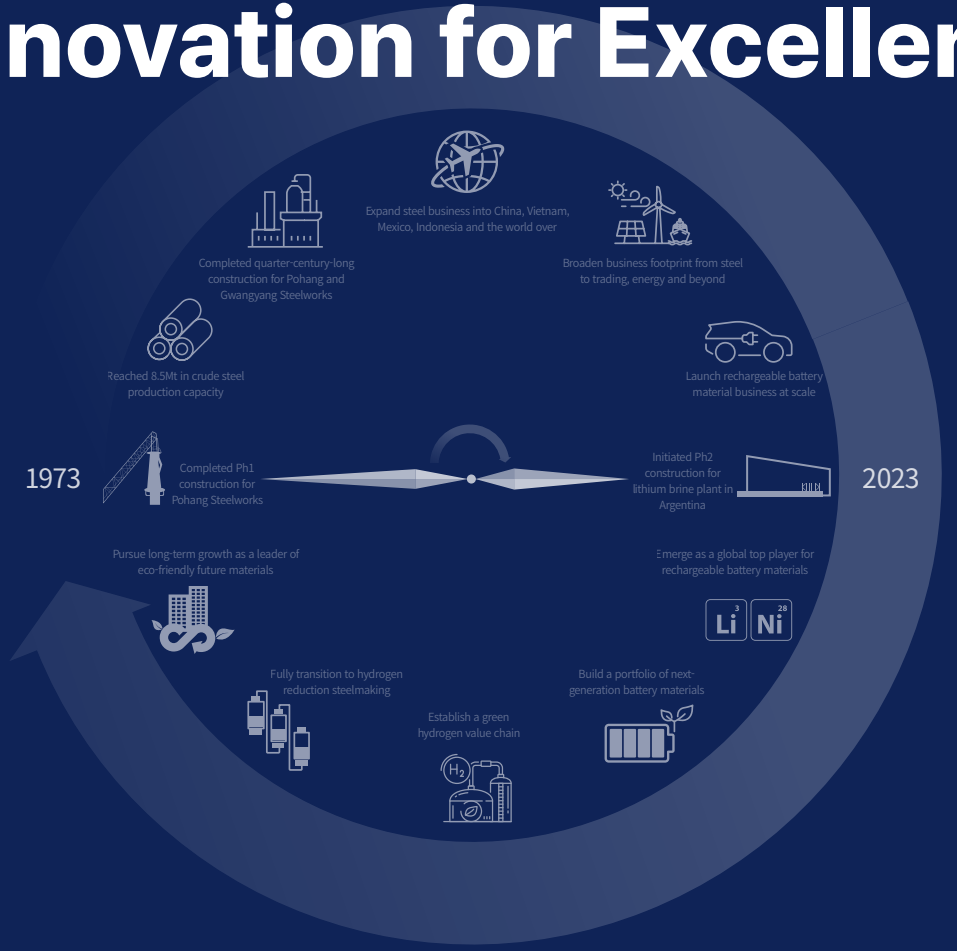
Materials for Tomorrow, Innovation for Excellence



posco HOLDINGS

About This Report

POSCO Holdings proudly presents our 2023 sustainability report describing our commitment, strategy, and performance in advancing sustainability and ESG management.

This year is deeply meaningful as POSCO celebrates the 20th anniversary of its sustainability reporting. In this report, we offer a systemic view of POSCO Group's mid/long-term strategies, goals, business operations, and ESG performance in accordance with global ESG disclosure standards.

Moving forward, POSCO Holdings will transparently disclose POSCO Group's mid/long-term strategies and achievements by embracing the perspectives and meeting the expectations of our stakeholders through sustainability reporting.

[Report Distribution and Feedback]
This report can be downloaded on our website (www.posco-inc.com).
Please contact us with feedback or inquiries about this report.

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Website: www.posco-inc.com
Address: 440, Teheran-ro (Daechi-dong), Gangnam-gu, Seoul, Republic of Korea

Reporting Principles

This report was prepared in accordance with the GRI (Global Reporting Initiative) Standards: Core option. As a member of the UN Global Compact, POSCO Group outlined its progress in compliance with the 10 principles defined for human rights, labor, the environment, and anti-corruption as well as our efforts to meet the UN Sustainable Development Goals (SDGs).

The financial data contained herein conforms to the K-IFRS. ESG disclosures comply with the SASB (Sustainability Accounting Standards Board) industry classification system as well as the TCFD (Task Force on Climate-related Financial Disclosures) recommendations.

Reporting Scope

As a holding company, multiple affiliated companies are operated by POSCO Holdings. This report compiles qualitative performance and quantitative data pertaining to the domestic operations of 10 key operating companies, along with five major steel production subsidiaries operating overseas.

It should be noted that there are discrepancies in disclosure items for environmental and social data between domestic and overseas operations; moreover, separate disclosure was made for overseas steelmaking operations based on consolidated accounting.

*Key operating companies (10 companies): POSCO Holdings, POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH
- Overseas steel production subsidiaries (5 companies): PT.Krakatau POSCO (Indonesia), Zhangjiagang Pohang Stainless Steel (China), POSCO Yamato Vina Steel (Vietnam), POSCO Maharashtra Steel (India), POSCO Thainox (Thailand)

Reporting Period

This report generally covers the period between January 1 and December 31 of 2023. Some information regarding the performances of POSCO and POSCO Group's key operating companies and overseas operations may extend into the first half of 2024.

Reporting Cycle

Annual (previous reporting: July 2023)

Assurance

To ensure credibility of the reporting process and the information contained herein, this report was assured in accordance with ISAE 3000 by Samsil PricewaterhouseCoopers, an independent assurance provider.

Disclaimer

This report contains forward-looking statements that reflect POSCO Holdings' current outlook and strategy as well as predictions for our future sustainability and ESG performance. Such statements are best interpreted by taking into account a wide range of variables and uncertainties that may occur in the future. Hence, discrepancies may be observed between these statements and actual outcomes. POSCO Holdings is not obligated in any way to update or correct such forward-looking statements.

Reference Links for Further Information

- POSCO Holdings ESG
- POSCO Holdings Business Report
- POSCO Holdings Auditor's Report
- POSCO Holdings Governance Report
- POSCO Holdings Form 20-F
- POSCO Holdings IR Achieves
- POSCO Newsroom
- POSCO INTERNATIONAL's Sustainability Report
- POSCO E&C's Sustainability Report
- POSCO FUTURE M's Sustainability Report
- POSCO DX's Sustainability Report
- POSCO FLOW's Sustainability Report
- POSCO STEELEON's Sustainability Report
- POSCO M-TECH's Sustainability Report

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Cover Story

As we have contributed to advancing the nation and society at large through steelmaking for the last 50 years, POSCO Group will continue to pioneer materials for tomorrow and pursue innovation for excellence.

PART 1

CORPORATE **OVERVIEW**

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CEO Message

Let me begin by thanking our stakeholders for the unwavering support provided in every step of the way. I feel honored to deliver this message as the 10th Chairman of POSCO Group.

At POSCO Group, we champion the legacy of our predecessors as we take steps towards the new vision of 'Materials for Tomorrow, Innovation for Excellence'. This vision drives us to restore our native competencies across all of our operations and to gain the trust of our stakeholders so that we can stand on a strong foundation for continuous growth.

Established as a steelmaker, POSCO Group has long served to advance national and societal development. Today, we have ventured into the rechargeable battery materials business, which holds the key to shaping a greener future, further enhancing our corporate value and sustainability.

In the steel business, we will expedite the launch of low-carbon products and the development of decarbonized steelmaking and other breakthrough technologies to establish a low-carbon supply system. Moreover, the green transformation will be seized as an opportunity to hone the competitive advantage of our value-added premium products, thereby moving the needle on the global race to carbon net-zero.

For our rechargeable battery materials business, we will pursue operational efficiency across the value chain and continue to make investments to generate powerful business performance once the market recovers.

The energy business will assist the Group-wide low-carbon energy transition; our trading and logistics businesses will help render the steel and rechargeable battery materials supply chains more formidable, deriving maximum synergy throughout the Group's affiliated sectors.

We have demonstrated relentless commitment to meet the highest ethical standards as well as advanced governance principles on par with global norms. To answer the call of our stakeholders who expect no less than to model ethical management, we launched the POSCO Clean Committee and declared the New Ethical Management initiative, as a means to steer our management toward practices that resonate with all stakeholders.

We continue to add rigor to how we meet societal requirements on occupational incidents and GHG emissions; simultaneously, we will strengthen our safety culture by enforcing compliance with workplace rules and procedures. Furthermore, development of smart technologies will fundamentally eliminate risk in hazard-prone work processes and blind spots, enhancing safety on the shop floor.

Bars have been raised on corporate engagement and communication. To remain proactive to escalating social demands and to pursue win-win partnership, we will practice integrity in our communications and seek trust-based collaboration with local communities.

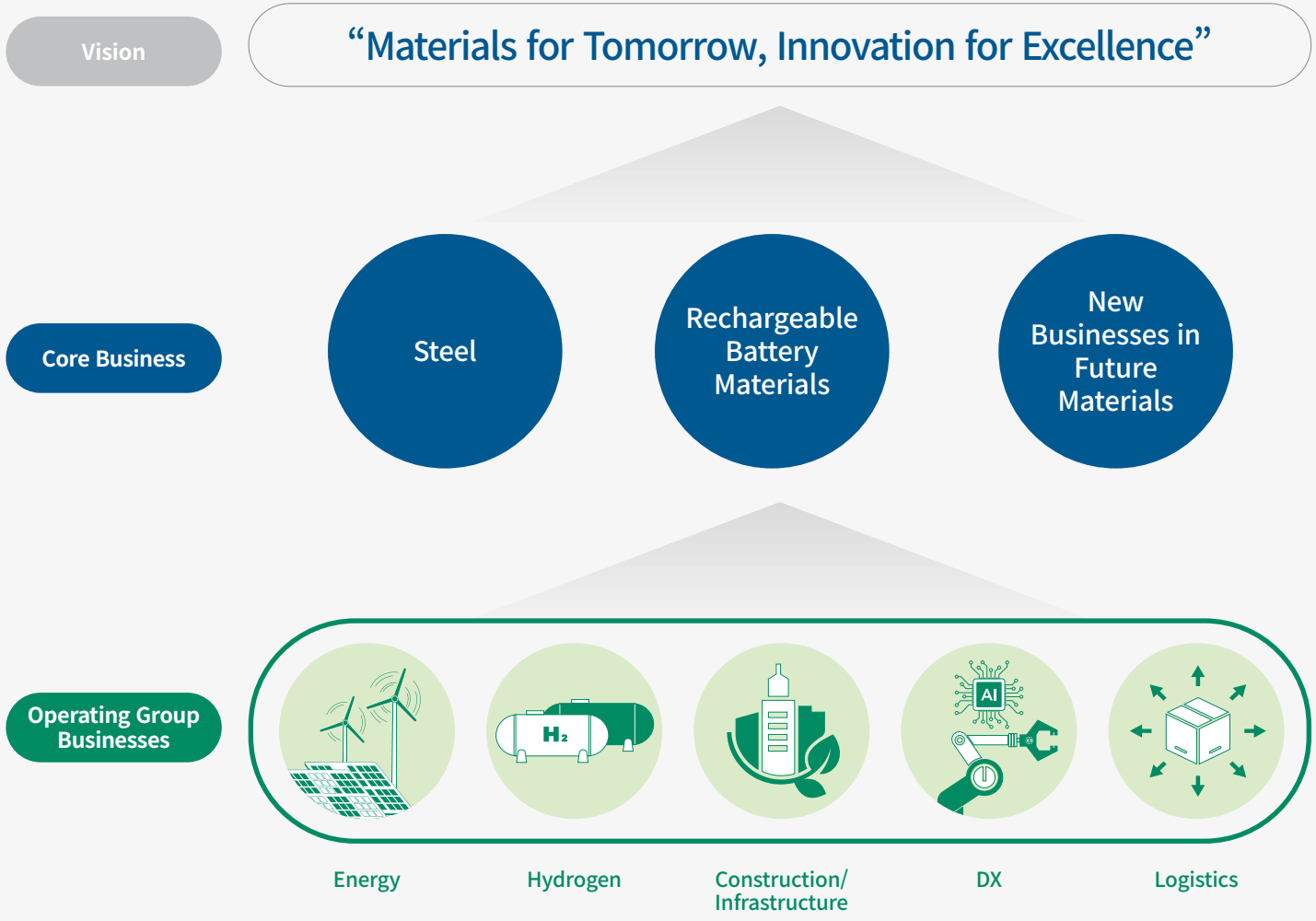
POSCO Group enjoys undisputed leadership today because of our patriotic devotion to advance nation-building through steelmaking, our diehard spirit of entrepreneurship and the endurance and dedication of our employees. The founding spirit of nationalistic goals are evolving into 'Materials for Tomorrow', and the pioneering challenge into 'Innovation for Excellence'.

We would like to count on your abiding encouragement and support in our journey towards sustainable growth.
Thank you.

CHANG In Hwa
Representative Director & Chairman, POSCO Group



What We Do



POSCO Group began as a steelmaking enterprise; today, we have expanded into rechargeable battery materials, an industry sector essential to building an eco-friendly future. This is how we continue to enhance the identity and value of POSCO Group on the global stage.

Steel business will continue to serve as the backbone of the growth of domestic industries and our business group. Our goal is to deliver innovative products that our customers desire, optimize processes to elevate operational efficiency, and strengthen our undisputed competitive advantage.

Rechargeable battery materials will power the engine of our future growth. By replicating the operational knowhow gained from our steelmaking experience, we will speed up project ramp-up. At the same time, we will strengthen native competencies that align with market demands.

As our vision to guide us to these goals, the founding ideal of ‘nation-building through steelmaking’ will evolve into making ‘Materials for Tomorrow’; the entrepreneurial spirit of our founding generation will be refined into a vision to ‘Innovation for Excellence.’

Core Business Sectors – 1. Steel

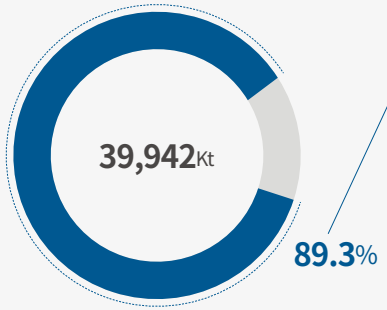
Steel is an essential element of modern life. Backed by industry-leading competitiveness, POSCO Group steers the transition to low-emission steelmaking.

Domestic Operations

By shifting to decarbonized processes and reinforcing the sustainable product portfolio, we are positioned for future market leadership.

- Install electric arc furnaces (EAF) and develop bridge technologies to reduce carbon emissions in existing facilities
- Promote sales growth for sustainable products and make forward-looking investments
- Integrate digital and innovative process to enhance operational efficiency

Crude Steel Output (2023)



Domestic

35,682 Kt

(89.3% of consolidated crude steel production)



Pohang Steelworks



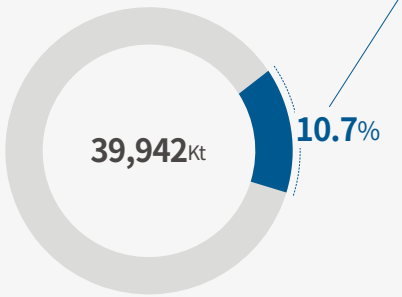
Gwangyang Steelworks

Overseas Operations

Across the world, we oversee multiple operations including steel mills, processing centers, and raw materials sourcing subsidiaries. Investments in Indonesia, India, and the Americas, the three fast-growing steel markets, are considered to scale our global business.

- Invest in growth markets via diverse avenues, e.g., JV, local manufacturing capacity building and eco-friendly process application
- Seek partnerships with raw materials and energy suppliers, e.g. Australia

Crude Steel Output (2023)



Overseas

4,260 Kt

(10.7% of consolidated crude steel production)



PT.Krakatau POSCO (Indonesia)



Zhangjiagang Pohang Stainless Steel (China)



POSCO YAMATO-VINA (Vietnam)

Global Recognition

World's most competitive steelmaker

for 14 straight years (2010~2023)

as ranked by the World Steel Dynamics, a world-renowned steel industry consultancy

Industry Champion in Sustainability

Named Sustainability Champion for 2 consecutive years

(2022, 2023) by the World Steel Association

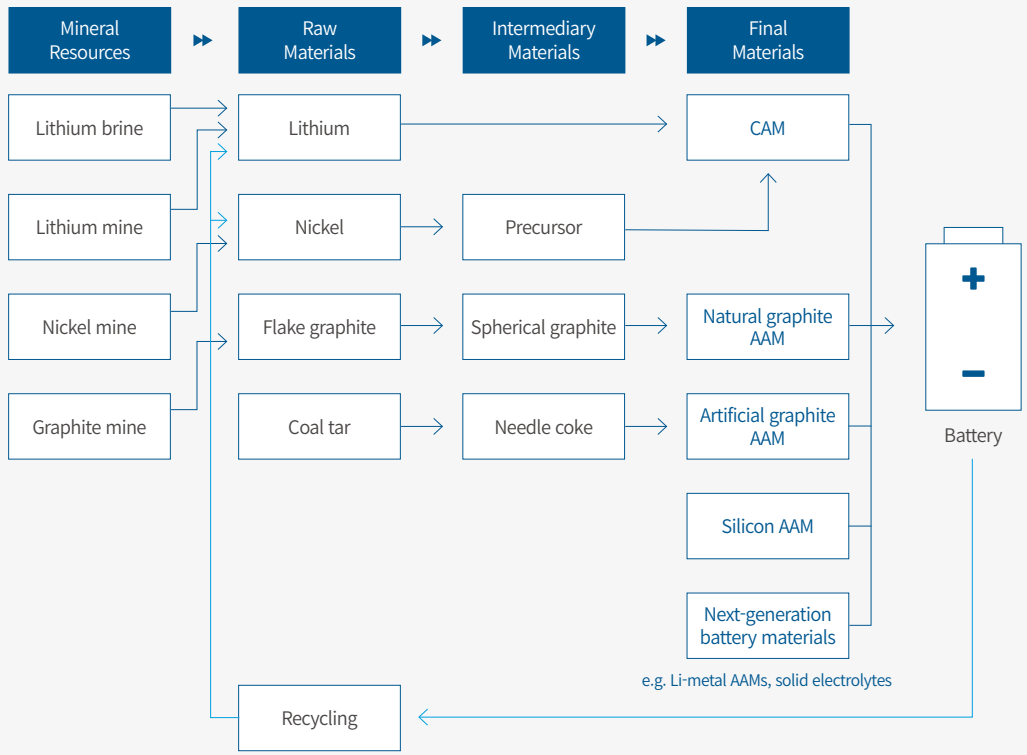
Operating Company	POSCO	POSCO STEELEON	POSCO M-TECH

Core Business Sectors – 2. Rechargeable Battery Materials

POSCO Group has built a complete rechargeable battery materials value chain. We are uniquely equipped to supply the world with raw inputs as well as final active materials, i.e., cathode and anode active materials (CAM, AAM). Furthermore, we will continue to expand the scope of our activities by harnessing the synergies generated across our Group businesses.

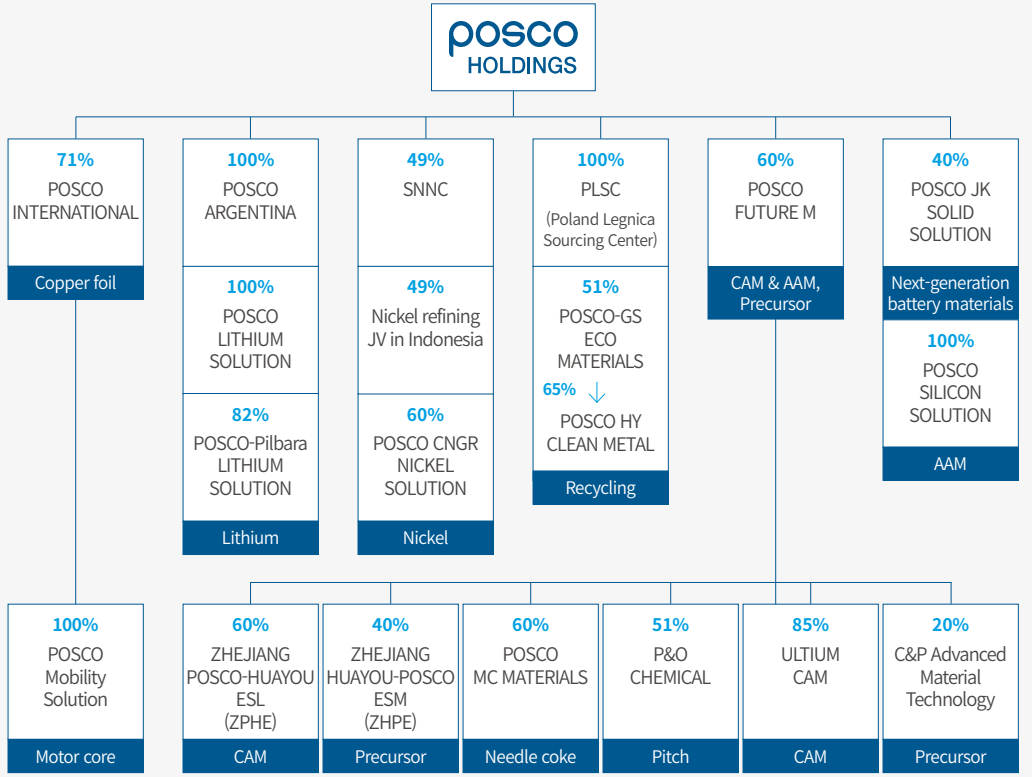
Value Chain

Our competititve advantage is that we own the raw and intermediate sources required to manufacture cathode-active and anode-active materials, essential components for rechargeable batteries.



Vertical Integration of Battery Materials Business

With POSCO Holdings at the helm, we have integrated mineral extraction, material production and processing vertically, with the goal to maximize synergy across POSCO Group companies.



Core Business Sectors – 2. Rechargeable Battery Materials _ Lithium/Nickel

To ensure reliable supply of essential battery components, e.g., lithium, nickel, we are investing in prominent assets, such as salt lakes and mining rights.

Lithium

Acquisition of a salt lake in Argentina and hard rock lithium in Australia have paved the way to produce lithium hydroxide in Korea from 2024.

Brine

Salt Lake in Argentina

Operator (shares)
POSCO Argentina (100%, POSCO Holdings)

Location
Hombre Muerto salt lake
Salta & Catamarca, Argentina

Reserves
13,517K tons (LCE)

Brine Lithium Plant

Operator (shares)
Phase 1 upstream & downstream: POSCO Argentina (100%, POSCO Holdings)
Phase 2 upstream: POSCO Argentina (100%, POSCO Holdings)
Phase 2 downstream: POSCO Lithium Solution (100%, POSCO Holdings)

Location
Phase 1 upstream & downstream: Salta & Catamarca, Argentina
Phase 2 upstream: Salta & Catamarca, Argentina
Phase 2 downstream: Yulchon Industrial Complex, Gwangyang

Yield
LH, 50Ktpa (25Ktpa each from Phases 1 and 2)

Hard rock

Mine in Australia

Operator (shares)
Pilbara Minerals, Australia (2.73%, POSCO Holdings)

Location
Pilgan Mine, Pilgangoora, Western Australia

Reserves
269Mtpa (offtake agreements signed for 315Ktpa)

Lithium Ore Processing Plant

Operator (shares)
POSCO Pilbara Lithium Solution
(82%, POSCO Holdings; 18%, Pilbara)

Location
Yulchon Industrial Complex, Gwangyang

Yield
LH, 43Ktpa

Nickel

Both wet and dry metallurgical approaches are used to produce nickel sustainably; come 2024, we will be production-ready in Gwangyang for battery-grade nickel sulfate. *High purity nickel with 99.9% and over nickel content

Pyro-metallurgy

Battery-grade nickel sulfate (Gwangyang)

Operator
Upstream: SNNC
Downstream: POSCO

Location
National Industrial Complex, Gwangyang

Output
Nickel sulfate, 20Ktpa

Battery-grade nickel sulfate (Pohang)

Operator (shares)
POSCO CNGR Nickel Solution
(POSCO Holdings 60%; 40% CNGR)

Location
Yeongilman Industrial Complex No.4, Pohang

Output
Nickel sulfate, 50Ktpa

Pyrometallurgy (Indonesia)

Shares
POSCO Holdings 49%, JV partner 51%

Location
Halmahera, Indonesia

Output
Nickel matte, 52Ktpa

Hydro-metallurgy

Hydrometallurgy (Australia)

Operator (shares)
Ravensthorpe Nickel Operation
(24.32%, POSCO Holdings; 75.68%, FQM)

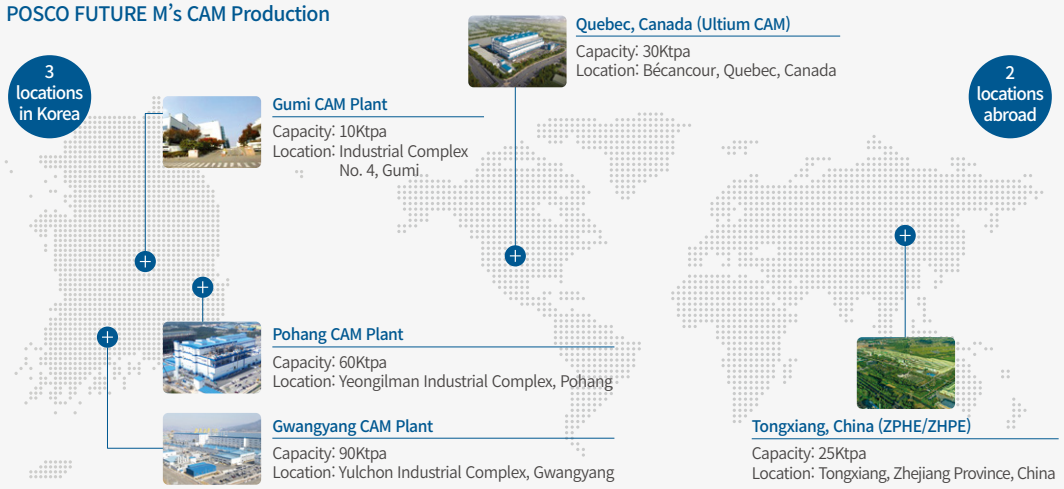
Location
Ravensthorpe, Western Australia

Output
MHP, 7.5Ktpa (offtake)

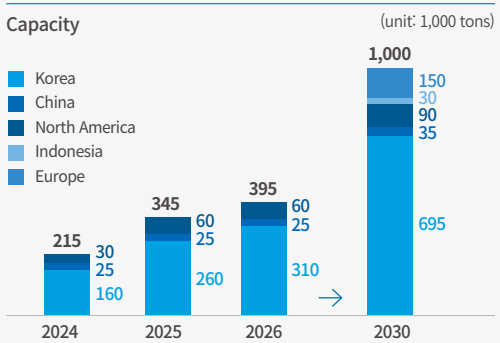
Core Business Sectors – 2. Rechargeable Battery Materials _ CAM/AAM

With proactive technological development and capital investments led by POSCO FUTURE M, we are uniquely positioned as the only supplier of both cathode and anode active materials in Korea.

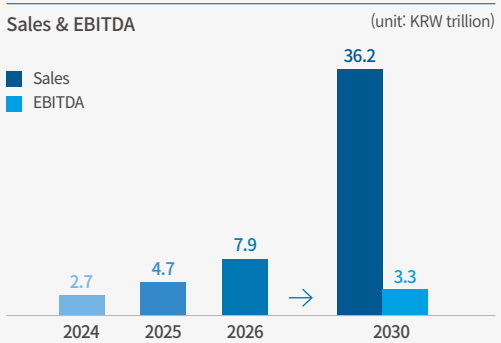
POSCO FUTURE M's CAM Production



2030 CAM Targets*

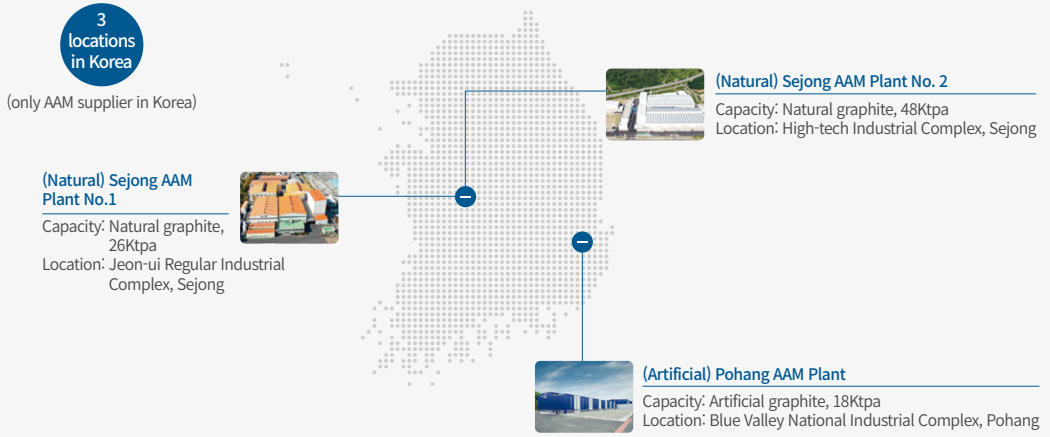


*The 2030 production volume data are preliminary as of June 2024 and subject to change.

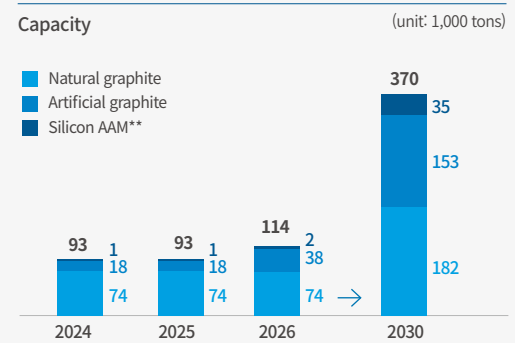


*Consolidated

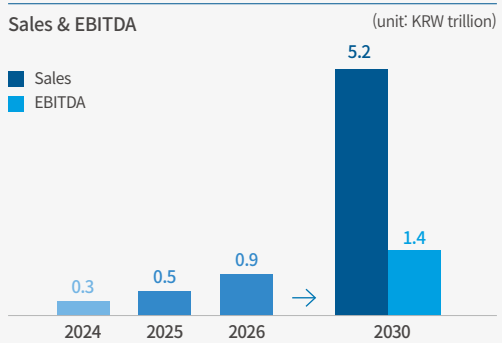
POSCO FUTURE M's AAM Production



2030 AAM Targets



*The 2030 production volume data are preliminary as of June 2024 and subject to change.
**POSCO Silicon Solution (SiOx included)

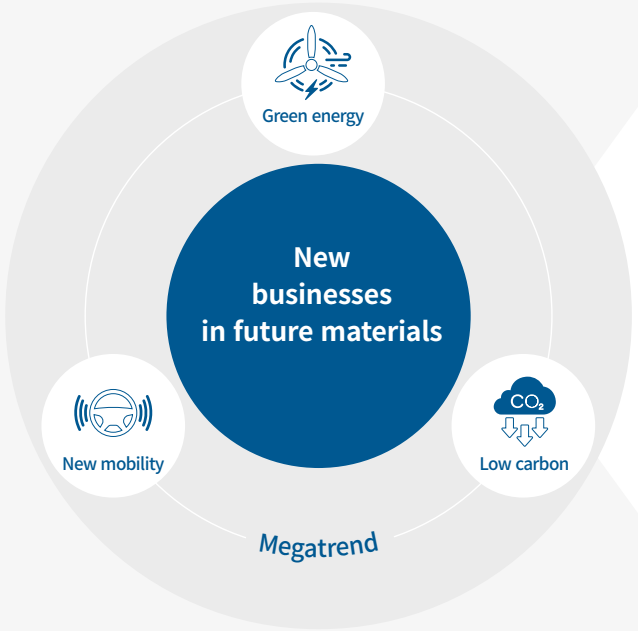


*Consolidated

Operating Company	POSCO FUTURE M	POSCO MC MATERIALS	P&O CHEMICAL

Core Business Sectors – 3. New Businesses

To identify new opportunities in future materials, we will explore diverse means, e.g., M&A, venture fund, R&D, to drive uninterrupted growth.



Diversify paths to new opportunities

Identify and acquire new technologies and businesses aligned with megatrends and POSCO Group's growth strategy

Investment	M&A invest in businesses specialized in materials, technology and patents
Venture fund	Identify promising ventures to enhance our business value chain and Group portfolio
R&D	Strengthen basic materials R&D to discover promising new materials
Global	Leverage affiliated businesses and offshore locations to identify new business opportunities

Unlock value to drive continuous growth of the Group

Operating Group Businesses – 1. Energy

As a leader of the clean energy industry, we are building a full value chain of LNG business from gas field development to production, trading, transportation, terminal storage and combined cycle power generation.

