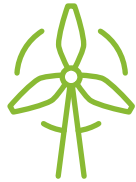


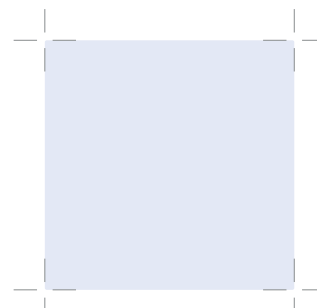
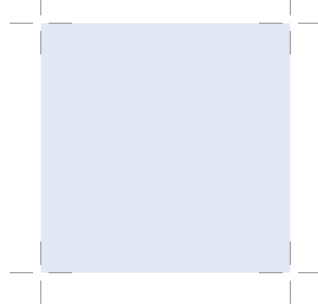
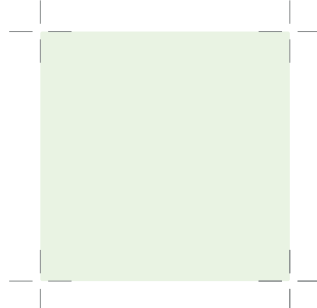
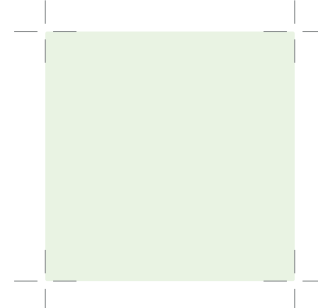
# Green Solution Partner for a Sustainable Future

2025 Company Profile



**KOREA ZINC**

# Green Solution Partner for a Sustainable Future



## Troika Drive: From Global Smelting Leadership to a Sustainable Future

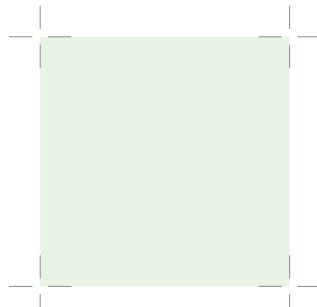
For over half a century, Korea Zinc has remained steadfast in one field, non-ferrous metal smelting. With world-class technological expertise and product quality competitiveness, we have grown into the No. 1 global smelting company.

Today, we are driving our expansion into a broader industrial ecosystem through the Troika Drive strategy, advancing beyond smelting into the future of sustainability and innovation.

Renewable Energy and Green Hydrogen Business  
Secondary Battery Materials Business  
Resource Recycling Business

We drive innovation that connects the environment, technology, people, and the future together, building a more sustainable tomorrow.

Green Solution Partner for a Sustainable Future



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### Chairman's Message

# Embarking on a New Chapter as a Global Leader in Renewable Energy and Advanced Materials

The world is undergoing a profound transformation.

From the rise of AI-driven industries to intensifying global competition over critical minerals and mounting uncertainty in supply chains, today's businesses face both growing responsibilities and new opportunities. In the midst of these changes, Korea Zinc remains committed to our core business, smelting and refining, while boldly setting out on a new journey toward a sustainable future.

We strive to become an essential pillar of tomorrow's industrial ecosystem through leadership in renewable energy, secondary battery materials, and resource recycling businesses.

#### A Promise for the Next 50 Years, Building on the Last Half-Century

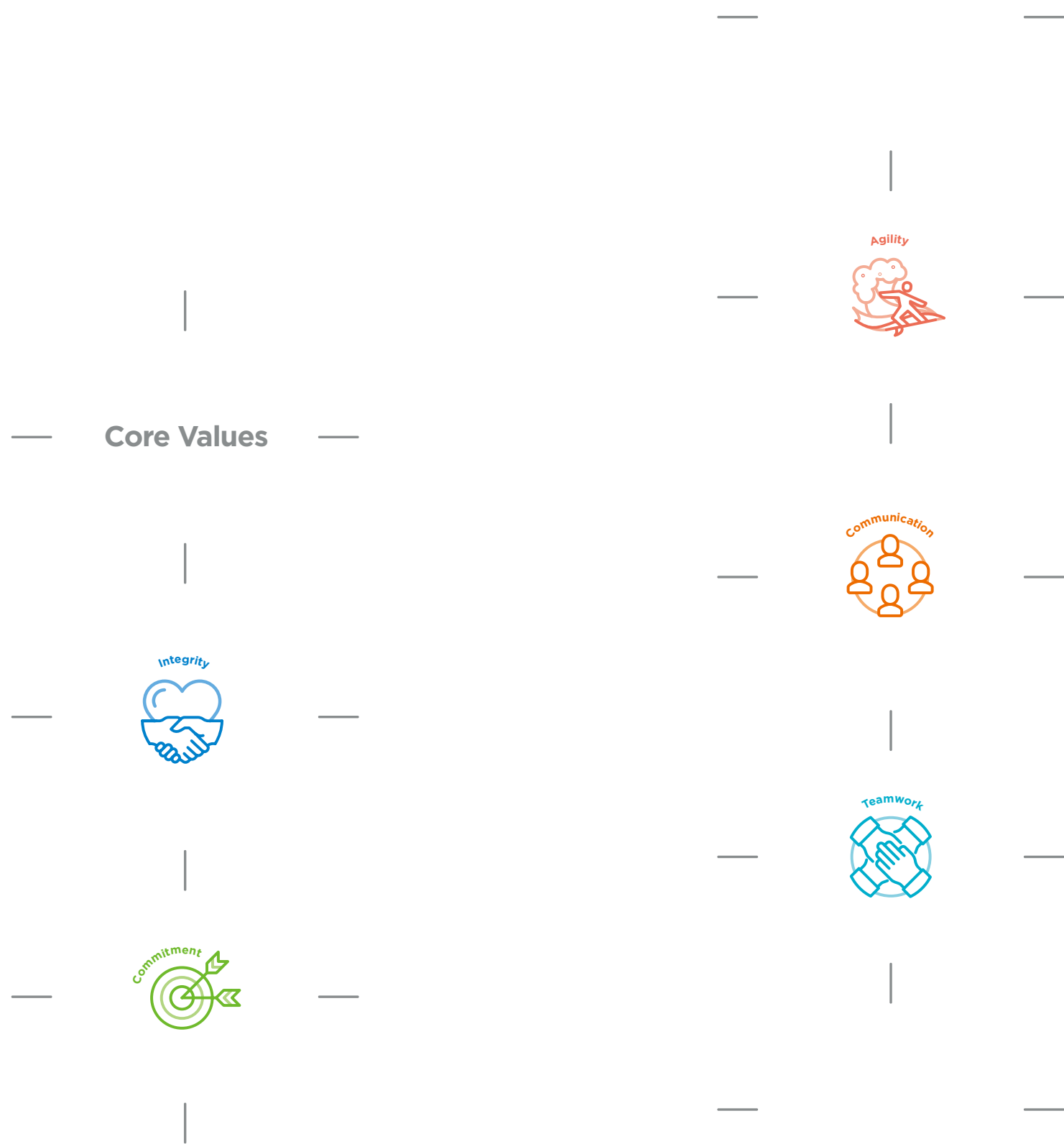
Founded in 1974 with limited resources and experience, Korea Zinc has spent the past five decades growing into the world's leading non-ferrous metal smelting company. In 2024, as we celebrated our 50th anniversary, we have set forth a new mission to guide our next half-century:

**“To convert diverse raw materials and energy sources into the energy and materials the world needs—safely, sustainably, and efficiently.”**

This mission is the core of our long-term sustainability strategy. Our five core values: honesty, commitment, flexibility, communication, and teamwork serve as both our compass and the driving force behind our promise to the future.

#### Turning Uncertainty into Opportunity

Our Troika Drive initiative is delivering tangible results, empowering us to pursue sustainability while simultaneously driving long-term business growth:



- In the renewable energy & green hydrogen business, we are leading the transition through projects such as the MacIntyre Wind Farm and the SunHQ Hydrogen Hub in Australia.
- In the secondary battery materials business, we are actively responding to the EV-driven industrial shift through full-scale production of copper foil and high-nickel precursors, along with the construction of our All-in-One Nickel Smelter, scheduled for completion in 2026.
- In the resource recycling business, we recover precious metals from end-of-life electronics and solar panels and have earned international SGS certification for producing copper and silver using 100% recycled raw materials.

These efforts mark more than milestones. They are proof of our commitment to green growth and our role in shaping a more sustainable industrial future.

#### Steadfast Progress, Grounded in Trust

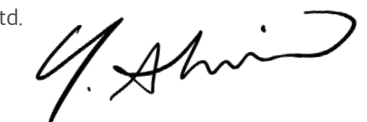
**“Korea Zinc was not built by placing stones, but by carefully laying down grains of our planet, one by one.”**

Our journey has always been rooted in integrity and trust, built hand in hand with our employees, partners, and stakeholders. Today, we stand on that strong foundation and look ahead to sustainable growth for the next generation.

In an era defined by AI, critical minerals, and the energy transition, Korea Zinc will continue to lead with foresight and prove its value through action. Amid shifts in global trade and supply chains, we will continue to serve as Korea's strategic base for critical mineral supply. Even now, Korea Zinc is doing what it does best, refining metals, and redefining the future.

Thank you for your continued trust and support. We will continue to deliver meaningful change and lasting impact.

Yun. B. Choi  
Chairman | Korea Zinc Co., Ltd.



# Business Overview

Established in 1974, Korea Zinc operates the world's largest single-site non-ferrous metals smelter, producing over 10 types of commodity metals such as zinc, lead, and copper, along with critical minerals like antimony and bismuth, which are gaining attention in the global supply chain discussions.

Driven by our next-generation growth strategy, Troika Drive, Korea Zinc is expanding beyond smelting into future-focused industries, including the renewable energy & green hydrogen, secondary battery materials, and resource recycling businesses with a vision to become the world's No. 1 eco-friendly materials provider.

By 2050, we aim to produce 100% green metals, leading the global transition to a cleaner, more sustainable future.

