, our precursor manufacturing and processing technology for cathode active materials, with a nickel (Ni) content exceeding 80% for lithium secondary batteries, was designated as a national core technology and a national high-tech strategic technology. As this technology is expected to contribute to economic security in the battery industry, we plan to further strengthen our information protection measures to prevent technology leakage.

To enhance transparency in information security management and build trust with customers and society, we disclose our information security activities in accordance with the Act on the Promotion of Information Security Industry. Detailed information about our security practices is available on the KISA Information Security Disclosure Portal.

[Information Security Disclosure Portal\(Korea Internet & Security Agency\)](#)

Training and Awareness Enhancement Activities

As part of company-wide information security awareness initiatives, Korea Zinc conducted phishing email response drills twice in 2024, once in the first half and once in the second half of the year. Based on the results of these drills, additional security training was provided. In 2024, we also established our personal information protection policy and conducted targeted training on various privacy protection measures and employees handling personal data. We plan to further strengthen our personal information protection efforts on an ongoing basis.

Current Status of Information Security

Category	Unit	2022	2023	2024
Loss of customer information	No. of data breaches	Case	0	0
	No. of data thefts	Case	0	0
	No. of data losses	Case	0	0
No. of information security-related issues	Case	0	0	0
No. of customers affected by the breach	Person	0	0	0
Information security investments	KRW million	1,949	2,886	2,715



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Economic

(Consolidated basis)

Category		Unit	2020	2021	2022	2023	2024
Assets	Current assets		49,129	56,890	60,711	55,717	75,671
	Non-current assets	KRW 100 million	35,868	42,750	60,268	64,744	72,252
	Total		84,996	99,640	120,979	120,461	147,923
Liabilities	Current liabilities		11,184	17,705	23,191	19,028	63,663
	Non-current liabilities	KRW 100 million	2,942	4,593	5,471	5,012	8,306
	Total		14,126	22,298	28,662	24,041	71,969
Equity	Capital stock		944	944	993	1,045	1,045
	Capital surplus		566	573	10,859	16,217	16,190
	Capital adjustment		-535	-535	-150	-669	-20,927
	Accumulated other comprehensive income	KRW 100 million	-673	-89	-808	-1,125	1,019
	Retained earnings		69,397	75,184	79,534	78,434	76,010
	Non-controlling interest		1,172	1,265	1,890	2,518	2,618
	Total		70,870	77,342	92,317	96,420	75,954
Total liabilities and equity	KRW 100 million	84,996	99,640	120,979	120,461	147,923	
Equity ratio (equity/assets)	%	83.38	77.62	76.31	80.04	51.35	
Debt ratio (liabilities/equity)	%	19.93	28.83	31.05	24.93	94.75	
Income tax paid	Profit before income tax	KRW 100 million	8,124	11,391	8,815	7,281	2,925
	Income tax expense		2,376	3,280	832	1,947	977
	Effective Tax Rate	%	29.25	28.79	9.44	26.74	33.40
	Corporate income taxes paid	KRW 100 million	2,359	2,934	4,543	2,010	1,688
	Paid tax rate	%	29.04	25.76	51.54	27.61	57.71

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Economic

Category		Unit	2020	2021	2022	2023	2024	
Production volume by key product	Base Metals	Zinc	Ton	643,542	640,372	640,067	640,020	630,151
		Lead	Ton	435,040	426,415	412,432	413,328	445,040
		Copper	Ton	26,261	27,363	26,419	31,050	32,121
	Precious Metals	Gold	Ton	10	14	12	9	7
		Silver	Ton	2,321	2,202	2,075	1,974	2,010
	Sulfuric acid	Ton	1,309,118	1,298,192	1,257,802	1,397,519	1,479,552	
Revenue breakdown by key product	Domestic	KRW million	1,701,829	2,494,490	2,560,819	2,125,409	2,676,833	
		%	30.11	34.83	31.69	29.15	33.11	
	Export	KRW million	3,950,320	4,668,016	5,520,559	5,165,660	5,412,183	
		%	69.89	65.17	68.31	70.85	66.89	
Revenue share by key product	Base Metals	Zinc	%	32.47	31.84	37.53	33.74	31.65
		Lead	%	17.47	16.81	16.63	17.84	17.56
		Copper	%	5.15	2.60	3.68	4.72	4.81
	Precious Metals	Gold	%	10.96	12.83	11.01	10.36	9.25
		Silver	%	30.31	29.04	22.72	26.39	29.47
	etc	%	3.63	6.88	8.42	6.95	7.25	
R&D expenditures	KRW 100 million	24.32	47.30	75.59	105.80	112.00		

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ESG DATA

Environmental

Category		Unit	2020	2021	2022	2023	2024	
Energy Consumption and Intensity	Energy Consumption*	Headquarters	TJ	6	8	8	9	9
		Onsan Refinery	TJ	50,341	50,360	49,773	46,565	44,416
		Total	TJ	50,347	50,368	49,781	46,574	44,425
	Energy intensity**	Headquarters		0.00079	0.00080	0.00071	0.00093	0.00075
		Onsan Refinery	TJ/KRW billion	6.64	5.05	4.44	4.80	3.69
		Total		7.07	5.15	4.44	4.80	3.69
Energy Consumption by Source	Renewable Energy	Solar power	TOE	6.8	6.5	6.5	6.3	5.7
			TJ	0.28	0.27	0.27	0.26	0.21
	Non-renewable Energy	Electricity	TOE	806,602	603,246	551,236	350,357	301,339
		City gas (LNG)	TOE	36,707	202,105	35,903	37,649	33,489
		Natural gas (LNG)	TOE	-	-	232,202	366,290	377,698
		Bituminous coal	TOE	87,012	99,236	80,239	89,785	98,968
		Anthracite	TOE	109,504	134,923	80,850	82,627	79,300
		Petroleum coke	TOE	157,801	103,695	195,842	213,240	226,789
		Refined oil	TOE	1,082	399	527	515	696
		LPG	TOE	7,262	7,397	8,305	8,337	8,100
		Diesel	TOE	100	90	87	76	87
		Exhaust gas	TOE	73,344	75,166	73,840	73,388	75,883
		Total	TOE	1,279,421	1,226,264	1,259,038	1,222,270	1,202,354
Share of Renewable Energy Consumption	%	0.0005	0.0005	0.0005	0.0005	0.0004		

* Based on the GHG emissions statement.