LNG Value Chain

We are building a robust LNG value chain that spans upstream and downstream operations.

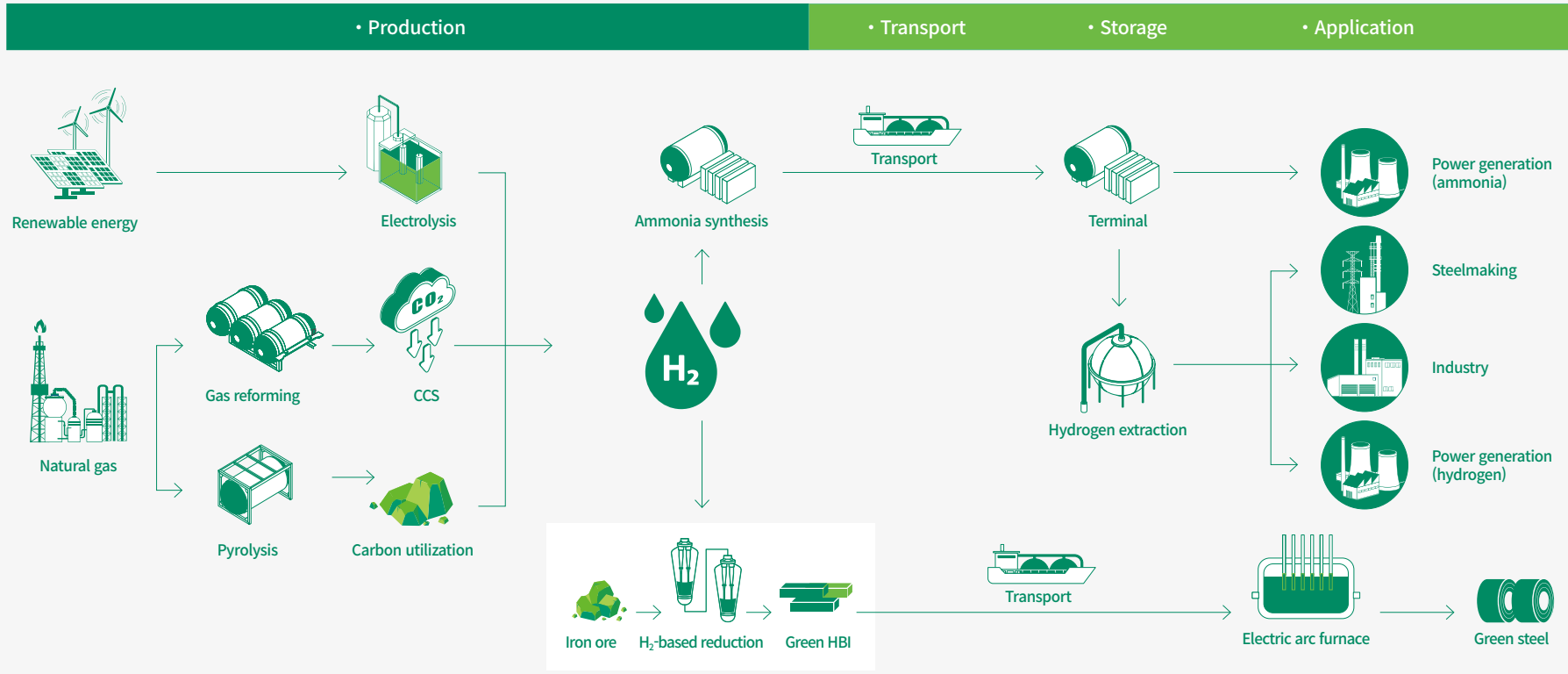
	Upstream	Midstream	Downstream
Strategic Focus	Increase resources	Capitalize on terminals, carriers and other LNG assets to expand service offerings, thereby increasing LNG trade volume	Introduce sustainable fuel blending for thermal power en route to carbon neutrality Expand offshore wind and ammonia/hydrogen infrastructure to lead the charge in green energy
Goal (2023~2030)	Gas reserves 1.5Tcf ⇒ 1.8Tcf	LNG trade volume 650K tons ⇒ 4.71M tons LNG terminal capacity 730K kl ⇒ 2.27M kl	LNG capacity 3.6GW ⇒ 6.8GW Renewable capacity (REC-based capacity) 0.08GW ⇒ 1.5GW
Value Chain	Gas field • Increase production at Senex • IExplore new assets	Extend midstream services Export terminal • Acquire LNG assets, e.g. export terminal, carrier, to strengthen the value chain LNG carrier Trading • Boost LNG trade volume on captive supply Import terminal • Increase terminal capacity	LNG-fueled power generation • Ensure cost-competitive LNG procurement • Diversify the energy portfolio LNG carrier commissioning • Expand storage infrastructure business Enter new markets • Enter new markets - Bunkering, SSLNG, etc
Operating Company	POSCO INTERNATIONAL		POSCO E&C

Operating Group Businesses – 2. Hydrogen

With POSCO Holdings at the helm, POSCO, POSCO International and POSCO E&C are building a full hydrogen value chain from production to transportation, storage and utilization.

Hydrogen Value Chain

From green hydrogen production, ammonia conversion and cracking to hydrogen-based power and steelmaking, we are engaged across the hydrogen value chain and building our clout on a global scale.



Define actionable strategies for Group-wide green transition

Strategic Focus

① Diversify sourcing options to strengthen competitiveness in procurement
② Accelerate decarbonization across the Group by providing low-cost H_2 supplies
③ Identify technological breakthroughs to review diverse applications

Operating Company	POSCO HOLDINGS	POSCO INTERNATIONAL	POSCO E&C

Operating Group Businesses – 3. Construction/Infrastructure

From eco-friendly construction to renewable energy and convergence-driven infrastructure, we challenge the limits of the industry to shape a sustainable future for all.

Core Business

Our goal is to become a household name as a builder of sustainable future societies. To do so, we will apply the expertise gained from our broad project experience in plants, infrastructure and civil works to the businesses of hydrogen, rechargeable battery materials, sustainable building and convergence infrastructure.



Brine lithium processing plant, Argentina

Ongoing EPC project to build a lithium hydroxide plant with 25Ktpa capacity. Scope of work covers design, equipment supply and construction.



Waste incinerator, Warsaw, Poland

Poland's largest waste incinerator, equipped with cutting-edge 7D BIM technology, is under construction. The waste heat generated from the facility is to be reused to generate power and for district heating

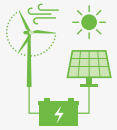
Eco

Decarbonization solutions

Rechargeable battery/low-carbon steel

Clean energy

Offshore wind, SMR



Urban

Future urban landscape

Eco-friendly residence

Smart infrastructure

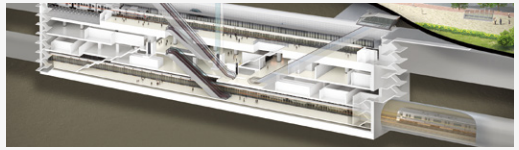
Future mobility/environmental infrastructure





Songdo International Business District

An urban development project worth KRW 24 trillion implemented on a site measuring approximately 5.77 km^2 (twice the size of Yeouido). The project aspires to build a Northeast Asian business hub that offers a range of urban amenities: parks, office space, convention venues, schools and golf courses.



Shin-Ansan Line double-track railway

Underground inter-city rail project worth KRW 3.3 trillion. Once completed, the rail would run 44.7km to link Ansan/Siheung, Gyeonggi and Yeouido Island, Seoul, helping to ease traffic congestion in the metropolitan region

Zero Energy Building (ZEB)

By incorporating a life cycle assessment (LCA) perspective on building emissions, POSCO E&C applies a suite of carbon reduction innovations, e.g., PosMent, OSC, prefabrication, to construction projects. Furthermore, to play a proactive part in the Korean government's ZEB policy, we are formulating certification guidelines for each ZEB grade and undertaking demonstration projects*.

*ZEB Grade 1 demonstration completed for the Jack Nicklaus Villa

ZEB Roadmap for Public Housing

2023	2025	2030
Guidelines for ZEB Grade 5 were completed (Grade 5: 20-40% energy self-sufficiency)	**Develop guidelines for ZEB Grade 4** (Grade 4: 40-60% energy self-sufficiency)	**Pilot run ZEB Grade 3 projects** (Grade 3: 60-80% in energy self-sufficiency)

Operating Company	POSCO E&C	POSCO WIDE	POSCO A&C

Operating Group Businesses – 4. DX

A suite of ICT solutions combine information and operational technologies to propel Digital Transformation (DX) in steel, rechargeable battery materials, construction and energy.

Smart Factory

Real-time collection and analysis of shop floor data and AI-powered process controls help deploy smart manufacturing. Digital twins of actual manufacturing processes are used to simulate processes, validate parameters and ensure optimal decision-making.

Smart Factory Service

- Maximize process efficiency via real-time, data-driven decision-making
- Provide professional services in consulting, deployment and operation

Smart Factory Evolution

❶ Integrate and seek optimization across processes	❷ Apply Smart solutions to MES value chain	❸ Expand the digital twin to the external supply chain
Implement cross-departmental process intregation projects	Adopt digital technologies in all shop floor operations and customer interface	Connect partners and suppliers across the business ecosystem

Digital Twin

- Virtual duplication of the physical shop floor aid in concurrent parameter verification and simulation of various scenarios to inform decision making.
- Apply digital twins to maintain equipment and optimize energy flows at POSCO's Pohang and Gwangyang Steelworks

IT Service

Our expertise in manufacturing, construction and logistics will be merged with the latest AI and big data technologies to create customer value.

Cloud Service

Provide a full range of services for cloud adoption, e.g., consulting, architecture, design, deployment, migration, SaaS/PaaS integration, and technical support

Smart Security

Build security systems and offer operation and monitoring services to safeguard customer data

Smart Data Center

Deliver end-to-end services based on data center deployment and operation experience

Intelligent Enterprise

Provide consulting, design, deployment and operation to customize information systems to client needs

Smart Home

By applying IoT, cloud computing and big data, develop cutting-edge, self-learning smart home systems that adapt to lifestyles of residents

Smart Transportation

Apply smart control technology to existing transportation infrastructure to provide urban traffic information and implement transport management system

EIC Engineering

By seamlessly integrating electricity, instrumentation and computers, we deliver process automation and Smart control solutions. In particular, Smart technologies are embedded in robotic process automation systems to improve operational safety and productivity.

Factory Automation

- Automate continuous processes by using sensors, PLCs and computers to build process control systems
- Automate unit processes, e.g., warehousing, unmanned crane operation

EIC Infrastructure Service

- Provide electrical engineering, fire protection, security camera-based safety systems and energy optimization for shop floor operation

Industrial Robotics Automation

- Design, deploy and operate robotics automation systems through 3D process design and simulation in partnership with global robotics companies



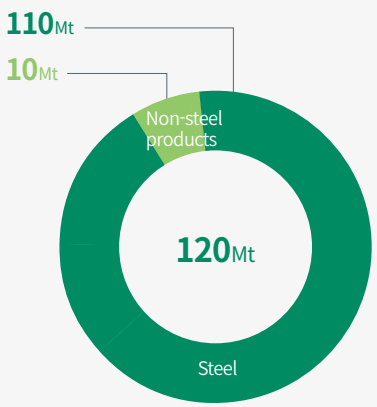
POSCO DX's exhibition booth at the Smart Factory+Automation World 2024

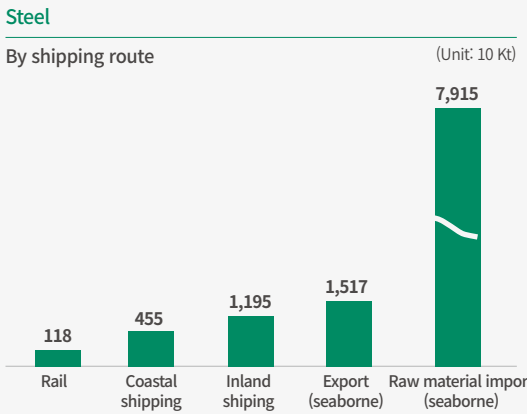
Operating Company: POSCO DX

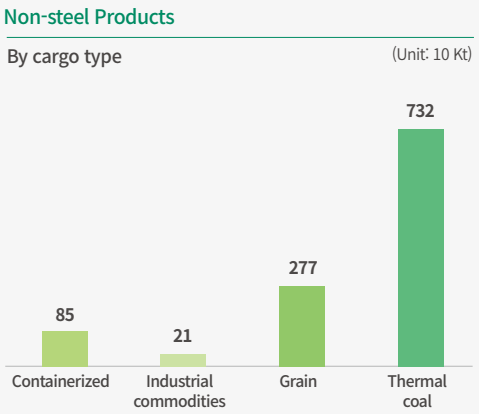
Operating Group Businesses – 5. Logistics

From origin to destination, we ship, unload and store POSCO Group products, e.g., steel, rechargeable battery materials, energy, grain.

Throughput (POSCO FLOW)







Logistics Infrastructure



CVC vessel (raw material)
42 vessels
*Consecutive Voyage Charter



Land transport
2,000 vehicles



Unloading berth
40 locations



Warehouse
20 locations



Railroad freight car
174 cars



Regular voyage
92 ports

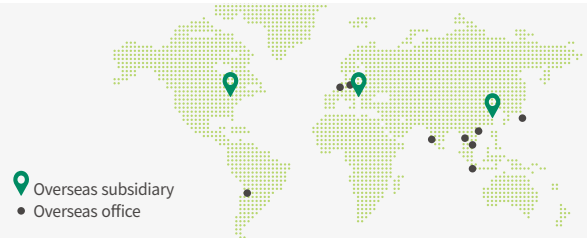
Customer

Steel	Rechargeable battery materials	Li/Ni	Hydrogen
Energy	Construction/ infrastructure	Agri-Bio	3PL

Value Chain



Market & Geography



· **Generate synergy by consolidating logistics services across Group businesses**
- Logistics service integrated across 15 companies, e.g., POSCO, POSCO INTERNATIONAL, POSCO STEELEON, POSCO FUTURE M
- Built-in supply chain resilience helps each business enhance its native competencies

· **Comprehensive logistics services rendered across the full value chain**
- Broad service portfolio ranging from road/rail freight and storage, coastal shipping, unloading and central terminal service (CTS) to seaborne trade and air freight
- Full spectrum logistics service from raw material sourcing to product delivery

· **Expand global network; consolidate offshore logistics by region**
- Expand global network to consolidate risk response; establish logistics hubs centered on key businesses, i.e., steel, rechargeable battery materials
- 11 global hubs, e.g., China, Canada, India, Europe

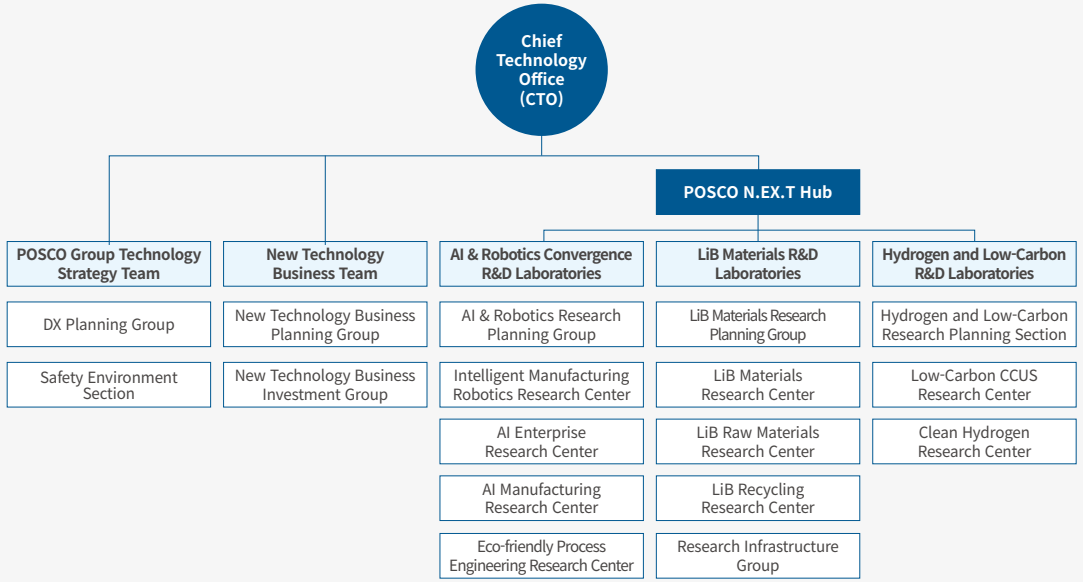
Operating Company	POSCO FLOW

POSCO Holding's Chief Corporate Technology Office

To adapt to changing business realities, our priority is to seek balanced growth across our business portfolio; hence, we will transition to sustainable steelmaking processes and strategically develop core business sectors such as rechargeable battery materials. To get ahead in next-generation technologies and businesses, in January 2022, we established POSCO N.EX.T Hub, a group that merges 3 research arms, each focused on AI, rechargeable battery materials and hydrogen & decarbonization. The organization performs comprehensive research on POSCO Group's core business interests.

Organization Chart

The CTO oversees the POSCO Group Technology Strategy Team, the New Technology Business Team, and POSCO N.EX.T Hub. With a focus on sustainable future materials, POSCO N.EX.T Hub controls three research units: AI & Robotics Convergence R&D Laboratories, the Group's AI control tower; rechargeable Battery Materials R&D Laboratories, aligned with the Group's eco-friendly future materials business; and Hydrogen and Low-Carbon R&D Laboratories. The flagship campus based in Pohang collaborate with satellite campuses in Songdo, Seoul and Yulchon (Gwangyang). A prominent mission is to build partnerships with key research institutions in Korea and overseas.



Visit POSCO N.EX.T Hub website at www.posconexthub.com

POSCO N.EX.T Hub: Vision

To become a global top-tier research organization dedicated to the development of sustainable future technologies for the next 50 years of POSCO Group.

Field of Research

GREEN INTELLIGENCE AI & Robotics Convergence R&D Laboratories

'Green Intelligence' encapsulates the laboratories' commitment to productivity improvement, safety, and autonomous manufacturing across Group businesses. The research unit takes the lead in preparing for future technologies that help usher in an innovative and sustainable future.

- Improve per-capita productivity and ensure shop floor safety through AI/robotic solutions
- Support optimal decision-making based on hyperconnected data and simulation
- Develop sustainable, next-generation processes to bolster core manufacturing competencies

GREEN MOBILITY LiB Materials R&D Laboratories

To secure a leadership position in the eco-friendly future materials space, research on rechargeable battery materials is performed and overseen at the Group level. Best-in-class research talent and infrastructure are put to work to develop proprietary dry recycling and lithium extraction technologies, cathode and anode active materials and solid-state battery compounds.

- Apply steelmaking knowledge to dry recycling research
- Optimize commercial-scale lithium production process and develop high value-added products
- Develop cost-saving innovations in CAM & AAM production; develop solid-state battery materials

GREEN ENERGY Hydrogen and Low-Carbon R&D Laboratories

A wide range of R&D strategies are defined, adjusted and implemented to facilitate the Group's push to net zero and to help build a national hydrogen economy. Namely, Clean Hydrogen Research Center focuses on supplying clean and affordable hydrogen for use in steelmaking; Low-Carbon CCUS Research Center investigates CCUS options to remove unabated emissions from steel production. The goal is to help advance the Green Transformation (GX) of POSCO Group.

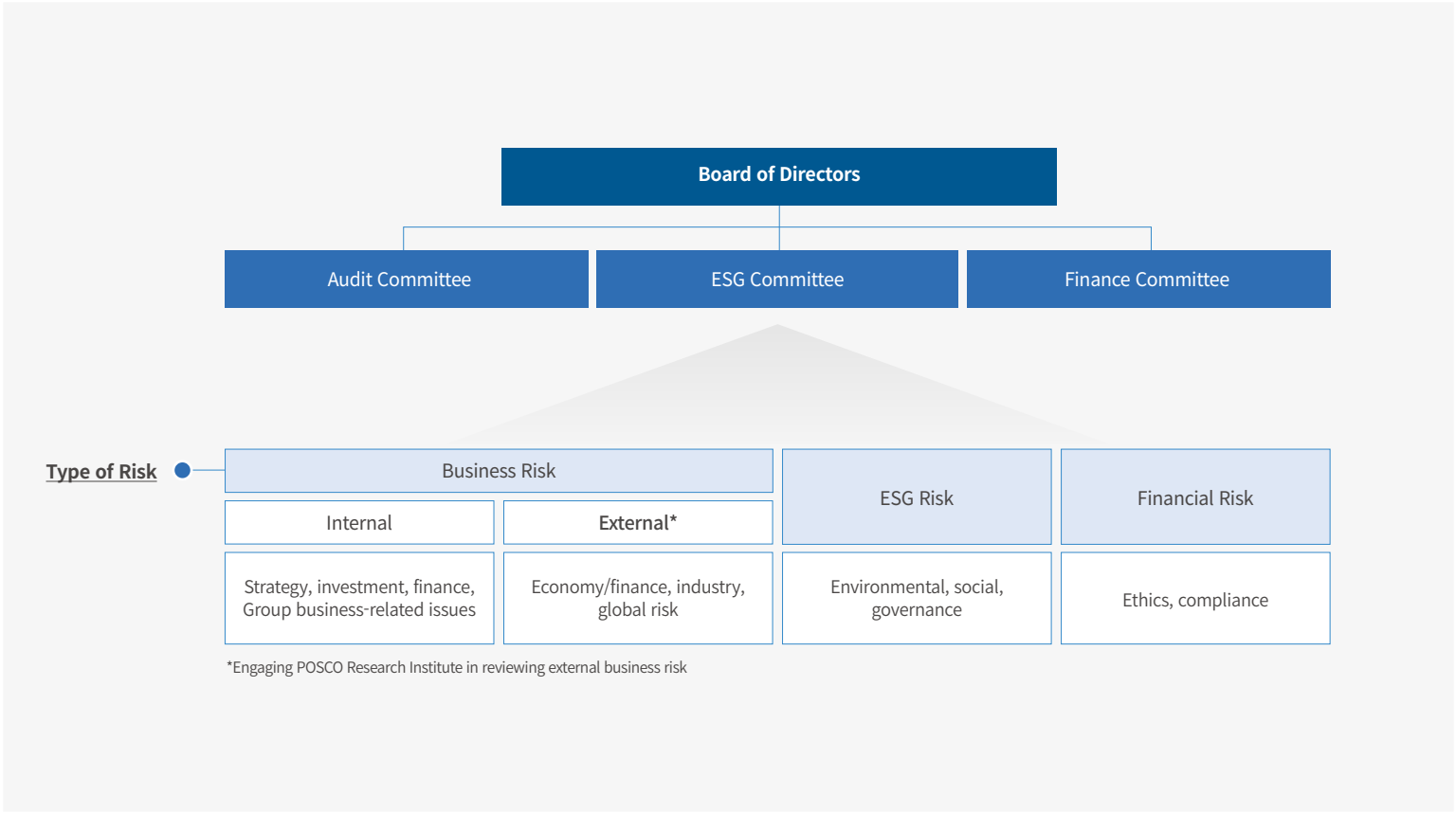
- Acquire H_2 production, storage and application technologies necessary to supply clean hydrogen economically
- Refine CCUS and carbon abatement technologies for steelmaking
- Drive technological breakthroughs to accelerate Green Transformation (GX) across Group affiliates

Risk Management

Risk Management Governance

POSCO Holdings operates a risk management system to constantly review a range of risk that may arise across our entire business operations and to report monitoring results and response measures for key issues to the Board of Directors.

Risk Management Governance



Business Risk Management

Internal business risks are monitored by the Corporate Strategy Team, departments responsible for Group business management, and the Finance IR Team, and are reported to the Board of Directors. The Corporate Strategy Team monitors risks in implementing strategies and making investments at the Group level. Specifically, our company regulations stipulate that ESG risks should be reviewed in making new investment through the Internal Investment Deliberation Committee to ensure such risks are rigorously managed. The Finance IR Team handles currency rates, financing, and other financial risks. Key issues monitored by respective teams and key decisions made in relation to new business investment are initially reported through the Finance Committee and final decisions are made by the Board of Directors.

External business risks, ranging from industry and financial market trends to shifting business conditions in global markets and competitor strategies, are monitored by the POSCO Research Institute on an ongoing basis. Monitoring results are regularly reported to relevant departments and are made available across all Group affiliates through POSCO Group's Global Information Hub (GIH).

ESG Risk and Other Non-business Risk Management

The ESG Team under the Corporate Compliance and Ethics Team establishes and operates the Group-level ESG issue response and management system to effectively respond to internal/external ESG risks associated with POSCO Group. This enables us to set standards in identifying and assessing ESG risks requiring Group-wide management, and to comprehensively manage the status of ESG risks each month at respective operating companies. Key ESG issues are reported each quarter to the Group ESG Council, a C-level consultative body composed of POSCO Group's chief executive members, and improvement measures are discussed accordingly.

Corporate audit personnel at the Corporate Compliance and Ethics Team perform quarterly reviews on the operational status of our consolidated financial statements and internal accounting control system and directly report to the Audit Committee as a way to strengthen our financial risk management.

The Audit Committee is briefed on consolidated financial statement audit and review results each quarter by external auditors, and seeks independent opinions from these external auditors through meetings not attended by top management to effectively oversee our financial risks.

Risk Management

Investment Deliberation

At POSCO Holdings, it is stipulated that all investments be made in accordance with the set investment deliberation process to effectively address investment risk. Investment business is reviwed by the Investment Deliberation Committee composed of personnel from relevant departments along with the Corporate Compliance and Ethics Team, and is finalized through the deliberations and decisions made by the Investment Committee, a decision-making body presided by the CEO, and the Board of Directors. The ESG checklist is distributed for personnel at operating companies and POSCO Holdings to preemptively review ESG impact, and review outcomes are aligned with investment performance assessment.

Investment Deliberation Process



Ongoing monitoring continues following investment approval to review overall issues as well as ESG risk. When investment is completed, performance assessments are made in line with the performance assessment plan developed for individual investment businesses. Our investment management approach ensures that expected ESG risks are incorporated into the investment business proposals submitted for each business so that such risks are reflected in performance assessment, and that ESG considerations are factored in from preliminary planning to post-investment assessment to minimize ESG risks while maximizing ESG growth opportunities in the process.

Performance Assessment Management Process



ESG Checklist for Investment Deliberation

Area	Check Items	Details
Environmental	❶ Climate change	• Has the proposal considered renewable energy conditions (e.g. RE100) in the investment destination? Is the proposal competitive in terms of renewable energy costs and carbon intensity?
	❷ Water stress	• Is the investment destination in a water-stressed area? If so, has the proposal reviewed response plans? ※Website to consult to identify water-stressed areas : Aqueduct Water Risk Atlas(wri.org)
	❸ Air, water quality, byproducts (waste)	• Does the proposal include the investment expenses to secure technology and equipment to comply with regulations of the investment destination in relation to air quality, wastewater, and byproducts (waste)?
	❹ Biodiversity	• Has the proposal identified the presence of habitats for endangered animals and plants and reviewed associated response strategies? ※Website to consult to identify protection areas : Explore the World's Protected Areas(protectedplanet.net)
Social	❶ Safety	• Are there safety issues for construction and manufacturing processes? Are there management plans established?
	❷ Raw materials	• Has the proposal reviewed ESG factors in raw material sourcing, transport and use? (e.g. child labor, LNG carrier)
	❸ Local community	• Does the proposal include any regular/open communication channels that allow for interaction with stakeholders, such as public consultations?
	❹ Human rights	• Has the proposal reviewed in advance risks associated with labor rights and diversity (e.g. child/compulsory labor)?
Governance	❶ Compliance	• Does the proposal comply with global and local anti-corruption and ethical standards? Has the proposal verified its compliance with Group's ESG policies?
	❷ Tax/disclosure	• Does this proposal abide by tax laws of the investment destination? For joint ventures, has the proposal identified which company is responsible for making consolidated ESG disclosure under the given shareholding structure?

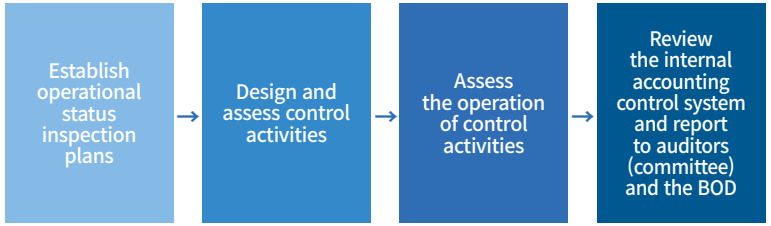
Internal Accounting Control System

POSCO Group introduced the internal accounting control system, and its operational and status review results are regularly reported to the Board of Directors and auditors (Audit Committee). The operational and status review results of each fiscal year are also provided to the Annual General Meeting of shareholders through our Representative Director. Such reviews are categorized into design assessment* and operational assessment**, and deficiencies identified as a result of assessment are handled through consultation between the dedicated department and departments implementing concerned controls to seek improvement.

*Design assessment: Review the appropriateness/integrity of control activities designed to prevent and detect errors and irregularities associated with financial statements

**Operational assessment: Review whether control activities are undertaken as designed

Internal Accounting Control System



Innovative Stories for Better Future

POSCO Group stays at the forefront of building a better future drawing on the resources and capabilities of our operating companies.
In recounting 'Our Story of Innovation towards a Better Future', we proudly present the following three breakthroughs achieved by POSCO.

Novel High-efficiency Blast Furnace Operation Technology

Importance of Developing Low-carbon Bridge Technology

The steel industry is widely known for its carbon-intensive nature, accounting for nearly 39% of Korea's GHG emissions in the industrial sector. Steel, however, is noted for its remarkable advantages: its per-ton prices are lower than aluminum, magnesium and other materials, its exceptional workability lends itself to versatile applications from tiny needles to super-large-sized ships, and as much as 85% of steel can be recycled.

According to the World Steel Association, producing one ton of steel, aluminum, magnesium, and CFRP (Carbon Fiber Reinforced Plastic) generates average carbon emissions of 2.3 tons for steel, 16.5 tons for aluminum, 46 tons for magnesium and 22 tons for CFRP, demonstrating that steel emits the least amount of carbon per production volume. Nonetheless, steel's production volume is overwhelmingly greater than other materials due to its aforementioned outstanding characteristics, making the steel industry highly carbon intensive in terms of absolute emissions generated. In fact, when intensity is considered, steel is a low-carbon material with relatively lower carbon emissions.

In Korea, steel serves virtually all industries, including automobiles, shipbuilding, electronics, and construction, as an irreplaceable core material, and plays a foundational role in producing tremendous knock-on effects both downstream and upstream for the competitiveness of the nation's manufacturing sector. To make sure the Korean manufacturing industry remains competitive, POSCO is progressing towards its 2050 Net Zero goal in a way that utilizes existing facilities to the fullest extent possible for cost-effectiveness.

While the most optimal way to dramatically reduce carbon emissions in the steel production process is to transition to hydrogen reduction steelmaking and other low-carbon systems, HyREX, POSCO's proprietary hydrogen reduction steelmaking technology, is still in its technology development phase, and it may take considerable time until its facilities are established and normal operations begin even when this technology is fully developed.

Meanwhile, the market and customer demand for low-carbon steel is growing continuously, increasingly underscoring the importance of developing bridge technology to mitigate carbon emissions under the current blast furnace production system.

Developed a low-carbon bridge technology to reduce carbon emissions by 5%

After two years of hard work, the Ironmaking Department of the Gwangyang Steelworks successfully developed low-carbon bridge technology to reduce carbon emissions by 5% while operating its current blast furnaces.

In the ironmaking process, the blast furnace is charged with iron ore (Fe_2O_3) and coke (C), which are melted through the injection of hot air (1,200°C) and pulverized coal (C) to produce pig iron. It is in the reduction process where oxygen is removed from iron ore that carbon dioxide is generated. Hence, the most effective way of reducing carbon emissions is to lower the consumption of pulverized coal and coke within the blast furnace.

While the gas flow was previously concentrated towards the center of the furnace to maintain stable operation, this posed limitations in reducing the consumption of pulverized coal and coke due to its low gas utilization. Our solution was to adopt a flywheel model: we re-defined permeable zone to develop a new way of distributing intermediate charging materials and expanded the reaction zone of iron ore and reducing gases in so doing, developing novel, high-efficiency operation technology capable of reducing coal consumption in proportion to the duration of operations.