**Non-Ferrous Metal Smelting Business**

**Renewable Energy & Green Hydrogen Business**

**Secondary Battery Materials Business**

**Resource Recycling Business**

# The Troika Drive

## Renewable Energy & Green Hydrogen Business

Advancing toward 100% green metal production through renewable energy and green hydrogen, without carbon emissions

## Non-Ferrous Metal Smelting Business

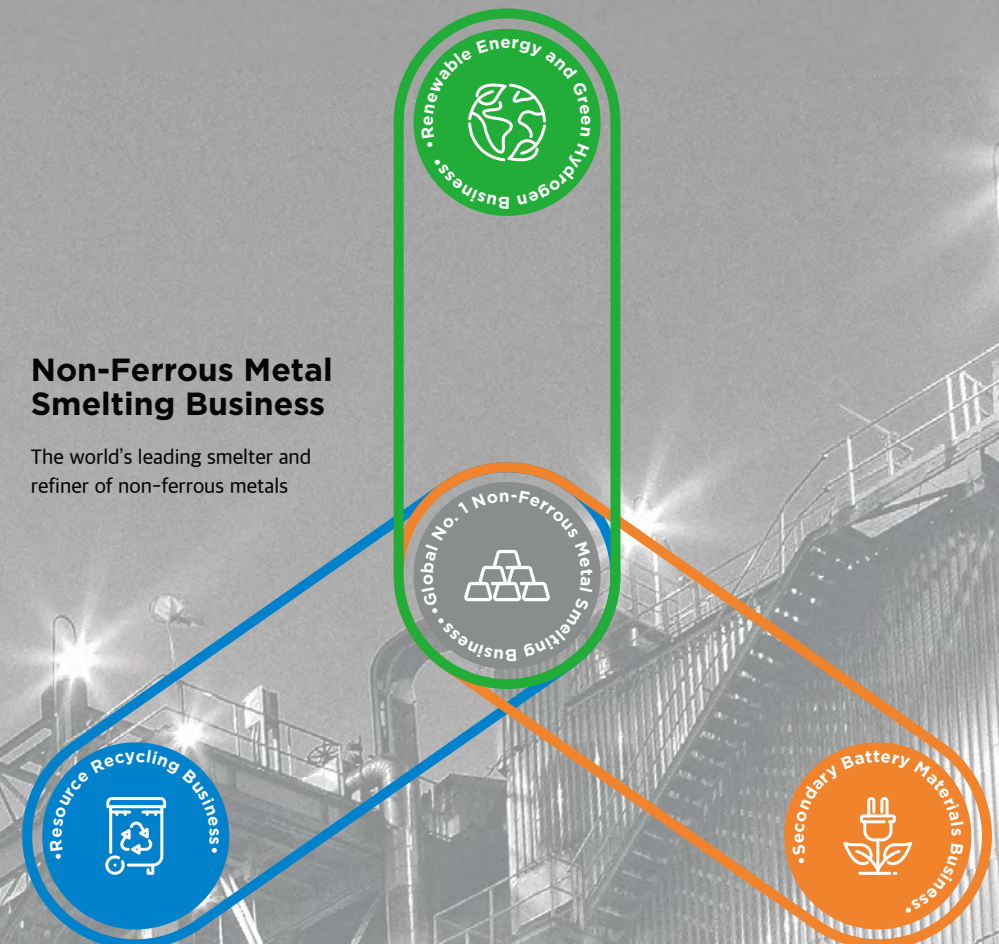
The world's leading smelter and refiner of non-ferrous metals

## Resource Recycling Business

Creating new value by recycling EAF dust, e-waste, and waste solar panels

## Secondary Battery Materials Business

Building a value chain spanning the production of nickel sulfate, precursors, and electrolyte copper foil through the recycling of batteries



# Beyond

A World-Leading Non-Ferrous Metal Smelter

# Metals

## A Global Leader in Non-Ferrous Metals

Korea Zinc operates the world's largest single-site zinc smelter, positioning the company as a global leader in comprehensive non-ferrous metal production.

We hold the No. 1 global market share in both zinc and lead, producing over 1.2 million tons annually across more than ten different non-ferrous metals.

Korea Zinc has built the world's first integrated process for smelting and refining zinc, lead, and copper, while adopting the eco-friendly Top Submerged Lance (TSL) processing technology. These innovations have enabled us to maintain industry-leading profitability among other global smelters. Building on this expertise, we've expanded into secondary battery materials, developing proprietary high-nickel precursor processing technology which has been recognized as a nationally designated core technology.

Amid global supply chain disruptions triggered by China's restrictions on strategic mineral exports, Korea Zinc plays a vital role as South Korea's sole domestic producer of strategic minerals.

Through continued technological development, we are maximizing the recovery rates of critical minerals such as antimony and indium, reinforcing global supply chain resilience.

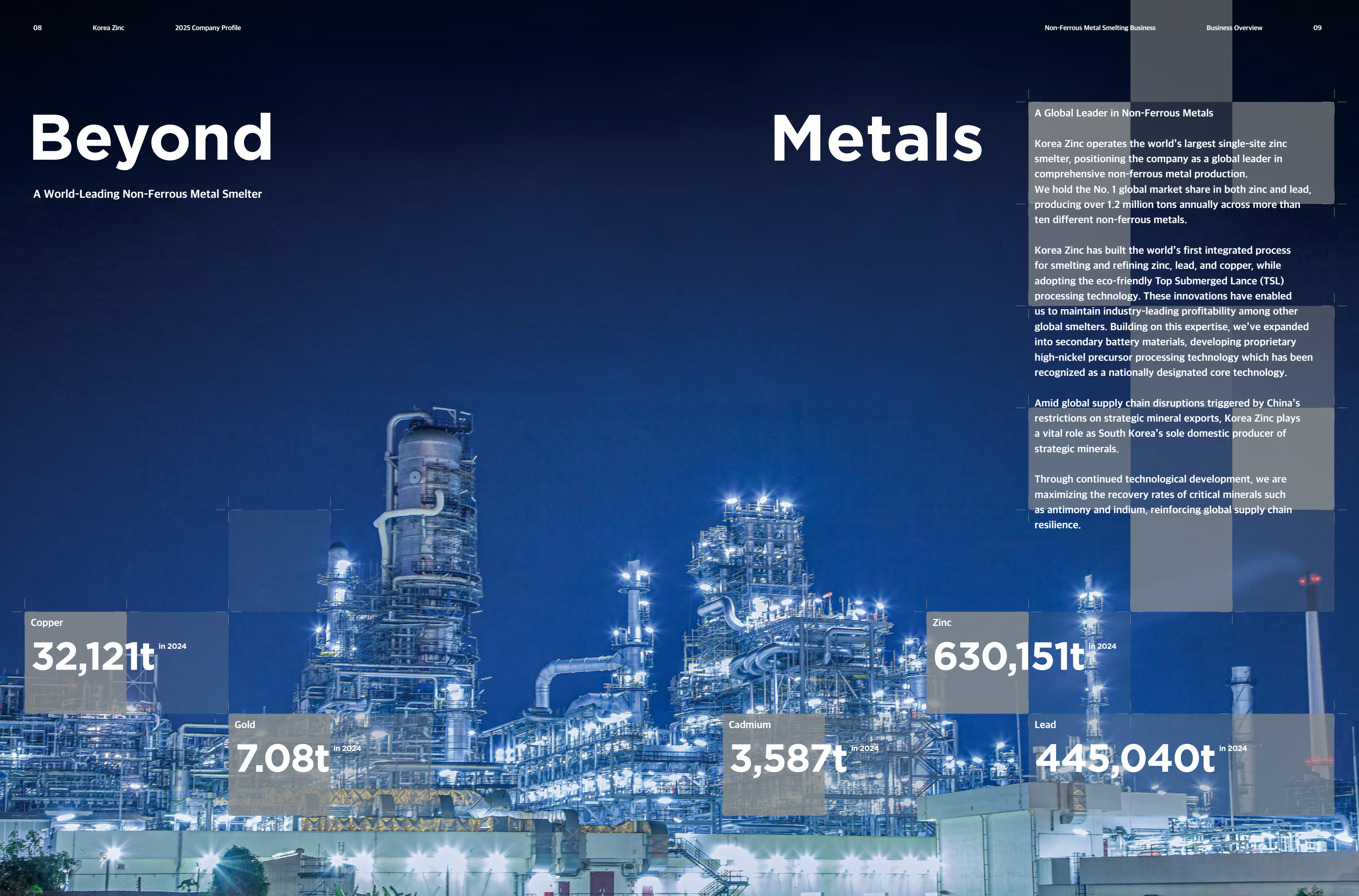
Copper  
**32,121t** in 2024

Gold  
**7.08t** in 2024

Cadmium  
**3,587t** in 2024

Zinc  
**630,151t** in 2024

Lead  
**445,040t** in 2024



# Green

Renewable Energy & Green Hydrogen Business

Troika Drive I

# Energy

**Opening the Door to the Carbon-Neutral Era**

Korea Zinc is taking the lead in ushering in the era of carbon neutrality by driving large-scale renewable energy and green hydrogen projects in Australia, a nation rich in natural resources.

Through our local subsidiary Ark Energy, we are developing and operating large-scale solar and wind farms. The clean electricity generated will be converted into green hydrogen and green ammonia, which will help power operations at the Sun Metals Refinery in Australia and the Onsan Refinery in Korea, both on track to achieve RE100 compliance.

In Korea, we are also making steady progress toward carbon neutrality. In August 2024, we took a major step by installing a hydrogen refueling station and introducing 30 hydrogen-powered forklifts at our Onsan Refinery. This is the first case of hydrogen forklift adoption within a national industrial complex in Korea.