** Based on the sales (consolidated) of the relevant year.

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ESG DATA

Environmental

Category		Unit	2020	2021	2022	2023	2024	
Scope 1*	Headquarters		127	154	173	226	245	
	Onsan Refinery	tCO ₂ eq	1,891,807	2,342,375	2,343,708	2,574,200	2,572,422	
	Sub-total		1,891,934	2,342,529	2,343,881	2,574,427	2,572,667	
Scope 2*	Headquarters		231	284	253	286	264	
	Onsan Refinery	tCO ₂ eq	1,642,385	1,210,471	1,106,283	703,253	605,594	
	Sub-total		1,642,616	1,210,755	1,106,536	703,539	605,858	
Scope 1+2**	Total	tCO ₂ eq	3,534,549	3,553,283	3,450,416	3,277,964	3,178,524	
Greenhouse Gas Emissions	Category 1. Purchased Goods and Services		-	1,597,486	1,439,329	1,456,758	1,389,849	
	Category 2. Capital Goods		-	12,578	33,809	15,727	445,582	
	Category 3. Fuel and Energy-Related Activities Not Included in Scope 1 or Scope 2		-	173,332	230,939	243,958	238,822	
	Category 4. Upstream Transportation and Distribution		-	245,959	207,803	249,870	75,299	
	Category 5. Waste Generated in Operations		-	24,756	32,726	31,490	33,028	
	Category 6. Business Travel		-	128	684	979	707	
	Scope3***	Category 7. Employee Commuting	tCO ₂ eq	-	1,696	1,901	2,053	2,121
	Category 9. Downstream Transportation and Distribution		-	149,683	149,399	159,750	52,735	
	Category 10. Processing of Sold Products		-	2,435,293	2,655,653	2,431,864	2,292,211	
	Category 11. Use of Sold Products		-	28,371	32,071	25,846	-	
	Category 13. Downstream Leased Assets		-	-	-	-	1,074	
	Category 15. Investments		-	83,180	75,700	75,182	78,531	
	Total		-	4,752,462	4,860,014	4,693,476	4,609,959	
	Intensity****	Scope 1 Emission		0.25	0.23	0.21	0.26	0.21
		Scope 2 Emission	1,000tCO ₂ eq/ KRW billion	0.22	0.12	0.10	0.07	0.05
Scope 1+2 Emission			0.47	0.36	0.31	0.34	0.26	
Scope 3 Emission			-	0.48	0.43	0.47	0.38	

* Calculated according to Article 27(3) of the 「Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crises」, Article 21(5) of its Enforcement Decree, and Article 24(1) of the 「Act on the Allocation and Trading of Greenhouse Gas Emission Permits」.

** There is a discrepancy between the total GHG aggregation and GHG emissions reported by individual business sites due to rounding down at the site level. A correction has been applied to the previously disclosed data to address errors in the 2021 GHG emissions figures.

*** The emission factor applied to Category 4 has been updated, and Category 13 has been newly added to expand data coverage.

**** Based on the sales (consolidated) of the relevant year.

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Environmental

Category		Unit	2020	2021	2022	2023	2024	
Air Pollutant Emissions	NOx	Emissions	Ton	771.8	900.2	819.7	757.3	716.6
	SOx*	Emissions	Ton	1,250.5	1,053.8	842.7	718.6	966.9
	VOC	Emissions	Ton	4.0	1.2	2.5	7.8	2.2
	TSP	Emissions	Ton	92.7	92.3	112.8	108.4	130.9
		Emissions	Ton	2,119.1	2,047.6	1,777.7	1,592.0	1,816.6
	Total	Year-on-year emissions	%	-40	-3	-13	-11	14
Water Pollutant Discharge	TOC	Emissions	Ton	-	-	32.6	20.5	17.9
	COD**	Emissions	Ton	14.8	11.8	-	-	-
	SS	Emissions	Ton	20.7	14.4	103.9	120.3	41.8
	BOD	Emissions	Ton	9.8	12.8	8.2	6.0	7.7
	T-N	Emissions	Ton	75.8	75.4	150.7	141.9	130.9
	T-P	Emissions	Ton	0.1	0.1	0.06	0.1	0.2
	Total	Emissions	Ton	121.2	114.5	295.5	288.7	198.6
	Year-on-year emissions	%	-32	-6	158	-2	-31	
Water Consumption	Head-quarters	Water use (tap water)	m ³	3,058	3,106	3,452	4,590	6,662
	Onsan Refinery	Water withdrawal	m ³	12,156,003	13,595,789	13,505,918	14,389,650	14,719,258
		Water use***	m ³	9,695,471	11,029,336	10,619,466	11,573,904	11,778,205
		Water discharge	m ³	2,460,532	2,566,453	2,886,452	2,815,746	2,941,053
	Total	Water use	m ³	9,698,529	11,032,442	10,622,918	11,578,494	11,784,867
	Intensity	m ³ /KRW billion	1,279.2	1,105.8	946.8	1,193.1	977.8	
Training on Hazardous Chemicals Control	Hazardous chemical handler training	Recipients (employees)	Person	-	495	1,081	780	959
		Recipients (suppliers)	Person	-	532	687	324	217
		Training hours	Hour	-	16	16	16	16
	Hazardous chemical worker training	Recipients (employees)	Person	1,204	233	92	94	103
		Recipients (suppliers)	Person	1,796	646	108	205	223
		Training hours	Hour	2	2	2	2	2

* The 2022 SOx data has been corrected due to an error in the previously disclosed figures for the prior year.

** COD was replaced with TOC starting in 2022.

*** Water use is calculated by subtracting the volume of water discharged from the total water withdrawn, while adding the amount lost through evaporation. The previous year's data has been corrected.

Category		Unit	2020	2021	2022	2023	2024		
Waste	Head-quarters	General waste	Recycling*	-	-	-	-	4	
			Other	Ton	12	11	9	9	10
			Total	12	11	9	9	14	
	Onsan Refinery	General waste	Landfilling	521	261	430	946	564	
			Incineration	2,055	1,639	2,090	5,425	3,277	
			Recycling	26,857	26,931	27,049	25,868	32,243	
			Other	4,847	8,404	3,510	2,715	6,054	
			Total	34,281	37,134	33,079	34,953	42,139	
			Designated waste	Landfilling	68,887	49,632	67,770	64,931	119,123
	Total	Slag	Incineration	1,632	1,563	1,795	66	85	
			Recycling	118	100	117	76	8,168	
			Other	4	0	0	2	14	
Total			70,641	51,295	69,682	65,075	127,391		
Recycling**			Ton	699,444	732,432	614,832	661,461	487,474	
Landfilling			69,408	49,893	68,200	65,877	119,687		
Total	Total	Incineration	3,687	3,202	3,885	5,491	3,362		
		Recycling	726,419	759,463	641,998	687,405	527,889		
	Other	4,863	8,415	3,519	2,725	6,078			
Total Waste Generated	Ton	804,377	820,873	717,602	761,498	657,016			
Waste Generation Intensity	Ton/KRW billion	106.1	82.3	64.0	78.5	54.5			
Waste Recycling Rate	%	90.3	92.5	89.5	90.3	80.3			
Environmental Investment Costs***	Air	KRW million	24,737	2,818	9,593	27,893	11,722		
	Water	KRW million	1,652	1,401	2,085	10,866	38,126		
	Chemicals	KRW million	2,579	7,217	660	854	5,977		
	Total	KRW million	28,968	11,436	12,338	39,613	55,825		

* Waste recycling volume at the headquarters has been calculated starting from the second half of 2024, following the relocation of the office building.