This technology works by controlling the flow of gas and thus could have produced adverse effects such as reduced production. POSCO's top management, however, was ready to tolerate failures and fully supported this initiative to tap into the unknown. Employees also chose to face the challenge head-on rather than resting on the status quo in spite of the expected difficulties such as declining quality of fuels and raw materials, achieving an innovative technological breakthrough to shift the paradigm of the ironmaking process.

Such efforts brought to life bridge technology capable of reducing coke consumption at no additional costs while utilizing the existing blast furnace, delivering both cost savings and carbon emissions reduction.

Achieving Both Cost Savings and Carbon Reduction through Process Innovation

Currently, this technology applies to all blast furnaces at the Gwangyang Steelworks and we are phasing in this technology at the Pohang Steelworks.

When deployed at both of our steelworks, this technology is expected to generate cost savings internally and mitigate carbon emissions externally.

The Ironmaking Department of the Gwangyang Steelworks was granted the most prestigious Innovation Award at the 35th POSCO Group Technology Conference in 2023 in recognition of its achievement in successfully undertaking the project to develop innovative, carbon-reducing, high-efficiency blast furnace operational technology.

Building upon this success, POSCO will continue to pursue process innovation to achieve both cost savings and carbon emissions mitigation as the company progresses towards a low-carbon production system.



Receiving the Grand Prize at the 35th POSCO Group Technology Conference

Innovative Stories for Better Future

Integration of Steel with Agriculture to Reduce GHG Emissions

Are we consuming climate-friendly rice in the net zero era?

Cultivating rice, the primary staple on our table, results in the emission of methane, a type of greenhouse gas. Rice paddies are filled with water year-round, which prevents oxygen in the air from easily penetrating into the soil. When oxygen falls short as a result, organic matters in the soil such as compost sprayed across rice fields are decomposed by microorganisms, producing the greenhouse gas of methane in the process.

As such, GHG emissions generated from rice cultivation each year amount to 21 million tons, representing 25% of total agricultural emissions in Korea.

Korea's agricultural industry should mitigate its GHG emissions by 27.1% by 2030 in alignment with the government's NDC (Nationally Determined Contribution) target. As GHG emissions in this specific sector are inevitable resulting from the natural growth of animals and plants, the agricultural industry suffers from the lack of adequate reduction technology along with challenges in new technology development.

Meanwhile, POSCO has supplied silicate fertilizers made of slag, a byproduct from the steelmaking process. The silicate fertilizers used in Korea are all produced from the slag generated by POSCO, and over 13.76 million tons of such fertilizers went into nourishing the nation's ride paddies for the past 50 years.

Silicate fertilizers are rich in silica (SiO_2) that is indispensable for rice farming. While silica is not one of those essential elements for plant growth, it is instrumental for the growth of rice. Silica forms 5~10% of rice weight, and hence this gives rice the nickname 'silica plant'. Silica, however, is hardly separated from the soil, making it difficult for rice to absorb silica.

Spraying silicate fertilizers helps rice feed on silica and grow strong, resisting rain and wind and defending itself against pests and diseases.

This prompted POSCO to explore ways to pursue win-win solutions for both the company and the agricultural industry by leveraging its resources and technology.

Reducing Methane Emissions by 33% While Boosting Production by 27% through Silicate Slag Fertilizers

Blast furnace slag is a type of slag generated when producing pig iron from iron ore in the blast furnace. POSCO discovered that iron ions (Fe^{3+}) contained in blast furnace slag in extremely small quantities (below 1%) are capable of inhibiting the activation of methanogens that produce methane in the rice cultivation process.

This inspired POSCO to initiate a project to quantify the benefits of this steel byproduct in reducing GHG emissions and obtain approval from the government for its contribution to mitigating emissions as the very first to do so across the world.

Having the government recognize any achievement in reducing GHG Emissions requires the presentation of 'numerical data representing all regions of the nation'. To achieve that level of representation, on-site demonstration was performed in three locations of Daejeon, Suncheon, and Jeonju for three years from 2019, and this enabled POSCO to successfully quantify GHG emissions avoided per amount of silicate fertilizers used.

POSCO went the extra mile to further mitigate GHG emissions and create added value in so doing.

Apart from blast furnace slag, POSCO generates various byproducts containing iron. Taking note of their potential as resources, POSCO conducted tests to boost the effect of slag silicate fertilizes in suppressing methane generation. Iron oxides, the most effective methane generation suppressor, were chosen as the byproduct to be added, and the optimal mixing ratio was identified to develop upgraded silicate slag fertilizers. This was followed by additional on-site demonstrations in the three regions of Gyeongsang, Jeolla, and Chungcheong for three years from 2020.

This revealed that rice paddies with the Fe-enhanced fertilizers applied, when compared to those without, achieved a 33% reduction in methane production and a 27% increase in rice harvest.

Creating Value to the World and Shaping a Sustainable Tomorrow

Gaining recognition for silicate fertilizers' benefits in reducing GHG emissions required POSCO to present science-based proof for the new functionality of blast furnace slag used as raw materials for silicate fertilizers in reducing methane production, working with the Ministry for Food, Agriculture, and Forestry and Fisheries performing necessary assessment and the Ministry of Environment granting final approval.

Making thorough preparations for full three years, POSCO came up with the necessary scientific evidence and successfully cleared the verification made by these two ministries on silicate fertilizers for their benefits in mitigating GHG emissions. In January 2022, silicate fertilizers were approved as the world's first nationally-recognized GHG emission factor.

In October 2023, these Fe-enhanced fertilizers were awarded in the Excellence in Sustainability category at the Steelie Awards hosted by the World Steel Association, earning POSCO worldwide recognition for its years of efforts to mitigate GHG emissions through the use of steel byproducts.

Slag silicate fertilizers create added value for a better world, contributing to the sustainability of steel and agriculture. While they are primarily used in Korea and Japan currently, extending their application to the world's largest rice producing region of the ASEAN including Indonesia and Vietnam will bring positive economic, environmental, and social impact: farmers' income will rise through increased rice production, GHG emissions will be reduced in the agricultural sector, and the use of steel byproducts for the production of fertilizers will help expand the circular economy.

Befitting its status as the 'world's most competitive steelmaker', POSCO pledges to provide solutions to mitigate GHG emissions made possible with its steel byproducts, driving sustainable growth in a way that brings win-win benefits to both the steel and agricultural industries.

Innovative Stories for Better Future

Workplace Made Safer with People and Robots Working Together

Background for the Application of Robots and AI for Manufacturing

As robots and AI are deployed at scale for shopfloor operations, an unprecedented wave of productivity innovation is looming large.

Highlighting that having people in the loop slows down the overall process to the speed of humans and that the process itself should be fully automated while people oversee the machines (robots), Elon Musk, CEO of Tesla, unveiled a robotic humanoid Optimus at Tesla AI Day in 2022.

This is interpreted as a strategic move to prepare for the upcoming transformation in productivity gains made possible with full automation. The full-scale deployment of robots on the production line is expected to boost productivity by nearly seven folds from the current level.

POSCO is also working to keep abreast of the new era of manufacturing innovation, leveraging robots to enhance both productivity and safety performance simultaneously.

In operating certain production processes, POSCO is witnessing declining proficiency levels, which is attributable to the high proportion of manual shopfloor work from the productivity viewpoint and to the increasing number of short-tenured employees resulting from the demographic change in workforce. From the health and safety perspective, there are concerns for employees' health risk due to working conditions, along with tightening regulations including the Occupational Safety Act and the Serious Accidents Punishment Act.

POSCO's ambition for future process innovation is to fundamentally eliminate safety risk while embracing robotic solutions for productivity gains.

POSCO's pursuit of robotic solutions is specifically anchored on the 'ensemble AI model' aiming at seeking cooperation between robots performing simple repetitive work without error and humans making comprehensive judgement and flexibly responding to unexpected situations, combining the best of both worlds in so doing.

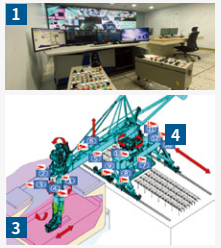
This will drive POSCO's efforts to deploy remote intelligent solutions to replace manual work and expand safe workplaces where robots performing high-risk work cooperate with their human counterparts.

Key Outcomes of Robotic Solutions for Process Innovation

Remote ground operation solution technology for raw material/fuel unloading equipment, gas leak prevention technology for the coke oven door, and automated CGL pot dross removal technology all represent POSCO's achievements in pursuing process innovation by introducing robotic solutions for steel manufacturing.

① **Developing remote ground operation solutions for raw material/fuel unloading equipment**

- Currently developing automation technology (AI) to switch from manual to remote ground operation for unloading equipment located at height
  → Expected benefits: Remove human error and improve work efficiency



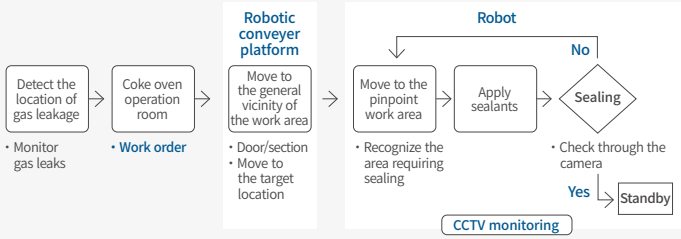
System Configuration

1 Smart remote ground operation room
2 5G wireless data transmission technology
3 LiDAR* to check stacking status
4 Full HD image transmission system (13 units)

*LiDAR: Create a precise map of the surrounding environment by measuring the distance traveled by laser pulses sent from a source and reflected back from an object

② **Developing coke oven door gas leak prevention technology**

- Move the robot to the location of gas leak through the conveyer platform, and spray sealants
  → Expected benefit: Fundamentally eliminate such safety risks as gas poisoning and burns



③ **Developing automated CGL pot dross removal technology**

- Deploy robots to automate the manual work of removing CGL pot dross
  → Expected benefits: Boost productivity, minimize dross defects on the steel sheet surface, and fundamentally prevent the occurrence of safety incidents



Before | After

These three accomplishments in technology development eloquently demonstrate the benefits of AI-enabled automation of manual work in minimizing human errors such as work deviations, fundamentally deterring safety risks including gas poisoning and burns, and improving productivity while minimizing quality defects.

Key Achievements and Plans

Such process innovation driven by robotic solutions was made possible by combining POSCO's know-how accumulated over the years with the precision performance of robotics and AI, generating social and environmental value as well as economic performance through productivity innovation to ultimately build undisputed dominance.

POSCO Group will explore technology enabling workers, robots, and AI to collaborate while offsetting each others' weaknesses, taking the lead in creating a safer and more productive workplace.

History of Sustainability Reporting

POSCO published the Environmental Progress Report in 1995 as the first Korean company to do so, and released its inaugural sustainability report in 2004.
Since then, POSCO has continued with sustainability reporting on an annual basis to keep abreast with the stakeholder needs for sustainability disclosure.
In presenting the 21st sustainability report in 2024, we would like to take this as an opportunity to revisit POSCO Group's wholehearted commitment and efforts towards sustainability.

POSCO's History of Sustainability Reporting

- Reporting history
- Key achievements of sustainability management

2004
- Published the inaugural sustainability report titled <the posco movement>

2006
- Established a company-wide carbon management system

2008
- Published a sustainability report prepared through conducting a materiality test

2010
- Declared a vision for low-carbon green growth
- Published a carbon report that received third-party assurance as the world's 1st steelmaker to do so

2011
- Convened the 1st Environmental Management Committee supervised by the CEO

2012
- Joined the UN Global Compact
- Published the inaugural integrated report



2013
- Published the 1st online report

2015
- Introduced the Clean POSCO System to establish transactional fairness and transparency



2017
- Created an index for the 17 UN SDGs

2020
- POSCO announced its 2050 net zero commitment



2021
- Established the ESG Committee under the Board of Directors
- Created the data-focused ESG Factbook

2022
- Launched POSCO Holdings as a holding company
  Established the Group ESG Council
  Established the ESG Session under the Board of Directors
  Established the Stakeholder Roundtable
- Published the inaugural report of the holding company and created the ESG Policy Book

2023
- Held the 1st ESG NDR (Non Deal Roadshow) (Hong Kong, Singapore, London)
- Published the 1st consolidated sustainability report

2024
- Published the 21st sustainability report

History of Sustainability Reporting

Change in Sustainability Reporting





2003 sustainability report		2023 sustainability report
POSCO only KRW **14.3594** trillion	Sales	Consolidated KRW **77.127** trillion
POSCO only **1** company	Reporting scope	Consolidated **15** Group affiliates*
GRI (sustainability reporting standards) **1** set of standards	Reporting standards	ISSB and TCFD in addition to GRI **3** set of standards
9 agendas	Reported agendas	**20** agendas
25 datasets	Reported datasets	**255** datasets
POSCO only **2.15** tCO_2e/t-s	Key Metrics: Environmental GHG emissions intensity for steel	POSCO only **2.02** tCO_2e/t-s
POSCO only Percentage of female employees: **1.6**% out of **19,373** employees	Key Metrics: Social Number of employees, number of female employees	Consolidated Percentage of female employees: **8.8**% out of **34,179** employees
2 Board committees were exclusively composed of outside directors Percentage of outside directors: **57**%	Key Metrics: Governance Independence of the Board of Directors	**4** Board committees were exclusively composed of outside directors Percentage of outside directors: **58**%

*POSCO Holdings, POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO MOBILITY SOLUTION, POSCO M-TECH, PT.Krakatau POSCO, Zhangjiagang Pohang Stainless Steel, POSCO Yamato Vina Steel, POSCO Maharashtra Steel, POSCO Thainox

External Assessment of Our Sustainability Management

POSCO Group has published sustainability reports assured by third-party assurance providers since 2003 to present reliable ESG information to stakeholders for transparent communication. Our improvement efforts to advance sustainability management and our achievements in expanding the scope of our ESG disclosure are positively received by key sustainability rating agencies in Korea and abroad. (as of Apr. 2024)

Global assessment

Sustainalytics Industry Top-Rated

Rated 1 across all areas

Rated A

Domestic assessment

Rated Overall A+
(A in Environmental/A+ in Social/ A+ in Governance)

Awarded at the Korean Readers' Choice Awards

PART 2

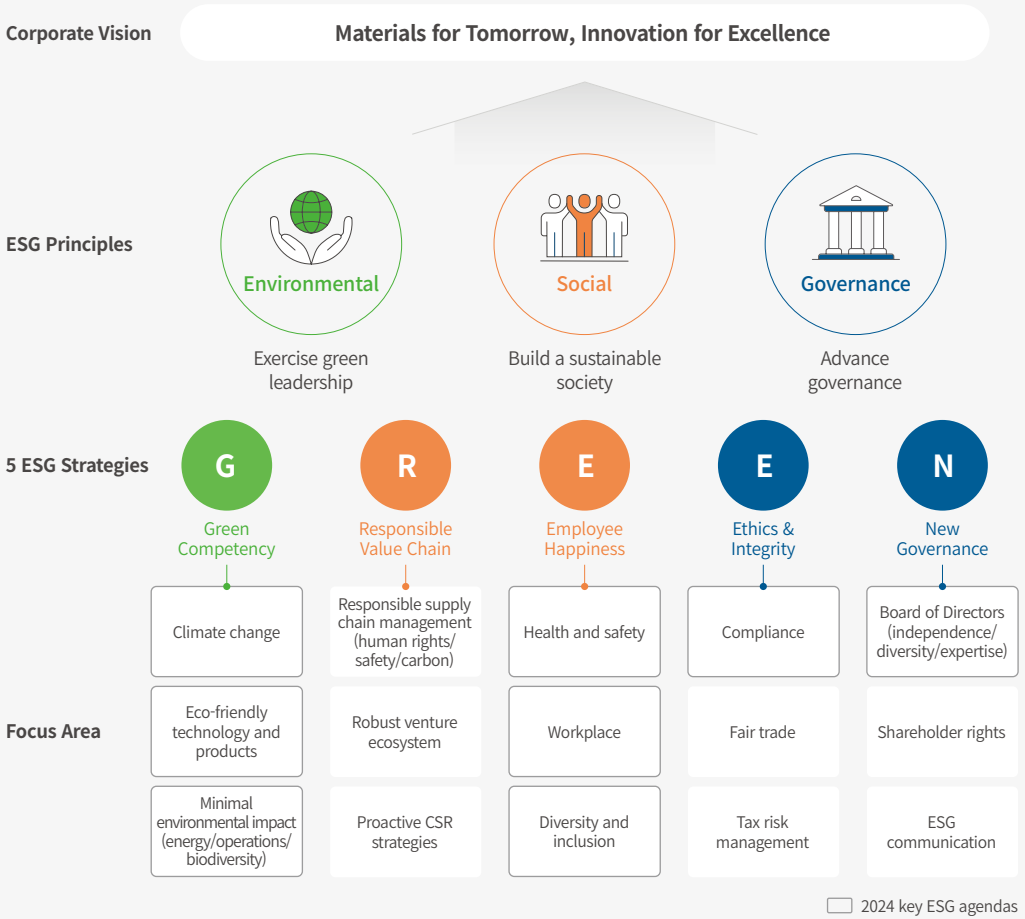
ESG PERFORMANCE

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POSCO Group's ESG Strategic Framework

New Corporate Vision

Building upon the proud legacy of epoch-making achievements and restoring our predominance across the overall operations, POSCO Group will progress towards achieving our new corporate vision 'Materials for Tomorrow, Innovation for Excellence'.



GREEN Framework

POSCO Group defines ESG management as exercising green leadership, building a sustainable society, and advancing governance. Anchored on GREEN as the keyword embodying eco-friendly future materials, we established the following five ESG strategies encompassing each of the three areas of Environment, Social, and Governance.

Green Competency

To cope with climate change, we will pursue low-carbon processes and energy efficiency while developing eco-friendly products and services. Throughout this process, we intend to minimize our environmental footprint to build a future where people live and thrive in harmony with nature.

Responsible Value Chain

We are committed to promoting sustainability throughout our value chain by assisting our business partners to achieve the highest level of standards in all areas of low-carbon technology, human rights and safety.

Employee Happiness

With commitment to create a vibrant and safe workplace, we intend to build a corporate culture that values workplace safety, human rights, and diversity while nurturing creative talent to lead the way in the rapidly-changing world.

Ethics & Integrity

To maintain the highest ethical standards in the entire business decision-making process, we will continue to enhance ethics and compliance and promote fair trade.

New Governance

We will uphold the independence, expertise, and diversity of the Board of Directors. Prioritizing shareholder rights and transparency, we will reach new heights.

Double Materiality Assessment

To accurately identify the needs and expectations of wide-ranging stakeholders and integrate them into our ESG management strategy, we have conducted double materiality assessment for three years since 2022.

For this year's reporting, we upgraded our double materiality assessment system to cover key ESG issues in each of the five business areas of steel, rechargeable battery, infrastructure, energy, and trading in addition to Group-wide key ESG issues. This is expected to help POSCO Group properly identify pending key ESG issues and assist effective business decision-making as a result.

In pooling together ESG issues affecting POSCO Holdings, we referred to agenda items discussed through the Group ESG Council supervised by the CEO, issues identified through direct communication with major stakeholders via ESG NDR*, conference calls, and e-mails, and organized feedback from internal and external stakeholders through surveys.

This was followed by the 3rd Stakeholder Round Table we hosted to invite a range of stakeholders including investors, academia, government agencies, customers, and suppliers to engage in in-depth discussions on ESG issues requiring our focused attention to make progress towards sustainable development.

The high-priority issues identified through the Stakeholder Round Table and double materiality assessment were selected as the 'Top 10 ESG Issues' of POSCO Holdings, and improvements are made in alignment with our mid/long-term KPIs. We will also fully disclose specifics on these issues, detailing how we manage each of these key ESG issues, through our annual sustainability reporting.

*Non Deal Roadshow

Process	Purpose	Key Considerations
❶ Understand and select	Identify potential significant impact on the sustainability of POSCO Holdings' business model and value chain	• SASB's industry-specific metrics for each operating company/value chain • ESG assessment metrics of 4 major global rating agencies (MSCI, Sustainalytics, ISS ESG, and KCGS) • Inquiries raised by investors and other key stakeholders • Materiality assessment results of respective operating companies and major ESG issue reports from industry peers
❷ Identify issues	Assess identified ESG issues for their social/ environmental Impact Materiality and Financial Materiality (risk & opportunity)	• [Impact Materiality] Social/environmental impact of ESG issues identified across five business models and their value chain - Positive/negative, actual/potential, inside-out impact brought by POSCO Holdings' business operations • [Financial Materiality] Financial impact in the areas of ESG regulations/laws/policies associated with identified issues - Risks and opportunities viewed from the outside-in impact perspective concerning POSCO Holdings' financial value
❸ Conduct double materiality assessment	Group ESG Council	• Analysis of the agendas discussed at the CEO-led Group ESG Council (29 agendas in 2023)
	Direct communication with stakeholders (ESG NDR, conference calls, etc.)	• Analysis of on/offline requests and responses from key stakeholders, including investors (156 cases in 2023)
	Surveys on internal/external stakeholders	• Survey on internal/external experts with a deeper understanding on POSCO Holdings' business and ESG (36 persons in 2023)
	Stakeholder Round Table with major stakeholders	• 3rd Stakeholder Round Table to heed feedback from investors, government agencies, and customers/suppliers
❹ Finalize material issues	Prioritize key ESG issues	• Prioritize key ESG issues based on quantitative analysis results, report them to the Board of Directors, and finalize material issues

Double Materiality Assessment

POSCO Holdings' Key ESG Issues



Top ESG Issue	Impact Materiality	Financial Materiality
❶ Climate change	94	87
❷ Independent and transparent Board of Directors	91	76
❸ Health and safety	91	73
❹ Energy	84	70
❺ Green technology and products	59	63
❻ Working environment	62	54
❼ Environmental management	48	55
❽ Biodiversity	50	47
❾ Compliance	45	52
❿ Diversity and inclusion	48	41

ESG	Specific Issue	GRI	SASB	TCFD	SDGs
E	❶ Climate change	GRI 305	EM-IS-110a.1, EM-IS-110a.2	●	SDGs 11, 13
	❹ Energy	GRI 302	EM-IS-130a.1, EM-IS-130a.2	●	SDGs 7, 11
	❺ Green technology and products	GRI 302		●	SDGs 9, 12
	❼ Environmental management	GRI 303, 306	EM-IS-120a.1, EM-IS-140a.1, EM-IS-150a.1		SDGs 6
	❽ Biodiversity	GRI 304			SDGs 14, 15
S	❸ Health and safety	GRI 403	EM-IS-320a.1		SDGs 3
	❻ Working environment	GRI 401, 402, 407, 408, 409			SDGs 3, 8
	❿ Diversity and inclusion	GRI 404, 405, 406			SDGs 4, 5, 10
G	❷ Independent and transparent Board of Directors	GRI 405			
	❾ Compliance	GRI 205, 206			SDGs 16

Double Materiality Assessment

Key ESG Issues by Business Unit

POSCO Holdings further upgraded our double materiality assessment process to accurately identify the needs and expectations of wide-ranging stakeholders. This allowed us to identify key ESG issues in each of the five business areas of steel, rechargeable battery materials, infrastructure, energy, and trading.

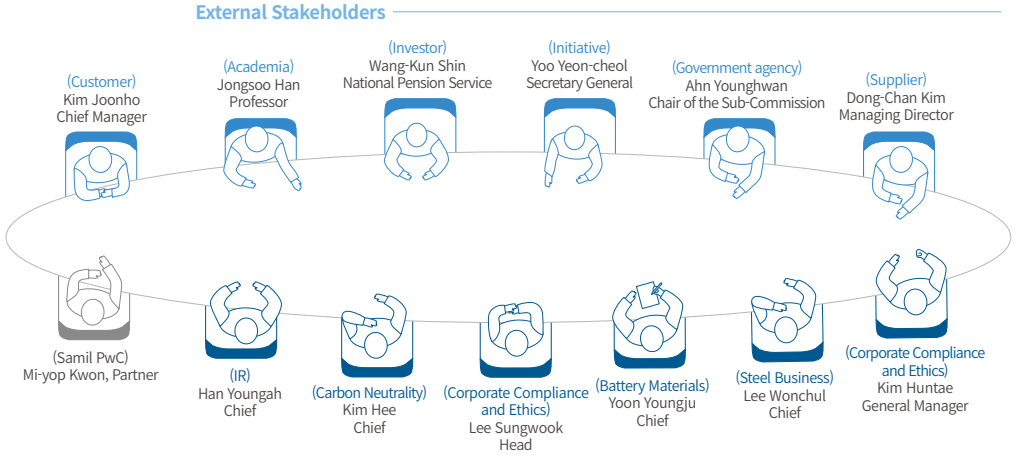
Steel		Rechargeable Battery Materials		Infrastructure (Construction, IT & Engineering)		Energy		Trading	
Top 5 Issues		Top 5 Issues		Top 5 Issues		Top 5 Issues		Top 5 Issues	
1	Climate change	1	Climate change	1	Compliance	1	Compliance	1	Compliance
2	Energy	2	Energy	2	Diversity & inclusion	2	Climate change	2	Climate change
3	Compliance	3	Compliance	3	Health & safety	3	Health & safety	3	Green technology and products
4	Green technology and products	4	Health & safety	4	Green technology and products	4	Energy	4	Energy
5	Working environment	5	Supply chain management	5	Climate change	5	Green technology and products	5	Working environment

Environmental Social Governance

On April 29, 2024, POSCO Holdings hosted the 3rd Stakeholder Round Table to invite ESG-related stakeholders to POSCO Center. Marking its 3rd meeting this year, the Stakeholder Round Table served to heed feedback and engage in mutual discussions on key ESG issues requiring Group-wide management efforts.

This year's Round Table was joined by Wang-Kun Shin, member of the Board Committee on Responsible Investment and Governance of the National Pension Service, Yoo Yeon-cheol, Secretary General of the UN Global Compact Korea Association, Ahn Younghwan, Chair of the Greenhouse Gas Reduction Sub-commission at the Presidential Commission on Carbon Neutrality and Green Growth, Han Jongsoo, President of the Korean Accounting Association, Kim Joonho, Head of the ESG Department at HD Korea Shipbuilding & Offshore Engineering, and Dong-Chan Kim, Managing Director at Chosun Refractories to represent external stakeholders. From POSCO Holdings, Lee Sungwook, Head of the Corporate Compliance and Ethics Team (Senior Executive Vice President), Yoon Youngju, Chief of Battery Materials Business Management, Kim Hee, Chief of Carbon Neutral Strategy, Lee Wonchul, Chief of Steel Business Management, Han Young-Ah, Chief of IR, and Kim Huntae, General Manager of Corporate Compliance and Ethics Team. Participants were briefed on POSCO Holdings' ESG management performance for the year 2023 and communicated their expectations for 2024, sharing a breadth of ideas for our balanced growth and sustainable development. POSCO Holdings will continue to provide diverse mechanisms to proactively heed the voice of stakeholders and integrate such feedback in our ESG policies and strategies.

Overview of Participants



Review on Our 2023 Activities

Q. Please give us an overview of POSCO Holdings' key ESG achievements in 2023.

A (POSCO Holdings) Kim Huntae Let me briefly share our major ESG achievements in 2023. I would first like to highlight that we set new mid-term net zero goals to tackle the issue of 'climate change response'. Our initial pathway was to reduce carbon emissions by 10% by 2030 and by 50% by 2040 to achieve net zero by 2050. We added a more ambitious interim goal of mitigating our carbon emissions by 30% by 2035. To attain this goal, POSCO is investing over KRW 600 billion in its Gwangyang Steelworks to build a large-sized electric arc furnace with annual capacity of 2.5 million tons, which will be completed by the end of 2025 to produce low-carbon steel materials starting from 2026. In 2022, we initiated the design of a HyREX demonstration plant and committed to making full-scale investments to achieve net zero emissions by 2050. In January this year, we opened the Hydrogen Reduction Steel Development Center at the Pohang Steelworks. Throughout 2023, we took a series of specific actions for decarbonization to combat climate change.

Turning to 'ethics and compliance', we launched the Group Council on Respect for Human Rights in 2023 to further advance human rights management at the Group-wide level. This Council is joined by 20 operating companies including POSCO. For the three maintenance subsidiaries we created in Pohang and Gwangyang to ensure robust facility operations as the foundation for competitiveness of our steel business, we established their ethical management infrastructure early on to uphold respect for human rights. It is also notable that 10 operating companies of POSCO Group were rated excellent and above in the Compliance Program assessments performed by the Fair Trade Commission, setting a record ever achieved by a single enterprise group since the introduction of the CP system. Such accomplishments indicate that our Group-level commitment and efforts for ethics and compliance are gaining recognition both internally and externally.

Concerning 'supply chain management', we launched the Group Supply Chain Management Council which convenes semi-annually to effectively manage supply chain ESG issues at the Group level. In particular, POSCO made written assessments on over 96% of its suppliers that exceed KRW 500 million in annual transaction amount. This was followed by on-site due diligence conducted on low-performing suppliers to develop improvement plans and take action accordingly. POSCO FUTURE M completed written assessment on 337 suppliers, and will do so for all suppliers by 2028.

Lastly, let me share our progress made on 'safety' issues. To raise employees' safety awareness, POSCO Group keeps track of TRIFRs (Total Recordable Incident Frequency Rate) in addition to LTIFRs (Lost Time Injury Frequency Rate) at all levels of the Group. This enables us to document even small trivial accidents to take a preventive approach to safety management. Our Group Safety Council attended by C-level executives convenes on a semi-annual basis to raise the bar on safety management. Meanwhile, POSCO implements 'integrated smart safety solutions' to automatically detect unsafe worker behaviors and take proactive action. Enabled by smart CCTVs operating on AI imaging technology, these solutions were independently developed by POSCO DX to allow for remote monitoring of high-risk tasks and areas as well as facility abnormalities. These solutions were deployed at over 130 manufacturing, construction, and power plant locations to verify their effectiveness, and were applied to wider Group affiliates including POSCO, POSCO E&C, and POSCO FUTURE M in 2023. We also introduce AI robotic solutions to create a safework environment.

All these achievements demonstrate that POSCO Holdings is becoming more sustainable year after year through ESG management, and we will step up our efforts to continuously advance our ESG management across the board.

Q. Can you offer your suggestions on key ESG issues and responses in the environmental area?

A (Environmental expert) Ahn Younghwan While playing a crucial role in driving our national economy, the steel industry is also known for its carbon-intensive nature, representing 16.7% of Korea's GHG emissions. Achieving our NDC (Nationally Determined Contribution) goals is only possible when carbon emissions are reduced in the steel industry. It is deeply meaningful that POSCO set a new interim goal of mitigating its carbon emissions by 30% by 2035. However, 'setting goals' is one thing and 'achieving goals' is another. My suggestion for POSCO is that the company should elaborate on its plans and achievements in reducing carbon emissions through its future sustainability reporting to clearly demonstrate its firm commitment to reaching the set goals for stakeholders.

A (POSCO Holdings) Kim Hee As Ahn Younghwan mentioned, POSCO established its 2050 carbon neutrality roadmap and disclosed this through its sustainability report. This roadmap entails mid/long-term goals and comprehensive strategies in the areas of raw materials, investment, energy, and technology development, and efforts are being made on multiple fronts in collaboration with shopfloor operations to progress towards these goals. For instance, we are improving the efficiency of existing facilities, shifting to low-carbon fuels and raw materials, and developing low-HMR (Hot Metal Ratio) operation technology in the short-term. Over the mid-term horizons, we aim to introduce electric arc furnaces (EAF) and highly viable bridge technologies such as CCUS (Carbon Capture, Utilization, Storage). Ultimately, our aim is to develop HyREX technology to achieve carbon-free steelmaking. Our net zero commitment is clearly demonstrated in our efforts to invest in EAFs, initiate the design of an HyREX demonstration plant, and open the Hydrogen Reduction Steel Development Center.

A (HD Korea Shipbuilding & Offshore Engineering) Kim Joonho In the shipbuilding industry, over 90% of carbon emissions are generated in the ship operation phase. This makes transitioning to greener fuels through introducing ammonia-propelled vessels and green methanol-fueled vessels a top priority in our industry. When we fully shift to greener fuels, our priority then will be reducing Scope 3 emissions from supply chains. In particular, steel materials account for about 20~30% of the parts used for shipbuilding, and we anticipate increases in demand for low-carbon steel in the foreseeable future. This underscores the need for POSCO to ready itself to meet the growing demand for low-carbon steel products.

A (POSCO Holdings) Kim Hee As just mentioned by Kim Joonho, POSCO is aware of the demand for low-carbon steel products among our key customers in the automobile and shipbuilding industries. This is why we are focused on technology development to produce low-carbon steel materials capable of mitigating Scope 1 & 2 emissions generated from product manufacturing, and we are also developing technologies to produce high-end steel through EAFs to cater to market needs.