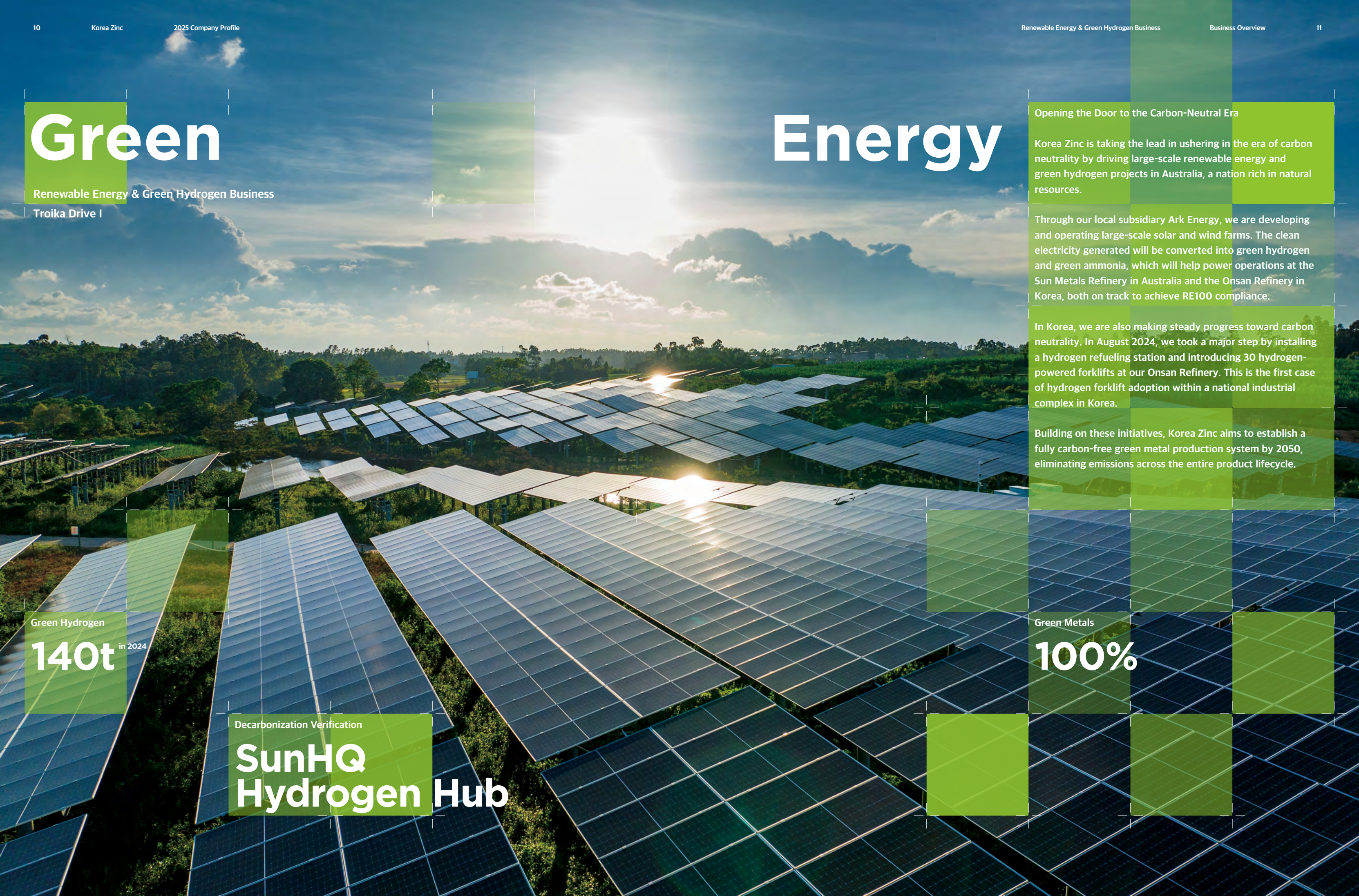
Building on these initiatives, Korea Zinc aims to establish a fully carbon-free green metal production system by 2050, eliminating emissions across the entire product lifecycle.

Green Hydrogen  
**140t** in 2024

Decarbonization Verification

**SunHQ**  
**Hydrogen Hub**

Green Metals  
**100%**



# Batteries

Secondary Battery Materials Business

Troika Drive II

# The Future

## Unrivaled Technological Leadership in the Era of Eco-Friendly Mobility

To meet the demands of a new era defined by eco-friendly mobility, Korea Zinc is expanding into the secondary battery field, leveraging over 50 years of world-class refining technology.

Currently, Korea Zinc manufactures and develops key secondary battery materials such as nickel sulfate, precursors, and electrolytic copper foil. Our high-nickel precursor processing technology was designated as a core national technology by the Korean government in November 2024, further proving our unmatched technological leadership in next-generation mobility.

The supply chain for secondary battery materials is heavily dependent on specific countries, including China, making the global supply chain potentially difficult for companies. Korea Zinc is committed to enhancing supply chain resilience through continued innovation and independent technology development.

## High-Quality Precursors for Cathode Active Materials

# Precursors

## The World's First All-In-One Nickel Smelter

# All-In-One

100% Recycled Electrolyte Copper Foil

# 100% Recycled

# Recycling

Resource Recycling Business

Troika Drive IID

# Revolution

Innovation that Eliminates Waste—Leading the Resource Recycling Revolution

Korea Zinc is expanding the resource recycling business by recycling smelting byproducts, end-of-life solar panels, used batteries, and e-waste to create new value. These efforts are expected to contribute significantly to environmental protection, including reducing greenhouse gas emissions and landfill waste volumes.

One of our key circular economy projects is eco-friendly copper. Using e-waste collected in Korea and by our U.S. subsidiary PedalPoint Recycling, we produce high-demand copper to meet surging global needs. We possess proprietary technology that enables the production of ultra-high-purity copper (over 99.95%) from electronic waste. In August 2024, the French certification authority Société Générale de Surveillance (SGS) certified that Korea Zinc's copper is made from 100% recycled raw materials.

Going forward, Korea Zinc will continue expanding the resource recycling business to boost both economic efficiency and environmental preservation.

## EAF-dust

## E-waste

## Waste Solar Panels

Reused Ratio in Raw Material Supply

# 28%

# Green Solution Partner for a Sustainable Future

## Company Overview

Applying Essentials from the Past Half Century  
to Expand during the Next Century

Korea Zinc is moving beyond smelting,  
expanding operations to cover eco-friendly energy,  
cutting-edge materials, and resource recycling going forward.  
By leading this industrial transformation,  
we are helping build a more sustainable and resilient world.

**At a Glance**

**Financial Highlights**

**Milestones**

**Global & Domestic Affiliates and Subsidiaries**

### At a Glance

# From Global Smelting Leader to Green Materials Innovator

Building on our world-leading technology, we are shaping a more sustainable future beyond smelting.

### Company Overview

Korea Zinc Co., Ltd.	Year of Establishment	Employees (as of December 2024)
----------------------	-----------------------	---------------------------------

 **KOREA ZINC** | 1974 | 1,944

### Mission and Core Values

#### Our 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.

#### Core Values to Achieve Our Mission



#### Integrity

Face issues fairly and honestly



#### Commitment

Achieve excellence through dedication



#### Agility

Think broadly and act swiftly



#### Communication

Engage in open discussions and accept without judgments



#### Teamwork

Connect diverse Talents Together to Create Powerful Synergy

### Financial Highlights

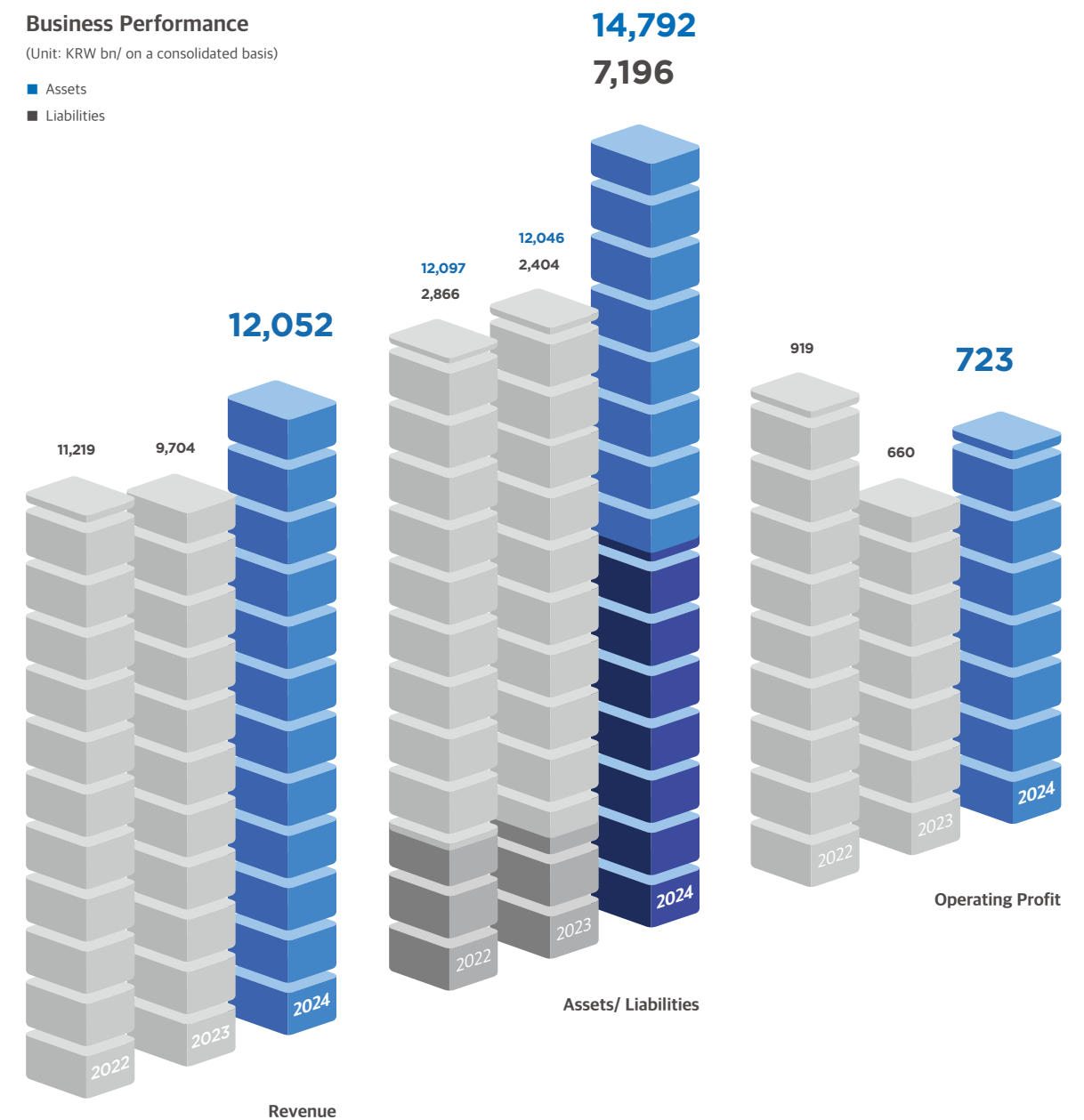
# Powered by World-class, Differentiated Technology, Korea Zinc has Recorded 100 Consecutive Quarters of Profitability

Our growth has remained steady, driven by continuous investment and relentless process innovation to improve cost efficiency.