** Under the calculation criteria of the "Allbaro" system, slag is classified as part of total waste generated.

*** The 2023 environmental investment costs have been corrected from the previously disclosed data for the prior year.

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ESG DATA

Social

Category		Unit	2020	2021	2022	2023	2024		
Workforce	Number of employees	Headquarters	Person	146	154	196	244	276	
		Onsan Refinery	Person	1,295	1,400	1,546	1,637	1,693	
		Total	Person	1,441	1,554	1,742	1,881	1,969	
	By gender	Head-quarters	Male	Person	122	124	152	181	205
			Female	Person	24	30	44	63	71
		Onsan Refinery	Male	Person	1,262	1,365	1,497	1,593	1,646
			Female	Person	33	35	49	44	47
	By age	Head-quarters	Under 30	Person	22	25	28	40	44
			Age 30-50	Person	99	101	133	156	184
			Over 50	Person	25	28	35	48	48
Onsan Refinery		Under 30	Person	206	276	366	383	381	
		Age 30-50	Person	840	855	893	942	977	
		Over 50	Person	249	269	287	312	335	
Employees with disabilities	Person	27	25	24	27	28			
Employees by type of employment*	Head-quarters	Male	Person	122	124	152	181	204	
		Permanent	Female	Person	24	30	43	61	70
			Total	Person	146	154	195	242	274
	Temporary	Female	Person	0	0	1	2	1	
		Total	Person	0	0	1	2	2	
	Onsan Refinery	Male	Person	1,213	1,269	1,366	1,502	1,546	
		Permanent	Female	Person	33	35	45	42	46
			Total	Person	1,246	1,304	1,411	1,544	1,592
Temporary		Male	Person	49	96	131	91	100	
		Female	Person	0	0	4	2	1	
Total	Person	49	96	135	93	101			

* Outsourced employees are disclosed through the business report on page 385.

Category		Unit	2020	2021	2022	2023	2024		
Employee Diversity	All managers	%	1.10	1.37	3.20	5.26	6.27		
	Percentage of female manager*	Percentage of female among top management positions	%	0.91	0.91	2.92	2.61	3.66	
		Percentage of female among junior management positions	%	1.23	1.65	3.38	6.91	7.78	
		Percentage of female among team leaders	%	-	-	0	1.32	1.47	
	Percentage of female manager by business location	Headquarter	%	2.78	3.88	7.69	11.59	13.45	
		Onsan Refinery	%	0	0	0.47	0.85	1.15	
	No. of new employees	Person	67	187	296	239	195		
	New Employees Recruitment	By gender	Male	Person	61	174	258	206	178
			Female	Person	6	13	38	33	17
		By age	Under 30	Person	53	153	213	144	130
Over 50			Person	0	1	4	2	0	
Number of retirees	Over 50	44	78	118	125	86			
Status of Employee Turnover	By gender	Male	Person	42	73	108	106	81	
		Female	Person	2	5	10	19	5	
	By age	Under 30	Person	12	30	69	53	44	
		Age 30-50	Person	13	24	27	53	23	
		Over 50	Person	19	24	22	19	19	
	turnover	Total turnover	%	3.1	5.0	6.8	6.6	4.4	
		Voluntary turnover	%	2.1	3.7	6.1	5.8	3.5	
	Current Status of Labor Union Membership	No. of employees affiliated with the labor union	Person	988	1,000	1,052	1,147	1,169	
Percentage of employees affiliated with the labor union**		%	68.6	64.4	60.4	61.0	59.4		

* Manager: Senior manager level or above (Top management position: executive and general manager level or higher, Junior management position: the level of senior manager)

** Employees eligible for union membership and collective agreement: Technicians

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ESG DATA

Social

Category		Unit	2020	2021	2022	2023	2024	
Employee Compensation	Total	KRW million	85	86	95	102	111	
	Average wage per person	Male	KRW million	87	88	98	105	114
		Female	KRW million	44	45	49	60	67
	Ratio of female to male base salaries (new hires)	%	-	-	100	100	100	
	Ratio of entry-level salary to the statutory minimum wage	Male	%	172	177	231	230	226
		Female	%	172	177	231	230	226
Regular Performance Evaluations*	Total	%	96.3	91.8	93	94.2	91.4	
	By gender	Male	%	96.7	92.1	93.6	95.2	93.1
		Female	%	84.2	84.6	82.8	75.7	63.6
	By age	Under 30	%	96.2	79.5	89.8	94.6	88.5
		Age 30-50	%	98.1	97.3	95.9	94.5	92.9
		Over 50	%	90.5	89.9	88.8	92	91.1
Training Provided**	Total	Person	1,441	1,554	1,742	1,881	1,969	
	By gender	Male	Person	-	-	-	1,779	1,851
		Female	Person	-	-	-	110	118
	By position	Managerial position	Person	-	-	-	147	123
		Non-managerial position	Person	-	-	-	1,742	1,846
	Total training hours (accumulated hours)	Hour	82,313	61,538	84,582	107,929	101,149	
Average training hours per person	Total	Hour	57	40	49	57	51	
	By gender	Male	Hour	-	-	-	56	50
		Female	Hour	-	-	-	81	71
	By position	Managerial position	Hour	-	-	-	78	47
Non-managerial position		Hour	-	-	-	56	52	
Total training expenses	KRW 1,000	322,800	436,300	1,584,000	2,924,266	1,930,379		
Average training cost per person	KRW 1,000	224	281	909	1,555	980		

* Employees who joined in the second half of the year, assistants, contract-based employees, and those on leave are not subject to the regular performance evaluation.