A (POSCO Holdings) Lee Wonchul The steel industry plays a highly influential role across automobile, home electronics, shipbuilding, construction, machinery and other wide-ranging industries. This highlights the utmost importance of continuously developing low-carbon products and bringing them to market. While the most ideal option is to supply carbon-free steel products through hydrogen reduction steelmaking, it will take considerable time and expenses to commercialize this technology. As such, a realistically feasible option for us is to maintain the current blast furnace production system for several years to come. In this regard, it is critical that we develop bridge technology to significantly reduce GHG emissions from the currently-operating blast furances. POSCO is exploring new operational technologies to 'directly inject hydrogen-containing gases to the blast furance' or 'integrate CCUS into blast furnace operations'. In so doing, POSCO is engaging in technology development for low-carbon steel products under varying scenarios to prevent any shortage in the supply of steel products or customers shouldering excessive cost burdens.

Q. Can you share your suggestions on key ESG issues and responses in the social area?

A (Social expert) Yoo Yeon-cheol The achievements made by POSCO Holdings and its major operating companies for the past year show that their ESG system has been firmly established. It is particularly encouraging that 10 operating companies of POSCO Group received excellent Compliance Program ratings and that POSCO, a steelmaker, achieved zero incidences of high-consequence injuries. The safety reward program, which originates from POSCO Group's unique corporate culture, testifies to the effects of incentivizing positive performance over penalizing negative performance. Meanwhile, POSCO Group needs to widely publicize its key ESG achievements in alignment with the UN Sustainable Development Goals (UN SDGs).

A (POSCO Holdings) Lee Sungwook As Mr. Secretary General suggested, we will show how POSCO Group's key ESG achievements align with the UN SDGs through this year's sustainability report. In the social area, we are focused on the ESG issue of 'safety'. Since the Serious Accidents Punishment Act took effect, many companies prioritize the prevention of safety accidents. At POSCO, we are going the extra mile to consider potential health issues that may arise in the working environment from the vantage point of 'rights to health'. POSCO has convened the 'Health Advisory Committee' since 2021 joined by labor representatives, executives, and external health experts while measuring the risk level of working conditions and systematically promoting lifecycle-based health management. As such, POSCO remains committed to providing a safe and pleasant workplace to prevent injuries and improving the health and quality of life for employees.

A (Investor) Wang-Kun Shin Starting from this year, the National Pension Service (NPS) added climate change and occupational safety as key management matters. While these factors were reviewed only when relevant issues arose previously, they will be subject to continuous and systemic review efforts even when there are no related issues occurring. This change is highly relevant to POSCO Group, and the National Pension Service expects to have more active engagement with POSCO Group in this regard. POSCO Holdings has been recognized for its exemplary performance in the occupational safety area compared to other companies, and has always been a cooperative dialogue partner for the NPS. The NPS expects that POSCO Holdings set yet another example in addressing climate change issues by actively engaging with the NPS and transparently disclosing its major accomplishments.

Q. Can you share your suggestions on key ESG issues and responses in the governance area?

A (Investor) Wang-Kun Shin When it comes to POSCO Holdings' outside director appointment process, the Director Candidate Recommendation Committee is currently mandated to screen candidates for their qualifications and recommend candidates. Meanwhile, the current approach of engaging incumbent outside directors in appointing their successors may give rise to concerns over shareholders. Global leading companies nominate outside director candidates by collecting feedback from wide-ranging stakeholders and seeking advice from external specialized organizations to verify the independence and expertise of these candidates. POSCO Holdings will benefit from adopting such a system facilitating interactions with various stakeholders.

A (POSCO Holdings) Kim Huntae We appreciate your invaluable feedback on the nomination of outside director candidates. If I add some comments on the point you made, POSCO has operated the Outside Director Recommendation Advisor Panel solely composed of external experts since 2004 to ensure incumbent outside directors do not influence the appointment of their successors. The panel engages in robust assessments to recommend candidates five times the number of directors to be appointed to the Director Candidate Recommendation Committee, and the finalists chosen by the Committee through qualification assessment are appointed as outside directors through the decision made by the Annual General Meeting of shareholders.

A (Governance expert) Jongsoo Han Ethical management warrants greater focus in operating the Board of Directors. While it is true that POSCO Group is a leader in ethical management among Korean businesses, this leadership status is not always fully evident in its Board operations. I expect POSCO Group to rigorously apply its ethical management guidelines to the Board of Directors as well. Its outside director appointment process also needs to be improved through proactive efforts, shifting away from simply following past practices in operating the Board and appointing its members.

Q. Can you share your suggestions for risk management and opportunity creation?

A (Governance expert) Jongsoo Han The ESG issues identified through double materiality assessment are primarily related to risks. Given that POSCO Group is moving beyond steel to transition into a leader in eco-friendly future materials, my impression is that the potential of many ESG issues to create opportunity for the Group has been rather underestimated. Apart from risk management, POSCO Group also needs to explore ways to create new values and opportunities. It is critical that such values and opportunities are discovered in diverse business areas beyond steel, and efforts are needed to generate tangible outcomes in so doing.

A (POSCO Holdings) Yoon Youngju Founded as a steelmaker, POSCO Group is now advancing into the wider business areas of rechargeable battery materials that are essential in shaping a green tomorrow. It is noteworthy that we established a full value chain for rechargeable battery inputs from raw materials to final materials. This will surely help us improve supply chain efficiency and hone the competitive edge of our raw material business. For instance, reclaiming lithium, nickel, and cobalt from end-of-life batteries for reuse through recycling delivers both reliability in raw material supply and demand and cost savings for waste disposal. This also creates social value through the resources conserved and environmental pollution reduced. While the rechargeable battery market is faltering temporarily, POSCO Group continues with our investment to acquire high-quality resources and remains agile in embracing future innovative technology so that we could maximize performance when the market recovers.

A (Chosun Refractories) Dong-Chan Kim Chosun Refractories produces refractories highly resistant to high-temperature conditions that characterize blast furance and electric arc furnace operations, and engages in on-site disassembly and construction at POSCO's operations. Such working conditions inevitably expose our employees to increased health and safety risks. To minimize safety risks, we aim to actively team up with POSCO in terms of equipment and facilities used on-site.

A (HD Korea Shipbuilding & Offshore Engineering) Kim Joonho Risk management is instrumental from the supply chain perspective. POSCO is one of our key suppliers, and this means that when POSCO fails to properly practice risk management, this will bring immense impact to our operations. Such risks may include natural disasters or strikes staged by shipping companies. We expect POSCO to develop its internal carbon information system on steel materials to help us accurately measure Scope 3 emissions.

A (POSCO Holdings) Kim Hee As more and more stakeholders demand disclosure of carbon emissions data, we have established a system to manage our carbon emissions and intensity by process and product unit to effectively respond to the Carbon Border Adjustment Mechanism (CBAM). This supports our ability to effectively cater to customer requirements.

A (POSCO Holdings) Han Youngah Let me share my views on risk management from the investor perspective. We remain committed to attaining the three goals we set when transitioning into a holding company structure through spin-off. First, we are redirecting profits generated towards areas with high ROI and symbolic significance. A case in point is rechargeable battery business. Second, we strive to become a shareholder-friendly company. We paid KRW 10,000 in minimum dividends, and will continue to apply the dividend policy we set in 2023. Third, we continue to establish sound and transparent governance. One common concern raised by external investors is related to uncertainties that derive from change in top leadership and risks involving the Board of Directors. POSCO Holdings is clearly aware of such market concerns, and is engaging in consulting to internally pursue improvement. In 2024, we will disclose specific improvement plans and take action accordingly.

Double Materiality Assessment

Special Page ② Results of Direct Stakeholder Communication (FY2023)

As a holding company, POSCO Holdings operates a POSCO Group-level ESG risk response system developed to ensure effective response to internal/external ESG risks. Group-wide ESG issues raised through wide-ranging channels are compiled by the Corporate Compliance and Ethics Team of POSCO Holdings (ESG), and key issues are reported to the Board of Directors with C-level management meetings including the Group ESG Council playing a pivotal role in developing responses.

In 2023, we received and addressed a total of 156 ESG issues at the Group-wide level by leveraging our ESG risk response mechanism encompassing ESG NDRs, investor conference calls, and e-mails. By area, these issues were categorized into 69 environmental issues, 59 social issues, 20 governance issues, and eight cross-cutting issues.

By agenda, 50 issues were associated with GHG emissions and 37 issues with human rights. By stakeholder group, inquiries from investors and insurers accounted for the largest portion with 81 issues, followed by 30 issues from customers and suppliers and 27 issues from ESG rating agencies.

We prepared this report in a way to fully describe the major inquiries identified through stakeholder communication and the progress we made in addressing them. We also accommodated the request from global investors to make our sustainability reports available in both Korean and English simultaneously, publishing our sustainability report in English and Korean concurrently starting from this year. Going forward, POSCO Holdings will engage in open communication with stakeholders to drive sustainable change together.

Issues Identified through Direct Communication with Stakeholders (156 issues)

By Area	Issues	Percentage
Environmental	**69**	**44%**
Social	**59**	**38%**
Governance	20	13%
Cross-cutting	8	5%
By Agenda	**Issues**	**Percentage**
GHG emissions	**50**	**32%**
Human rights	**37**	**24%**
Governance	14	9%
Supply chain	10	6%
Biodiversity	9	6%
Ethics/compliance	9	6%
Health & safety	5	3%
Others	22	14%
By Stakeholder Group	**Issues**	**Percentage**
Investors/insurers	**81**	**52%**
Customers/suppliers	**30**	**19%**
ESG rating agencies	**27**	**17%**
Central/local governments	3	2%
Local communities	2	1%
Others	13	9%

Area	Agenda	Major Stakeholder Inquiries	Page
Environmental	GHG emissions	• Rigorous analysis of carbon neutrality roadmap scenarios through transition risk reviews • Need for more robust Scope 3 emissions measurement and external verification • Additional explanation on bridge technology and update on the current status of low-carbon investments and technology developments including HyREX technology development	50 160 38~42
	Biodiversity	• Details of NDPE implementation of the palm plantation in Indonesia • Update on the studies conducted on plant construction in Argentina	151~155 71~72
Social	Local community/ indigenous peoples	• Improvement of the grievance system for indigenous peoples near the palm plantation in Indonesia	152
	Supply chain	• Disclosure of due diligence plans developed for key supply chains and due diligence results	95~96
	Human rights	• Update on the progress made on the labor union issues of POSCO ASSAN TST in Türkiye • Development of measures at the HQ level to prevent labor issues at overseas operations • Disclosure of human rights due diligence results and improvement plans for overseas operations • Disclosure of the human rights due diligence conducted on MPCC in Myanmar and its details	144~146 147~148 149 102
Governance	Governance	• Explanation of the CEO/director appointment process	128~129
Others	ESG disclosure	• Proposal to simultaneously publish both Korean and English reports to address the inappropriate time lag in accessing critical information caused by the choice of language • Prepare for the ESRS, the ISSB Standards and other ESG disclosure standards and make additional disclosures on new global disclosure metrics	Simultaneously publish this year's report in Korean/English on June 28, 2024 (Fri.) Disclose ESG performance in line with ISSB's 4 pillars, reflect the ESRS in updating the ESG Factbook

Environmental



Climate Change Response (TCFD Report) 35

Energy 58

Biodiversity 66

Environmental Management 73



POSCO HOLDINGS 2023

TCFD Report

Climate Change Response

POSCO Group established and announced the 2050 carbon neutrality roadmap for each of our carbon-intensive domestic operations, including POSCO, POSCO INTERNATIONAL, and POSCO FUTURE M. We also strive on multiple fronts throughout our operations to reduce GHG emissions, stepping up our efforts to join in on the global initiative to fight climate change.

This year's TCFD Report features the resilience of the steel business seen from the viewpoint of physical/transition risk as demanded by global disclosure standards, the analysis of climate-related risks affecting our key business operations, and the proportion of Group operations that align with the EU Taxonomy in a book-in-book format.

Looking ahead, we will further fine-tune our governance, strategies, risk management, and targets & metrics for climate-related risks and opportunities while reaching out ever closer to investors and shareholders.

Climate Change Response

GOVERNANCE

Climate Change Response Management System

POSCO Holdings recognizes climate change both as a key risk and a strategic opportunity to position itself as a leader of eco-friendly future materials, and is working on multiple fronts to set and manage GHG emissions reduction targets, establish an organizational system, and make relevant facility investments across our overall operations. The Group ESG Council, a C-level management consultative body composed of POSCO Group's leadership, and the Group Management Meeting attended by presidents of global operations serve to manage the carbon management status of respective key operating companies as the key agenda on a quarterly basis. Projected climate-related risks, their corresponding scenario analyses and the progress made are reported to POSCO Holdings' Board of Directors.

To accelerate our progress towards the 2050 carbon neutrality goal and bolster the role of the Group-wide control tower, we created the Carbon Neutral Team: this Team was established by integrating POSCO Holdings' Steel Business Team and Hydrogen Business Team with POSCO's Carbon Neutral Strategy Office, and headed by one of our Senior Executive Vice Presidents. The Team is tasked with developing POSCO Group's carbon neutrality implementation strategy while reviewing and coordinating issues that may occur at respective operating companies in moving towards the carbon neutrality roadmap to support its systemic implementation. In tandem with this, POSCO, POSCO INTERNATIONAL, and POSCO FUTURE M which collectively represent 99.9% of the Group's total carbon emissions operate their own dedicated organizations to effectively respond to climate change.

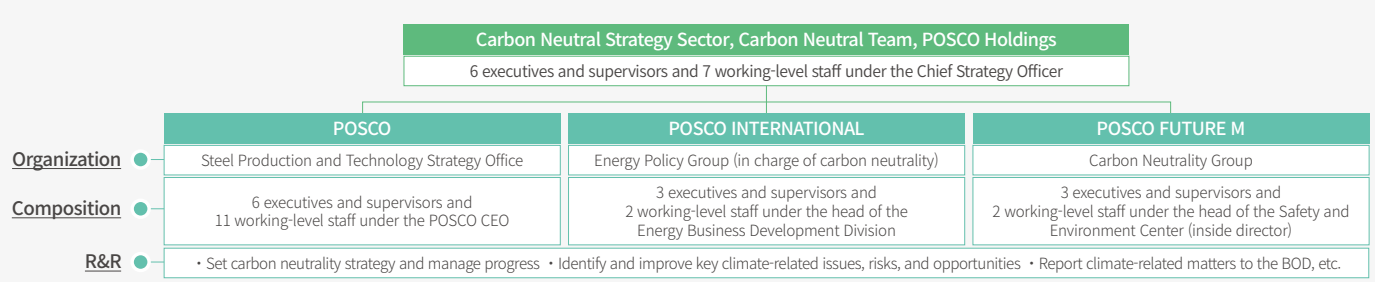
In line with the creation of the Carbon Neutrality Team at POSCO Holdings, POSCO transferred the operational function of the Carbon Neutral Group up and running since 2022 into the Steel Production and Technology Strategy Office. The Steel Production and Technology Strategy Office has been responsible for establishing a low-carbon production system through electric arc furnace equipment investment and others, and will now take the lead in systematically pursuing the decarbonization of our steel business in sync with the 2050 carbon neutrality roadmap.

POSCO INTERNATIONAL organized and operated a Carbon Neutrality Task Force following the merger with POSCO ENERGY in 2023, and moved on to set up a new regular organization in charge of carbon neutrality in April 2024 under the Generation Business Development Office at the Energy Business Development Division to elaborate on its carbon neutral strategy and bolster its execution.

POSCO FUTURE M has operated the Carbon Neutral Group since 2023 led by the Head of Safety and Environment Center under the direct leadership of its CEO. These dedicated organizations serve to establish the carbon neutrality roadmap of respective operating companies while reporting key issues that may affect their business operations including climate-related risk and opportunity, to their Board of Directors and top management, systematically supporting informed business decision-making.

Furthermore, the Group GX Council has been up and running since 2024 under the leadership of the leader of the Carbon Neutrality Team at POSCO Holdings. This Council reviews the progress made on carbon neutrality-related investment, production, and R&D at the Group level and coordinates relevant issues to pursue effective decarbonization efforts at all levels of the Group.

POSCO Group's Carbon Neutrality Organization (as of Apr. 2024)



Board of Directors

POSCO Holdings' Board of Directors is central to our efforts to review Group-level ESG strategies, policies, and management systems, including climate-related activities, and to play a supervisor role in monitoring key ESG issues and their progress made.

- The role of the ESG Committee stipulated in the
  Board of Directors' Operational Regulations

Agendas Reported to the Group ESG Council/ESG Sessions (2023)

Date of Reporting	Agenda
Mar. 24, 2023	POSCO's 2050 carbon neutrality roadmap roll-out and One-Voice
	POSCO FUTURE M's mid/long-term RE100 response plan
	POSCO's EU CBAM trend and response plan
Jun. 16, 2023	POSCO INTERNATIONAL's 2050 carbon neutrality roadmap
	POSCO FUTURE M's carbon neutral strategy and action plan
Aug. 25, 2023	POSCO Group's physical risk analysis results and response plans for key operations
Nov. 9, 2023	POSCO FLOW's Scope 3 emissions calculation results and reduction plans for logistics operations
	POSCO's internal carbon pricing system operational plans
May 9, 2024	POSCO carbon neutrality roadmap roll-out
	Eco-friendly financial KPI management strategy in line with the EU Taxonomy

Policy

- POSCO Holdings' Environmental Policy
  - Basic principle: Develop a climate change risk assessment system, reduce GHG emissions, etc.
  - Implementation plan: Incorporate climate change risk into the company-wide risk assessment system, develop and implement GHG emissions reduction plans, make climate disclosures, etc.

Climate Change Response

STRATEGY

POSCO Group's Mid/long-term Carbon Emissions Reduction Plan

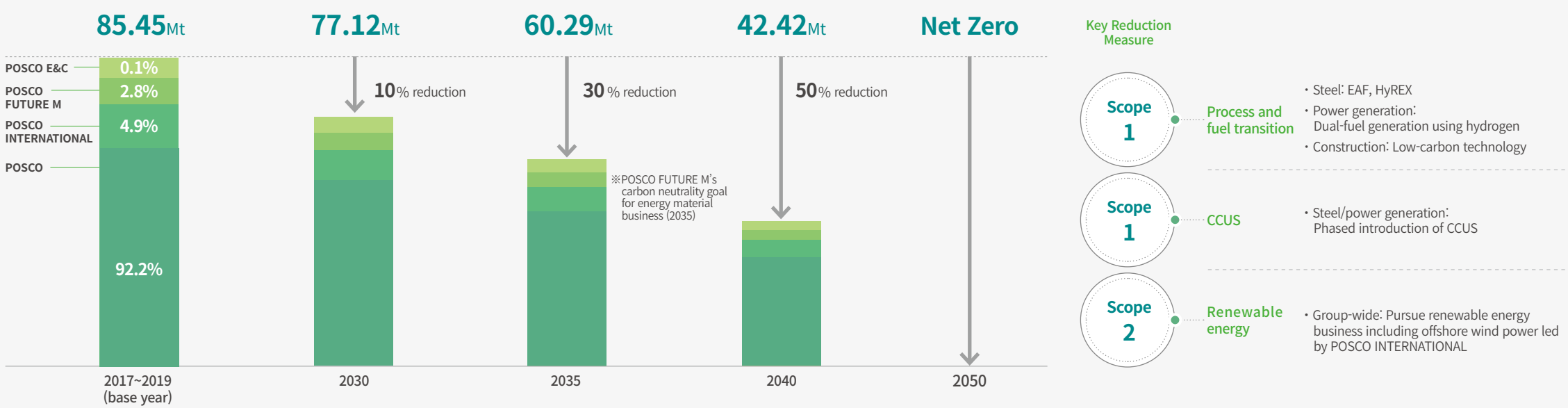
POSCO Group established and announced its 2050 carbon neutrality roadmap for each of our domestic operations generating large quantities of carbon emissions – POSCO, POSCO INTERNATIONAL, and POSCO FUTURE M.

While the four operating companies in Korea that announced their carbon neutrality roadmap vary distinctively in terms of their carbon neutral goal announcement, base year, and business characteristics, we will analyze our Group-level carbon emissions reduction trajectory over the mid-to-long term (Scope 1 and 2) in line with the base year of POSCO which represents the largest proportion of our total carbon emissions (92%) and ensure the integrated management of our carbon neutrality roadmap.

To reduce Scope 1 emissions, we will focus on the process transition to hydrogen-based ironmaking (HyREX), dual-fuel power generation using hydrogen, and CCUS (Carbon Capture, Utilization, and Storage) that align with our steel and other core businesses.

As to Scope 2 emissions, we aim to expand our Group-level renewable energy business including photovoltaic and offshore/onshore wind power generation. In tandem with this, we will monitor the progress made by respective affiliates in progressing towards their carbon neutrality roadmap, and keep our integrated carbon neutrality roadmap up to date with the shifting market and technology landscape.

Group-level Carbon Emissions Reduction Plan



Climate Change Response

STRATEGY

POSCO's Carbon Neutrality Roadmap

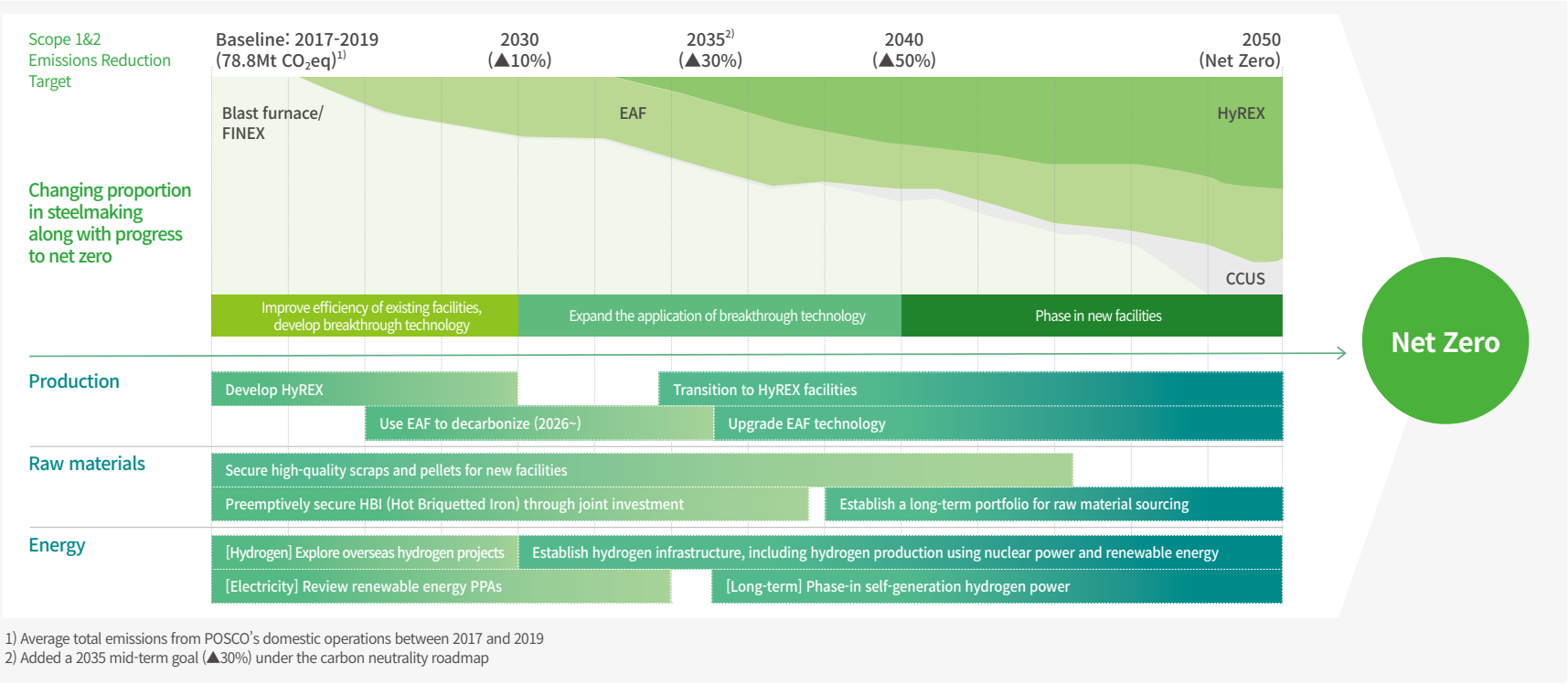
POSCO established its 2050 Carbon Neutrality Roadmap encompassing its overarching mid/long-term strategies for raw materials, investment, energy, and technology development to reach net zero by 2050.

POSCO plans to reduce its carbon emissions by 10% by 2030, 30% by 2035, and 50% by 2040 against the baseline of 78.8 million tons, its three-year average carbon emissions between 2017 and 2019, and become net zero by 2050.

Journeying towards its 2050 net zero goal, POSCO will shift to low-carbon fuels and raw materials for its currently-operating facilities and develop low-HMR (Hot Metal Ratio) technology along with improving the efficiency of existing facilities in the short term while introducing highly feasible bridge technologies such as Electric Arc Furnace (EAF) and CCUS in the mid term.

Ultimately, POSCO aims to develop HyREX (Hydrogen Reduction) technology to ensure its steelmaking process does not generate GHG emissions.

POSCO's Carbon Neutrality Roadmap



1) Average total emissions from POSCO's domestic operations between 2017 and 2019
2) Added a 2035 mid-term goal (▲30%) under the carbon neutrality roadmap

Carbon Neutrality Investment Plan*

~2030

2022
- Initiated the design of a HyREX Demo Plant

2023
- Approved EAF installation at the Gwangyang Steelworks

2026
- Operate 2.5 Mt-capacity EAF at the Gwangyang Steelworks
- Operate a 300t-capacity top and bottom blowing furnace at the Pohang Steelworks

2030
- Complete the development of commercial HyREX technology

2050
- Introduce HyREX as a way to achieve carbon neutrality

2050

*The above timelines are subject to change depending on local and global circumstances.

Climate Change Response

STRATEGY

POSCO is committed to reducing carbon emissions on multiple fronts in line with its 2050 carbon neutrality roadmap.

To progress towards this roadmap, POSCO is primarily working on ① blast furnace-based low-carbon bridge technology, ② converter and EAF-based bridge technology, ③ FINEX-based bridge technology, and ④ HyREX technology.

① Blast furnace-based low-carbon bridge technology: Using low-carbon fuels and raw materials

The iron ore put into the blast furnace is broadly categorized into sintered ore and pellets, with the former comprising over 70% of total with the highest portion. Pellets are produced by milling, sorting and shaping iron ore into uniform-sized spherical lumps, and switching from sintered ore to pellets for blast furnace operations generates the effect of saving on the fossil fuels that go into sintered ore production.

HBI (Hot Briquetted Iron) is a type of direct reduced iron (DRI) produced by removing oxygen from iron ore. Feeding HBI into the blast furnace has the potential to reduce the consumption of coking coal required for reduction in the blast furnace process. Generally, using 100kg of HBI in producing one ton of molten iron results in lowering CO_2 emissions by 100kg when compared to using sintered ore.

Injecting low-carbon natural gas in lieu of coking coal is another way to decrease the intensity of carbon emissions. Methane (CH_4), a main component of natural gas, breaks down to carbon monoxide (CO) and hydrogen (H_2) when reformed, generating hydrogen-containing gas in the process. Injecting such gas into the windpipes at the bottom of the blast furnace as reductant could relatively save on the use of coking coal.

POSCO developed a plan to establish relevant technology by equipping its blast furnace with a natural gas injection system in the first half of 2023, and aims to complete byproduct gas purification/injection technology for its steelworks by 2025. Such blast furnace-based bridge technologies will be pooled together into a package to establish a low-carbon blast furnace model.

② Converter and electric arc furnace-based bridge technologies: Electric arc furnace mixing, top-bottom blown converters

A converter is a large jar-shaped container for molten iron produced in the blast furnace, and serves to produce molten steel by blowing oxygen into the molten iron to eliminate impurities and refining it to desired temperature and composition. In producing one ton of molten steel, approximately 80% of the total carbon emissions generated come from the molten iron production process. As such, converter-based bridge technologies intend to reduce molten iron used by the converter while increasing the amount of scraps. There are two main approaches to reducing molten iron within the converter.

First, EAF steel mixing combines molten iron from the blast furnace and molten steel from the EAF to reduce the consumption of molten iron in the converter. The EAF produces molten steel by recycling used steel scraps and is able to reduce carbon emissions to one-fourth against those of the blast furnace. The EAF, however, is limited by the content of residual elements in steel scraps in producing premium steel. Currently, premium steel – advanced automotive sheets and shipbuilding plates – is mostly produced by refining molten iron from the blast furnace through the converter. This prompted POSCO to initiate a large-sized EAF with 2.5 million tons annual capacity from 2026 onwards to develop technology to mix molten iron from the blast furnace with molten steel from the EAF within the converter to mitigate carbon emissions all while producing premium steel. Producing 2.5 million tons of molten iron through the EAF is expected to result in up to 3.5 million tons of carbon emissions avoided per year compared to POSCO's current blast furnace process.

Second, the top-bottom blown converter technology secures additional heat sources required to increase the amount of steel scraps used in the converter by blowing oxygen in from the top and the bottom of the converter. The converter has no external heat source, and uses the heat self-generated through the oxidization of impurities in molten iron. As a result, the temperature of molten iron declines in proportion to the steel scraps used. Meanwhile, the top-bottom blown converter technology process provides extra heat sources by blowing in oxygen from the bottom as well as from the top, which in turn maximizes the efficiency of secondary combustion and heat conductivity inside the converter.

One remarkable advantage of steel is that steel scraps are easily reclaimed and can be recycled numerous times. EAF steel mixing, top-bottom blown converter, and other technologies that have the potential to leverage large amounts of steel scrap in the converter in place of molten iron are collectively called 'low-HMR (Hot Metal Ratio) technology'. By developing low-HMR technology that uses molten iron produced through POSCO's proprietary FINEX technology, it is possible to bring converter molten feed to 70% and below. This is expected to reduce the production of molten iron and mitigate GHG emissions from the ironmaking process as a result.

Climate Change Response

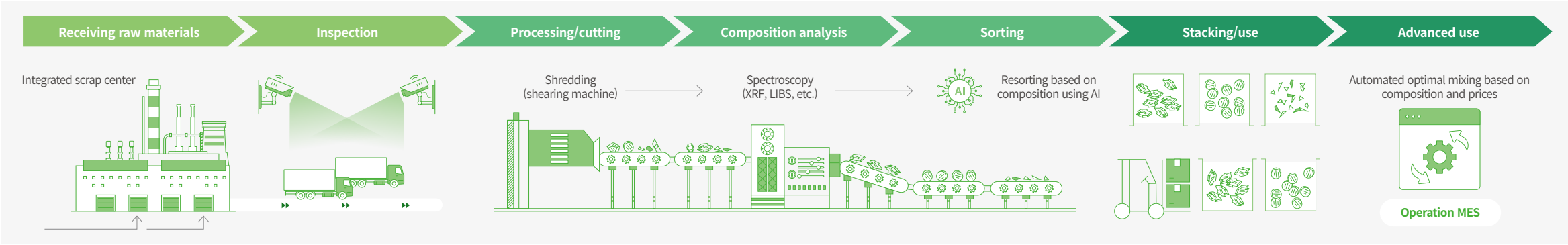
STRATEGY

Scrap Supply/Demand and Management

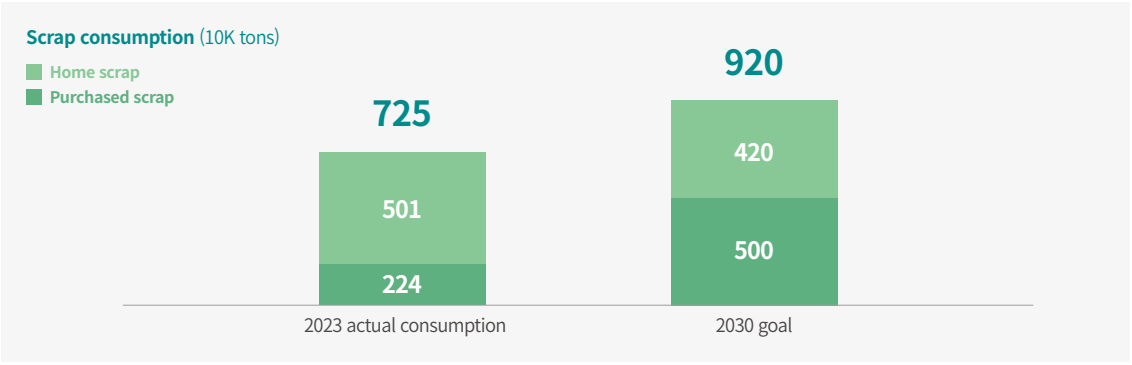
POSCO's mid/long-term iron scrap procurement strategy defined in alignment with its 2050 carbon neutrality roadmap and internal/external conditions associated with iron scrap drives its efforts to source scraps in a cost-effective way.