### Business Performance

(Unit: KRW bn/ on a consolidated basis)

- Assets
- Liabilities



Milestones

# Half a Century of Excellence, a Century of Challenge: Our Sustainable Journey Has Begun

For over 50 years, Korea Zinc has remained committed to a single path, building world-class technological excellence and unmatched product quality. Now, we look ahead to the next 100 years, embracing new challenges and shaping the future of sustainable industry.

Business Growth

## 1991-2004

Leveraging outstanding technological expertise to break into the global market

- 1991 · Completed the Exclusive Pier for the Onsan Refinery
- 1992 · Constructed DRS Lead Smelter (135kt)
- 1993 · Constructed CHP\* Plant (43,500 kW electricity ; 175 t/hr of steam)
- 1994 · Constructed Direct Leaching Plant
- 1996 · Established Sun Metals Corporation in Australia
- 2000 · Constructed a TSL Plant  
· Acquired Domestic New Technology (KT) Certification
- 2001 · Acquired ISO 9001 Certification (LRQA)
- 2002 · Obtained World-Class Product Certification (for Zinc Ingot from the Ministry of Commerce, Industry and Energy)
- 2004 · Awarded 2004 Green Management Award in Technology Division (Korea Efficiency Association)  
· Constructed a Copper Smelter (20kt)  
· Completed Indium Plant

KRW  
**1tr**  
1998

KRW  
**1.6tr**  
2000

KRW  
**2.2tr**  
2004

Worldwide Advancement

## 2005-2019

Taking the lead in the market by becoming the world's premiere smelter and refiner of non-ferrous metals

- 2009 · Awarded 'Gold Tower Order of Industrial Service Merit'
- 2010 · Completed TSL Plant
- 2011 · Completed Refinery and Precious Metal Factory

KRW  
**5.6tr**  
2011

KRW  
**3.4tr**  
2007

KRW  
**7.6tr**  
2020

- 2015 · Constructed 2nd Non-Ferrous Metals Complex
- 2016 · Acquired SteelCycle  
· Established Townsville Logistics
- 2017 · Established ZOC Vietnam
- 2018 · Established Townsville Marine Logistics
- 2019 · Started Investment to Rationalize Zinc Leaching Process

KRW  
**6.9tr**  
2018

Global Broadening

## 2020-Present

Proactively responding to global market shifts through new growth investments

- 2020 · Established KZAM Co., Ltd.
- 2021 · Established Ark Energy  
· Completed LNG Combined Power Plant

- 2022 · Troika Drive Management Declaration  
· Established Pedalpoint Holdings, LLC  
· Acquired of Epuron  
· SteelCycle SC Corporation  
· Acquired Igneo Holdings, LLC  
· Established Korea Precursor Corporation

- 2023 · Began the Construction of an All-in-One Nickel Smelter

- 2024 · Acquired Kataman Metals  
· Proclaimed the "Mission and Core Values" in Celebration of the 50th Anniversary  
· Designated as a National Core Technology and National Strategic High-Tech by the Government for its Original Precursor Technology
- 2025 · Nickel Sulfate Production Technology Selected as a National Strategic Technology

KRW  
**12.1tr**  
2024

KRW  
**11.2tr**  
2022

Foundation and Business Growth

## 1974-1990

Laying the groundwork for Korea's non-ferrous metal industry

- 1974 · Korea Zinc founded
- 1978 · Constructed a Zinc Smelter (annual capacity of 50)
- 1982 · Completed Copper Plant  
· Established R&D Center
- 1986 · Constructed a Lead Smelter (35kt/year)
- 1987 · Constructed a Zinc Refining Facility (170kt/year)  
· Established Korea Nickel Company
- 1988 · Registered Zinc Slab Ingot LME
- 1990 · Listed on the Korea Stock Exchange

CHP\* : Combined heat and power

## Global & Domestic Affiliates and Subsidiaries

# Innovation and Synergy Fueled by Korea Zinc's Global & Domestic Network

Our operational units around the world enable us to act preemptively and lead the market amid the rapidly changing global business climate.



### Domestic Network

● Manufacturing and Services

- Sorin Information Technology Co., Ltd.** Providing network, system integration (SI), IT solution, software, and hardware services
- KZ Green Tech Co., Ltd.** Offering energy diagnosis services and specializing in the construction and operation of cogeneration power plants
- KZX Co., Ltd.** Providing comprehensive freight and port transportation services
- KZ Trading** Engaging in the trade and wholesale / retail of non-ferrous metals
- KZ Precision Corporation** Designing, manufacturing and trading acid pumps, steel structures, and general industrial machinery

● Secondary Battery Materials Business

- KZAM Corporation** Manufacturing and selling copper foil for secondary battery applications
- KEMCO Co., Ltd.** Manufacturing and selling nickel sulfate
- KPC (Korea Precursor Company)** Manufacturing and selling precursors for secondary battery cathodes

● Resource Recycling Business

- SteelCycle Corporation** Manufacturing and selling zinc oxide
- SteelCycle SC Corporation** Pre-treatment of copper secondary resources
- Alantum Corporation** Manufacturing alloy forms for engine emission controls and industrial catalysts

### Global Network

● Smelting and Refining

- ICM Pachapaqui S.A.C** Engaging in mine development
- Pan Pacific Metal Mining Corp.** Engaging in mine development
- Sun Metals Corporation** Smelting, manufacturing and selling zinc, sulfate, and other materials
- Townsville Logistics** Providing zinc · zinc concentrate transportation services
- Townsville Marine Logistics** Providing zinc · zinc concentrate transportation services
- Zinc Oxide Corp. Vietnam LLC** Manufacturing and selling zinc oxide

● Resource Recycling Business

- Kataman Metals** Non-ferrous metal trading
- Pedalpoint evTerra Recycling** E-waste collection and pre-treatment
- Pedalpoint Holdings / Pedalpoint Igneo Holdings** U.S. HQ for Korea Zinc's resource recycling business
- Pedalpoint Igneo Technologies** Securing and trading copper raw materials in the U.S.
- Pedalpoint Igneo France** Pyrolysis business for waste PCB scrap
- Zinc Oxide Corp. Thailand Ltd.** Sourcing secondary raw materials

● Renewable Energy & Green Hydrogen Business

- Ark Energy Corporation** Developing renewable energy, hydrogen and power business

# Business Highlights

## Bold Steps Toward a Greener Tomorrow

For over 50 years, Korea Zinc has driven global progress with world-leading smelting and refining technology.

Today we are stepping beyond smelting through our Troika Drive initiative—expanding into renewable energy & green hydrogen, secondary battery materials, and resource recycling.

This transformation places Korea Zinc at the forefront of the global push for carbon neutrality and a sustainable future.

We are now living in a new era, where industry and the environment no longer stand apart, but move forward together.

Korea Zinc is helping shape this unprecedented paradigm.

With bold ambition and enduring innovation, we continue our journey toward a greener tomorrow.

**Non-Ferrous Metal Smelting Business**

**Renewable Energy & Green Hydrogen Business**

**Secondary Battery Materials Business**

**Resource Recycling Business**



## Non-Ferrous Metal Smelting Business

# World-leading Metal Smelting and Refining Technology

Korea Zinc has firmly established itself as the global No.1 smelter in non-ferrous metals, producing zinc, lead, gold, silver, indium, and more.

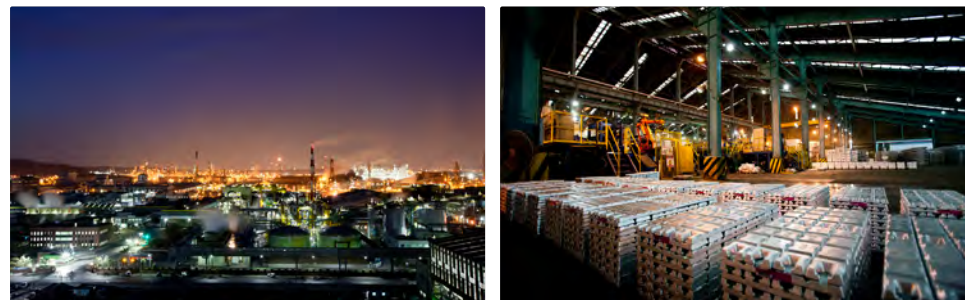
For over half a century, we have supplied essential metals to industries worldwide, powered by unrivaled technological expertise and product excellence.

Our advanced smelting and refining operations produce high-purity metals through cutting-edge technology and environmentally responsible processes, securing our leadership in the global market and supporting critical industries across the value chain.

With continuous innovation in eco-friendly refining, we are shaping the future of next-generation industries.

From automobiles and electronics to construction and energy, Korea Zinc delivers high-quality metals that drive the world forward, building a more sustainable future together with our global partners.

### Onsan Refinery: The World's Largest and Highest-Capacity Single-Site Smelter



- Located in the Onsan National Industrial Complex, Onsan-eup, Ulsan, Korea, covering a site of 1.42M m<sup>2</sup>
- The world's largest single-site non-ferrous smelter with the highest production capacity globally
- Produces over 1 million tons annually across more than 10 types of non-ferrous metals
- No.1 in global zinc production market share (based on a single-site smelter)
- No.1 in global lead production market share (based on a single-site smelter)

### Smelting Innovation at Korea Zinc: High-Quality Output, Eco-Friendly Processes

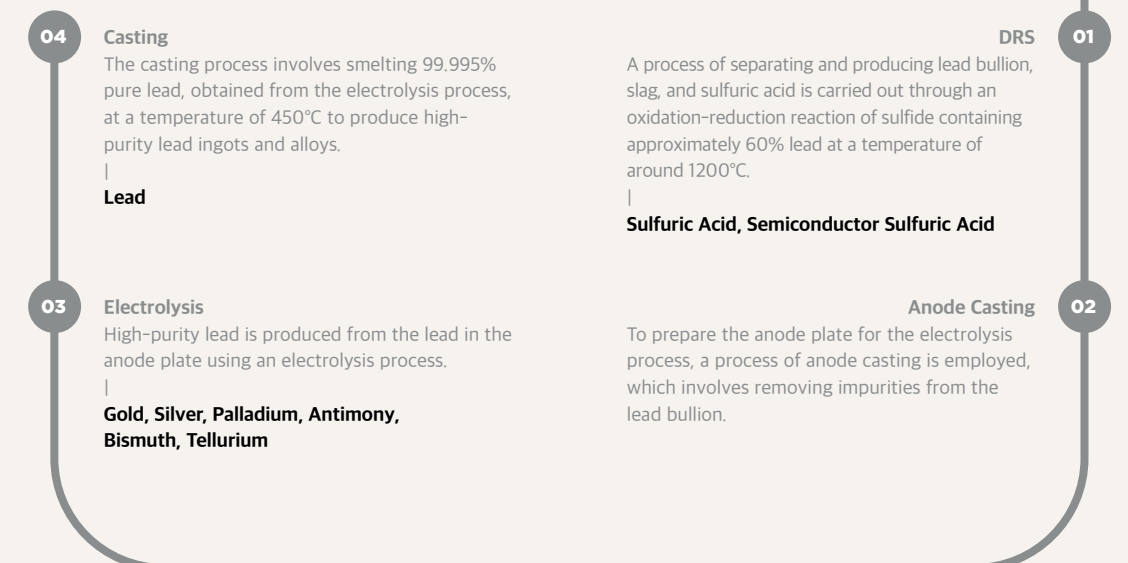
- **Top Submerged Lance (TSL) Technology:** Recovers commodity metals including zinc, lead, and copper from smelting byproducts and industrial waste. Final residues are discharged as environmentally safe "clean slag," minimizing environmental impact.
- **Direct Reduction Smelting (DRS) for Lead:** Korea Zinc was the first in the world to commercialize this one-step smelting process, which merges the oxidation and reduction stages. This process has been proven to reduce energy consumption and prevent pollution across diverse feedstocks.
- **Green Metal Roadmap:** Korea Zinc is advancing a company-wide roadmap to produce low-carbon green metals by minimizing emissions across the entire product life cycle from raw material sourcing and transport to final production.