** Gender and rank-specific data management began in 2023.

Category		Unit	2020	2021	2022	2023	2024
No. of Accidents	Korea Zinc	Case	1	7	8	10	8
	Suppliers	Case	16	14	16	9	11
No. of workers injured	Korea Zinc	Person	1	8	8	10	9
	Suppliers	Person	17	14	16	9	11
Lost Work Hours	Korea Zinc	Hour	-	123,048	6,296	6,944	7,712
	Suppliers*	Hour	-	6,504	13,728	5,416	69,320
	Total*	Hour	-	129,552	20,024	12,360	77,032
No. of Near Miss Cases**	Korea Zinc	Case	893	1,335	869	525	145
	Suppliers	Case	0.08	0.54	0.49	0.58	0.51
	Total	Case	1.06	0.83	0.76	0.42	0.55
Injury Rate	Korea Zinc*	%	0.62	0.70	0.64	0.49	0.53
	Suppliers	%	-	4.38	0.20	0.22	0.23
	Total	%	-	0.20	0.34	0.13	1.82
Severity Rate	Korea Zinc*	Lost work hours per 1,000 hours worked	-	2.14	0.28	0.17	1.07
	Suppliers	Lost work hours per 1,000 hours worked	-	0.20	0.34	0.13	1.82
	Total	Lost work hours per 1,000 hours worked	-	2.14	0.28	0.17	1.07
Total Recordable Injury Frequency Rate (TRIFR)	Korea Zinc	No. of recordable injuries per 1,000,000 hours worked	0.32	1.98	2.04	2.41	1.90
	Suppliers	No. of recordable injuries per 1,000,000 hours worked	4.14	3.45	2.96	1.74	2.31
	Total	No. of recordable injuries per 1,000,000 hours worked	2.43	2.77	2.56	2.04	2.11
Lost Time Incident Rate (LTIR)	Korea Zinc	No. of lost time incidents per 200,000 working hours	0.06	0.40	0.41	0.48	0.38
	Suppliers	No. of lost time incidents per 200,000 working hours	0.83	0.69	0.63	0.35	0.46
	Total	No. of lost time incidents per 200,000 working hours	0.49	0.55	0.53	0.41	0.42
Near Miss Frequency Rate (NMFR)	Korea Zinc	No. of near misses per 1,000,000 hours worked	286.22	378.40	221.05	126.37	34.35

* Corrected figures due to error in previous year's report

** Number of near misses submitted and adopted after review through the 'Korea Zinc Suggestion Management System'

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ESG DATA

Social

Category		Unit	2020	2021	2022	2023	2024	
Health and Safety Training Status	Legally mandated training	Total training hours	Hour	-	41,733	48,378	50,290	49,624
	Non-mandatory training	Total training hours	Hour	-	5,332	22,445	17,933	15,277
		Total training hours*	Hour	-	47,065	70,823	68,223	64,901
	Total	Average training hours per person**	Hour	-	32.0	43	39	37

* Total training hours (training hours × number of participants) by course

** Total training hours / number of regular workers. The number of participants by training course may include multiple counts and supplier employees. The average per-person figure is calculated based on Korea Zinc's full-time employee count.

Category		Unit	2020	2021	2022	2023	2024
Status of Employee Volunteer Activities*	Annual participants	Person	-	-	110	78	173
	Total volunteer hours	Hour	-	-	400	389	829
	Average hours per participant	Hour	-	-	3.6	5	4.8
Social Contribution Expenses**		KRW million	6,608	6,767	8,201	7,934	7,790

* Due to social distancing measures during the COVID-19 pandemic, no social contribution activities were carried out in 2020 and 2021.

** Social contribution expense data for 2022 and 2023 have been revised.

Governance

Category		Unit	2021	2022	2023	2024
Board of Directors*	Total no. of registered directors	Person	9	11	11	12
	Internal director	Person	3	4	4	3
	Independent director	Person	5	6	6	7
	non-executive director	Person	1	1	1	2
	Proportion of independent director	%	55.6	54.5	54.5	58.3
	Male	Person	9	10	10	10
	Female	Person	0	1	1	2
	No. of female registered executives not related to controlling shareholders	Person	0	1	1	2
	Proportion of female directors	%	0	9.1	9.1	16.7
	Par value	KRW	5,000	5,000	5,000	5,000
Shareholder Return	Dividends per share	KRW	15,000	20,000	20,000	15,000
	Total dividends	KRW 100 million	2,651	3,545	3,973	3,027
	Dividend yield	%	3.63	3.75	3.5	3.0
	Dividend payout ratio (consolidated)	%	46.3	43.8	50.9	57.4
Cancellation of treasury stocks	KRW 100 million	0	0	0	1,000	
Total Shareholder Return Rate		%	46.3	43.8	50.9	76.4

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GRI Index

General Disclosures

Korea Zinc has reported its sustainability-related information in accordance with the GRI Standards 2021 for the period from January 1 to December 31, 2024. The company has applied GRI 1: Foundation 2021 and did not reference any sector standards.

GRI Standards	Disclosure	Page	Remarks
2-1	Organizational details	6, 7	
2-2	Entities included in the organization's sustainability reporting	2	
2-3	Reporting period, frequency and contact point	2	
2-4	Restatements of information	2	Revisions from the previous report are clarified through separate footnotes.
2-5	External assurance	101	
2-6	Activities, value chain and other business relationships	9-13, 53	
2-7	Employees	91	
2-8	Workers who are not employees	91	
2-9	Governance structure and composition	76	
2-10	Nomination and selection of the highest governance body	75, 80	
2-11	Chair of the highest governance body	75-76	
2-12	Role of the highest governance body in overseeing the management of impacts	78	
2-13	Delegation of responsibility for managing impacts	16	
2-14	Role of the highest governance body in sustainability reporting	16	
2-15	Conflicts of interest	79	
2-16	Communication of critical concerns	78	
2-17	Collective knowledge of the highest governance body	79	
2-18	Evaluation of the performance of the highest governance body	77	
2-19	Remuneration policies	77	
2-20	Process to determine remuneration	77	
2-21	Annual total compensation ratio	60-61	
2-22	Statement on sustainable development strategy	4	
2-23	Policy commitments	48-51, 105	
2-24	Embedding policy commitments	48-51, 105	

GRI Standards	Disclosure	Page	Remarks
	2-25	Processes to remediate negative impacts	16, 23, 29, 42, 49, 65, 70
	2-26	Mechanisms for seeking advice and raising concerns	47, 51, 82-83
GRI 2: General Disclosures 2021	2-27	Compliance with laws and regulations	-
	2-28	Membership associations	105
	2-29	Approach to stakeholder engagement	63-74
	2-30	Collective bargaining agreements	62

GRI Standards	Disclosure	Page	Remarks
GRI 3: Material Topics 2021	3-1	Process to determine material topics	17-19
	3-2	List of material topics	18
Material Topic: Action on Climate Change			
GRI 3: Material Topics 2021	3-3	Management of material topics	22
GRI 201: Economic Performance	201-2	Financial implications and other risks and opportunities due to climate change	23
GRI 302: Energy	302-1	Energy consumption within the organization	27, 88
	302-2	Energy consumption outside of the organization	27
	302-3	Energy intensity	27
	302-4	Reduction of energy consumption	27
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	26, 89
	305-2	Energy indirect (Scope 2) GHG emissions	26, 89
	305-3	Other indirect (Scope 3) GHG emissions	26, 89
	305-4	GHG emissions intensity	26, 89
	305-5	Reduction of GHG emissions	26