This starts with expanding scrap collection locations across the nation by 2026 with POSCO INTERNATIONAL leading the way and establishing integrated scrap centers both outside and inside the company for scrap sorting, storage, and processing to ensure reliable supply of iron scraps. Over the mid-to-long term, POSCO plans to engage in long-term contracts and joint yard investments to source scraps overseas, ultimately reaching 9.2 million tons in scrap procurement by 2030.

Overview of the Integrated Scrap Center



Iron Scrap Use Plan



*The consumption of iron scrap is subject to change according to our future carbon neutrality strategy.

Improvement Task

Infrastructure development	• Build integrated scrap centers (inside/outside the company) • Build an integrated visual management system	• Use smart CCTVs for real-time scrap supply monitoring • Secure additional scrap-only yard sites within the Pohang/Gwangyang Steelworks
Scrap sorting/ storage	• Analyze tramp elements contained in scraps through spectroscopy • Build a composition-based scrap brand system	• Improve usability through shredding of mid/large-sized scraps • Develop a yard inventory management system and an automated receiving/release system
Advancement of application technology	• Develop mixing methods optimized for each type of steel through analysis of elements contained in different types of scraps • Develop technology to use elements contained in scraps (Ni, Cr, Cu., etc.) • Ensure more rigorous monitoring of scrap receiving, inventory, and use	

Climate Change Response

STRATEGY

③ FINEX-based bridge technology: CCU

In partnership with the Research Institute of Industrial Science and Technology (RIST), POSCO has been undertaking a public-private national R&D project since 2021 to demonstrate CCU (Carbon Capture and Utilization) technology separating and capturing high-purity CO_2 from the high-temperature gases generated from blast furnaces, converters, and FINEX melting furnaces and injecting this byproduct gas into the coke oven to be used as heat source for power generation.

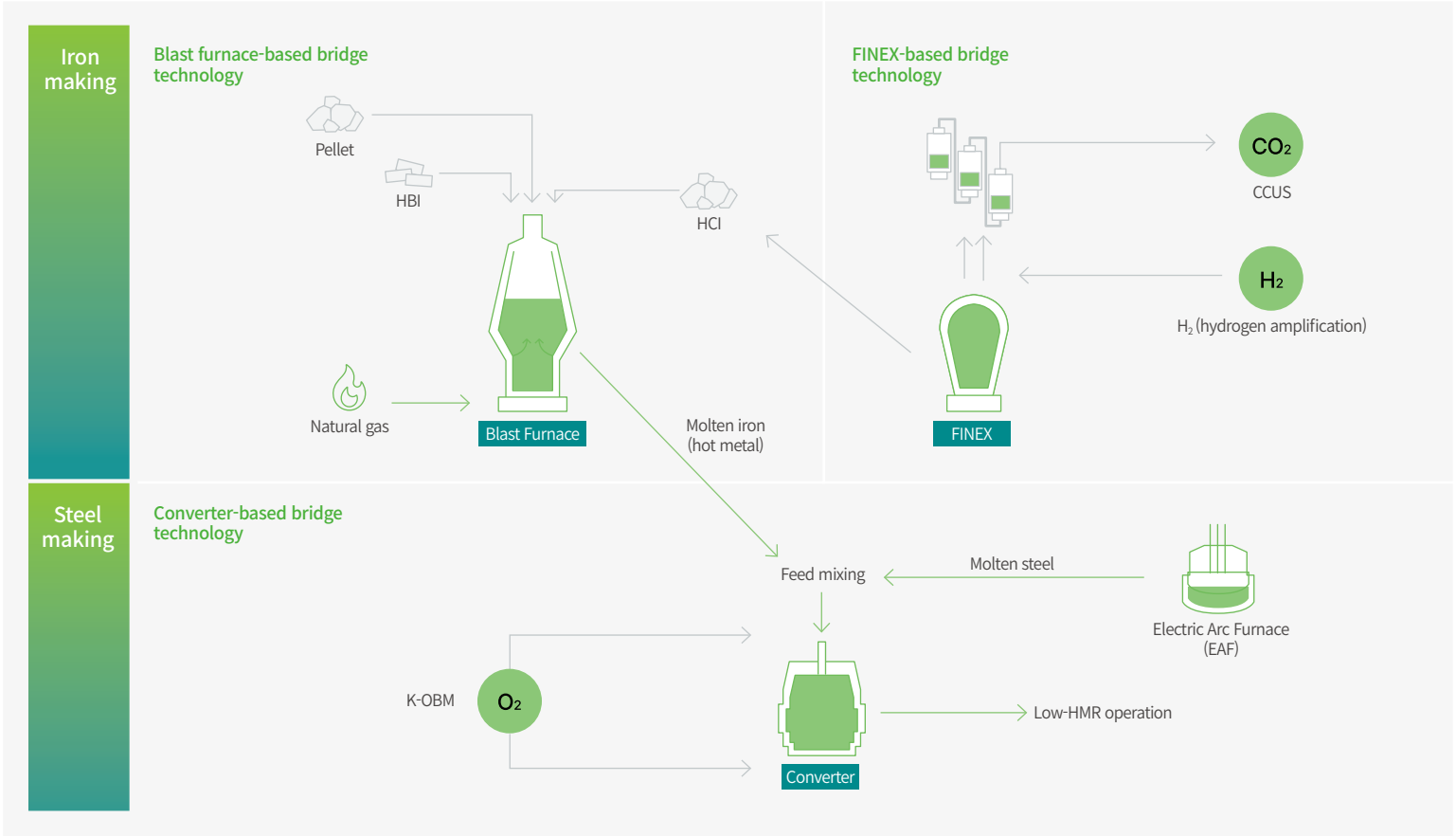
The demonstration conducted at the Pohang Steelworks in January 2024 proved the viability of injecting medium-purity gas 65~70% in CO_2 level into the coke oven: this approach is cost-effective as it does not require additional energy input to increase the purity of CO_2 gas, and also brings the effect of increasing the calorific value of COG (Coke Oven Gas) by nearly 7%. When scaled for application at the Pohang and Gwangyang Steelworks, this CCU technology is expected to avoid 320,000 tons of CO_2 emissions per year.

Furthermore, work is underway to commercialize the production of liquid carbon dioxide using medium-purity CO_2 byproduct gas. This is expected to make possible the cost-effective production of liquid CO_2 with 99.99% purity to broaden our industrial gas product portfolio and reduce our CO_2 emissions by 170,000 tons each year per 200,000 tons of liquid carbon dioxide produced.

List of Key CCU Patents (POSCO, RIST)

Category	Description
1019408380000	Equipment for preparation of injection gas into coke oven and method of the same
1015337740000	Device for gas injection into coke oven
1015608860000	Coke oven and method for injection of reaction gas in coke oven using the same
1018193400000	Gas injection device for coke oven
1018791060000	A method of increasing the temperature of injecting gas into coke oven and coke oven
1020430120000	Equipment for preparation of injection gas into coke oven and method of the same

Low-carbon Bridge Technology



Climate Change Response

STRATEGY

④ POSCO HyREX technology

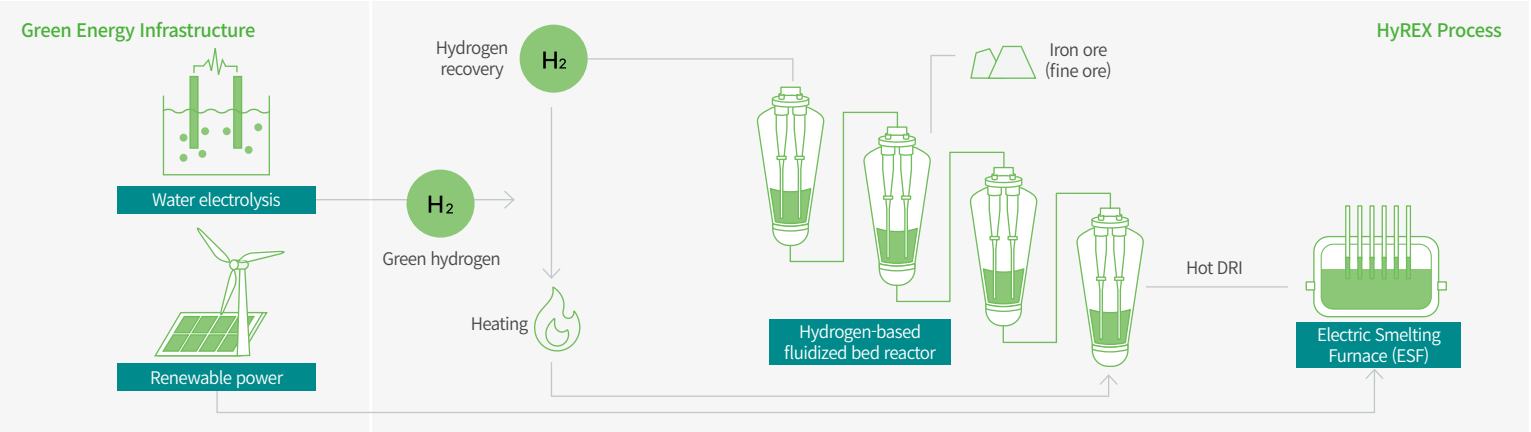
Hydrogen-based steelmaking replaces coking coal with hydrogen as reductant and heat source for the ironmaking process to dramatically reduce GHG emissions. HyREX, POSCO's proprietary hydrogen-based steelmaking technology, employs fluidized bed reactors from its already-commercialized FINEX process, and brings considerable advantages in raw materials and equipment technology when compared to the shaft furnace model adopted by overseas steelmakers. While the shaft furnace is charged with pellets produced by processing iron ore into uniform-sized spherical shape, HyREX is able to use fine ore without additional treatment to facilitate the sourcing of raw materials and enable cost-effective production.

In terms of equipment technology, HyREX adopting fluidized bed reactors brings added benefits in temperature control when compared to the shaft furnace. More to the point, the FINEX process POSCO developed to employ fluidized bed reactors has already adopted hydrogen injection and DRI (Direct Reduced Iron) technologies that are key to hydrogen-based steelmaking, and thus is recognized as the most optimal pathway to achieving hydrogen-based steelmaking.

POSCO initiated the land approval process (1.35 million m^2) in 2021 to build a HyREX steelmaking plant at the Pohang Steelworks, and signed an MOU in July 2022 for joint engineering work with Primetals which has its own track record in designing FINEX equipment. Under this MOU, POSCO is co-designing key equipment for a HyREX demonstration plant, and will build a HyREX test facility with 300,000 tons annual capacity at the Pohang Steelworks.

In 2023, a 50kg/batch test fluidized bed reactor was installed at the Technical Research Laboratories in Pohang to demonstrate hydrogen-based fluidized reaction technology. In April 2024, our Pohang Steelworks completed the ESF (Electric Smelting Furnace) test facility with 1 ton/hour capacity and successfully tapped molten steel from the furnace. In so doing, POSCO reached foundational milestones in developing ESF element technology and completing its HyREX technology. Moving forward, we will develop and commercialize hydrogen-based fluidized bed reactor technology by 2030 which lies at the core of the hydrogen-based steelmaking process, and gradually transition from conventional furnaces into HyREX facilities by 2050 to achieve our net zero goal.

HyREX (Hydrogen Reduction) Process



Opening POSCO's HyREX Development Center



In 2024, POSCO opened the HyREX Development Center at the Pohang Steelworks and expanded its net zero organization.

This Center houses the HyREX Project Team overseeing the Center's overall operations, the Investment Planning and Engineering Office dedicated to investment business management, the Low Carbon Iron and Steel Making R&D Center for R&D operations, and POSCO E&C for design work, and will play a key role in constructing test facilities in the run-up to achieving HyREX technology, POSCO's proprietary hydrogen-based ironmaking technology, through the integrated implementation of the entire process from technology research to equipment setup and test operations.

HyREX technology was named national strategic technology in January 2024 in recognition of its strategic importance for national security and its impact on the overall national economy.

In May 2024, the Ministry of Science and ICT set four priorities for its 'Global R&D Flagship Project', including 'developing iron ore optimization technology for Korean-style hydrogen reduction steelmaking (steel)'.

This government-led project prioritizes and supports R&D projects requiring strategic, intensive investments. Developing iron ore optimization technology for Korean-style hydrogen reduction steelmaking aims to identify optimal feedstock conditions needed to realize hydrogen reduction steelmaking technology that has the potential to dramatically reduce carbon emissions in the steel industry.

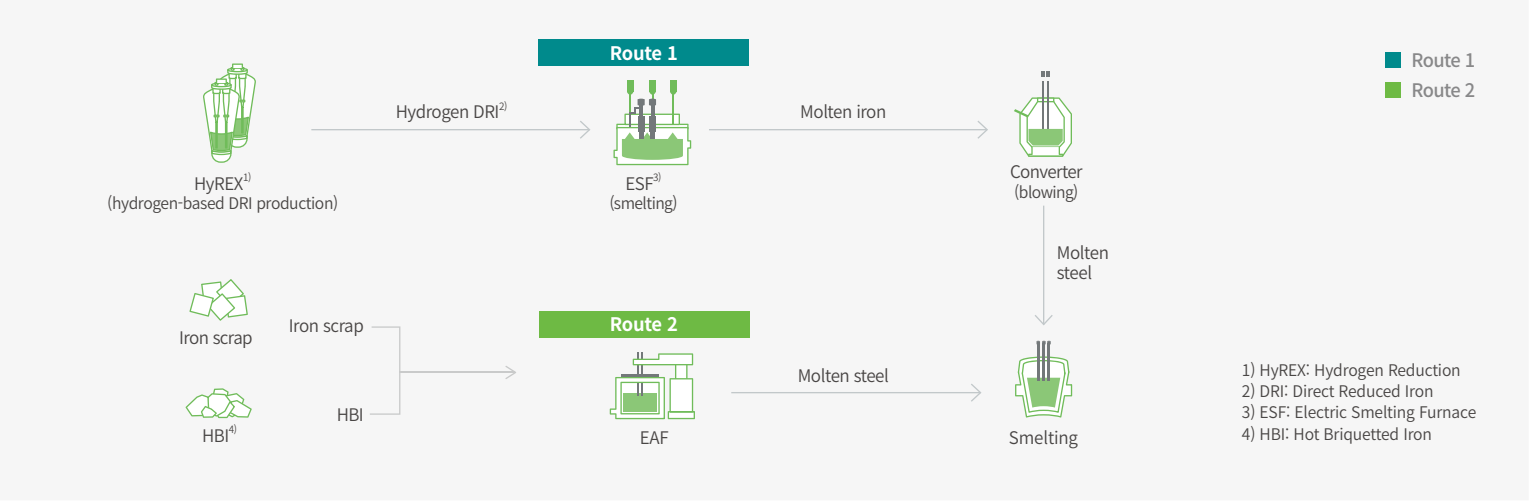
Climate Change Response

STRATEGY

Carbon Neutrality Facility Configuration Scenario

POSCO reviews its technology development in line with wide-ranging scenarios to effectively progress towards net zero. Route 1 feeds DRI (Direct Reduced Iron) produced through HyREX into the ESF (Electric Smelting Furnace) to produce molten iron. This approach is cost-effective as it uses existing steelmaking facilities and is able to produce high value-added steel. Still, it presents challenges to tackle as its cost-effective production is made possible only when infrastructure is established in Korea including for hydrogen supply. Route 2 employs the EAF and feeds iron scrap and HBI (Hot Briquetted Iron) in place of hydrogen DRI to produce molten iron. POSCO will commit to identify optimal facility configurations and production methods to achieve net zero in line with global low-carbon technology development trends, and to cement its leadership in eco-friendly technology in the upcoming global steel market.

Facility Configuration Scenario



Asset Allocation and Planning

To pursue an effective transition into a low-carbon steelmaking system, POSCO expanded and restructured its HyREX and EAF business organizations in 2024, and created the New Steel Engineering Group. The temporary HyREX Task Force Team was scaled into the HyREX Project Team operating directly under the President to be responsible for HyREX technology development and facility engineering. In addition, the Electric Arc and Smelting Furnace Project Team was expanded and restructured into the Electric Arc and Smelting Furnace Project Team under the Gwangyang Steelworks to bolster our on-site execution.

Green Partnership

POSCO has made voluntary disclosures on its climate change activities and GHG emissions to the CDP (Carbon Disclosure Project) since 2003. POSCO endorsed the TCFD in 2020 as the first Korean manufacturing business to do so, and is disclosing its carbon data in accordance with TCFD recommendations. In 2023, POSCO was awarded a Leadership (A-) rating by the CDP in Climate Change Response.

POSCO's Ratings in CDP's Climate Change Assessment



Rigorous Scope 3 Emissions Management

POSCO has been disclosing its Scope 3 emissions through annual sustainability reports, and received third-party verification on Scope 3 emissions in 2022 in conformity with ISO 14064-3* standards. In 2024, a working-level council was created for Scope 3 data calculation led by POSCO, a steelmaker, and attended by POSCO FLOW, the Group's logistics arm, among others. This helps us develop emissions calculation systems and methods on a consolidated basis, and disclosures will be made for annual disclosure items as required by global disclosure standards.

*Detailed guidance on verification and validation of GHG statements

K-EV100

POSCO joined K-EV100 (Korean version of the zero-emission vehicle transition initiative) led by the Ministry of Environment in 2021 and has since been fully endorsing this initiative. POSCO has switched into zero-emission vehicles (EVs and hydrogen vehicles) for the vehicles owned or leased by the company since 2022 to operate 121 such vehicles (16%) in 2023, and will make this switch gradually each year to 100% transition to zero-emission vehicles by 2030.

Climate Change Response

STRATEGY

POSCO INTERNATIONAL's Carbon Neutrality Roadmap

POSCO INTERNATIONAL disclosed its 2050 Carbon Neutrality Roadmap in July 2023. This sets a goal of reducing its carbon emissions by 37% by 2030 from the 2021 base year to eventually reach net zero by 2050. POSCO INTERNATIONAL will achieve this goal by focusing on the acquisition of offshore wind power sources while expanding its hydrogen co-firing/100% hydrogen firing power generation and CCS (Carbon Capture and Storage) businesses.

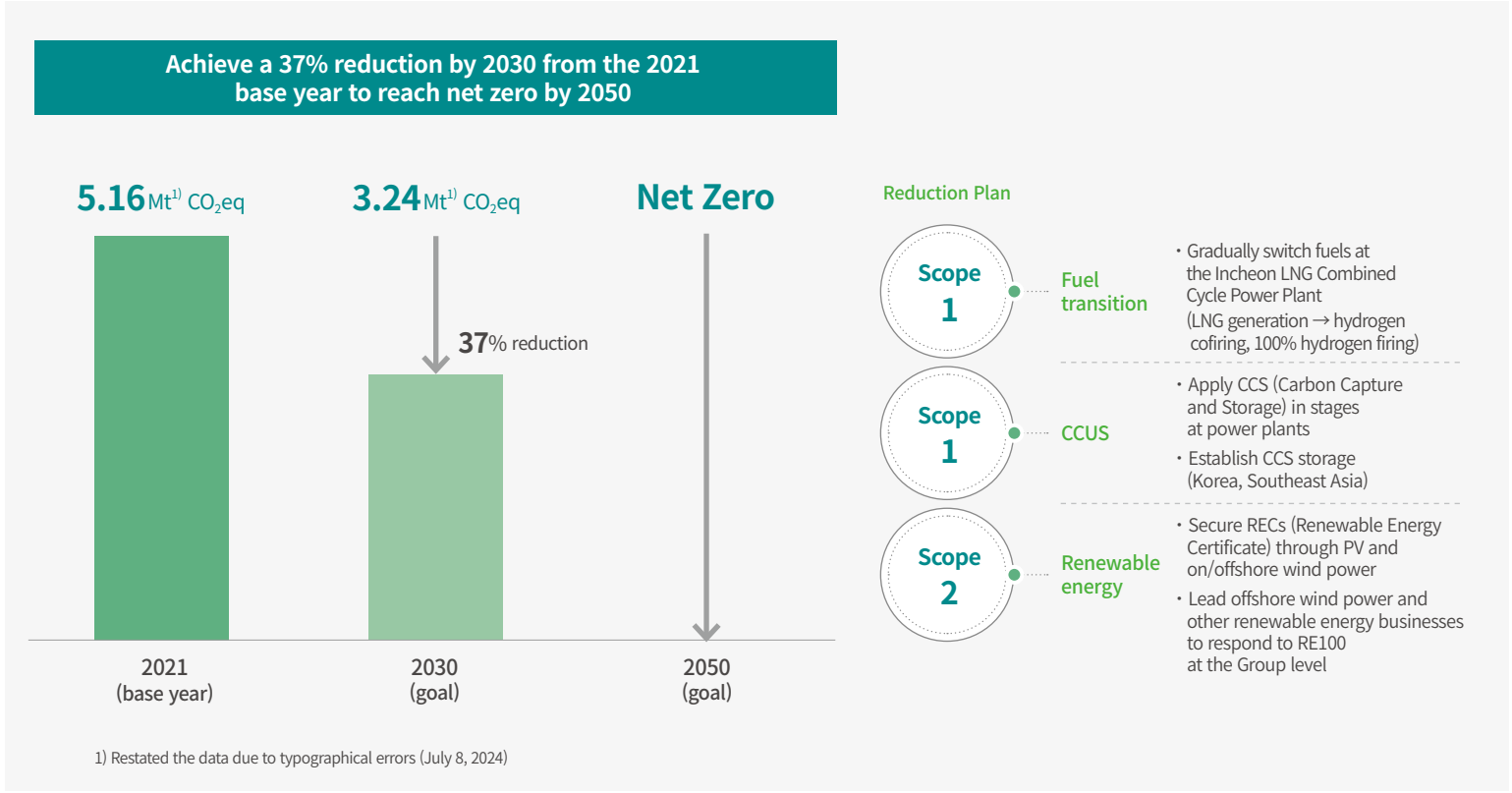
Specifically, the company's reduction plan consists of direct reduction (Scope 1) and indirect reduction (Scope 2) pathways: direct pathways represent direct reduction of carbon emissions through fuel transition and CCS while indirect pathways involve the expansion of renewable energy generation to secure carbon credits.

To achieve direct reduction (Scope 1), POSCO INTERNATIONAL will gradually switch from LNG to hydrogen co-firing/100% hydrogen firing for its key domestic operations – 3.4GW-capacity Incheon Combined Cycle Power Plant – in consideration of government policies and its technology commercialization timeline while adopting CCS technology in stages to mitigate the remaining carbon emissions of the plant. To this end, the CCS Commercialization Group was launched in February 2023 to implement a CCS demonstration project by drawing on the company's capabilities established in undertaking its gas field development project in Myanmar. POSCO INTERNATIONAL plans to progressively scale its CCS business in Korea and abroad, comprehensively taking into account international conventions, economic feasibility of operation, and underground storage technology development among others.

As to indirect reduction pathways (Scope 2), POSCO INTERNATIONAL aims to acquire carbon credits through PV and on/offshore wind power and expand its renewable energy business to respond to RE100 at the Group level.

POSCO INTERNATIONAL's 2050 Carbon Neutrality Roadmap was established for its headquarters and domestic subsidiaries which account for the majority of its GHG emissions in line with the government's 2030 Nationally Determined Contributions (NDC). POSCO INTERNATIONAL will gradually extend its coverage to include overseas subsidiaries to disclose and implement its roadmap in alignment with international standards.

2050 Carbon Neutrality Roadmap



1) Restated the data due to typographical errors (July 8, 2024)

Climate Change Response

STRATEGY

POSCO FUTURE M's Carbon Neutrality Roadmap

In 2022, POSCO FUTURE M declared 'Carbon Neutrality by 2050' and disclosed the company's implementation roadmap aligns with the 1.5°C scenario through the analysis of IPCC's SSP scenarios, and presents mid-term (2030, 2040) and long-term (2050) goals taking into consideration climate-related laws and regulations in Korea and abroad, market and technology development trends, customer requirements, implementation efforts of industry peers, and alignment with POSCO FUTURE M's business strategy. POSCO FUTURE M's carbon reduction strategy is anchored around three pillars to achieve 100% carbon neutrality for its energy material business by 2035 and across its entire operations by 2050.

Firstly, the company will improve its existing facilities and processes to pursue energy efficiency gains. This will be done by switching from equipment and materials that rely on fossil fuels (LPG, diesel, etc.) to electricity-powered high-efficiency alternatives while seeking out collaboration projects with research institutes aiming at reducing GHG emissions to develop relevant technology early on. As process emissions account for 70% of its company-wide GHG emissions, POSCO FUTURE M will shift to low-carbon fuels and introduce CCUS (Carbon Capture, Utilization, and Storage) technology to reduce process emissions to zero by 2050. Lastly, POSCO FUTURE M will scale its PV power generators currently operated at some operational sites to cover its entire operations while diversifying its procurement portfolio through PPAs and REC purchases among others.

Carbon Neutrality Roadmap

Strengthen low-carbon management by introducing GHG emissions reduction technology, expanding renewable energy, and shifting to greener raw materials and fuels

Goal

Achieve Carbon Neutrality by 2050
Become carbon neutrality by 2035 in energy materials business in response to the supply chain carbon neutrality goals of domestic and global customers

Strategy

Process improvement	Renewable energy expansion	Energy efficiency improvement

Milestone

2030	2035	2040	2050
47% reduction	77% reduction	83% reduction	Carbon Neutrality

Process Improvement

- Switch to low-carbon fuels for refractories (BC oil → NG[1])
- Introduce CCUS technology (installing a rotary kiln (RK) pilot plant for quicklime manufacturing) and expand its application (review chemical conversion, mineralization, etc.)
- Shift to raw materials with zero CO_2 emissions for cathode materials (lithium carbonate → lithium hydroxide) and reduce process emissions to zero for energy materials

Renewable Energy Expansion

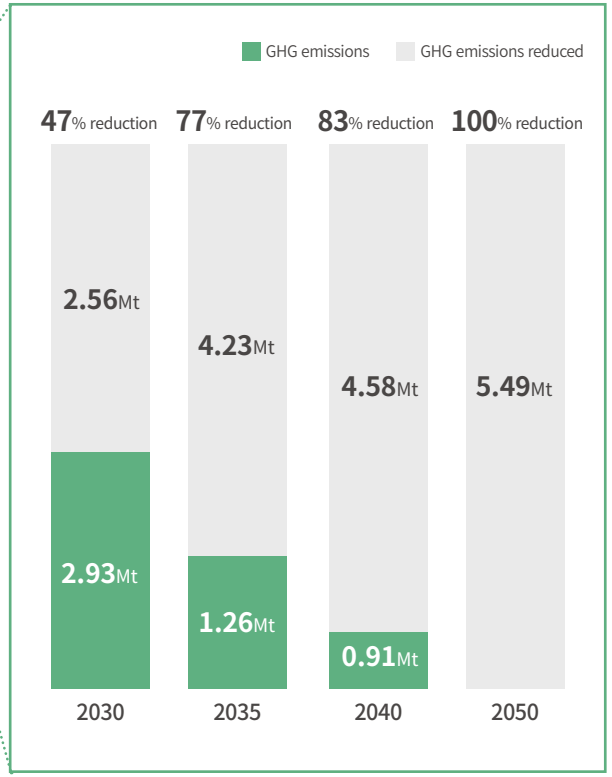
Establish an indirect sourcing system	Expand direct sourcing	Achieve 100% renewable energy
• Purchase RECs[2]/Green Premiums[3] • Expand rooftop PV installation	• Identify internal/external renewable energy business and review equity investment (in cooperation with POSCO INTERNATIONAL) • Participate in large-scale offshore wind power generation at the Group level	• Diversity indirect sourcing channels through third-party/direct/on-site PPAs[4] • Continue to identify and invest in various projects and review joint entry in self-generation business

Energy Efficiency Improvement

- Achieve energy savings through low-temperature sintering of anode materials and singer speed control, and improve the lime material insertion system, etc.
- Continue to reduce power consumption while increasing energy efficiency through facility/process improvement (pump PRM control, automatic trap installation for compressors, etc.)

*For reduction activities undertaken in stages, reductions made by 2050 are reflected.
1) Natural Gas
2) Renewable Energy Certificate
3) Electricity consumers wishing to have their renewable energy power consumption certified may purchase additional premiums in addition to paying their power bills. Green Premiums are sold by KEPCO, and the proceeds go to support renewable energy projects and others.
4) Power Purchase Agreement

Carbon Neutrality Roadmap



Climate Change Response

STRATEGY

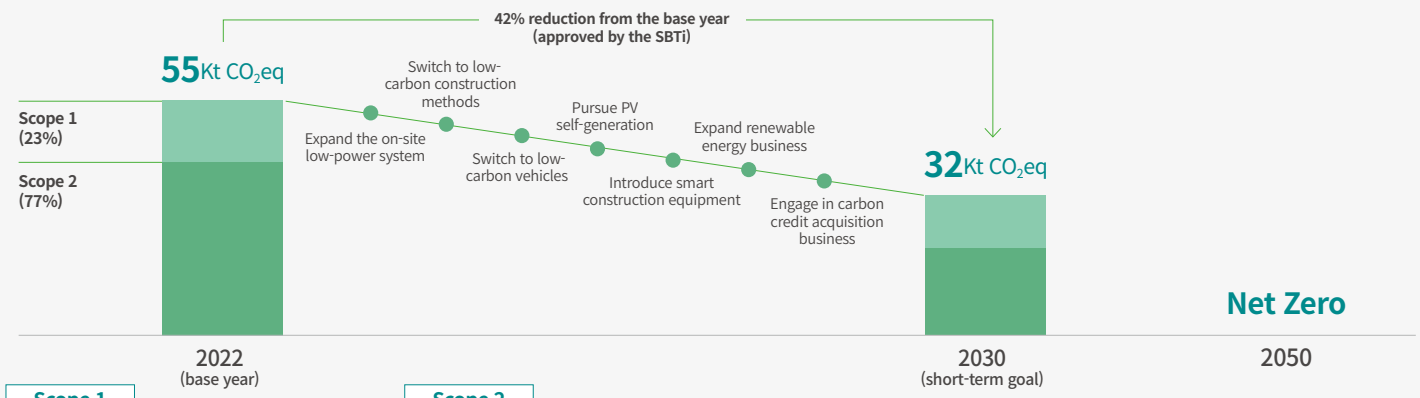
POSCO E&C's Carbon Neutrality Roadmap

POSCO E&C established its 2050 Carbon Neutral Strategy in 2021 as the first construction company to do so in Korea, and set its short-term goals in 2023 to reduce Scope 1 & 2 emissions by 42% and Scope 3 emissions by 25% by 2030 from the 2022 base year in line with the criteria laid out by the Science Based Targets initiative (SBTi). In January 2024, its 2030 short-term carbon emissions reduction targets were approved through the validation performed by the SBTi, which served to establish their objectivity and credibility.

Analysis of POSCO E&C's carbon emissions across the entire value chain from 2022 showed that while carbon emissions from the construction process (Scope 1 & 2) represented nearly 50,000 tons per year or 1% of total emissions, its Scope 3 emissions generated from the production of raw materials along supply chains and the use of sold products (operation of completed buildings) accounted for 3.2 million tons or 99% of total annual emissions with the highest proportion. This underscored the essential need for proactively pursuing reductions in Scope 3 as well as Scope 1 and 2 emissions in consideration of the distinctive characteristics of the construction industry.

In alignment with the reduction targets approved by the SBTi, POSCO E&C will electrify its construction equipment and facilities to shift their fuel from oils to electricity, hydrogen, and hybrid energy sources while improving energy efficiency by expanding Off-Site Construction and developing smart curing systems for the winter season to achieve reductions. In mitigating Scope 2 emissions, the company will introduce an AIoT-assisted real-time power consumption measurement and management system across the entire operations to lower power consumption as much as possible while expanding PV self-generation for its owned buildings and pursuing external renewable energy projects in sync with offshore wind power business to switch from conventional to renewable energy. To mitigate Scope 3 emissions that account for the largest share of total, POSCO E&C will achieve higher ZEB (Zero Energy Building) grades for public housing and accelerate the ZEB business in line with its ZEB technology development roadmap to lower emissions in the building operation phase, and develop low-carbon materials through technology R&D and provide stronger incentives for low-carbon-certified materials to reduce carbon emissions across its supply chains.