### Key Production Processes for Zinc and Lead

Our smelting processes are seamlessly integrated to maximize output and efficiency, while enabling the recovery of additional valuable metals, enhancing overall process competitiveness.



### Lead Smelting Process



## Commodity Metals

(Production Volume As of 2024)



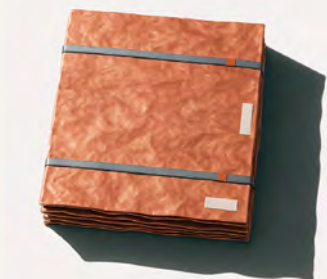
### Zinc 630,151t | Production Volume

- Top-quality zinc ingots are produced with a purity of at least 99.995%.
- Used in rust-proof coatings for steel, in the manufacture of machinery parts and brass, and in additives for paints and tires.
- Used in countless everyday applications, such as galvanized steel sheets, accessories, batteries, machinery & electronic parts, and automotive parts.



### Lead 445,040t | Production Volume

- Top-quality lead ingots are produced with 99.99% purity.
- Used in automotive batteries, wire coverings, radiation shielding, and numerous other areas.



### Copper 32,121t | Production Volume

- A stable supply of high-purity (99.9935%) electric copper is produced with our proprietary Korea Zinc Copper Process (KCP).
- High-quality copper foil is supplied as a key material for secondary battery anodes.
- Used in numerous other industries as well, including machinery parts, construction materials, and electric wire.



## Precious Metals

(Production Volume As of 2024)



### Gold 7.08t | Production Volume

- The 1kg gold bars are produced with at least 99.99% purity.
- Used in jewelry, electroplated products, medical applications, semiconductors, displays, and bonding wire.



### Silver 2,010t | Production Volume

- Our silver granules and ingots, at least 99.99% pure, are recognized for excellence as a registered brand by LBMA of the UK and the COMEX Group of the US.
- Used in a wide range of industries—from solar power generation to jewelry, electroplated goods, and electronics that rely on electrical conductivity.



## Rare Metals & Other Metals

(Production Volume As of 2024)

### Antimony 3,604t

Production Volume



- Used in ammunition, missiles, and the defense industry.
- Used in flame retardants, batteries, and medical devices.

### Tellurium 215t

Production Volume



- Used in storage batteries, thermometers, and heaters.

### Indium 92t

Production Volume



- An important material in the semiconductor and display sectors.
- Used in various electrodes and nodes in semiconductor fabrication, leveraging its electrical conductivity.
- Used in transparent electrodes, whether for light-emitting displays (LEDs) or in liquid crystal display (LCD) manufacturing.

### Cadmium 3,587t

Production Volume



- Used in batteries and alloys.

### Semiconductor Sulfuric Acid 223,020t

Production Volume

- The Onsan Refinery operates 17 production lines, enabling stable production and supply of high-purity sulfuric acid.
- During silicon wafer processing, the organic matter and metal contaminants stuck on the silicon surface are oxidized and removed with high-purity sulfuric acid, which acts as a cleaning agent.

### Bismuth 1,012t

Production Volume



- Used in medical equipment and cosmetics.

### Palladium 124.3kg

Production Volume



- Used in automobiles, hydrogen fuel cells, and electronic products.



#### Hematite-Based Zinc Smelting (High-Purity Zinc)

- A proprietary zinc refining method that maximizes zinc recovery to over 98.5% while efficiently and economically removing iron impurities.

#### Strategic Rare Metal Recovery Technology

- Enables the concentration, purification, and refining of critical minerals such as antimony, bismuth, indium, and tellurium, generated during zinc and lead smelting.
- Produces metals with purity levels exceeding 99.99%.

(Currently under review for designation as a National Core Technology)

## Technological Advantage Through Continuous Smelting Innovation

### Technological Advantage through Innovation:

#### Integrated Processes for Zinc, Lead, and Copper Maximize Efficiency and Output

- Phase I (To 2017): Korea's first integrated smelting system lays the foundation for a zero-waste, eco-friendly refinery.
- Phase II (Current): New ferric oxide-based processing boosts zinc and copper recovery.
- Phase III (From 2026): All-in-One Nickel Smelter integrates zinc, lead, copper, and nickel into a single processing stream.
- Nickel, a key metal, will be included in an integrated smelting and refining system. The new operation will also increase the recovery rates of indium, antimony, bismuth and tellurium by 20-30%, raising overall profitability.

#### Fumer Plant: Unlocking Additional Value from Smelting Byproducts

- The Fumer Plant can recover valuable metals from smelting byproducts. High-temperature decomposition converts byproducts into a gaseous state; the gases cool on their way the dust collector and return to a solid state. The solidification point varies, so the residual valuable metals are recovered at different temperatures, while the remaining byproduct is discharged as clean slag, used in industrial aggregates and cement.

#### National Core Technology (Designated in November 2024):

#### Korea Zinc's High-Nickel Precursor Manufacturing

- This proprietary technology increases the nickel content of battery precursors to over 80%, significantly boosting energy density and output.
- Raw materials such as MHP and matte will go through pyrometallurgical and hydrometallurgical processes to produce battery-grade materials at the All-in-One Nickel Smelter. These will be converted into high-performance precursors at Korea Precursor Company. This end-to-end system establishes a complete value chain for cathode precursors, helping to localize and give self-reliance to Korea's battery supply chain.

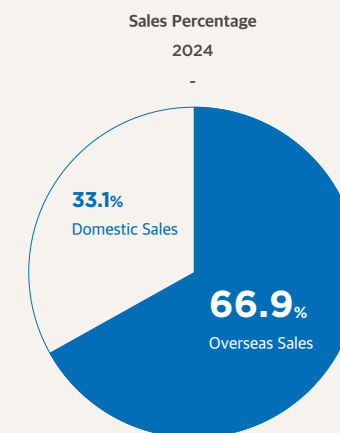
#### Market Competitiveness

- No.1 in Global Zinc Production: The Onsan Refinery ranks first in the world in zinc output among single-site smelter.
- No.1 in Global Lead Production: Holding a 9.5% share of the global market, Korea Zinc enjoys an undisputed leadership position.
- A Leading Exporter of Industrial Commodity Metals: Exports account for 70% of total sales, making Korea Zinc a major global supplier of essential commodity metals.

#### Major Supply Chains

The global supply chain is restructuring because of China's export controls on five key minerals, including tungsten and tellurium. Yet, Korea Zinc continues to maintain an unrivaled position in the global supply ecosystem.

- Korea's only producer of both antimony and indium, supplying 11% of global demand
- Produces 99.99%-pure bismuth, with 989 tons sold annually (904 tons exported)
- Produces 215 tons of tellurium per year



## Renewable Energy & Green Hydrogen Business

# From a High-Energy Consumer to a Green Energy Leader

The non-ferrous metal smelting industry inherently requires high power consumption, yet Korea Zinc recognized the potential of renewable energy early on and has continued strategic investments in this area.

Korea Zinc is leveraging the abundant renewable energy resources in Australia to steadily expand its renewable energy and green hydrogen projects in a bid to achieve carbon neutrality. Furthermore, we are building a value chain that links green hydrogen production, storage, transportation, and export, preparing to become a leader in the green energy sector.

As South Korea's leading non-ferrous metals producer, Korea Zinc has joined RE100 and is committed to achieving carbon neutrality by 2050. Our roadmap includes building a "green metals" production system by mid-century, one that generates zero carbon emissions across the entire product lifecycle. As the world works together to reduce emissions and build a cleaner future, Korea Zinc is proud to be at the forefront of that effort.

### Promotion of Renewable Energy Projects



Ark Energy, our subsidiary specializing in renewable energy and green hydrogen, took over the related business from Sun Metals Corporation (SMC) and is currently operating a solar power plant while constructing a wind farm. Ark Energy provides end-to-end renewable energy solutions, from development through performance monitoring.