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GRI Standards	Disclosure	Page	Remarks
Material Topic: Our Impact on Nature			
GRI 3: Material Topics 2021	3-3	Management of material topics	28
GRI 305: Emissions	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	33
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	30
	303-2	Management of water discharge-related impacts	33
	303-3	Water withdrawal	30, 90
	303-4	Water discharge	30, 90
	303-5	Water consumption	30, 90
GRI 306: Waste 2020	306-1	Water discharge by quality and destination	32
	306-2	Waste by type and disposal method	32
	306-3	306-3 Significant spills	32, 90
	306-4	Transport of hazardous waste	32, 90
	306-5	Water bodies affected by water discharges and/or runoff	32, 90
Material Topic: Occupational Health and Safety			
GRI 3: Material Topics 2021	3-3	Management of material topics	40
GRI 403: Occupational Health & Safety	403-1	Occupational health and safety management system	40-41
	403-2	Hazard identification, risk assessment, and incident investigation	42
	403-3	Occupational health services	45
	403-4	Worker participation, consultation, and communication on occupational health and safety	43
	403-5	Worker training on occupational health and safety	43
	403-6	Promotion of worker health	45
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	45
	403-8	Workers covered by an occupational health and safety management system	41
	403-9	Work-related injuries	46

GRI Standards	Disclosure	Page	Remarks
Material Topic: Human Rights Management			
GRI 3: Material Topics 2021	3-3	Management of material topics	48
GRI 406: Non discrimination	406-1	Incidents of discrimination and corrective actions taken	51
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	-
GRI 408: Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	-
GRI 409: Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	-
Material Topic: Stakeholder Engagement			
GRI 3: Material Topics 2021	3-3	Management of material topics	63, 70
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	72-73
	203-2	Significant indirect economic impacts	72-74
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	70

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GRI Index

GRI Standards	Disclosure	Page	Remarks
Economy			
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	9
	205-1	Operations assessed for risks related to corruption	82
GRI 205: Anti-corruption	205-2	Communication and training about anti-corruption policies and procedures	82
	205-3	Confirmed incidents of corruption and actions taken	83
	207-1	Approach to tax	83
GRI 207: Tax 2019	207-2	Tax governance, control, and risk management	83
	207-4	Country-by-country reporting	83
	Environment		
GRI 301: Materials	301-1	Materials used by weight or volume	39
	301-2	Recycled input materials used	39
GRI 302: Biodiversity 2024	304-3	Habitats protected or restored	36
GRI 308: Supplier Environmental Assessment	308-2	Negative environmental impacts in the supply chain and actions taken	53

GRI Standards	Disclosure	Page	Remarks
People			
GRI 401: Employment	401-1	New employee hires and employee turnover	57, 91
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	61-62
	401-3	Parental leave	62
GRI 404: Training and Education	404-1	Average hours of training per year per employee	60
	404-2	Programs for upgrading employee skills and transition assistance programs	58-59
	404-3	Percentage of employees receiving regular performance and career development reviews	60
GRI 405: Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	91
	405-2	Ratio of basic salary and remuneration of women to men	61
GRI 414: Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	45
	414-2	Negative social impacts in the supply chain and actions taken	53
GRI 415: Public Policy	415-1	Political contributions	- In compliance with the Political Funds Act and relevant regulations, no political contributions were made.
GRI 418: Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	84

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SASB Index



Topic	Code	Classification	Metric	Unit	Page
Greenhouse Gas Emissions	EM-MM-110a.1	Quantitative	Gross global Scope 1 emissions, percentage covered under emissions limiting regulations	Ton, %	26
	EM-MM-110a.2	Qualitative	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	-	26
Air Quality	EM-MM-120a.1	Quantitative	Air emissions of the following pollutants: CO, NOx (excluding N2O), SOx, particulate matter (PM10), mercury (Hg), lead (Pb), and volatile organic compounds (VOCs)	Ton	33
Energy Management	EM-MM-130a.1	Quantitative	Total energy consumed, percentage grid electricity, percentage renewable	TJ	27, 88
Water Management	EM-MM-140a.1	Quantitative	Total water withdrawn, total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	m ³ , %	30, 33
Waste & Hazardous Materials Management	EM-MM-150a.2	Quantitative	Description of waste and hazardous materials management policies and procedures for active and inactive operations	Ton, %	Not applicable
Workforce Health & Safety	EM-MM-320a.1	Quantitative	(1) MSHA all-incidence rate, (2) fatality rate, (3) near miss frequency rate (NMFR) and (4) average hours of health, safety, and emergency response training for (a) full-time employees and (b) contract employees	%	46
Business Ethics & Transparency	EM-MM-510a.1	Qualitative	Description of the management system for prevention of corruption and bribery throughout the value chain	-	81-83

TCFD Index

Pillar	Disclosures	Page	CDP
Governance	The board's oversight of climate-related risks and opportunities.	22	C4.1
	Management's role in assessing and managing climate-related risks and opportunities.		C4.3
Strategy	The climate-related risks and opportunities the organization has identified over the short, medium, and long term.	23	C3.1, C3.6
	The impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.		C5.3
	The resilience of the organization's strategy, taking into consideration different climate related scenarios, including a 2°C or lower scenario.		C5.1
Risk Management	The organization's processes for identifying and assessing climate related risks.	23	C2.2
	The organization's processes for managing climate related risks.		
Metrics and Targets	How processes for identifying, assessing, and managing climate related risks are integrated into the organization's overall risk management.	26-27	C7.51
	The metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.		
	The targets used by the organization to manage climate related risks and opportunities and performance against targets.		