Scope 1, 2 Carbon Neutrality Roadmap (Korea and abroad)



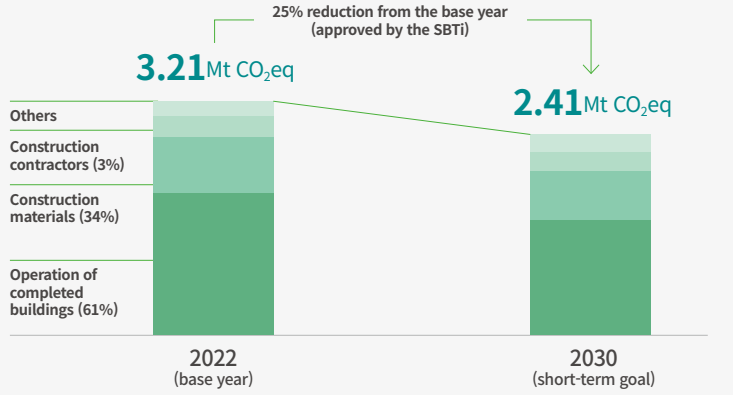
Scope 1

- Switch to low-carbon fuels: Adopt hydrogen, electricity, and hybrid power to construction machinery and vehicles
- Introduce smart construction equipment: Apply the MCS(Machine Control System) to earth work

Scope 2

- Expand the low-power on-site system: Introduce systems to improve energy efficiency for cranes, lifts, and other major construction equipment and to ensure AIoT real-time power management across all construction sites
- Shift to low-carbon construction methods: Develop OSC* technology (modular, pre-fab concrete, etc.) and expand low-energy construction methods
  *OSC (Off-Site Construction): Fabricate standardized construction components at a off-site plant and assemble them at the construction site
- Expand renewable energy business: Increase investment in offshore wind power and others, and sign PPAs (Power Purchase Agreement) for renewable energy supply
- PV self-generation: Install PV panels and ESS (Energy Storage System) on site offices/owned buildings

Scope 3 Reduction Goal (Korea)



Construction materials/ construction contractors

- Expand low-carbon materials through technology R&D
- Strengthen incentives for low-carbon-certified materials and support for contractors with their carbon reduction efforts

Operation of completed buildings

- Pursue higher ZEB grades for public housing and accelerate business expansion in line with the 2030 zero energy technology development roadmap

Climate Change Response

RISK MANAGEMENT

POSCO Group's Climate Change Risk Management System

Response System

POSCO Group established a response system to analyze physical risk caused by climate change including floods, heat waves, typhoons, and rising sea levels as well as transition risk concerning policy, market, technology, and reputation to minimize the resulting financial impact.

Physical and transition risks are managed in the four areas of governance, strategy, risk management, and metrics & targets in line with the TCFD Framework, and this aligns with our Group-wide risk governance system.

Physical Risk Response System

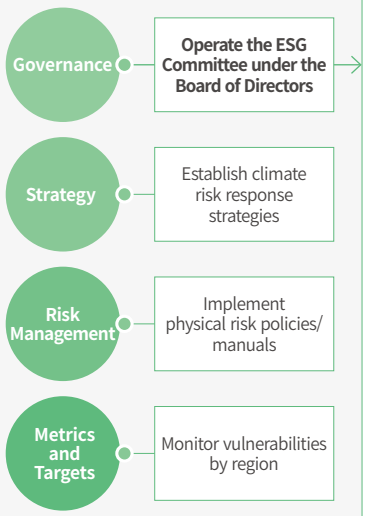
POSCO Group operates our own response process to minimize losses from physical risk and ensure business continuity in accordance with the TCFD-COSO framework.

This starts with identifying climate hazards such as floods in the locations where our global operations are based and assessing our vulnerabilities. Risk assessment results inform our efforts to address risks through disaster management and climate adaptation: disaster management defines procedures to prevent short-term potential disasters including floods, heat waves, and typhoons and to promptly recover from actual disasters while climate adaptation aims to improve our adaptation capabilities against mid/long-term climate change risks including rising temperatures and sea levels.

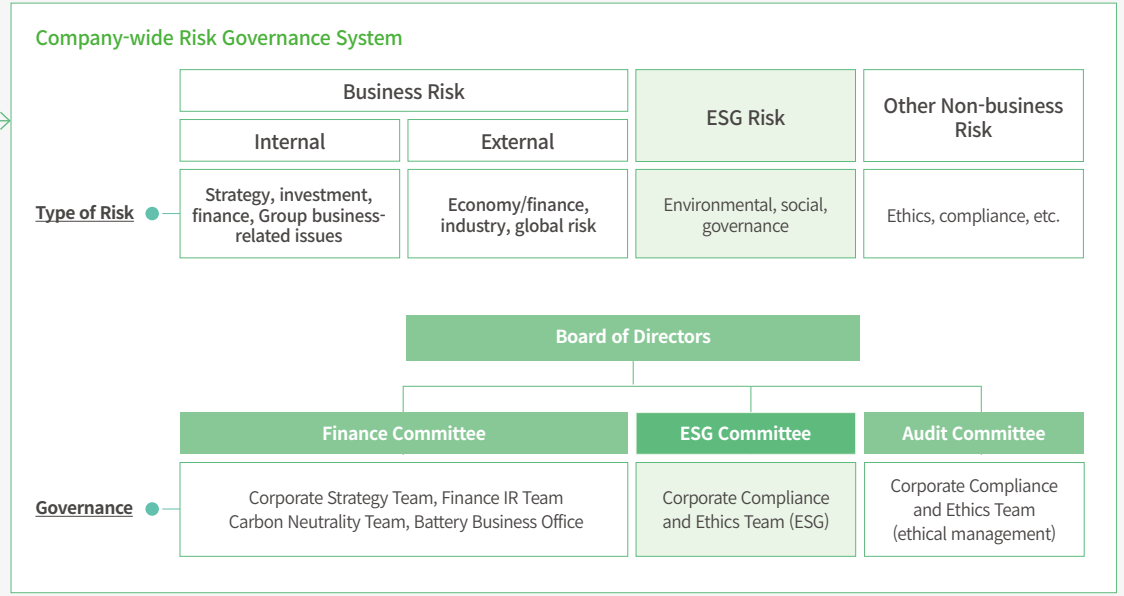
Such efforts include strengthening our employee health programs against heat waves and building breakwaters and other disaster prevention infrastructure. Disaster management and climate adaptation activities are undertaken across our entire global operations, and their outcomes are monitored at the Group level.

The Group ESG Council serves to regularly and internally share information on the occurrence of physical risks and our response to them, and key issues are reported to the Board of Directors and effectively communicated to investors and other external stakeholders.

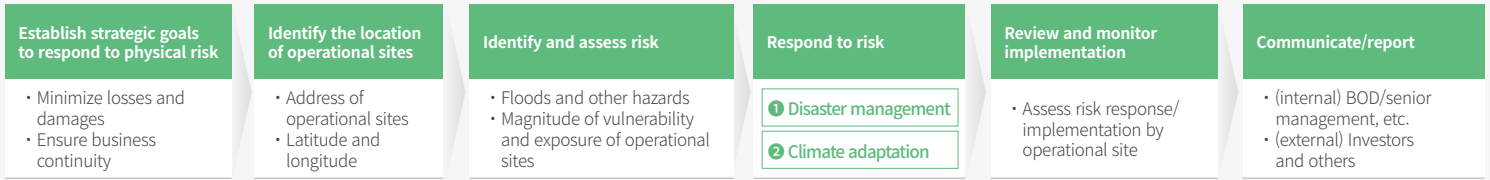
TCFD Framework



Company-wide Risk Governance System



Physical Risk Management Process



Climate Change Response

RISK MANAGEMENT

Physical Risk Response Process ❶ Disaster management

Disaster management aims to prevent natural disasters, and in the event of disasters, to minimize their impact and deter secondary damages in line with the Business Continuity Plan (BCP).

Natural disasters are categorized into the five types of typhoon/heavy rain, heavy snow/cold wave, earthquake/tsunami, drought (shortage of water resources), and lightening strike, and are handled through the 4-phase process of prevention-preparation-response-recovery. The prevention phase starts with regularly checking the items defined in the checklist by type of disaster and promptly addressing any deficiencies occurring. In the preparation phase, we carefully watch weather forecasts one week before the anticipated occurrence of disasters, and check emergency equipment and secure necessary materials. In the response and recovery phases, alerts are issued and the disaster HQ and recovery teams are mobilized to swiftly restore damage and ensure business continuity. Our business continuity plans and manuals concern earthquakes among others as well as weather and climate conditions, and specify response plans for such social disasters as explosions and fires in addition to natural disasters.

Physical Risk Response Process ❷ Climate adaptation

Climate adaptation refers to all actions taken to ensure ecological and socioeconomic systems adapt to climate change, including activities that aim to mitigate vulnerabilities to hazards triggered by climate events as well as climate-related risks.

For climate adaptation, POSCO Group considers climate risk even from the business and investment strategy development phase, and is bolstering our climate risk adaptation capabilities across the entire business operations spanning personnel, infrastructure, and energy. In making new investments, we assess target investment locations and existing operations for their vulnerability and exposure to floods, droughts, and other climate events from the investment deliberation phase, and develop measures to respond to shortage of industrial water, power outages, and risks involving raw material supply and sales. Regarding mid/long-term sea level rises, we are establishing a comprehensive disaster prevention system and bolstering our infrastructure to safeguard our operations in close consultation with local communities. To address extreme temperature abnormalities, we are expanding rest areas and cooling/heating facilities within our operations while providing flexible work arrangements and other work environment improvement programs to keep our employees healthy.

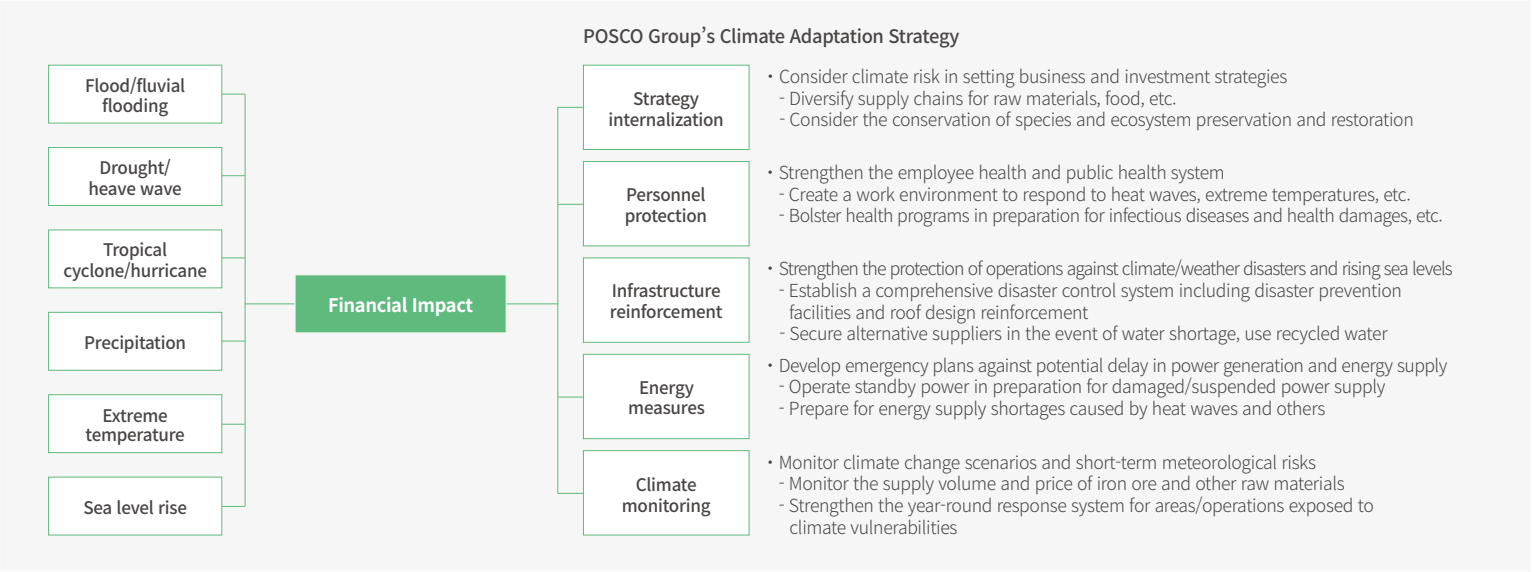
Type of Disaster

Type 1	Type 2	Type 3	Type 4	Type 5
Typhoon/heavy rain	Heavy snow/cold wave	Earthquake/tsunami	Drought (shortage of water resources)	Lightening strike

Disaster Management System

Phase	Definition	Key Activity
Prevention	• Periodic annual activity to prevent damage caused by disasters	• Establish and check the disaster management system, inspect and reinforce facilities • Conduct disaster safety training and emergency drills
Preparation	• Preparation to prevent damage before disaster occurrence (D-7)	• Secure emergency equipment and materials, manage actions taken in each phase of disaster occurrence
Response	• Response to prevent damage on the day of disaster (D-day)	• Issue alerts, operate the disaster headquarters, take initial action and rescue/first aid measures, and engage in other emergency activities
Recovery	• Activity to recover damage and normalize the function of facilities/ equipment/key operations	• Organize and operate a recovery team, conduct recovery activities, and implement the business continuity plan

Physical Risk and Climate Adaptation Strategy



*Source: Managing the Risk of Extreme Events and Disasters to Advance Climate Change Adaptation, IPCC 2012

Climate Change Response

RISK MANAGEMENT

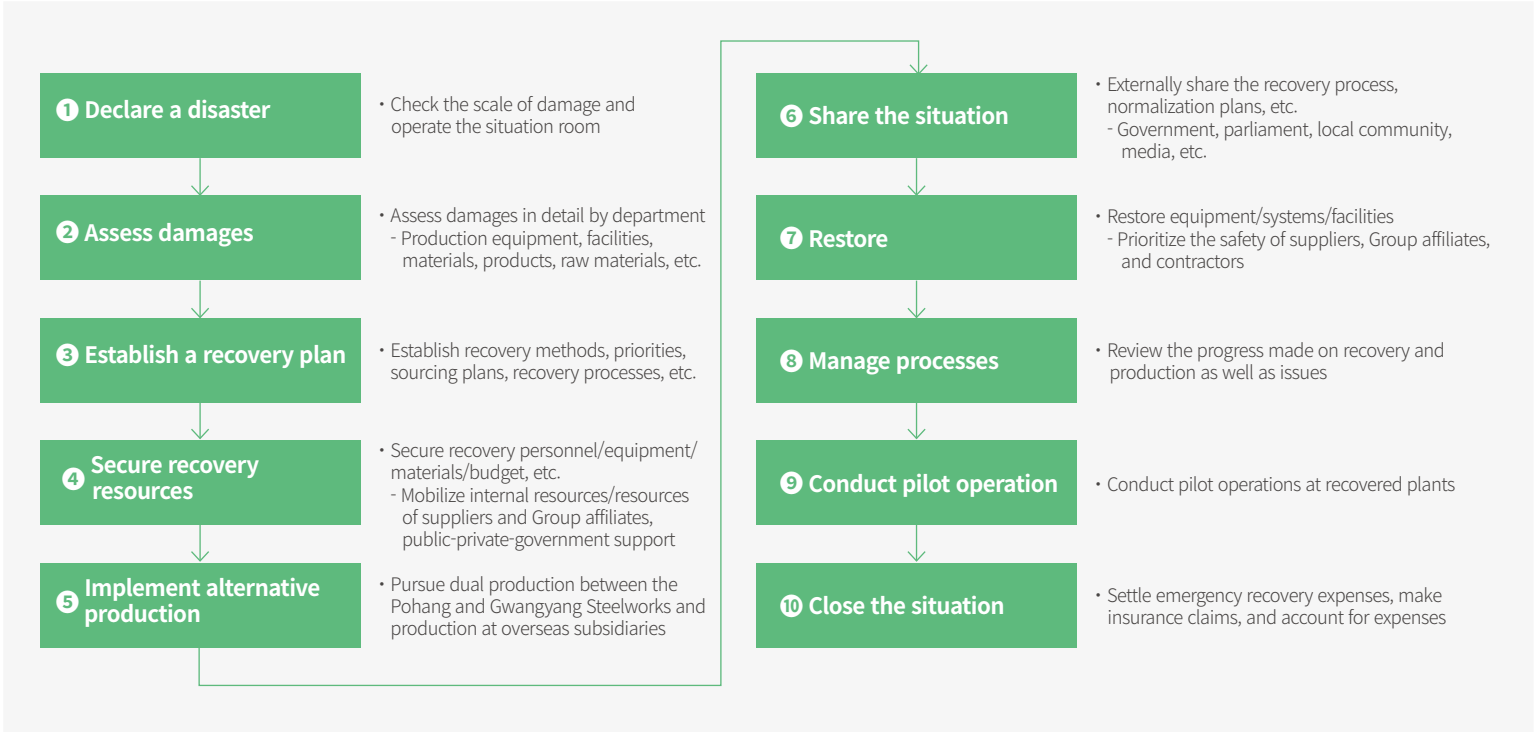
Business Continuity Plan for Physical Risk

Our Business Continuity Plan (BCP) details the 10-step recovery process implemented in the event of disasters, from disaster declaration to complete recovery.

This begins with Step 1 to identify the magnitude of disasters and declare a disaster accordingly.

This is followed by detailed assessments made into damaged equipment and materials and the development of recovery plans including the creation of a recovery response organization. If the disaster is rated the highest-level 'mega disaster' based on its disaster grade and magnitude of damages, this prompts top management to issue a disaster alert and the company-wide response headquarters oversees relevant operations.

For disasters rated below mega disasters, recovery plans are established with a focus on operational sites. When such plans are developed, alternative production is initiated to compensate for facility shutdown (e.g. mobilize overseas subsidiaries) and provide protection for domestic and global customers. Key stakeholders – suppliers, customers, governments, local communities – are engaged in communication in relation to the progress made for our recovery and normalization plans. In the restoration phase, safety is considered as the top priority and normalization efforts are made through process management and pilot operation.



Climate Change Response

RISK MANAGEMENT

Just Transition

In transitioning into a low-carbon process, POSCO Group is aware that the resulting change including one in facility configuration may impact our employees and local communities, and aims to ensure a fair transition through proactive communication to facilitate smooth adaptation and participation among stakeholders.

1) Employees

POSCO Group is implementing the workforce transition plan in a phased-in manner which was developed in line with our 2050 Carbon Neutrality Roadmap.

As to the Gwangyang Steelworks' EAF which commenced construction in 2024 and will initiate operation in 2026, its production and technical staffing plan will be developed with a focus on individuals possessing EAF-related experience and knowledge from the facility investment phase to secure necessary capabilities through job training for these individuals.

POSCO's proprietary hydrogen-based steelmaking HyREX process is based on FINEX technology which is currently being implemented by POSCO, which means this process does not require a significant workforce transition compared to other steelmakers and the resulting needs for workforce switchover can be met through reskilling training. This surely brings benefits to POSCO which is still able to leverage its accumulated know-how even during the process transition.

In sync with the full-fledged facility transition, voluntary reskilling training will be provided mainly to employees working at departments set for downsizing and/or closure, and professional training courses will be arranged to nurture skilled workforce through collaboration between POSCO Group University, Group's in-house training institute, and the Technical Research Laboratories in charge of technology development.

As part of such efforts, optimum personnel needs will be estimated through the job analysis performed on new processes, and existing employees will be assigned to new roles with full respect for their willingness. This will allow us to support employees with career management as well as to ensure employment security, and we will make sure regular updates are provided on the transition process through labor unions at respective operating companies, Young Board and other official communication channels.

For the new business areas of rechargeable battery materials, hydrogen, and LNG, we will expand recruitment in stages to accommodate the installation of new large-scale production facilities. In 2023, 68 employees were relocated towards rechargeable battery materials operations through POSCO FUTURE M's job posting program open to POSCO Group employees, and individuals with expert capabilities will be brought in from the outside to meet additional staffing needs.

2) Local Community

POSCO Group has defined its social responsibility since establishment as seeking growth in conjunction with local communities, and has remained committed to resolving a range of social issues with community members primarily in Pohang, Gwangyang, Seoul, and Incheon where we are based, presenting a model of shared growth between business and society.

We recognize local communities as a key stakeholder group in our low-carbon transition, and objectively review its environmental and social impact on local communities to incorporate such impact as key input into our decision-making. We also share review outcomes with local residents and experts through communication channels and seek their feedback to pursue fairness in the transition process.

In proceeding with the approval process to secure land to achieve hydrogen-based steelmaking essential to our progress towards net zero, we have provided seven separate presentations and two joint presentations for people living in Songdo-dong, Haedo-dong, and Cheongrim-dong in the vicinity of the site since May 2023, disclosing environmental impact assessment and traffic impact assessment findings while collecting feedback from local residents. A separate public hearing session for the land development project was also held to engage in in-depth discussions on seagrass habitats and coastal impact, which testifies to our commitment to stakeholder communication to build broader consensus in undertaking the project.

POSCO's HyREX Transition Plan



Joint Briefing for Local Residents in Pohang



Date: July 13, 2023
Venue: Deokup Workers' Welfare Center in Nam-gu, Pohang-si

Climate Change Response

METRICS AND TARGETS

Carbon Performance Management

POSCO Group sets annual targets for 'GHG intensity' as an effective measure of our response to climate change for respective operating companies and monitors their performance while reporting and managing relevant data through the Group-level consultative body attended by senior management.

POSCO's GHG intensity for 2023 improved to 2.02tCO_2eq/ton, down by 3.3% from 2.09tCO_2eq/ton which is the baseline of the 2050 carbon neutrality roadmap (average between 2017~2019) due to reduction in coal expenses made possible through low-carbon operations.

POSCO INTERNATIONAL's intensity rose against the target to 0.378tCO_2eq/MWh in line with the increasing utilization of its power plant following the operating instructions (electricity supply) of the Korea Power Exchange. POSCO FUTURE M's intensity increased against the target for cathode materials while improvements were made for refractory/quicklime/lime materials.

Category		Unit	2021	2022	2023	
					Target	Performance
POSCO (domestic)		tCO_2eq/ton	2.05	2.05	2.04	2.02
POSCO INTERNATIONAL (domestic)[1]		tCO_2eq/MWh	0.383	0.376	0.367	0.378[2]
POSCO FUTURE M	Cathode	tCO_2eq/ton	4.334	5.116	4.050	4.199
	Anode		1.305	1.433	1.467	1.463
	Refractory		0.577	0.437	0.492	0.454
	Quicklime		0.914	0.850	0.857	0.841

1) The intensity is based on the transmission capacity of POSCO INTERNATIONAL's Incheon LNG Combined Cycle Power Plant.
*GHG intensity data for 2020-2022 were prepared based on the specifications submitted by each company, and are subject to change according to the government's emissions verification.
**Targets for each company are subject to change according to variations in production volume and sales attributable to a shift in business strategy/structure and impact from product market conditions.
2) Exceeded the set carbon intensity target due to the increasing utilization of the power plant following the operating instructions of the Korea Power Exchange

Eligibility KPIs under the EU Taxonomy

To achieve our vision 'Materials for Tomorrow, Innovation for Excellence', POSCO Group is joining in on the global efforts to combat the climate crisis, and is shifting into a greener buisness portfolio to facilitate the transition into a sustainable society.

We analyzed our respective core businesses for their 2023 turnover and CapEx eligibility in terms of ratios and amounts according to the EU Taxonomy, a classification system established to clarify eco-friendly economic activities.

As of FY2023		Steel	Rechargeable Battery	Lithium	Hydrogen
Turnover	Eligibility ratio	96.5%	67.0%	100%	Still in the initial phase of business, turnover to be generated in the future
	Value	KRW 37,610.4 billion	KRW 3,191.2 billion[1]	KRW 4.7 billion	
Capital Expenditure	Eligibility ratio	87.5%	94.2%	100%	100%
	Value	KRW 2,999.7 billion	KRW 1,286.5 billion	KRW 2,241.9 billion[2]	KRW 7.5 billion

1) The total turnover of rechargeable battery business was calculated by using the turnover presented in POSCO FUTURE M's 2023 business report as denominator.
The CapEx was calculated using the value of acquired tangible/intangible assets as denominator.
2) The CapEX amount of lithium business all goes to invest in rechargeable battery manufacturing and the full value is reflected as eligible CapEx
*The eligible turnover of energy business reflects that of LNG power generation business conducted by POSCO INTERNATIONAL

Overview of Analysis

POSCO Holdings adopted the S&P Global Clinamonics methodology to analyze physical risks for nine key global operational sites, and released the results through our Sustainability Report 2022. For this year's reporting, we made corrections for these results in 2023 in line with S&P's SSP scenarios.

Methodology

In line with the update made for the climate modelling analysis methodology of S&P Global Climanomics from RCP (Representative Concentration Pathways) to SSP (Shared Socioeconomic Pathways), SSP scenarios were applied in correcting physical risk analysis results.

SSPs were featured in the IPCC 6th report (AR6, Working Group I) as new GHG reduction pathways, and were created by taking into account future population changes, economic developments, urbanization and other socioeconomic factors on the basis of RCP scenarios.

SSP Scenarios

Scenario	Implication	Global Temperature (end of the 21st century)
SSP 1-2.6	Low-carbon scenario: Declining social inequalities and rapid development of eco-friendly technology facilitate climate change mitigation and adaptation to drive sustainable growth	+1.9°C
SSP 2-4.5	Middle of the road scenario: Socioeconomic development follows the middle of the road pathway with climate change slowing down	+3.0°C
SSP 3-7.0	Baseline scenario: Inequalities in socioeconomic development and institutional limitations result in vulnerabilities to climate change	+4.3°C
SSP 5-8.5	High-carbon scenario: Lack of climate policies, fossil fuel-driven growth, and large investments in human resources boost adaptation for climate change while reducing mitigation at the socioeconomic level	+5.2°C

*Source: Korea Meteorological Administration, IPCC 6th report

Target of Analysis

In analyzing physical risks, 11 key operational sites were selected for their role in driving the sustainable growth of POSCO Group in the steel, rechargeable battery materials, and gas field business.

Category	Worksite
POSCO Holdings (1 location)	POSCO ARGENTINA (Hombre Muerto salt lake)
POSCO (5 locations)	Pohang Steelworks, Gwangyang Steelworks, PT KRAKATAU POSCO (Indonesia), Zhangjiagang Pohang Stainless Steel (China), POSCO YAMATO VINA (Vietnam)
POSCO INTERNATIONAL (4 locations)	Shwe gas field project in Myanmar, PT. BIA in Indonesia (palm plantation), (new) Gwangyang LNG Terminal, Incheon LNG Combined Cycle Power Plant
POSCO FUTURE M (1 location)	Gwangyang Cathode Plant



Analysis (Correction) Results

In June 2023, POSCO Group's key operations were analyzed for physical risk occurring by 2049 by employing S&P's RCP-based climate modelling methodology, and it was revealed that seven operational sites were subject to the four types of physical risk – coastal flooding, fluvial flooding, extreme temperature, and drought.

A re-analysis performed in line with the SSP scenarios newly adopted by S&P's climate modelling revealed that our asset value loss rates dramatically diminished across the entire operations. In particular, our Pohang Steelworks, Gwangyang Steelworks, PT.KP, and PY VINA that are situated along the coast showed the greatest reduction in asset value losses caused by coastal flooding.

SSP 5-8.5 scenarios project that global warming will further aggravate and our asset value losses resulting from the risk of extreme temperature inched up across nine worksites.

Financial Impact by Physical Risk between 2040 and 2049[1)]

Modeled Average Annual Loss: Below 1% | 1~10% | 10% and higher

Company	Worksite	Coastal Flooding		Fluvial Flooding		Extreme Temperature		Drought		Pluvial Flooding (Heavy rainfalls)[2)]	
		Initial (RCP 8.5)	After Correction (SSP 5-8.5)	Initial (RCP 8.5)	After Correction (SSP 5-8.5)	Initial (RCP 8.5)	After Correction (SSP 5-8.5)	Initial (RCP 8.5)	After Correction (SSP 5-8.5)	Initial (RCP 8.5)	After Correction (SSP 5-8.5)
POSCO Holdings	POSCO ARGENTINA	Below 1%	Below 1%	Below 1%	Below 1%	Below 1%	1~10%	1~10%	Below 1%	-	Below 1%
POSCO	Pohang Steelworks	10% and higher	Below 1%	1~10%	Below 1%	1~10%	1~10%	Below 1%	Below 1%	-	Below 1%
	Gwangyang Steelworks	1~10%	Below 1%	1~10%	Below 1%	1~10%	1~10%	Below 1%	Below 1%	-	Below 1%
	PT KRAKATAU POSCO (PT.KP)	10% and higher	Below 1%	Below 1%	Below 1%	Below 1%	1~10%	Below 1%	Below 1%	-	Below 1%
	Zhangjiagang Pohang Stainless Steel	Below 1%	Below 1%	Below 1%	Below 1%	1~10%	1~10%	Below 1%	Below 1%	-	Below 1%
	POSCO YAMATO VINA (PY VINA)	10% and higher	Below 1%	Below 1%	Below 1%	Below 1%	1~10%	Below 1%	Below 1%	-	Below 1%
POSCO INTERNATIONAL	Gwangyang LNG Terminal	-	Below 1%	-	Below 1%	-	Below 1%	-	Below 1%	-	Below 1%
	Incheon LNG Combined Cycle Power Plant	-	Below 1%	-	Below 1%	-	1~10%	-	Below 1%	-	Below 1%
	Shwe gas field project in Myanmar	1~10%	Below 1%	Below 1%	Below 1%	Below 1%	Below 1%	Below 1%	Below 1%	-	Below 1%
	PT. Bio Inti Agrindo (palm plantation)	Below 1%	Below 1%	Below 1%	Below 1%	1~10%	1~10%	Below 1%	Below 1%	-	1~10%
POSCO FUTURE M	Gwangyang Cathode Plant	Below 1%	Below 1%	1~10%	Below 1%	1~10%	1~10%	Below 1%	Below 1%	-	Below 1%

1) Wildfire, tropical cyclone, and water stress risks were below 1% and not indicated.
2) Pluvial flooding refers to ground flooding caused by heavy rainfalls, and is a new addition made under the updated S&P climate modeling. The risk of pluvial flooding for our palm plantation was 1.1% according to analysis results.

Risk Response by Operational Site

For the four sites of the Pohang Steelworks, PT.KP, PY VINA, and the Shwe Project in Myanmar that are located along the coast, they were designed from the outset to ensure their ground elevation was at least 3 meters above the sea level as part of the proactive measures taken to minimize asset value losses even in the event of sea level rises occurring due to climate change.

To prevent the recurrence of tremendous damage which affected the Pohang Steelworks in the wake of the flooding of Naengcheon Stream in 2022, POSCO developed a 'business continuity plan' in 2023 comprehensively detailing its plans to prevent natural disasters, restore damages, initiate alternative production, and protect markets while establishing a 24/7 response system to minimize physical risk through facility enhancements (e.g. water barriers) and system development. This was extended to cover the Gwangyang Steelworks and the Gwangyang Cathode Plant for which the risk of 'fluvial flooding' was analyzed to ensure an equivalent preventive system is established.

The palm plantation in Indonesia was analyzed for the risk of 'extreme temperature' and 'pluvial flooding'. To address the risk of 'extreme temperature', we are expanding emergency infrastructure including emergency power generators and freshwater storage facilities in preparation for heat waves and droughts while reinforcing the response system by building infrastructure to improve health and safety as well as working conditions for employees. To address the risk of pluvial flooding caused by heavy rainfalls, we are conducting regular checks on drainage channels within the plantation and operating an emergency system established for emergency road network recovery.

The lithium plant operated by POSCO ARGENTINA was initially identified for its risk for drought. Meanwhile, any location prone to drought provides essential conditions for operating lithium plants considering that lithium is extracted through the natural evaporation of salt water for 12~18 months. As such, we pointed out to S&P Global that dry climatic conditions with abundant radiation serve to facilitate lithium production, which was reflected in making corrections for physical risk analysis results. POSCO ARGENTINA's lithium plant classifies its sources of water withdrawal to separately develop and use underground water, and also developed POSCO Group's proprietary lithium extraction technology to save water consumption by 50~80% against competitors, responding to the risk of water shortage in so doing.