- Established Ark Energy, specializing in renewable energy and green hydrogen
- Acquired Epuron, Australia's largest renewable energy developer
- Operates a solar power plant that supplies 25% of total electricity for SMC
- Constructing the MacIntyre Wind Farm in Queensland, Australia, to power approximately 630,000 households
- BESS Project in Richmond Valley
  - Signed a long-term energy supply agreement with the Government of New South Wales for the Richmond Valley BESS Project (Dec. 2023)
  - Signed a BESS supply agreement for Richmond Valley with Hanwha Energy (Mar. 2025)

### SunHQ Hydrogen Hub Pursuing Decarbonization Demonstration Initiatives

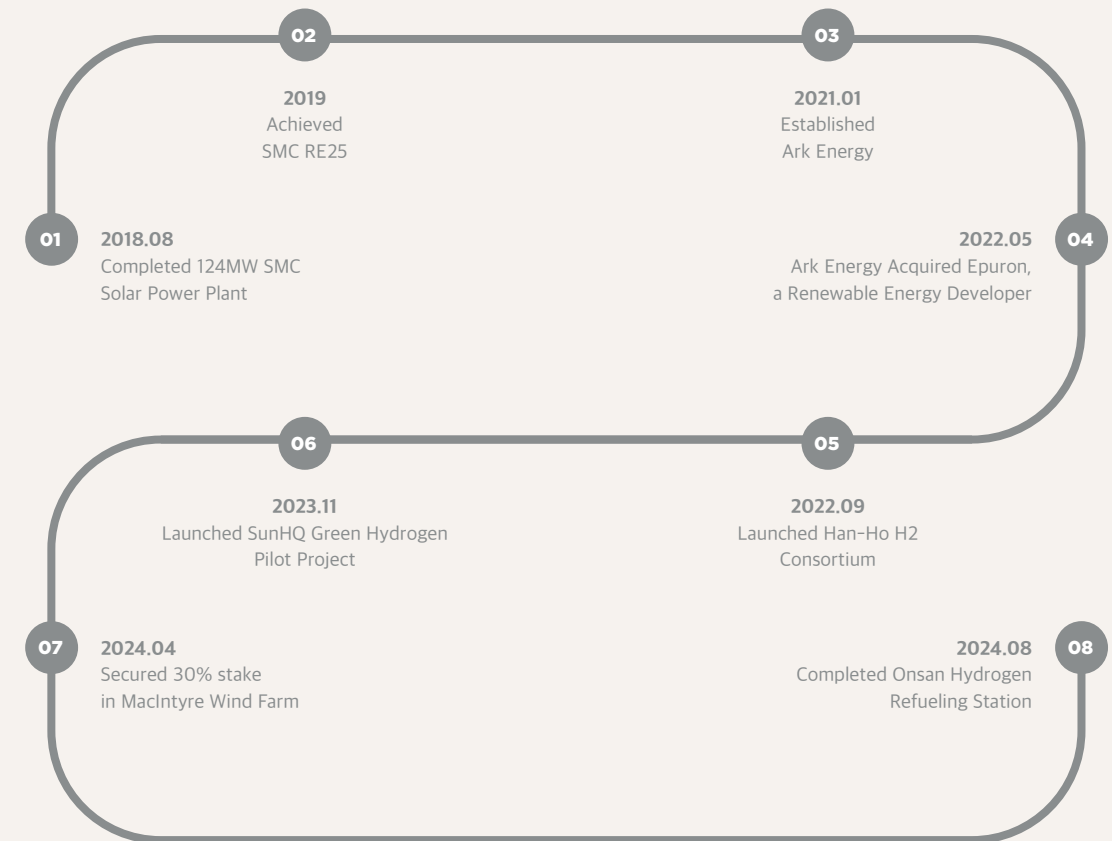
- A decarbonization demonstration project is underway, supported by the Australian Federal and Queensland State Governments. The project produces 140 tons of green hydrogen annually using a 1MW electrolyzer linked to an existing solar power plant. The green hydrogen powers hydrogen fuel cell trucks, replacing the conventional diesel fuel.

### Verification of Hydrogen Mobility Popularization

- Held a ribbon-cutting ceremony with the Ministry of Trade, Industry and Energy for a hydrogen refueling station for forklifts (Onsan Refinery, Aug. 28, 2024)
- Selected as a target enterprise for a government-led R&D project to develop demonstration-based reliability verification technology for commercializing hydrogen-powered forklifts.

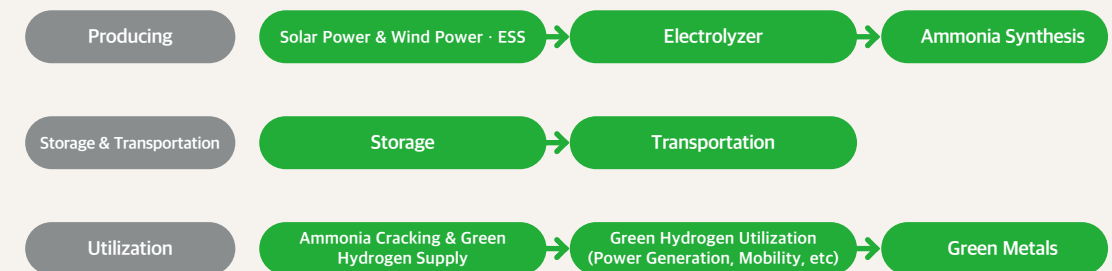


## Renewable Energy and Green Hydrogen Business Roadmap



## Renewable Energy and Green Hydrogen Value Chain

A value chain is built starting with green hydrogen produced with renewable energy and extending to its storage, transport, and export. New demand is created, and new markets are being targeted.



## Secondary Battery Materials Business

# Setting New Standards in Battery Materials, Crafted by Korea Zinc

Leveraging world-class refining technology, Korea Zinc is ushering in the future in the secondary battery materials market, which drives the growth in electric vehicles.

Korea Zinc is establishing a comprehensive value chain from producing nickel sulfate, precursors, and electrolytic copper foil to recycling end-of-life batteries, thereby solidly responding to the soaring demand for key battery materials.

Through subsidiaries such as KEMCO, KZAM, and the joint venture Korea Precursor Corporation (KPC), Korea Zinc produces high-purity nickel and eco-friendly copper foil, maximizing synergy with recycling technologies to realize a resource-circulating materials industry.

Korea Zinc is setting a new standard in battery materials that combines advanced technology with sustainability.



### KEMCO: A Korea Zinc Subsidiary Established in 2017



KEMCO plays a key role in the domestic secondary battery supply chain by providing a stable supply of high-purity nickel sulfate.

- The All-in-One Nickel Smelter integrates cutting-edge smelting technologies and can flexibly adjust raw material inputs.
- Leveraging over 50 years of smelting and refining expertise, KEMCO has built

proprietary closed-loop processes to maximize profitability.

- Eco-friendly processes are applied for substantial reductions in CO<sub>2</sub> emissions and minimal generation of waste materials.

### Korea Precursor Corporation (KPC): Joint Venture Established Between KEMCO and LG Chem in 2022

This enterprise applied proprietary technology to efficiently produce high-quality cathode material precursors, helping to bring self-reliance to the domestic precursor supply chain.

- Cathode material precursors are produced with innovative processes that apply technical smelting know-how.
- The high-nickel precursor production technology was designated a national core technology in 2024.



### KZAM: A Korea Zinc Subsidiary Established in 2020

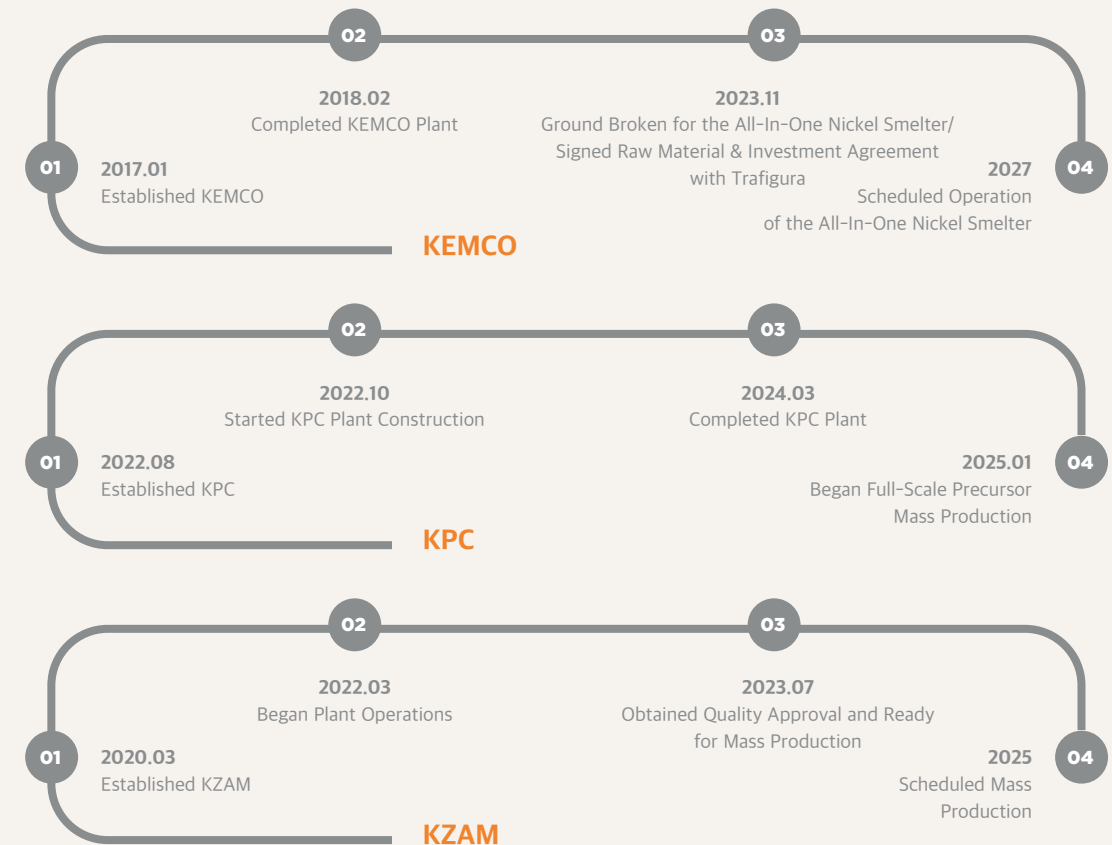


The World's Most Reliable and Sustainable Supplier of Electrolytic Copper Foil

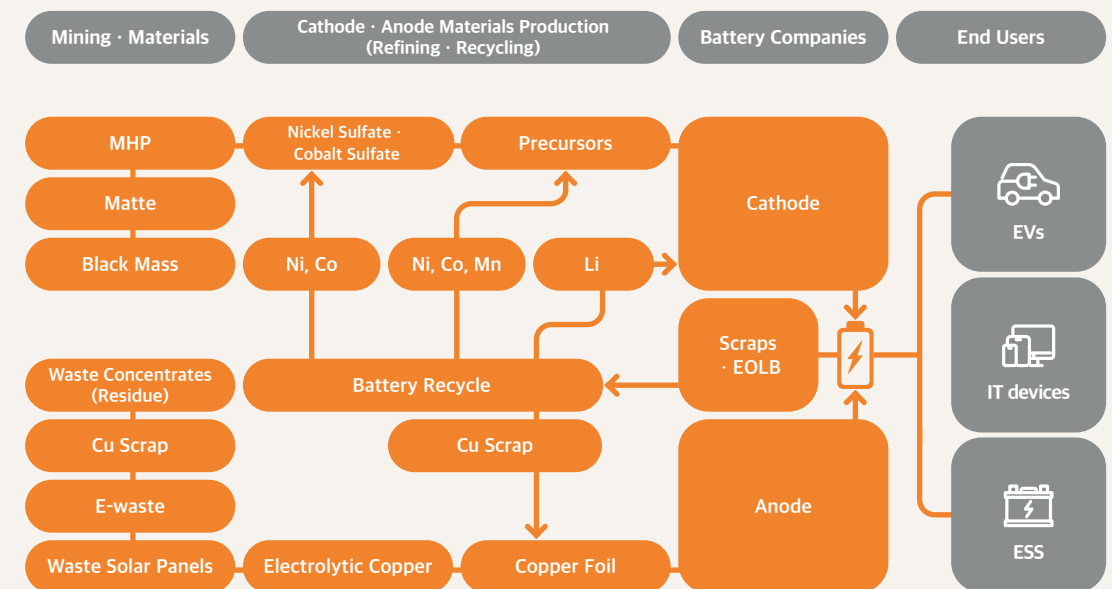
- Backed by over 50 years of Korea Zinc's expertise in smelting and electro-refining, KZAM manufactures high-quality electrolytic copper foil, an essential anode material for rechargeable batteries.
- This eco-friendly operation produces

electrolytic copper foil from electric copper that was made as a 100% recycled material.