IFRS S2 Index

Pillar	Metric	Page
Governance	The governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.	22
	1 The governance body(s) (which can include a board, committee or equivalent body charged with governance) or individual(s) responsible for oversight of climate-related risks and opportunities.	
Strategy	2 Management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities.	22
	The entity's strategy for managing climate-related risks and opportunities, and the effects of those risks and opportunities—identified through the strategy—on its business model and value chain, strategy and decision-making, and financial position, performance, and cash flows over the short, medium, and long term.	23-24
	1 The climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects.	
	2 The current and anticipated effects of climate-related risks and opportunities on the business model and value chain.	
	3 The impact of climate-related risks and opportunities on strategy and decision-making, including information on transition plans.	
4 The effects of climate-related risks and opportunities on the entity's financial position, performance, and cash flows for the reporting period, as well as the anticipated financial impacts over the short, medium, and long term.		
Risk Management	5 The climate resilience of the entity's strategy and business model in response to climate-related changes, scenarios, and uncertainties.	10
	Processes used to identify, assess, prioritize, and monitor climate-related risks and opportunities, including whether and how these processes are integrated into and inform the overall risk management process.	25
	1 The processes and related policies the entity uses to identify, assess, prioritize, and monitor climate-related risks.	
2 The processes the entity uses to identify, assess, prioritize, and monitor climate-related opportunities.		
Metrics and Targets	3 The extent to which, and how, the processes for identifying, assessing, prioritizing, and monitoring climate-related risks and opportunities are integrated into and inform the entity's overall risk management process.	25
	The entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set and any targets it is required to meet by law or regulation.	26-27
	Cross-industry metrics	
	1 Scope 1, 2, and 3 GHG emissions and measurement approach	
	2 Amount and share of assets or business activities exposed to climate-related transition risks.	
	3 Amount and share of assets or business activities exposed to climate-related physical risks.	
	4 Amount and share of assets or business activities aligned with climate-related opportunities.	
	5 Capital expenditure, financing, or investment allocated to climate-related risks and opportunities.	
	6 Whether and how the entity applies an internal carbon price in its decision-making, and the price per metric tonne of greenhouse gas emissions it uses to evaluate the associated costs.	
	7 Whether and how climate-related considerations are incorporated into executive remuneration, and the percentage of executive management remuneration in the current period linked to climate-related considerations.	
Industry-based metrics		
1 Reference to industry-based metrics associated with disclosure topics, as described in the Industry-based Guidance on Implementing IFRS S2.		
Climate-related metrics		
1 Quantitative and qualitative climate-related targets set by the entity, including those required by law or regulation, and the applicable timeframes and scopes to which the targets apply.		
2 The approach to setting and reviewing targets, including whether the targets and methodologies have been validated by a third party, the methods and indicators used to monitor progress, and the processes for reviewing or revising targets.		
3 The types of greenhouse gas emissions covered by the target, the gross greenhouse gas emissions reduction target, and, in the case of a net emissions target, the entity's planned use of carbon credits to achieve the target.		

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PART A: Governance of Respect for Human Rights			
Topic	Code	Disclosures	Page
Policy Commitment	A1	What does the company say publicly about its commitment to respect human rights?	48
	A1.1	How has the public commitment been developed?	48
	A1.2	Whose human rights does the public commitment address?	48
	A1.3	How is the public commitment disseminated?	48
Embedding Respect for Human Rights	A2	How does the company demonstrate the importance it attaches to the implementation of its human rights commitment?	48
	A2.1	How is day-to-day responsibility for human rights performance organized within the company, and why?	16, 48
	A2.2	What kinds of human rights issues are discussed by senior management and by the Board, and why?	48, 50
	A2.3	How are employees and contract workers made aware of the ways in which respect for human rights should inform their decisions and actions?	48, 51
	A2.4	How does the company make clear in its business relationships the importance it places on respect for human rights?	48
	A2.5	What lessons has the company learned during the reporting period about achieving respect for human rights, and what has changed as a result?	49-51

PART B: Defining a Focus of Reporting			
Topic	Code	Disclosures	Page
Statement of Salient Issues	B1	State the salient human rights issues associated with the company's activities and business relationships during the reporting period.	49
Determination of Salient Issues	B2	Describe how the salient human rights issues were determined, including any input from stakeholders.	49, 50
Choice of Focal Geographies	B3	If reporting on the salient human rights issues focuses on particular geographies, explain how that choice was made.	54
Additional Severe Impacts	B4	Identify any severe impacts on human rights that occurred or were still being addressed during the reporting period, but which fall outside of the salient human rights issues, and explain how they have been addressed.	Not applicable

PART C: Management of Salient Human Rights Issues			
Topic	Code	Disclosures	Page
Specific Policies	C1	Does the company have any specific policies that address its salient human rights issues and, if so, what are they?	48, 105
	C1.1	How does the company make clear the relevance and significance of such policies to those who need to implement them?	48, 52
Stakeholder Engagement	C2	What is the company's approach to engagement with stakeholders in relation to each salient human rights issue?	50-51, 63
	C2.1	How does the company identify which stakeholders to engage with in relation to each salient issue, and when and how to do so?	63
	C2.2	During the reporting period, which stakeholders has the company engaged with regarding each salient issue, and why?	63
Assessing Impacts	C2.3	During the reporting period, how have the views of stakeholders influenced the company's understanding of each salient issue and/or its approach to addressing it?	63
	C3	How does the company identify any changes in the nature of each salient human rights issue over time?	50-51
Integrating Findings and Taking Action	C3.1	During the reporting period, were there any notable trends or patterns in impacts related to a salient issue and, if so, what were they?	49
	C3.2	During the reporting period, did any severe impacts occur that were related to a salient issue and, if so, what were they?	-
Tracking Performance	C4	How does the company integrate its findings about each salient human rights issue into its decision-making processes and actions?	50-51
	C4.1	How are those parts of the company whose decisions and actions can affect the management of salient issues, involved in finding and implementing solutions?	16
	C4.2	When tensions arise between the prevention or mitigation of impacts related to a salient issue and other business objectives, how are these tensions addressed?	16
Remediation	C4.3	During the reporting period, what action has the company taken to prevent or mitigate potential impacts related to each salient issue?	49
	C5	How does the company know if its efforts to address each salient human rights issue are effective in practice?	49
Remediation	C5.1	What specific examples from the reporting period illustrate if each salient issue is being managed effectively?	61-62
	C6	How does the company enable effective remedy if people are harmed by its actions or decisions in relation to the salient human rights issues?	51
	C6.1	Through what means can the company receive complaints or concerns related to each salient issue?	51
	C6.2	How does the company know if people feel able and empowered to raise complaints or concerns?	51
	C6.3	How does the company process complaints and assess the effectiveness of outcomes?	51
Remediation	C6.4	During the reporting period, what were the trends and patterns in complaints or concerns and their outcomes regarding each salient issue, and what lessons has the company learned?	51
		During the reporting period, did the company provide or enable remedy for any actual impacts related to a salient issue and, if so, what are typical or significant examples?	Not reported

UN SDGs

UN SDGs	Activities of Korea Zinc	Page
 End poverty in all its forms everywhere	Social contribution activities to reduce poverty for the socially vulnerable and underprivileged.	72
 Ensure healthy lives and promote well-being for all at all ages	Strengthening safety-related institutions and operating related programs for employees and business partners.	43-45
 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Education programs on capacity building and life planning for all employees.	56, 58-60
 Achieve gender equality and empower all women and girls	Monitoring gender representation in management positions, STEM departments, and training metrics to support women's empowerment.	61
 Ensure availability and sustainable management of water and sanitation for all	Managing water pollution through internal effluent discharge standards set at less than 80% of the legal pollutant limits.	33
 Ensure access to affordable, reliable, sustainable and modern energy for all	Development and expansion of renewable energy, such as solar, wind, and hydrogen energy.	10-13, 24
 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Creating new jobs and recruiting people through promoting new businesses.	10-13, 57
 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Increasing investment in minimizing environmental impact and participatory activities in institutions for a healthy industrial ecosystem.	10-13, 105
 Make cities and human settlements inclusive, safe, resilient and sustainable	Establishing sustainable infrastructure by completing the LEED Silver-certified Safety Training Center at the Onsan refinery, promoting hands-on safety education.	43