Our Response to the Risk of Coastal Flooding

Company	Worksite	Major Response	Altitude (above sea level)
POSCO	Pohang Steelworks	• Installed retaining walls against waves at the raw material shack vulnerable to tsunami (2.3km, 2012~2017) and reinforced revetments and detached breakwaters (2020) *Revetment: Protective structures installed along the boundaries of riverbanks, coastlines, or levees to prevent erosion **Detached breakwaters: Seawalls installed offshore to reduce wave energy • Installed watertight doors/water barriers for locations vulnerable to flooding and key facilities (1,853 locations) • Reinforced the water barriers outside the steelworks (1.9km) and Naengcheon Stream embankment (1.7km) • Developed a steelworks drainage monitoring management system using water level meters and CCTVs, improved the drainage system • Secured large engine pumps for emergency response in the event of flooding	+ 3.2~4.5m
	PT.KP	• Built drainage treatment facilities and maintained drainage considering maximum daily precipitation • Installed watertight doors/water barriers for key facilities including electrical rooms and ironmaking substations (96 locations)	+ 4.5~5.5m
	PY VINA	• Located EAF/smelting/casting/rolling facilities, electrical rooms, and other main facilities on 2nd/3rd floors against coastal flooding • Expanded the drainage near the harbor dock and warehouse (Mar. ~ Oct. 2023) and dredged the harbor (biennial)	+ 3.7m
POSCO INTERNATIONAL	Shwe Project (onshore pipeline)	• Completed emergency response procedures by designing and constructing structures to consider coastal flooding, cyclones, and other natural disaster situations • Reinforced slopes near the site with reinforced concrete and maintained the terminal water collection facility to prevent flooding	+ 15~20m

Our Response to the Risk of Fluvial Flooding

Company	Worksite	Major Response
POSCO	Gwangyang Steelworks	• Installed watertight doors/water barriers at ironmaking/rolling sites (662 locations) • Developed a drainage management system, improved the drainage system for the steelworks • Secured large engine pumps to respond to emergency in the event of flooding
POSCO FUTURE M	Gwangyang Cathode Plant	• Reviewed the installation of water barriers (1,708m in entire perimeter and 2m in height) outside the plant and drainage pumps

Our Response to the Risk of Extreme Temperature

Company	Worksite	Major Response
POSCO INTERNATIONAL	PT. BIA (palm plantation in Indonesia)	• Secured reservoirs to supply water for each mill in preparation for heat waves and droughts • Secured and operated emergency power generators within the plantation for areas with unstable power supply • Developed worker health manuals for abnormal temperatures and performed monitoring • Established standard operating procedures (SOPs) for new job functions including mechanical harvesting • Installed internal meteorological observation equipment (10 units) within the plantation to collect location-based meteorological data and perform real-time monitoring

Transition Risk Management

POSCO Holdings analyzed transition risk that may occur in our transition into a low-carbon business model with respect to POSCO's steel business in the areas of ① policy/law, ② markets ③ technology, and ④ reputation.

[Policy/legal Risk]

① Increasing operational costs in line with the tightening emissions trading regulations

Business Impact

POSCO is subject to the nation's Emissions Trading System (ETS). Businesses covered by the ETS are allocated allowances free-of-charge by the government during the set plan period, and may sell or buy allowances in the market to reconcile their surpluses or deficits.

The ETS was introduced to help Korea deliver on its NDCs (Nationally Determined Contribution), and is in its third plan period (2021~2025) currently. As Korea raises its 2030 NDC target and the global community steps up its effort to achieve net zero, it is expected that the allocation of free allowances will be phased out starting from the fourth plan period (2026~2030).

This could lead to rising price of allowances, indicating that if POSCO does not reduce its carbon emissions, the company may shoulder increased burden for purchasing allowances to compensate for its excess emissions.

Our Response

In consideration of EU's Emissions Trading System (ETS) and Korea's policy directions, POSCO internally predicts possible surpluses and deficits measured against the allocation of free allowances while analyzing the financial impact under the scenario of phasing out free allowances, developing countermeasures to minimize its carbon costs over the mid-to-long term. In parallel, POSCO is working to embrace carbon-neutral technologies and high-efficiency production technologies, including EAF, CCUS, and hydrogen reduction steelmaking.

POSCO will pilot an internal carbon pricing program as part of its investment deliberation process from 2024 onwards to review the cost-effectiveness of its investments from the comprehensive viewpoint considering future carbon costs as well. In so doing, POSCO continues to expedite its efforts to introduce HyREX and other new low-carbon investment undertakings.

② Carbon taxes imposed under the EU CBAM

Business Impact

The Carbon Border Adjustment Mechanism (CBAM) aims to levy and collect carbon taxes that align with the EU ETS according to the carbon content of products produced in non-EU countries where environmental regulations are less stringent and imported into the EU. The CBAM first applies to the six products of steel, aluminum, cement, fertilizer, electricity, and hydrogen, which includes POSCO's steel products.

To ensure the CBAM is firmly established prior to its full-scale implementation, the transitional period was set for October 2023 to December 2025. With the CBAM taking its full effect from 2026 onwards, companies should buy CBAM certificates to offset their excess carbon emissions under the pertinent EU standards, incurring carbon costs as a result. This may undermine the competitiveness of POSCO's steel products in the market.

Our Response

In preparation of a potential decline in its competitive edge in the export market following the CBAM implementation, POSCO launched a CBAM task force in August 2022 and is teaming up with its Brussel Office in Europe and POSCO INTERNATIONAL's German subsidiary to ensure systemic response. In February 2024, POSCO broke ground for its EAF plant with 2.5 million tons annual capacity at the Gwangyang Steelworks with a goal of initiating operations in 2026. Compared to the conventional blast furnace, EAF could potentially reduce carbon emissions by up to 75%, providing an effective option to respond to the EU's CBAM as a low-carbon production system.

We are also working on steel mixing technology combining molten iron produced from the blast furnace and the EAF respectively to cater to the CBAM and customer needs. Adjusting the mixing ratios of molten iron from the blast furnace and the EAF through this mixing technology enables us to dramatically lower our carbon emissions intensity compared to the traditional blast furnace while producing high-end steel which was not readily available with EAF steel manufacturing. This eventually allows us to bring low-carbon steel products to customers without the need to pay for CBAM certificates.

③ Tightening global climate disclosure standards (ISSB, S2, SEC, etc.)

Business Impact

The IFRS, the US SEC, and the EU EFRAG published their climate disclosure standards, presenting increasingly stringent demands to disclose data on climate-related physical risk and transition risk as well as Scope 3 emissions.

Our Response

In our sustainability report we published in 2023, POSCO Holdings disclosed the results of physical risk analysis performed on our nine key operational sites in Korea and abroad that drive the sustainable growth of POSCO Group. This year's sustainability report illustrates how each operational site responds to such risk along with the corrections made for the results of physical risk analysis conducted on respective sites the previous year.

As to transition risks that may arise in the industrial transition process including a low-carbon economy transition in the areas of policy, markets, technology, and reputation, this year's report serves to analyze their impact and disclose our response to them.

Meanwhile, we have been disclosing our Scope 3 emissions through our annual sustainability reporting. To further advance our Scope 3 calculation, a working-level Scope 3 consultative body has been up and running under the supervision of the Head of the Safety Health Environment Division at POSCO since April 2024, allowing us to systematically respond to the climate disclosure mandate.

[Market Risk]

① Customers' growing demand for low-carbon steel materials

Business Impact

Companies around the world are speeding up their transition into a low-carbon business model to combat the accelerating climate crisis. This naturally boosts the demand for low-carbon steel materials among big global car OEMs, green energy providers and home appliances makers who face immense decarbonization needs. This also raises the possibility of diminishing market competitiveness when we fail to swiftly deliver the required low-carbon steel materials.

Our Response

POSCO is committed to developing bridge technologies to manufacture low-carbon steel products leveraging EAF and conventional production facilities. While supplying carbon-reduced steel through EAF from 2026 onwards, POSCO will also take a hybrid approach to mixing molten steel from the EAF with molten iron from the blast furnace to produce low-carbon steel materials. This will make it possible to produce and supply steel products all while reducing carbon emissions by up to 75% compared to conventional blast furnace production.

Research efforts will also be made to predict the demand for carbon-neutral or low-carbon steel materials, specifically their projected timing, quantities, and price levels, and the results will inform our investment decision-making to reach net zero.

② Intensifying competition to secure supply chains in line with the growing demand for low-carbon steel raw materials

Business Impact

Transitioning into low-carbon production systems will motivate global steelmakers to compete more fiercely to secure low-carbon raw materials, such as pellets and HBI (Hot Briquetted Iron). This makes establishing supply chains to economically source low-carbon raw materials a top priority.

Our Response

HyREX, POSCO's proprietary hydrogen reduction steelmaking technology, is distinguished from the shaft furnace method adopted by other steelmakers for its use of fluidized bed reactors. While the shaft furnace should be charged with pallets produced by milling and sorting iron ore to shape it into uniform-sized spherical lumps, the fluidized bed reactor is able to use fine ore without additionally processing the iron ore extracted from mines, facilitating the sourcing of raw materials and enabling cost-effective production.

As of 2020, the supply of pellets amounted to 420 million tons while the global production of iron ore reached 1.8 billion tons, indicating that the current level of pellet supply falls short of the global steel demand. In line with the commercialization of hydrogen reduction steelmaking, the competition will only intensify among global steelmakers operating the shaft furnace to source high-grade pellets. In comparison, POSCO is better positioned to source raw materials as it has adopted the fluidized bed reactor.

Removing oxygen from iron ore and shaping the directly reduced iron generated as such into a briquette shape results in the production of HBI with reduced carbon emissions. An essential low-carbon raw material, HBI is instrumental in producing high-grade steel through the EAF. To ensure the reliable supply of HBI, POSCO plans to participate in HBI projects in Australia, the Middle East and other regions to build reliable HBI supply chains and actively leverage them in producing low-carbon products.

[Technology Risk]

① Risk involved in the development of hydrogen reduction steelmaking technology

Business Impact

The upcoming net zero era demands that the steel industry engages in new technology development and large-scale facility investment to reduce carbon emissions in the steelmaking process. This essentially means that we are required to move away from our decades-old steelmaking practices, from facilities to technology and raw materials, to transform into low-carbon steelmaking, and our survival as a steelmaker literally hinges on the successful development of carbon-neutral technology.

Our Response

On the back of its FINEX fluidized bed reactor technology, POSCO is working on HyREX technology, its proprietary hydrogen reduction steelmaking method which harnesses iron ore in powder form and hydrogen to produce molten iron. Since initiating the development of FINEX technology back in 1992 and commercializing this technology in 2007, POSCO has successfully produced 35 million tons of molten iron to date on a cumulative basis at its FINEX plant.

Generally, any technology development follows the process of lab (proof of concept), pilot (continuous process validation), and demonstration (commercial validation) prior to its ramp-up to commercialization. POSCO, however, will skip the pilot step and validate its HyREX technology by 2030 by drawing on the technology, experience, operational know-how, skilled workforce, and supply chains it has acquired while developing the FINEX process.

Furthermore, POSCO's hydrogen reduction steelmaking technology was named 'national strategic technology' in January 2024, which paved the way to accelerate its technology development along with tax benefits.

② Declining value of conventional furnaces in the transition to low-carbon technology

Business Impact

Commercial technology for hydrogen reduction steelmaking will be completed around 2030. The commercial validation of this technology, however, should be followed by equipment switchover to replace existing processes and the construction of fluidized bed reactors, EAFs, and other new equipment for hydrogen reduction steelmaking, which will take a considerable amount of time. In addition, large-scale production of low-carbon steel products is made possible when infrastructure is in place to supply large quantities of green hydrogen in a cost-effective way. This is why bridge technology is garnering attention as an interim step towards the low-carbon transition to produce low-carbon steel products all while using conventional facilities including blast furnaces and converters.

Our Response

While progressing towards the commercialization of hydrogen reduction steelmaking, POSCO is also developing bridge technologies that use blast furnaces while opting for pellets, HBI, natural gas and other low-carbon fuels and raw materials to reduce the consumption of fossil fuels. In so doing, POSCO is working to extend the service life of blast furnaces as much as possible before they become stranded assets and to ensure the reliable supply of economically viable, low-carbon steel products in the market. In tandem with this, POSCO is developing CCUS technology for its FINEX facilities, along with exploring 'K-OBM' and 'EAF steel mixing' technology as converter-based bridge technologies.

[Reputation Risk]

① Declining reputation due to negative climate-related issues

Business Impact

As climate-related socioeconomic risks are emerging, governments, investors, customers and other key stakeholders call for companies to disclose their efforts to respond to climate change. Hence, any failure on the part of POSCO to select climate change response as a key ESG issue to manage or to properly disclose its efforts to tackle climate change may result in negative feedback from stakeholders, tarnishing its corporate reputation over the long haul.

Our Response

Since 2022, POSCO Holdings has operated the annual stakeholder roundtable to collect feedback and engage in discussions on key ESG issues among wide-ranging stakeholders including investors, academia, suppliers, and customers. This ensures we properly prioritize key ESG issues requiring our focused attention and transparently disclose the improvements made through our annual sustainability reports.

We have also hosted the ESG NDR (Non Deal Roadshow) each year since 2023 to comprehensively heed the expectations of stakeholders on major ESG issues and reflect them in our performance management while properly communicating how we are responding to these issues including the improvements we made.

② Risk of green washing

Business Impact

In line with the tightening global initiative to regulate greenwashing (companies misleadingly promoting their products as environmentally friendly when they are not), the number of related litigations is also on the rise. This underlines the need to prepare for the risk of greenwashing in promoting low-carbon, eco-friendly business operations and products and making disclosures.

Our Response

Since 2023, POSCO has implemented a process developed to prevent the risk of greenwashing in its external communications associated with low-carbon, eco-friendly statements. The Greenwashing Review Committee is up and running with POSCO's ESG Group playing a leading role to prevent the risk of greenwashing from occurring and establish follow-up monitoring procedures, safeguarding its brand value and minimizing litigation risk.

Overview of Business Impact and Our Response to Transition Risk for Steel Business (summary)

	Category	Business Impact	Our Response
Policy/legal risk	Tightening regulations for the GHG Emissions Trading System	• Increasing costs of purchasing allowances due to the reduced allocation of free allowances	• Analyze financial impact and develop countermeasures in line with the scenario of phasing out free allowances • Develop carbon-neutral/low-carbon technology and introduce high-efficiency production technology • Promote low-carbon investment undertakings, including the introduction of an internal carbon pricing system
	EU's implementation of the CBAM	• Carbon costs incurring due to the implementation of the CBAM (Carbon Border Adjustment Mechanism)	• Launch a task force to respond to the CBAM and build a collaboration system with EU-based subsidiaries • Establish a low-carbon production and sales system to respond to the CBAM, including operating an EAF at the Gwangyang Steelworks
	Strengthened global climate disclosure standards	• Strengthened global climate disclosure requirements spanning physical/transition risk and Scope 3 emissions	• Analyze physical risk affecting key operations in Korea and abroad, and develop countermeasures • Analyze the impact of transition risk and disclose our responses • Operate a working-level consultative body to advance our Scope 3 calculation system
Market risk	Increasing requirement to supply low-carbon steel materials	• Weakened market competitiveness due to the failure to ensure the timely supply of low-carbon steel materials	• Produce low-carbon steel products by harnessing converters (mixing technology) and other existing facilities • Conduct research to predict future demand/prices for low-carbon steel materials
	Growing demand for low-carbon raw materials	• Intensifying competition to secure the supply chains of low-carbon steel raw materials	• Develop hydrogen reduction steelmaking (HyREX) technology using easy-to-source powdered iron ore as main feedstock • Build an HBI (Hot Briquetted Iron) production plant to secure HBI supply chains
Technology risk	Risk involved in the development of hydrogen reduction steelmaking technology	• Increasing demand to develop hydrogen reduction steelmaking (HyREX) technology and make large-scale facility investment	• Have established technology, workforce, and supply chains through over 20 years of experience in commercializing FINEX* *Work is underway to develop HyREX technology on the back of our FINEX fluidized bed reactor technology • Receive tax benefits as a company owning national strategic technology
	Diminishing value of conventional furnaces	• Conventional furnaces becoming stranded assets in line with the introduction of hydrogen reduction steelmaking	• Develop low-carbon production technology (bridge technology) using blast furnaces and other existing facilities
Reputational risk	Declining reputation due to negative issues	• Declining reputation due to improper issue management	• Properly select key ESG issues through the stakeholder roundtable and strengthen performance management • Host the ESG NDR (Non Deal Roadshow) to operate regular communication channels for investors and ESG rating agencies
	Risk of greenwashing	• Declining brand value due to litigations associated with greenwashing	• Reinforce risk prevention and follow-up monitoring by operating the Greenwashing Review Committee

Energy

GOVERNANCE

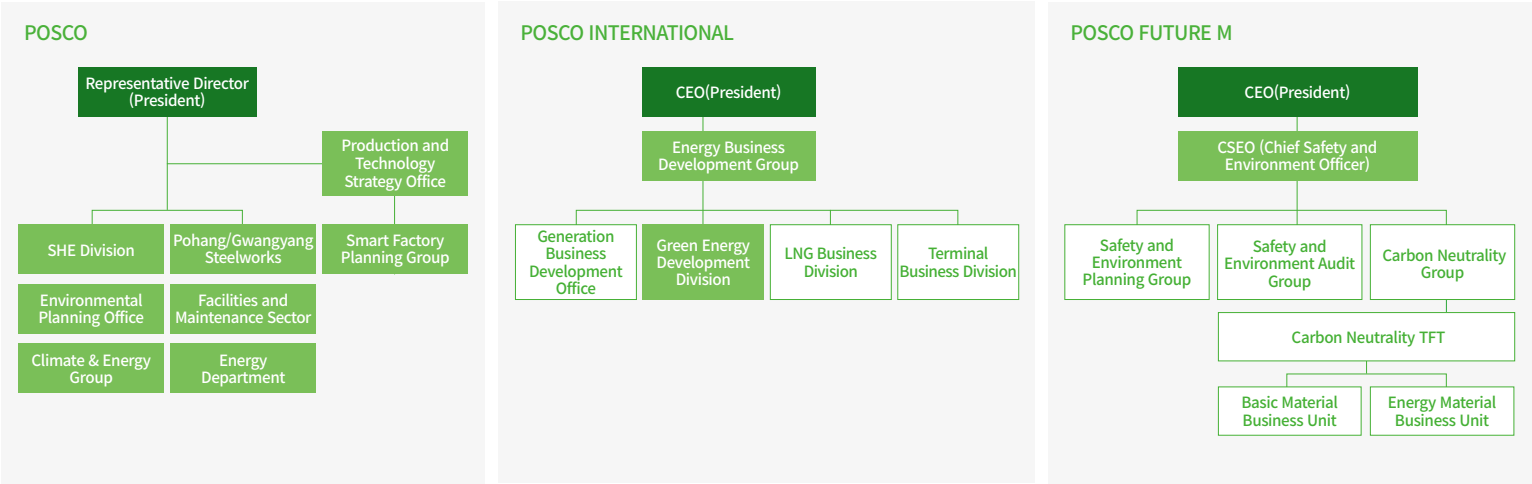
Organization and Roles

POSCO Group pursues energy efficiency and the expansion of renewable energy use in line with our integrated environmental energy management policy. Our energy management strategy centers around POSCO, POSCO INTERNATIONAL, and POSCO FUTURE M that consume large amounts of energy and account for a significant share of total carbon emissions within the Group. Energy strategies that align with our carbon neutrality roadmap are considered as a reporting item for the Board of Directors and are managed as such.

At POSCO, overall energy operations are the responsibility of the Smart Factory Planning Group of the Production and Technology Strategy Office which is under the direct leadership of the CEO, the Climate & Energy Group under the Environmental Planning Office of the Safety Health Environment (SHE) Division, and the Energy Department of the Pohang and Gwangyang Steelworks. The Head of the Steel Production and Technology Strategy Office, the Heads of the Pohang/Gwangyang Steelworks, and the Head of the Safety Health Environment Division who lead our energy operations provide regular updates on our energy management status as well as energy reduction and investment plans at the operational meetings supervised by the CEO of POSCO.

In January 2023, POSCO INTERNATIONAL's merger with POSCO ENERGY further strengthened our Group-wide energy strategies, and its Energy Business Development Division operated directly under the CEO heads overall energy business operations at the Group level. The Green Energy Development Office under the Division is working to build domestic/overseas clean hydrogen procurement and hydrogen supply infrastructure while developing renewable energy business including onshore/offshore wind power and rooftop PV to meet POSCO Group's renewable energy needs.

POSCO FUTURE M appoints the Head of the Safety and Environment Center serving as the Chief Safety and Environment Officer (CSEO) as an inside director and deliberates and decides on climate change and energy issues through its Board of Directors. The Carbon Neutrality TFT operated by the Carbon Neutrality Group develops company-wide, working-level environmental and energy strategies, regularly reviews the progress made, and reports the results to the Carbon Neutrality Committee (presided by the CEO) including the company CEO.



Board of Directors

POSCO Holding's Board of Directors and ESG Committee are briefed each quarter on our carbon performance which is tied to energy use.

Policy

- POSCO Holding's Environmental Policy
- The Environmental Management Guideline, established in 2010, was updated into the POSCO Group integrated environmental and energy management guideline.

POSCO Group Integrated Environmental and Energy Management Guideline

POSCO Group realizes a sustainable, low-carbon, environmentally friendly economy through the following practices.

- We establish an integrated environmental and energy management system in accordance with ISO 14001/50001 and abide by applicable laws and regulations.
- We set environmental and energy goals and provide the resources necessary to attain these goals to continuously improve our integrated environmental and energy system and its performance.
- We expand the use of clean energy and introduce low-carbon process technology to lower GHG emissions and minimize the impact from climate change.
- We preserve resources and protect the environment from the lifecycle perspective, from the efficient use of natural resources and byproducts to green product development.
- We minimize the discharge of pollutants by applying eco-friendly manufacturing processes and optimal prevention technology.
- We regularly check our integrated environmental and energy management system and its performance, report to top management, and communicate with stakeholders.

STRATEGY

Clean Hydrogen Production

With POSCO INTERNATIONAL playing a pivotal role, POSCO Group aims to combine all our hydrogen business capabilities of Group affiliates operating in each phase of the hydrogen lifecycle to establish a full value chain from production of clean hydrogen to its transportation, storage, and utilization. This strategic endeavor will position us as Korea's largest hydrogen consumer and supplier.

Production

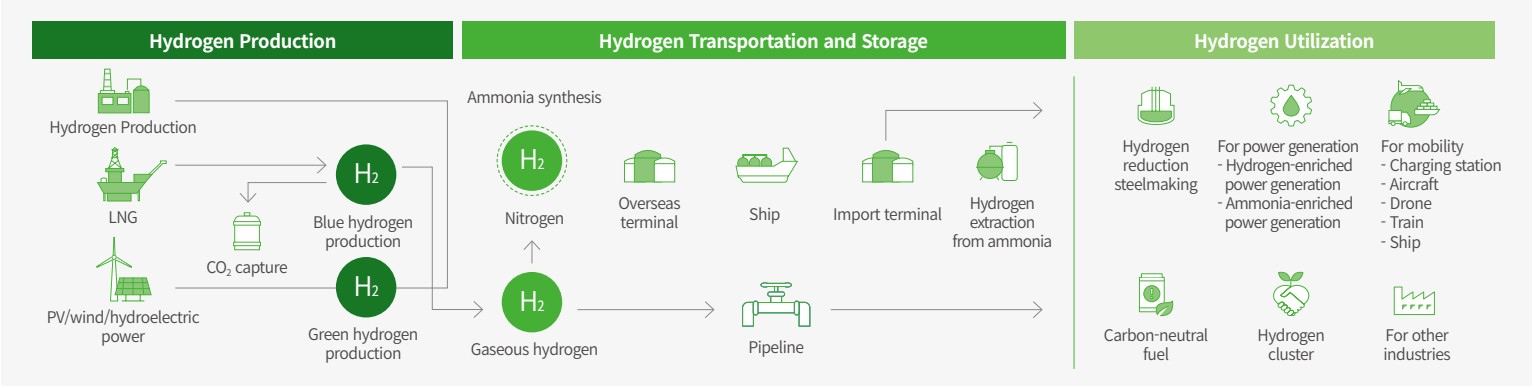
Green hydrogen is produced through water electrolysis by leveraging PV, wind and other renewable energy sources in locations providing ideal conditions for renewable energy generation. To establish hydrogen production hubs, POSCO Holdings plans to select strategic countries with exceptional renewable energy conditions and develop and invest in green hydrogen projects. This will be supported by POSCO, POSCO INTERNATIONAL, and POSCO E&C each responsible for supplying steel materials to build renewable energy generation facilities, transporting and receiving blue hydrogen in alignment with green hydrogen and CCS, and performing EPC (Engineering, Procurement, and Construction) for hydrogen production plants including water electrolysis facilities.

Transportation and Storage

Hydrogen produced overseas is converted through ammonia synthesis for efficient transportation, transported through ships, and stored at hydrogen terminals. Since hydrogen poses the risk of explosion in its gaseous state and requires cooling to -253°C for liquefaction, it is shipped with ammonia serving as a carrier in combination of nitrogen for safe and efficient long-distance transport. This transport and storage process will involve POSCO producing steel for hydrogen storage tanks and pipes, POSCO INTERNATIONAL building hydrogen import infrastructure including terminals and domestic distribution infrastructure, and POSCO E&C proactively building infrastructure for future hydrogen production and utilization by specializing in hydrogen plant EPC.

Utilization

Ammonia stored in terminals is reformed and converted back into hydrogen to be used for a range of applications, including hydrogen reduction steelmaking, power generation, and hydrogen vehicles. POSCO Group plans to produce 500,000 tons of hydrogen per year by 2030 by undertaking hydrogen generation projects under development in Korea and abroad, of which 250,000 tons will go to steelmaking and the remaining capacity to power generation and decarbonizing industries. As the steel industry's demand for hydrogen is set to surge beyond mid-2030 when transitioning to hydrogen reduction steelmaking takes place at scale, we will progressively expand our hydrogen production capacity to 3 million tons by 2040 and 7 million tons by 2050 to supply hydrogen to cater to large-scale B2B needs such as domestic/overseas steelmaking, power generation, and industrial applications.



POSCO Holdings Signing an Exclusive Green Hydrogen Development Contract in Oman



The consortium of six companies from three countries led by POSCO Holdings signed a contract to exclusively develop green hydrogen projects in Oman. This represents the largest exclusive green hydrogen project ever undertaken abroad by a Korean company.

In June 2023, the project development and usufruct agreement was signed with Hydrom in Muscat, the capital of Oman. The project site is Duqm and Hydrom is Oman's state-run company established to facilitate the nation's green hydrogen business.

This consortium headed by POSCO Holdings gained the right to exclusive green hydrogen development and production for the next 47 years in Duqm in Al Wusta located 450km southwest of Muscat. The land secured by the consortium is nearly 340km^2, about half the size of Seoul, and provides ideal conditions for constructing a renewable energy complex for its access to existing infrastructure facilities including roads and ports within the adjacent Duqm special economic zone.

The consortium plans to create a 5GW capacity renewable energy complex and produce 220,000 tons of green hydrogen per year. Most of the green hydrogen produced locally will be synthesized into over 1.2 million tons of ammonia for safe and efficient shipping before being imported into Korea to be used for hydrogen reduction steelmaking and clean carbon-free power generation among others. A portion of the hydrogen produced will go to meet Oman's local needs. An ammonia synthesis plant will be located in the Duqm special economic zone in consideration of the ease of marine shipping. The consortium plans to break ground for renewable energy facilities, a green hydrogen plant and an ammonia synthesis plant in 2027 following the project development period with a goal of completing them in 2030.

POSCO Group aims to combine all its ongoing hydrogen business capabilities spanning from production to transport, storage, and utilization to establish a value chain for our green hydrogen business model and reach 7 million tons in hydrogen production capacity by 2050. To this end, POSCO Holdings is pursuing a range of green and blue hydrogen projects mainly in such strategic areas as Australia, the Middle East, Southeast Asia, and North America.

Energy

STRATEGY

Renewable Energy

POSCO INTERNATIONAL is expanding its renewable energy business portfolio in Korea with a focus on Sinan in Jeollanam-do known for excellent wind resources and high solar radiation levels specific to salt ponds. To broaden this portfolio with clean hydrogen, the company will further advance into East Sea and West Sea regions to develop offshore wind power generation and partner with leading overseas companies to lay the foundation for POSCO Group's net zero goals.

Photovoltaic Power Generation

- Location: Palgeum-myeon, Sinan-gun, Jeollanam-do
- Generation capacity: **14.5**MW
- Rooftop PV at the Gwangyang Cathode Material Plant: **2.2**MW



Gwangyang Cathode Material Plant

POSCO INTERNATIONAL is operating a large-sized 14.5MW PV power generation complex established on a site that had been previously used as a salt farm and remained unused in Sinan-gun, Jeollanam-do.

The flat and sturdy ground of the reclaimed salt farm site offers advantages in ensuring safety when PV power generation structures are built. The availability of abundant solar radiation which is typical of salt farms further adds to such advantages. The company received positive evaluations for minimizing environmental damage by utilizing brownfield sites for the construction of the power plant. The PV power generation complex in Sinan produces 19,000MWh of highly efficient green energy per year to serve 5,300 households. Meanwhile, 2.2MW-capacity PV panels were installed on the rooftop of the Gwangyang Cathode Material Plant in cooperation with POSCO FUTURE M, and their commercial operation started in January 2024. These PV panels will generate nearly 2.6GWh of renewable energy per year, and their installation on the rooftop of the plant which remained unused made better use of available spaces. This will scale up to other Group affiliates to develop similar projects with over 10MW capacity.

Wind Power Generation

- Location: Jaeun-myeon, Sinan-gun, Jeollanam-do
- Generation capacity: **62.7**MW



POSCO INTERNATIONAL has been actively investing in Jeollanam-do known for its exceptional wind resources since the early days of the domestic wind power market. The company gained the development permit for onshore wind power generation in 2013 in Jaeun-myeon, Sinan-gun, Jeollanam-do, and initiated commercial operation in 2018 following phase-specific developments.

Currently, the company operates a 62.7MW-capacity onshore wind power generation complex consisting of 20 wind power generators. POSCO INTERNATIONAL is also constructing a 300MW-capacity offshore wind farm 2.5km off the west coast of Jaeun-do, Sinan-gun with a goal of completing it in 2028. The company's goal is to develop wind power generation business linking onshore and offshore to increase the proportion of renewable energy and contribute to a vibrant local economy.

Resource Circulation

- Location: Gangnam-gu, Seoul
- Generation capacity: **200,000**Gcal/year



Nearly 1.1 million tons of domestic sewage is released each day from the Tancheon Water Treatment Center into the Han River, and the average end-of-pipe temperature is 12°C.

POSCO INTERNATIONAL recovers the heat energy from the sewage treatment plant that would otherwise be discarded through heat pumps and supplies the heat for heating to nearby areas. This represents the first private sewage heat heating facility and the nation's largest such facility, and produces heating energy capable of serving 20,000 households per year (200,000 Gcal/year). In so doing, the company helps avoid the consumption of 20,000 tons of oil and reduce nearly 34,000 tons of CO_2 emissions per year.

Energy

STRATEGY

Pursuing Joint Development of Offshore Wind Power Generation

In September 2023, POSCO INTERNATIONAL signed an MOU with Equinor, a Norwegian broad energy company, to explore a broad collaboration in the green energy sector.

Under the MOU, the two companies will pursue the Firefly/Bandibuli project to build the world's largest floating offshore wind farm with 750MW capacity by installing 50 15MW-capacity wind power generators 70km off the coast of Ulsan-si in Korea.

Unlike fixed offshore wind power facilities installed along the coast, floating offshore wind power does not disrupt fishing activities and its offshore location ensures there is no obstruction to the wind flow, reliably producing power at relatively uniform wind speeds.

Apart from this, both companies will elaborate on possible areas of cooperation for energy transition, including joint development of offshore wind power generation, joint development partnership for low-carbon hydrogen and ammonia business, establishing steel supply chains for offshore wind applications, and developing a full LNG value chain (exploration-production-storage-generation).

Initiating this project, POSCO INTERNATIONAL plans to develop a 300MW-capacity offshore wind farm near Sinan-gun by 2028 in addition to the 14.5MW-capacity PV power generation and the 62.7MW-capacity onshore wind power generation currently up and running in Sinan-gun, Jeollanam-do. The company will also participate in the joint offshore wind power project under development in the East Sea region to expand its wind power generation capacity to 1.5GW by 2030.



Developing Floater Technology for Wind Power

POSCO partnered with SK ecoplant to develop a floating body model for offshore wind power to lay the basis for growth in the green offshore wind power market.

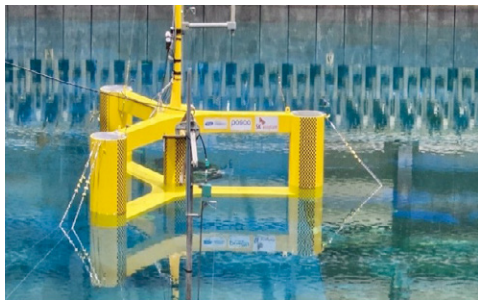
Both companies concurred on the high growth potential of the green offshore wind power market and signed an MOU to jointly develop a K-floating body for floating offshore wind power generation and demonstration technology in April 2021. The efforts initiated under this MOU to develop a K-Floater bore fruits as this new technology was awarded AIP* in March 2023 from DNV, a world-renowned certification body.