## Secondary Battery Materials Business Roadmap



## Secondary Battery Materials Value Chain



### Resource Recycling Business

## Circular Technology for a Sustainable Future

New value is created in a circular economy that reconnects resource origins with end-of-life products.

Eco-friendly technologies are used to breathe new life into steelmaking slag, e-waste, and waste solar panels, transforming them into valuable raw materials.

Korea Zinc is building a virtuous cycle between the steelmaking and refining industries and employing advanced robotic sorting systems through ROBOone, traveling on a sustainable journey that does not see resources as the end, but as a new beginning.

Our resource circulation strategy is now a key driver for the sustainability of the entire industry.

#### Building an Eco-friendly Virtuous Cycle between the Steelmaking and Smelting Sectors

- Technology for recycling steelmaking dust is applied to recirculate it as an eco-friendly resource instead of generating harmful landfill byproducts.
- The circular resource model links steelmaking and smelting in a closed-loop system.
- Crude zinc oxide is produced in an eco-friendly way using the rotary hearth furnace.

#### Establishing a Circular Economy System through a Resource Circulation Model that Recycles Discarded Materials

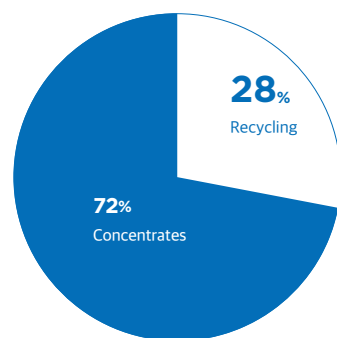
- Metals are extracted from end-of-life EV batteries, old smart phones, waste electronics, and other discarded resources.
- Valuable metals are extracted from e-scrap and process scrap recycling.

#### ROBOone Upgrades Resource Circulation Effort



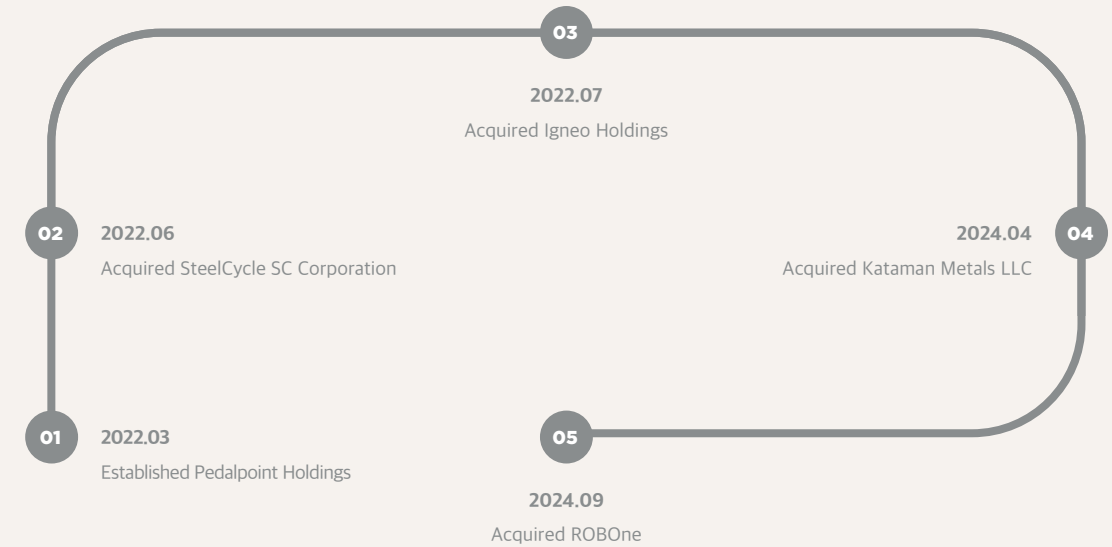
- The waste-sorting robot ROBIN from our subsidiary ROBOone has optimized the e-waste shredding and sorting processes, lowering costs. This technology enables valuable materials such as copper, silver, and gold from PCBs, as well as aluminum scrap, to be concentrated. The solution is planned for sequential deployment across six hub sites in the U.S., including Igneo's evTerra hub in Chicago.

Supply-Demand Ratio for Raw Materials

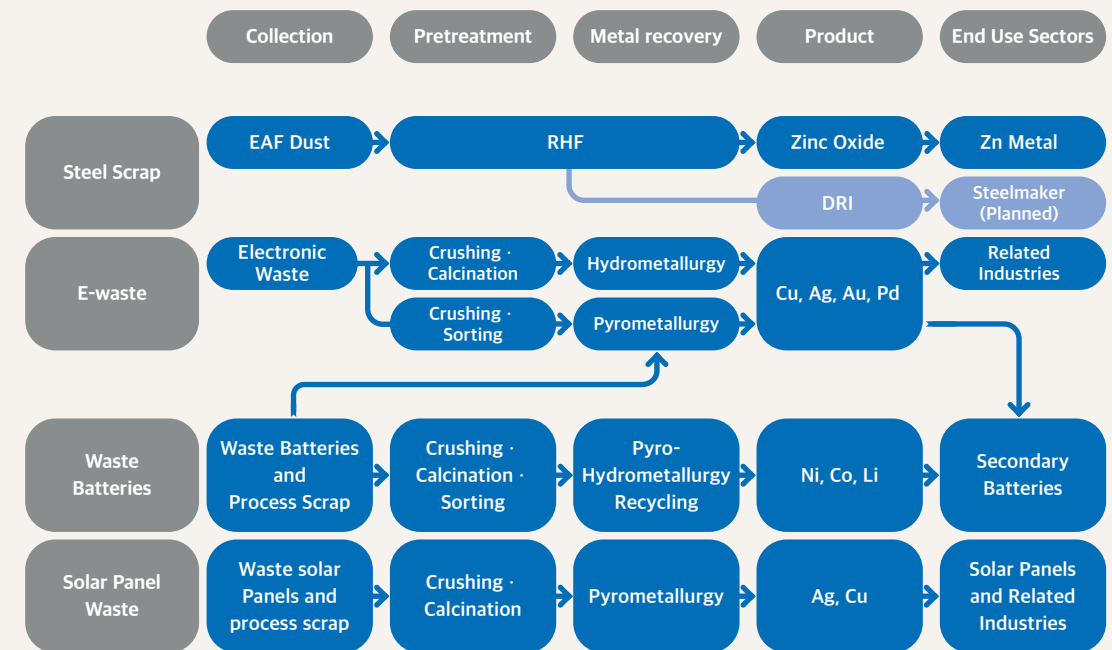


### Resource Recycling Business Roadmap

The resource recirculation that results from recycling various waste materials means more value is obtained from fewer resources.



### Resource Recycling Value Chain



# Sustainability Management

ESG, the Key to Unlocking a Sustainable Future:  
Korea Zinc's Corporate Strategy and Identity

Amid a fast-evolving global regulatory landscape and complex supply chain risks, Korea Zinc moves forward with unwavering commitment guided by a compass rooted in ethics, accountability, and shared prosperity.

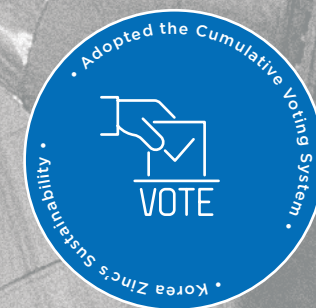
Transcending the inherent challenges of being a high-energy-consuming industry, Korea Zinc is actively implementing practical solutions such as calculating product-specific carbon footprints, utilizing low-carbon raw materials, and promoting responsible mineral procurement to address global human rights concerns. We are also reinforcing supply chain resilience through close collaboration with our partners, building a system of shared growth.

For Korea Zinc, ESG is not just a strategy. It is who we are and the key to unlocking a truly sustainable future.

**Environmental Performance**

**Social Performance**

**Governance Performance**



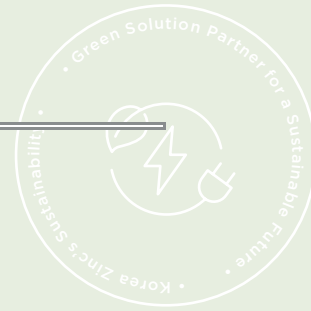
## Environment

# Driven by Nature, Committed to a Sustainable Future

Korea Zinc is committed to creating a world where nature, people, and businesses coexist and thrive together. To that end, we have established a clear environmental management strategy and proactively addressed critical environmental challenges.

The environment is prioritized at every step, from improving production processes to minimizing air and water pollutants, pursuing a roadmap toward carbon neutrality, and expanding renewable energy and green hydrogen.

Korea Zinc grows in harmony with the planet for a greener tomorrow than today.



• The globally recognized French certification authority Société Générale de Surveillance (SGS) certified that Korea Zinc produces copper and silver inside the Onsan Refinery that are from 100% recycled raw materials.



• Korea Zinc is the first in the domestic non-ferrous metal industry to obtain carbon footprint certification for zinc, silver, copper, and semiconductor-grade sulfuric acid based on Life Cycle Assessment (LCA) methodology.