UN SDGs	Activities of Korea Zinc	Page
 Ensure sustainable consumption and production patterns	Continuous production through inter-industry circulation and cooperation.	13, 39
 Take urgent action to combat climate change and its impacts	Conversion to renewable energy via energy conservation, greenhouse gas reduction, and the RE100.	22-27
 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Enhancing ecosystem resilience by integrating biodiversity policies across sites and participating in habitat restoration and reforestation projects.	35-36
 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Strengthening transparent and accountable management through internal audits and whistleblowing channels to prevent corruption.	47, 51, 82-83
 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	Expanding global partnerships and supporting a sustainable industrial ecosystem through participation in domestic and international associations and forums.	71, 105

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UNGC

The Ten Principles of the UN Global Compact

Korea Zinc joined the United Nations Global Compact (UNGC) in 2024 to contribute to the global pursuit of sustainable development. Korea Zinc supports the UNGC's Ten Principles in the areas of Human Rights, Labour, Environment, and Anti-Corruption, and is committed to integrating them into its management practices to advance sustainable business.



Topic	Principle	Page
Human Rights	Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and	48
	Principle 2: make sure that they are not complicit in human rights abuses.	48-51
Labour	Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	48, 51
	Principle 4: the elimination of all forms of forced and compulsory labour;	48, 52
	Principle 5: the effective abolition of child labour; and	57
	Principle 6: the elimination of discrimination in respect of employment and occupation.	48, 57
Environment	Principle 7: Businesses should support a precautionary approach to environmental challenges;	35-37
	Principle 8: undertake initiatives to promote greater environmental responsibility; and	35-36
	Principle 9: encourage the development and diffusion of environmentally friendly technologies.	27
Anti-Corruption	Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.	81

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Independent Assurance Opinion Statement

To: The Stakeholders of Korea Zinc Company, Ltd.

Overview

BSI (British Standards Institution) Group Korea (hereinafter referred to as the "Assurer") was requested to verify the KOREA ZINC Sustainability Report 2024 (hereinafter referred to as the "Report"). The Assurer is independent of Korea Zinc 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 Korea Zinc 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 Korea Zinc and the assurance was carried out under the assumption that presented the information and data were complete and accurate.

Korea Zinc 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 Korea Zinc only.

The Assurer is responsible for providing Korea Zinc 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 Korea Zinc. The Assurer shall not bear any other responsibility, including legal responsibility, to any third party other than Korea Zinc 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 Korea Zinc includes the following:

- Reporting contents during the period from January 1st to December 31st 2024 included in the report, some data included the first half of 2025.
- 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.

Assurance Level and Type

The assurance levels and types are as follows;

- Moderate level based on AA1000 AS and Type 1 (confirmation to the four principles as described in the AA1000 AccountAbility Principle 2018 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 Korea Zinc.

[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]

201-1~2, 203-1~2, 205-1~3, 207-1~2, 207-4, 301-1~2, 302-1~4, 303-1~5, 304-3, 305-1~5, 305-7, 306-1~5, 308-2, 401-1~3, 403-1~9, 404-1~3, 405-1~2, 406-1, 407-1, 408-1, 409-1, 413-1, 414-1~2, 415-1, 418-1

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 Korea Zinc HQ 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.

KOREA ZINC

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Independent Assurance Opinion Statement

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 Korea Zinc. 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 assurers 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 Korea Zinc'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 environmental 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

Korea Zinc defined shareholders/investors, employees, customers, partners and local communities as a Key Stakeholder Groups. In order to collect opinions by each stakeholder group in the context of sustainability, operated the stakeholder engagement process. Korea Zinc conducted a review of the stakeholder engagement process in order to reflect the major issues derived through the stakeholder engagement process in sustainability strategy and goals. Korea Zinc disclosed the results related to the process in the Report.

Materiality: Identification and reporting of material sustainability topics

Korea Zinc implemented its own materiality assessment process in consideration of the major business and operational characteristics to derive important reporting issues related to sustainability. In the materiality assessment, Korea Zinc conducted the analysis of global sustainability reporting or assessment standards, analysis of benchmarking the same industry to derive the impact and financial materiality. Korea Zinc derived 5 material topics through the relevant process, and disclosed GRI topic standard disclosures related to material topics in the Report.

Responsiveness: Responding to material sustainability topics and related impacts

Korea Zinc operated a management process for material topics in the context of sustainability derived from the materiality assessment. Korea Zinc established mid- to long-term sustainability plans and goals in according to the management methodology established to effectively reflect the expectations of key stakeholders. Korea Zinc reviewed through major management organizations, disclosed the process including policy, indicator, activity and response performance on material topics in the Report.

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

Korea Zinc 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. Korea Zinc established sustainability strategies and objectives based on the analysis results of major impacts, including risks and opportunities for material topics at the governance level, disclosed mid- to long-term plans and strategic system in the Report.

Recommendations and Opportunity for improvement

The assurer will provide the following comments to the extent that they do not affect the result of assurance; Considering the key business characteristics,

- It may be helpful to advance the sustainability management system by disclosing key mid- to long-term sustainability strategies, plans, and responses, such as climate change and biodiversity
- It may be helpful to advance the sustainability management system by developing internal control procedures for key sustainability performance indicators.

GRI-reporting

Korea Zinc 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 Korea Zinc. The sector standard was not applied.

Issue Date: 23/06/2025

For and on behalf of BSI (British Standards Institution):
BSI representative



Jungwoo Lee, Lead Assurer, LCSAP

Seonghwan Lim, Managing Director of BSI Korea

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GHG Emission Verification Opinion

Introduction

DNV Business Assurance Korea Ltd. (“DNV”) was commissioned by Korea Zinc Co., Ltd (“Company”) to perform third party verification for Company’s Greenhouse Gas Inventory Report for the calendar year 2024 (“the report”) based upon a reasonable level of assurance. The Company is responsible for the preparation of the GHG statement on the basis set out within Audit Standard the guidelines on the operation of GHG emission trading scheme (“ETS (Notification No. 2024-155 of Ministry of Environment)”). The Company has full responsibility of the GHG statement. According to terms of contract, DNV expressly disclaims any liability or co-responsibility for any decisions a 3rd party may make based on the verification opinion.

Objective and Scope of Verification

The objective of the verification is to present an independent verification opinion on the company's GHG statement, and the scope of verification is as follows;

- Organizational Boundary : Company domestic sites
- Reporting Boundary : Scope 1 (Direct emissions), Scope 2 (Indirect emissions)
- Reporting Period : 2024.01.01 ~ 2024.12.31

Verification Approach

The verification has been conducted in accordance with the verification principles and tasks outlined in the guidelines on the operation of GHG ETS (Notification No.2024-155, Korean Ministry of Environment) and the verification guideline for GHG ETS (Notification No. 2024-169, Korean Ministry of Environment). DNV planned and concluded our work so as to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a verification opinion with 5% materiality level. As part of the verification process, we have reviewed as follows;

- Adequacy of GHG data control, collection and emission calculation and report process
- The GHG inventory is based on measurements and has inherent limitations that may arise from the process of calculating, estimating, and finalizing the reported data.

Conclusions

Based on the verification conducted, the information related to the GHG statement has been properly calculated and reported. The result of Material discrepancy satisfied the criteria for an organization that emits more than 500,000 tCO2eq but less than 5,000,000 tCO2eq shall not exceed 2.5% from total emission

- DNV represents “unmodified” opinion on Greenhouse Gas Emissions.

(Unit: ton CO₂ equivalent)

2024	GHG Emissions (ton CO ₂ eq)			Energy consumption (TJ)		
	Scope 1	Scope 2	Total	Fuel	Electricity	Total
Company	2,572,666.884	605,858.266	3,178,524	31,765.412	12,660.220	44,425

* The total greenhouse gas emissions above may differ by less than ± 1 tCO2eq due to decimal point truncation to report as a whole number by business site.

2025. 6. 16
Lee, Jang Sup
Country Representative
DNV Business Assurance Korea Ltd.




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GHG Emission Verification Opinion

GHG Emission Verification Opinion

1. Verification Goal

The goals of greenhouse gas (GHG) emission verification (hereinafter referred to as 'verification') conducted by the Korean Standards Association are as follows.

- Confirming the conformity with standards and procedures of GHG emission and GHG emissions calculated within the scope of verification
- Checking the validity of declarations related to the organization's GHG emissions or removals
- Confirming the effective implementation of the organization's management of GHG emissions or removals
- Confirming the conformity of processes for implementing, managing and improving the organization's GHG emissions or removals estimates

2. Verification Scope

Korean Standards Association conducted limited assurance verification of Korea Zinc Company, Ltd.'s Scope3 GHG statement.

- Reporting Target : Headquarters, Onsan Refinery
- Boundary : Scope3(Other Indirect emissions)
 - Category 1. Purchased goods and service
 - Category 2. Capital goods
 - Category 3. Fuel and energy-related activities(not included in scope 1 or scope 2)
 - Category 4. Upstream transportation and distribution
 - Category 5. Waste generated in operations
 - Category 6. Business travel
 - Category 7. Employee commuting
 - Category 9. Downstream transportation and distribution
 - Category 10. Processing of sold products
 - Category 13. Downstream leased assets
 - Category 15. Investments
- Year : January 1, 2024 to December 31, 2024

3. Verification Criteria and Guidelines

Korean Standards Association conducted verification according to the procedures stipulated in ISO 14064-3 : 2019.

- Calculation criteria
 - KS I ISO 14064-1:2018
 - Guidelines for Reporting and Certification of Emissions from Greenhouse Gas Emissions Trading System (Ministry of Environment Notice No. 2025-64)
 - 2006 IPCC (Intergovernmental Panel on Climate Change) Guidelines
 - WRI (World Resources Institute) Greenhouse Gas Protocol
 - Corporate Value Chain (Scope 3) Accounting and Reporting Standard (WRI)
 - Technical Guidance for Calculating Scope3 Emissions

4. Level of assurance verification and Responsibility

Korea Standards Association provides verification at limited level of assurance to strengthen GHG management for your company's GHG emissions.

- On-site inspection : Visit to Korea Zin Company, Ltd. Headquarters
- Method of confirmation
 - Interview with greenhouse gas emissions manager and field staff
 - Review of the management system and data used to calculate greenhouse gas emissions during the reporting period
 - Tracking review of internal documents and basic data

Korea Zinc Company, Ltd. should provide fair data on information and evidence related to GHG emissions, and the KSA is limited to guaranteeing GHG emissions.

5. Verification Limit

GHG emissions can be affected by factors such as data limits and uncertainties in the scope of verification, and inherent limitations may exist accordingly.

6. Verification Conclusion

No errors or false facts were found in Korea Zinc Company, Ltd.'s GHG emissions verified through the ISO 14064-3 verification procedure within the scope of verification.

I Appendix. GHG Emissions in 2024

(Unit: tCO₂e)

Category		GHG Emissions
Category 1	Purchased goods and service	1,389,849
Category 2	Capital goods	445,582
Category 3	Fuel and energy-related activities (not included in scope 1 or scope 2)	238,822
Category 4	Upstream transportation and distribution	75,299
Category 5	Waste generated in operations	33,028
Category 6	Business travel	707
Category 7	Employee commuting	2,121
Category 9	Downstream transportation and distribution	52,735
Category 10	Processing of sold products	2,292,211
Category 13	Downstream leased assets	1,074
Category 15	Investments	78,531
Total		4,609,959

※ Note : The final GHG Emissions were calculated by summing each category and removing decimal points.

May 15, 2025

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Memberships and Associations

Memberships and Associations		
Korea Companies Information	Ulsan Industrial Health Council	Korea Nonferrous Metal Association
Korea International Trade Association	Ulsan Environmental Technologists Association	Korea Metal Recycling Industry Association
Seoul Chamber of Commerce and Industry	Onsan Industrial Complex Scholarship Committee	Korea Mining Association
Ulsan Chamber of Commerce and Industry	Ulsan Safety Communication Committee	Korea Urban Mining Association
Korea Customs Logistics Association	Ulsan Regional Institute Directors' Council	Overseas Resource Development Association
Korea-America Association	Ulsan/Yangsan Entrepreneur Association	Korea Battery Industry Association
Listed Company Audit Committee	Ulsan Logistics Council	The Korean Hydrogen & New Energy Society
Korea Industrial Technology Association	Ulsan Port Development Council	The Korean Society of Clean Technology
Korea Personal Improvement Association	Ulsan Electric Engineers Association	International Antimony Association
Korea Industrial Safety Association	Regional (Ulsan) Legislation Association	International Lead Association
Industrial Security Council	Industrial Safety Committee	International Zinc Association
Korea Council of Chief Information Security Officers	Onsan Industrial Complex Association	Korea RE100 Committee
Korean Chemical Society	Onsan Industrial Complex Safety Management Association	Carbon Free Alliance
Korea Nursing Association	Onsan Industrial Complex Environmental Management Association	KBCSD
Civil Defense Council	Onsan Industrial Complex Facility Directors' Council	Korea Emissions Market Association
Reserve Army Council	Onsan Industrial Complex General Affairs Department Heads' Council	KRX Emissions Market
Emergency Planning Council	Onsan Industrial Complex Scholarship Committee	
Environmental Protection Council	Busan/Ulsan/Gyeongnam Forum	

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KOREA ZINC