• **An Effort to join the Copper Mark Initiative**  
Plans are in place to strengthen environmental and human rights protection, community coexistence, and ethical management throughout the entire process, from mining to product manufacturing and sales.

• Korea Zinc was awarded the Special Prize for Carbon Management in the field of climate change and became the first in the metal and mining industry to be included in the Dow Jones Sustainability Index (DJSI) in 2022, maintaining inclusion for three consecutive years.



• **Pursuing the RE100 Target of Carbon Neutrality**  
We are the first Korean smelting operation to expand into new energy and hydrogen in an effort to transition toward clean energy and achieve carbon neutrality under the banner of the RE100.

• **Producing Green Hydrogen**  
We are the first domestic company to commercially produce green hydrogen overseas, beginning in the first half of 2024 by using solar power plants.

• **Establishing a Green Hydrogen Value Chain**  
The value chain is based on renewable energy and extends from hydrogen production to storage, transport and export.

• **Resource Recycling Business Model**  
An eco-friendly process has been established by sourcing secondary raw materials such as EAF-dust, e-waste, metal scrap, and end-of-life batteries to extract valuable metals, and by reintegrating process waste into making products such as electrolytic copper and secondary battery materials, thereby minimizing landfill byproducts.

• **Renewable Energy Roadmap**  
The operation of Ark Energy's solar power facilities and the MacIntyre Wind Farm in Australia are part of a project to produce renewable energy such as green hydrogen and introduce this energy into the Onsan Refinery in Korea, with the ultimate goal of converting 100% of power usage to eco-friendly energy.



### Social

# People-Centric Growth Built on Safety, Partnership, and Shared Prosperity

Worker safety is the fundamental element that determines corporate sustainability. Korea Zinc continuously strives to enhance safety awareness across all employees and partners by establishing advanced safety and health systems and training infrastructure.

We support our partners' sustainable growth through technology development and quality improvement initiatives, and by creating a coexistence fund. These efforts help to further the value of mutual growth.

- Korea Zinc HQ and KZAM received Trusted Information Security Assessment (TISAX) Level 3 certification for protecting data in the automatic industry.

- Korea Zinc HQ achieved the highest rating for two consecutive years in the Community Contribution Recognition Program, jointly organized by the Ministry of Health and Welfare and the Korea National Council on Social Welfare.

- Korea Zinc HQ received the Minister of Trade, Industry and Energy Award in the Shared Value Creation category at the 2025 Happy Plus Social Contribution Excellent Company Awards.

- The Onsan Refinery helps suppliers obtain and maintain Korea Occupational Safety and Health Management System certification, promoting sustainable mutual growth through strong collaboration with partner companies.

- A dispute-free workplace for the past 37 years: Korea Zinc has concluded wage and collective bargaining agreements for 37 years in a row without labor disputes by maintaining smooth communication between labor and management to improve working conditions and employee welfare.



### KZ Clover: A Social Contribution Strategy

Korea Zinc annually contributes the equivalent of 1% of operating profit to society across four key areas: Philanthropy and Volunteer Work, Talent Development, Culture & Arts, and Environmental Protection. Employees also actively participate in volunteer activities, sharing warmth and support with local communities.



#### • Philanthropy and Volunteer Work

- A total of KRW 3 billion was donated to Fruits of Love, the Community Chest of Korea (as of 2024, aggregate donations have reached KRW 36.7 billion).
- An aggregate KRW 21.5 billion has been donated to the Red Cross, and Korea Zinc and our employees participate in volunteer community service programs (sharing summer health foods and kimchi, delivering charcoal briquettes and white rice to needy families)
- Employee volunteers help improve living conditions for the underprivileged in the Ulsan area.
- Employee volunteers supporting the self-reliance of individuals with developmental disabilities.



#### • Talent Development

- Annual donations of more than KRW 100 million are given to the Onsan Refinery School Development Fund.
- Support is given for the Green Umbrella Children's Foundation and for cultural and career exploration programs for children from immigrant backgrounds in Ulsan.
- Support is given for the Huddling Youth Choir (includes members from multicultural families)
- Scholarship program is offered for students in Seoul's Nowon District (more than 170 students awarded scholarships to date)



#### • Environmental Protection

- Establishment of Connecting Forests, in Support of the Carbon Neutrality Effort (in Korea and Indonesia)
  - 10,000 yellow poplars were planted in Uljin, Gyeongsangbuk-do, Korea.
  - 20,000 coffee bushes were planted in Lombok, Indonesia.
  - 15,000 mangrove trees were planted in Lembongan, Indonesia.
- Sponsors the carbon-neutral arts and culture project Writing the Sea and employees participated in beachcombing volunteer activities. (Beachcombing: volunteers pick up drifting objects and garbage along the beaches)



#### • Culture & Arts

- The Metal Craftsperson of the Year award has been sponsored since 2013 to support creative activities in the shared field of "metal." Since 2023, Korea Zinc has taken on the role of event organizer, providing broader support for the creative work of contemporary metal artisans. (Two metal artists are selected and awarded each year)
- Support is ongoing for various other cultural and arts organizations as well as individual artists.



## Governance

# Trust-based Management Led by the Principle of a Responsibility Framework that Drives Sustainability

Korea Zinc’s transparent and responsible leadership safeguards the rights of employees and stakeholders.

Guided by an independent Board and a dedicated Sustainability Committee, we put ESG strategies into action with practical solutions.

Through ethical management and fair practices, we foster a culture of integrity across the organization.

All activities from strategy through execution are guided by our commitment to sustainability and trust.

• The ESG Committee was established under the Board of Directors in 2024 and the Sustainability Management Promotion Committee was launched in 2025 to reinforce company-wide ESG.

• The cumulative voting system was introduced to enhance transparency in corporate management, promoting board diversity, furthering management responsibility and strengthening shareholder rights, ensuring shareholder democracy.

• A compliance support officer was appointed in December 2023 to proactively identify and manage human rights risks and key management issues, in accordance with Commercial Law Article 542-13. Compliance control activities were carried out in 2024.

• An outside director was appointed as Board of Directors chair, thereby strengthening the Board’s independence and transparency.

• **Interim dividends:** Interim dividends have been implemented as part of ongoing efforts to enhance shareholder value since 2023. Shareholder returns are further strengthened through measures such as share repurchases and cancellations.



## Korea Zinc’s Sustainability Management Strategy

Korea Zinc has established four strategic directions to operate its business under the stated mission of “Continuous Innovation and Discovery of New Growth Drivers, Improving Sustainability through ESG Management.”

The four strategic directions are: Advanced Governance, People-centered Management, Eco-friendly Management, and Safety Management. Together, they aim not only to enhance corporate value, but also to create positive social and environmental value.

**Mission** Continuous Innovation, New Growth Engine Development, and Enhanced Sustainability Through ESG Management

**Strategic Objective** Enhance Corporate Value while Creating Social and Environmental Value

**Strategic Direction**  
**Advanced Governance**

- Build a system for ESG decision-making
- Diversify the Board of Directors and strengthen outside directors’ independence
- Reinforce the compliance system
- Implement integrated risk management

**Strengthen People-Centered Management**

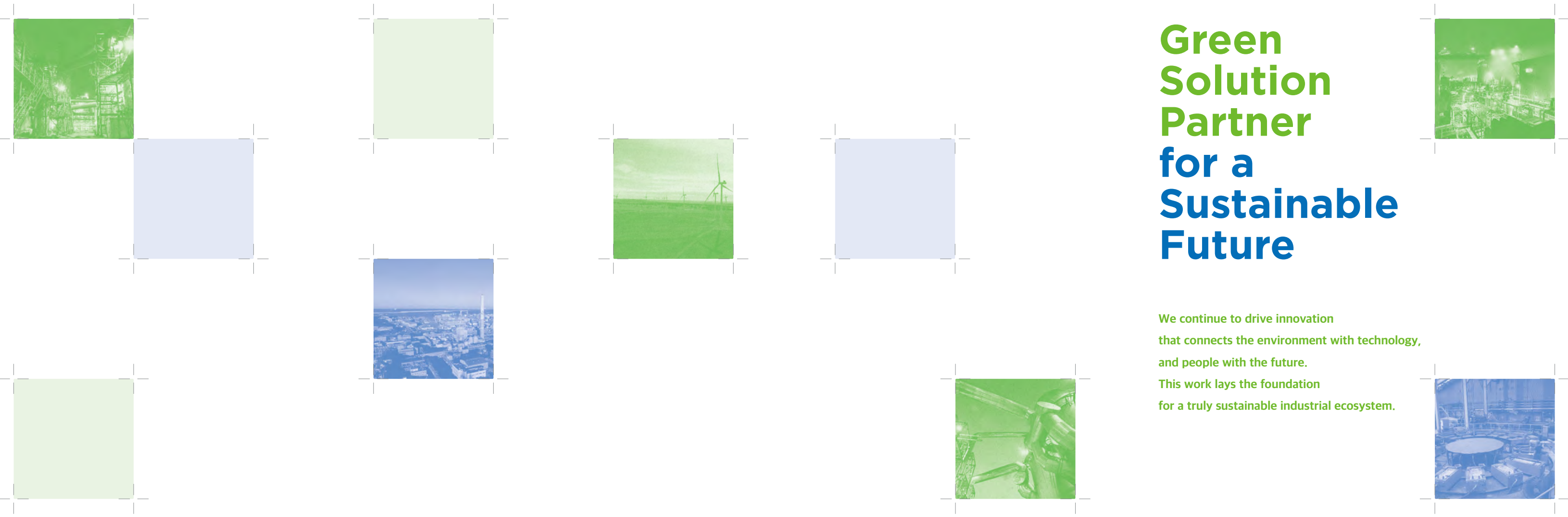
- Foster a corporate culture of cooperation and mutual growth
- Protect the human rights of all stakeholders
- Become a Great Workplace (GWP)

**Upgrade Environmental Protection Policies**

- Expand the use of renewable energy
- Conserve energy and reduce greenhouse gas emissions
- Minimize the effects of corporate activities on the environment

**Strengthen Safety Management**

- Achieve zero accidents due to human error
- Adopt smart safety systems
- Strengthen the safety culture in the workplace
- Build risk management systems for partners



# Green Solution Partner for a Sustainable Future

We continue to drive innovation that connects the environment with technology, and people with the future. This work lays the foundation for a truly sustainable industrial ecosystem.

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