*AIP (Approval in Principle): Conducting engineering analysis and risk assessments on new technologies and designs in the shipbuilding and industrial plant sectors to ensure that such technologies achieve the level of reliability and feasibility appropriate for ships or offshore structures in the approval process

POSCO, which has been conducting research on floaters since 2014, takes the charge in creating basic floater designs and developing technology to adopt performance-enhanced steel to improve the economic feasibility of floaters while SK ecoplant explores demonstration technology including detailed designs by drawing on its offshore engineering experiences spanning subsea tunnels and drilling ships.

The K-Floater jointly developed by POSCO and SK ecoplant was verified for its performance through the tank test conducted with a miniaturized scale model, and this will be followed by a demonstration project.

Going forward, POSCO, in close partnership with SK ecoplant, will move on to the detailed design, production, and sea trial phases to fully develop the K-Floater technology and apply its initial model to the floating offshore wind power project SK ecoplant is currently participating in.



A 1/36 scale model of the K-Floater (2m in width, 1m in height) showcased through the tank test conducted at the Korea Research Institute of Ships and Ocean Engineering on September 26, 2023

Developing BIPV Technology Using PosMAC

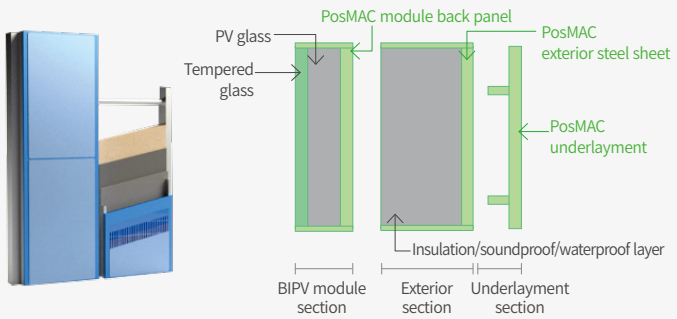
BIPV (Building Integrated Photovoltaics) are building-integrated exterior materials that also function to generate photovoltaic power. BIPV is drawing attention as a key green building technology as the Korean government mandated ZEB* certification for private buildings above a certain scale from 2025 onwards.

*Zero Energy Building: Minimize the necessary energy load and use renewable energy for minimal energy consumption

The predominantly-used 2nd-generation BIPV module adopted the Glass-to-Glass (G-to-G) structure with PV cells sitting between two layers of tempered glass. Meanwhile, this model posed increased risk for safety accidents and difficulties in installation due to the heavy weight of tempered glass.

In partnership with the Research Institute of Industrial Science and Technology, POSCO developed the 3rd-generation BIPV module with the Glass-to-Steel (G-to-S) structure replacing tempered glass installed at the rear of the conventional BIPV module with the highly corrosion-resistant PosMAC steel to overcome the shortcomings of the previous 2nd-generation module. POSCO will implement PosMAC BIPV demonstration projects at Korea East-West Power among others to develop key technology for ZEB and help reduce building energy consumption.

PosMAC BIPV Module Developed by POSCO



Energy

STRATEGY

Energy Efficiency Improvement Plan

Improving Efficiency in Power Generation

POSCO is improving the efficiency of power generation within its steelmaking process in an effort to seek energy efficiency. Byproduct gases generated from the steelmaking process are fed back to steel making and power generation as fuel, which allowed the company to internally meet 86.4% of the power needs at its steelworks in 2023. POSCO also pursues rationalization for its worn-out, low-efficiency generation facilities to improve power generation efficiency while developing technology to predict the generation and consumption of byproduct gases in real time and minimize the dissipation of such gases as a result.

POSCO is investing in the installation, upgrade, replacement, and process improvement of its energy recovery facilities to save energy consumption, and also engages in R&D and facility improvement efforts to increase the recovery of byproduct gas. In September 2023, the company held an energy saving idea contest to improve the energy efficiency of its steelworks. A total of 36 ideas were submitted by employees, and these ideas will be fine-tuned and applied to appropriate shopfloor conditions.

Managing Energy Saving Goals and Discovering Tasks

POSCO recognizes energy efficiency improvement as one of its top priorities. The company sets annual energy saving goals and makes progresses towards these goals. Its energy management system allows for real-time energy consumption monitoring, and the analysis of energy use patterns lays the basis to explore efficient ways of using energy. POSCO stipulated procedures to consider rooftop PV installation when investing in new plants whose rooftop space measures 6,000m^2 and above, and continues to discover energy saving tasks each year.

POSCO FUTURE M is seeking the use of renewable energy, as evidenced in its efforts to install PV power generators in 2019. As to its expanding rechargeable battery material business, POSCO FUTURE M opts for high-efficiency materials and facilities in establishing or expanding plants to improve energy efficiency.

Green Energy Investment Plan

As an operating company heading POSCO Group's energy business, POSCO INTERNATIONAL plans to invest over KRW 2.6 trillion for the next three years in line with the growth strategies of respective business divisions, including E&P (Exploration & Production), LNG (Liquefied Natural Gas), infrastructure, power generation, and green energy. The company will also continue to expand and develop its gas field project, and add capacity to its LNG terminal to help bring stability to the nation's energy supply/demand.

Exploration and Production

POSCO INTERNATIONAL will increase its natural gas production capacity to 1.2 million tons by 2025 in Australia through its local subsidiary Senex Energy, and acquire new E&P assets by working on exploration blocks in Malaysia and Indonesia to continuously broaden its overseas production footprint.

Storage

Following the LNG Tanks 1-5 currently operating at the Gwangyang LNG Terminal with 730,000kl-capacity, the company is constructing a 200,000 kl-capacity LNG Tank 6 with a goal of completing it in June 2024. POSCO INTERNATIONAL will also add Tanks 7-8 with 200,000 kl-capacity on its Terminal 2 site with a goal of completing them by 2026. The company plans to build new LNG terminals in Dangjin and Pohang, which will boost its storage infrastructure capacity to 2.27 million kl by 2030.

Power Generation

POSCO INTERNATIONAL remodeled units 3 and 4 among the seven LNG power plants it operates in Incheon to support hydrogen co-firing, and will operate GW-capacity commercial hydrogen co-firing power plants. Its goal is to achieve 100% hydrogen fueling by 2050 to supply zero-carbon green energy.

Renewable Energy

POSCO INTERNATIONAL will increase its onshore wind, PV and other renewable power generation from 0.08GW at the end of 2023 to 1.5GW by 2030 and lead the Group-level renewable energy business to respond to RE100.

Business	As-Is (as of the end of 2023)	New Investments (2024~2026)	Mid-term Growth Vision (2024~2026)
E&P	1.5Tcf in gas reserves	KRW 1 trillion[1)]	Expand gas reserves by diversifying LNG supply sources
Storage	5 storage tanks (730,000 kl)	KRW 1 trillion[1)]	Achieve energy security by establishing low-carbon LNG supply chains
Power generation	3.6GW in LNG power generation	KRW 0.5 trillion[1)]	Pursue green transition and expand global business to increase our expertise in power generation business
Renewable energy	0.08GW in renewable energy	KRW 0.1 trillion[1)]	Expand renewable energy business to lead net zero efforts
	Total	KRW 2.6 trillion[1)]	

1) Restated the data due to typographical errors (July 8, 2024)

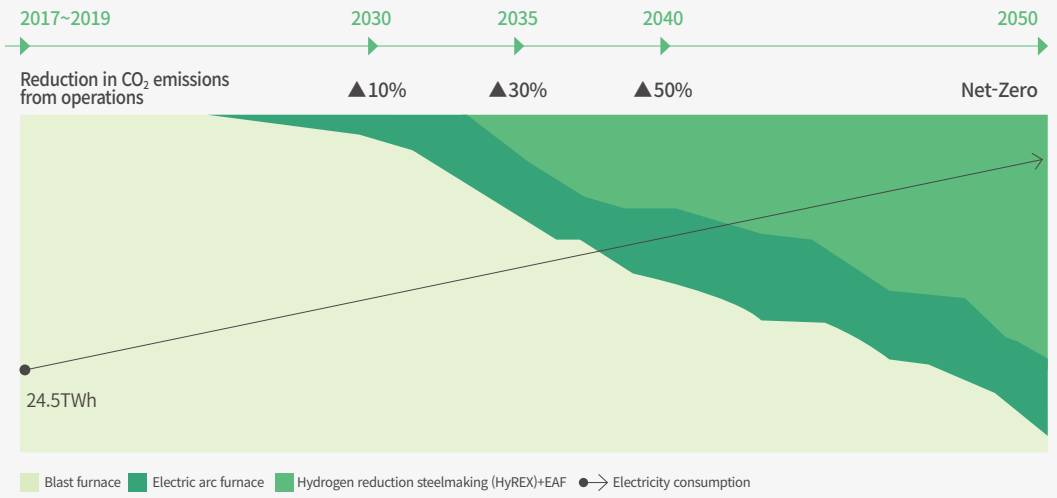
Energy

RISK MANAGEMENT

Preparation for Energy Transition

In progressing towards net zero, POSCO is reducing its reliance on blast furnace operations while readying for the transition towards electric arc furnace and hydrogen reduction steelmaking. Meanwhile, scaling down blast furnace operations will reduce the proportion of self-generation fueled by byproduct gases while boosting overall power consumption across its steelworks: fluidized bed reactors deployed for hydrogen reduction steelmaking consume large amounts of electricity, and their relative increase during this transition period will result in burgeoning power needs.

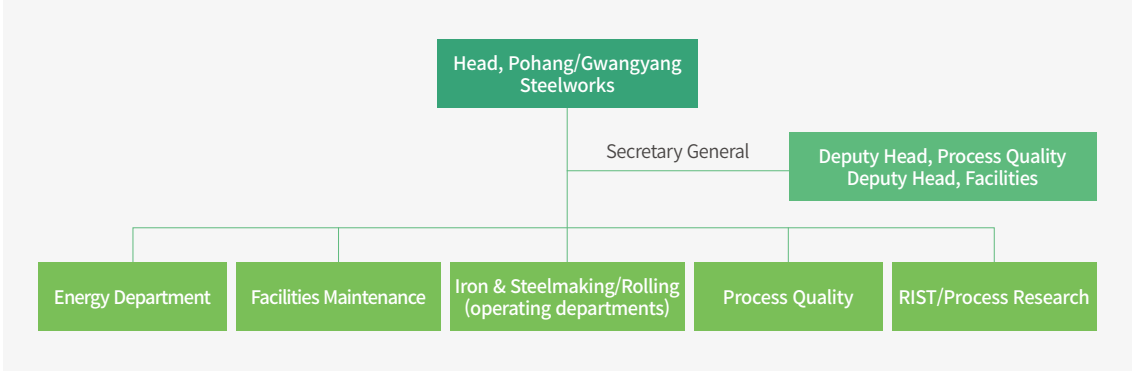
To meet the customer demands for RE100-compliant products and move forwards its 2050 net zero goal, POSCO is exploring ways to source zero-carbon energy including renewable energy. In the short-term, the company is purchasing Green Premium certificates, RECs and other types of renewable energy certificates recognized under the Korean RE100 program to cater to customers' renewable energy requirements. Over the long haul, POSCO is expanding investments in renewable energy self-generated on available sites within its steelworks and signing of PPAs (Power Purchase Agreement) with renewable power generators to ensure large-scale renewable energy supply.



Operating an Innovation TFT for Energy Saving

POSCO sets energy saving goals each year with the Energy Department at the Pohang/Gwangyang Steelworks leading the way, and defines action plans and KPIs to attain these goals.

To lower energy consumption at all levels of the company, quarterly meetings are held to check progress made for energy innovation under the supervision of the Heads of the Pohang/Gwangyang Steelworks. These meetings are attended by the Energy Department along with facilities, process quality, and research functions to keep track of intensity-based electricity and fuel consumption to achieve the set energy goals, share key energy issues, and check and manage the progress made in implementing energy conservation tasks.



Energy Certification

After achieving ISO 50001 in September 2012 for systemic energy management, POSCO has since received renewal audits each year to maintain this certification. The company also conducts annual internal audits to independently assess and improve the company-wide energy management system for its implementation status and management standards while continuously nurturing energy experts through external training including ISO 50001 internal auditor training (completed by 39 employees in 2023).

In October 2023, POSCO E&C was certified to ISO 50001 for the first time by LRQA, a global business assurance organization.
ISO 50001 was set by the International Organization for Standardization (ISO) as energy management system standard to assist organizations in establishing integrated and systemic management strategies for energy efficiency activities so that they could balance technical and administrative aspects to ensure the sustained, company-wide implementation of their energy management system.

Energy

RISK MANAGEMENT

Establishing an Energy Efficiency Management System

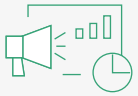
While POSCO previously focused on cost-based energy management at the plant level, it is shifting to one that prioritizes efficiency at the facility level. This will enable the company to introduce facility-based environmental metrics and conduct cost comparisons to establish a more meticulous management system.

This new system has been piloted at some of its plants since 2023, and POSCO will progressively scale up this system from 2024 onwards.

Key Functions of the Energy Efficiency Management System

Visualization

- Real-time intensity-based (KPI) assessment and management
- Process/facility-level energy information
- Issue alarms for deviations from the set scope of management



Analysis

- Analyze correlations between operating patterns and energy use
- Energy use pattern modeling



Optimization

- Improve efficiency in process/facility operation
- Optimize energy use efficiency in line with production/material patterns



METRICS AND TARGETS

POSCO's Energy Efficiency Improvement Goals, Performance, and Key Activities

As a member of the Korean Energy Efficiency Partnership (KEEP30*, Oct. 2022) led by the Ministry of Trade, Industry and Energy, POSCO set a goal of achieving a 1% intensity-based reduction in energy use per ton of steel produced each year by 2027 to join in on the national efforts to overcome the energy crisis and fulfill social responsibility. To attain this goal, POSCO is developing plans to reduce its coal, electricity, and fuel consumption: this will be done by increasing the use of pellets for blast furnace operations and adopting low HMR materials to lower coal consumption and by optimizing captive power generation to reduce electricity and fuel consumption for improved energy efficiency.

*A project undertaken through the voluntary agreement between the government and 30 companies to pursue energy savings and efficiency gains in the industrial sector

Goal

Category	Base Year (Average between 2019 and 2021)	2023	2024	2025	2026	2027	Note
POSCO's intensity-based goal, Mcal/t-s (reduction against the base year)	5,097	5,046 (△1%)	4,995 (△2%)	4,944 (△3%)	4,893 (△4%)	4,842 (△5%)	Annual Average (△1%)

※The above annual goals are subject to change as data verification is ongoing by the Korea Energy Agency, and 2023 data will be disclosed when the verification is completed.

Key Activities

1. Rationalization of Steam Power Generators (3 & 4) at the Gwangyang Steelworks

POSCO's Gwangyang Steelworks internally meets 83% of its power needs through steam power generation which uses byproduct gases stemming from steelmaking as fuel for electricity generation, offgas combined cycle power generation, and LNG power generation using natural gas as feedstock. Steam power generation relies on steam turbines and uses steam as working fluids to produce electricity while offgas combined cycle power generation uses offgas to power gas turbines and generate electricity in the process. POSCO invested KRW 86.8 billion in 2023 in its steam power generators 3 & 4 to replace boilers and generators that reached the end of their service life with new ones for increased reliability. Switching from old turbines to new ones deploying the latest technology also resulted in a 2.5% increase in generation efficiency. All in all, the company reduced its energy consumption by 66GWh per year and saved nearly KRW 8.8 billion in energy costs, which translated into 30,000 tons of carbon emission avoided per year.

Energy

METRICS AND TARGETS

Key Activities

2. Blast Furnace Hot Stove Temperature Control Optimization Program

Melting iron ore to produce molten iron in the blast furnace requires the continuous supply of ultra-high temperature air over 1,000°C. Such hot air is generated through the regenerative method whereby air passes through the regenerative chamber of the hot stove. Hence, the key to improving thermal efficiency lies in retaining high heat appropriate to maintain the intended temperature of the hot air within the regenerative chamber. The Ironmaking Department and the Electrical, Instrument, and Control Technology Department of the Gwangyang Steelworks remain committed to ensuring an appropriate level of air temperature through optimized hot stove temperature control in reflection of the different operating conditions of each blast furnace from 1 to 5. As part of such efforts, 10 new control functions were developed and applied to enable customized control for respective blast furnaces. The optimal pressure and calorific value of mixed gas were also identified to quickly restore the heat storage capacity when heat storage diminishes in a specific hot stove, increasing flexibility in air temperature control as a result. The hot stove plays a crucial role for its direct linkage with blast furnace operations, and the hot air temperature control system helps smooth out variations in hot air temperature to significantly contribute to operational reliability. Improved thermal efficiency also leads to reduced mixed gas consumption, which will allow the Gwangyang Steelworks to achieve over KRW 3.8 billion in cost savings in 2024. More to the point, this will result in more than 12,000 tons of CO_2 emissions avoided, equivalent to 1.5 million trees capturing carbon.

3. Completion of a Green, Integrated Fulfillment Center

On the rooftop of the 'POSCO Fulfillment Center' completed in April 2024 within the Gwangyang National Industrial Complex are PV power generators installed with 1.4MW capacity capable of serving over 500 households for one full year, indicating the center is self-sufficient and eco-friendly in meeting its own power needs. Its construction started in November 2022 with KRW 90 billion investment. The 50,000m^2-sized fulfillment center can accommodate seven football stadiums and consists of 34,000 cells to store materials of varying sizes from small to large ones. The center deploys large-sized shelves to support cranes to automatically fill cells with materials, cube-type warehouses where robots automatically store materials, and self-driving robots to dramatically increase productivity. The adoption of the WMS (Warehouse Management System) enabling data-based material demand prediction and inventory management also adds to its system efficiency throughout the entire process from material storage to delivery tracking.

POSCO INTERNATIONAL's Goals for Energy Business

Goal

Category	E&P	LNG Infrastructure	Power Generation	Renewable Energy
Strategic Direction	Increase reserves and acquire assets with LNG potential to expand the value chain	Expand linked businesses based on dedicated terminal vessels and other assets to increase LNG trade volume	Lay the basis for net zero through dual-fuel power generation and expand domestic/global GtP (Gas to Power) operations to secure LNG demand	Expand offshore wind power and build hydrogen ammonia infrastructure to lead in green energy supply
Mid/long-term Goal (2023~2030)	Gas reserves: 1.5Tcf → 1.8Tcf	LNG trade volume: 360,000 tons → 4.71 million tons Terminal capacity: 730,000 kl → 2.27 million kl	Generation: 3.6GW → 6.6GW	Green energy capacity: 0.08GW → 1.5GW

POSCO FUTURE M's Renewable Energy Use Goals

POSCO FUTURE M is expanding the use of low-carbon energy, including on-site rooftop PV generation, as one of the key pathways towards net zero, and set its mid/long-term goal of 100% transitioning to renewable energy for its energy materials business by 2035 and for its entire operations by 2050.

The company will keep current with regional renewable energy policies and trends to build its own renewable energy transition portfolio consisting of self-generation (PV), PPAs, and REC purchases. In moving forwards these set goals, POSCO FUTURE M will team up with POSCO INTERNATIONAL leading POSCO Group's energy business to mitigate risks associated with renewable energy development and pursue efficient ways to energy transition.

Performance

Year	2021	2022	2023
Renewable energy consumption (unit: GJ)	493.8	628.0	790.2

Goal

Year	2027	2030	2035
Renewable energy consumption (unit: GJ)	2,186,441	12,707,097	24,287,417

Biodiversity

GOVERNANCE

Policy

POSCO Group commits to minimizing our impact on the ecosystem and fulfilling our responsibility for ecological restoration while conducting business across our global operations. To this end, we established a Group-wide biodiversity policy and apply this policy to our key operations in Korea and abroad.

TNFD Endorsement

In commemoration of International Day for Biological Diversity on May 22, 2022, POSCO Holdings joined the TNFD (Taskforce on Nature-related Financial Disclosures) Forum as the first non-financial company in Korea to do so. With POSCO, POSCO INTERNATIONAL, POSCO E&C, and POSCO FUTURE M following suit, five Group affiliates officially made their commitment to biodiversity management as members of the Forum. In line with the TNFD framework, we will set biodiversity management metrics and engage in preemptive response while undertaking activities to prevent biodiversity loss and promoting biodiversity, continuing with our efforts to reinforce our capabilities to respond to natural capital issues and to mitigate biodiversity impact that may arise from our business operations.

POSCO's Approach to Biodiversity Policy Implementation

POSCO is inspecting the quality of seawater and the contamination of sediments in the vicinity of its domestic operations, and commissions specialized institutions to perform professional due diligence on biodiversity impact when deemed necessary. POSCO identifies the presence of biodiversity-protected areas and endangered species in areas adjacent to its existing and/or new operations, and the results serve as key inputs in its efforts to develop biodiversity management plans for respective business undertakings. In principle, POSCO does not pursue any business opportunity in areas recognized as biodiversity-protected areas or wetlands. In pursuing offsets, POSCO ensures that BATs (Best Available Techniques) are applied to set an example for others to follow.

STRATEGY

Biodiversity Management at Key Operations

While POSCO Group engages in a broad array of businesses, the palm plantation in Indonesia, the Pohang/Gwangyang Steelworks in Korea, and the lithium-rich salt lake in Argentina are specifically projected to have the greatest impact on their surrounding ecosystem. We take a differentiated biodiversity management approach to each of these operations taking into account their geological location and business characteristics.

Palm Plantation in Indonesia:

Announcing the NDPE Policy and Achieving the RSPO Certification

PT.BIA, POSCO INTERNATIONAL's local palm plantation corporation in Indonesia, fully assessed the environmental and social impact of its palm oil business early from its initial phase, and has integrated such impact in its decision-making process to take necessary action.

In January 2007 before starting its business, PT.BIA was granted a Location Permit for the plantation site by the Indonesia Investment Authority, and conducted environmental impact assessment pursuant to the nation's environmental laws. This revealed that the site primarily consisted of bushes, reeds, and secondary forests, categorizing it as a Convertible Production Forest, and PT.BIA earned approval for its plantation business in 2009.

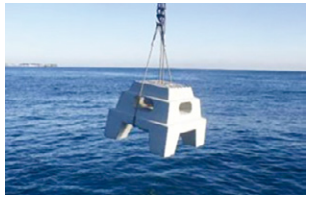
PT.BIA followed up on this by voluntarily excluding forests, wetlands, and waterways it internally considered as of high conservation value from the scope of development, along with wildlife protection areas, swamps, and other forest areas requiring protection under Indonesia's forest laws. The areas excluded as such amounted to nearly 20% of total land approved for the business, and have been safeguarded as areas of high conservation value to date. PT.BIA takes a rigorous approach to fire prevention and water quality protection in the course of its business operations to minimize any adverse impact on biodiversity within its estates and surrounding areas.

Such efforts allowed PT.BIA to join the RSPO (Roundtable on Sustainable Palm Oil) in 2018, and announced the NDPE (No Deforestation, No Peat, No Exploitation) policy in March 2020 as the first Korean company to do so. PT.BIA went on to achieve the RSPO certification in September 2021, and gained approval for its comprehensive mid/long-term plan for environmental protection and community preservation. Building on such achievements, PT.BIA is developing and operating environmental restoration management programs for nearby rivers spanning flood prevention and biodiversity preservation within the plantation estates as well as forest and ecosystem conservation programs outside the estates, doing its utmost to faithfully deliver on the promise it made with the international community.

Triton Project in Korea

Taking into account its business characteristics of operating seaside steelworks, POSCO has been undertaking the marine forestation project for the past one decade to help restore the marine ecosystem. To date, over 7,000 units of Triton Reef have been installed across 30 areas affected by sea desertification in Korea, and additional marine forests were created in Cheongjin 3-ri in Pohang in the vicinity of POSCO's steelworks in 2023. POSCO's commitment to marine ecosystem restoration through the creation of sea forests was widely recognized the world over when POSCO was awarded in the environmental innovation category at the International Corporate Citizenship Conference (ICCC) as the first-ever Asian company to do so in 2023.

In April 2024, POSCO inked an MOU with the Ministry of Maritime Affairs and Fisheries to create marine forests through public-private partnerships to restore and promote marine ecosystems through sea forestation, and will create sea forests near Mopo-ri and Gupyeong 1-ri. POSCO will also continue to cooperate to ensure sea forests are duly recognized as a viable carbon sink.



Installing Triton artificial reef

RISK MANAGEMENT

Risk Management Process: POSCO

POSCO's Biodiversity Risk Assessment Process

POSCO follows the 5-step process for biodiversity risk assessment, ranging from Step 1 to analyze biodiversity dependencies and impacts specific to the industry to Step 5 to monitor biodiversity.

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
	Analyze biodiversity dependencies and impacts specific to the industry	Identify biodiversity status near the operations	Assess biodiversity risk near the operations	Explore mitigation measures for respective operation	Monitor biodiversity
Implementation Activity	Use ENCORE's[1] tools to analyze the biodiversity dependencies and impacts of the steel industry	Analyze endangered species on the IUCN Red List, and identify the presence of UNESCO World Cultural Heritage sites and the habitation of threatened species near the operations	Use the Biodiversity Risk Filter (BRF) of the World Wild Fund for Nature (WWF) to analyze specific biodiversity risk at respective domestic operations	Take mitigation activities at respective domestic/global operations to minimize biodiversity risk	Report and review monitoring results
Assessment Tool	ENCORE	IUCN	WWF BRF	TNFD LEAP	TNFD LEAP

1) Analyze the types of natural capital on which businesses depend for their operations and the impact industry-specific economic activities bring on the natural environment

Steel Industry's Dependencies and Impacts on Natural Capital

POSCO performed the first round of analysis using ENCORE's tools on the biodiversity-related dependencies and impacts. This revealed that POSCO's dependencies in the three metrics of water flow maintenance, surface water, and ground water were in the medium range out of 21 metrics analyzing dependencies on ecosystem services. Meanwhile, analyzing the company's ecosystem impacts showed that POSCO's impacts were in the high range for three metrics covering water use.

Category	Relevant Metric	Level
Dependency	Water flow maintenance	Medium
	Mass stabilization and erosion control	Low
	Surface water	Medium
	Ground water	Medium
	Climate regulation	Very Low
Impact	Water use	High
	GHG emissions	High
	Solid waste	High

Source: ENCORE (Exploring Nature Capital Opportunities, Risks and Exposure)

Analysis of Threatened Species in the Vicinity of POSCO's Operations

Drawing on the IUCN (International Union for Conservation of Nature) Red List, POSCO surveyed endangered species in the 5km radius of its two steelworks in Pohang and Gwangyang. The number of these endangered species was analyzed in the three categories of Vulnerable, Endangered, and Critically Endangered, and this identified fish as facing the highest risk of extinction.

Domestic Operations

- Pohang Steelworks
  (6262, Donghaean-ro, Nam-gu, Pohangsi, Gyeongsangbuk-do, Republic of Korea)
- Gwangyang Steelworks
  (20-26, Pokposarang-gil, Gwangyang-si, Jeollanam-do, Republic of Korea)

Number of Endangered Species (IUCN Red List)

Category	Vulnerable	Endangered	Critically Endangered	Total
Pohang	31	18	1	50
Gwangyang	41	25	5	71

Category	Mammals	Birds	Reptiles	Amphibians	Fish	Mollusks	Plants	Fungus	Others
Pohang	5	13	2	0	23	1	4	1	1
Gwangyang	5	17	2	1	39	1	3	1	2

Source: IUCN (International Union for Conservation of Nature).
IUCN Red List of Threatened Species: Summary and Statistics
(Threatened species in each major group by country)

Biodiversity

RISK MANAGEMENT

Biodiversity Risk and Impact Analysis at POSCO's Key Operations

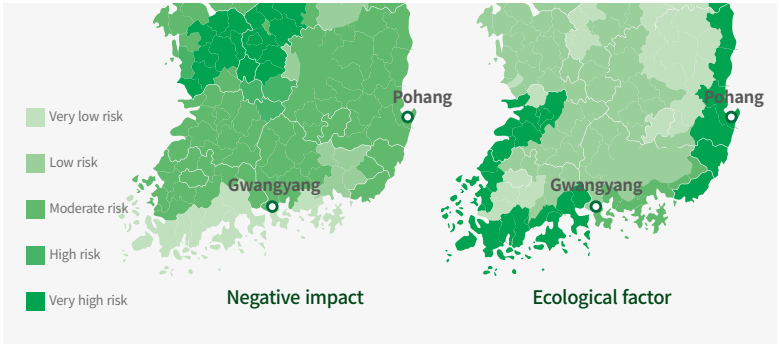
POSCO identified its biodiversity risk specific to the steel industry and in the vicinity of its operations with the help of the Biodiversity Risk Filter (BRF) of the World Wild Fund for Nature (WWF). This involved the analysis of risks in terms of Pressures on Biodiversity[1)] and Environmental Factors[2)] to comprehensively assess the health of local ecosystems and anthropogenic impact.

1) Metrics representing the conditions of an ecosystem, indicating comprehensive risks for the state of air/water/soil ecosystems and moisture. The lower the risk, the healthier an ecosystem is with stronger resilience
2) Metrics indicating negative impact on local environmental assets. The Lower the risk, the lower the likelihood of biodiversity impacts occurring

Industry-specific and Local-bound Biodiversity Risk Factors

Biodiversity Risk Factor		Risk Level (location-based)	
		Pohang	Gwangyang
Pressures on Biodiversity	Land, Freshwater and Sea Use Change	●	●
	Tree Cover Loss	●	●
	Invasives	●	●
	Pollution	●	●
Environmental Factors	Protected/Conserved Areas	●	●
	Key Biodiversity Areas	●	●
	Ecosystem Condition	●	●
	Range Rarity*	●	●

*Degree of endemism of mammals, amphibians and bird species



Source: WWF (World Wild Fund For Nature) Biodiversity Risk Filter

POSCO's Analysis of Key Operations by Environmental Impact Factor

Based on the biodiversity risk analysis results identified for POSCO's key operations, impact analyses were made on Pohang and Gwangyang where POSCO's operations are located in line with key risks.

Operational Condition		Environmental Impact Risk Factor				Surrounding Conditions
Operational Site	Size	GHG Emissions	Air Quality	Water Quality	Waste	UNESCO World Cultural Heritage Sites within the 5km Radius of Operations
Pohang	9.5km^2	Accelerating climate change, change in the distribution and habitats of species	Ecosystem destruction affecting animals and plants, reduced biodiversity	Destruction of aquatic habitats, water shortage, reduced biodiversity	Regulations governing waste recycling, limitation in waste disposal	None
Gwangyang	21.4km^2					None

Ecological Survey in the Vicinity of POSCO's Steelworks

To analyze the impact on marine ecosystems in the vicinity of Pohang and Gwangyang, we survey the number of species that we use as environmental metrics.

Ecological Surveys Conducted near POSCO's Steelworks (2023)

Area	Phytoplankton	Zooplankton	Attached Seaweed	Attached Benthic Animal
Pohang	30	22	51	75
Gwangyang	36	28	55	49

Mitigating Negative Biodiversity Impact

POSCO analyzed its biodiversity dependencies and impacts specific to the steel industry, and the results informed its efforts to implement a range of activities to mitigate factors having high biodiversity impact and to minimize negative environmental impact as a result.

Note	Impact and Risk	Key Mitigation Activity
Biodiversity impact mitigation	GHG emissions	• Increase the proportion of pallets and HBI (Hot Briquetted Iron) out of blast furnace raw materials to reduce fossil fuels consumed for sintered ore production • Use byproduct gas generated from the steel production as fuel for the steelmaking process and power plant operation to generate electricity
	Air quality	• Sign a voluntary agreement with the Ministry of Environment to reduce PM levels during their peak season (Dec.~Mar.) • Install dust collecting bleeders, capable of reducing pollutants in the residual gas of the blast furnace by nearly 90%, at all of the eight blast furnaces at its steelworks
	Water quality and water shortages	• Collect rainwater and yard/road spray water at the rainwater treatment facility and recycle such water after treatment • Generate desalinated water from the seawater desalination facility (30Kt/day) and use municipal sewage as industrial water (80Kt/day)
	Waste	• Use silicate fertilizers as a byproduct from the steel production to prevent soil acidification and reduce GHG (methane) emissions by nearly 14% • Use slag reclaimed through magnetic separation as scrap iron substitutes and non-magnetic slag as substitutes for natural aggregates

Biodiversity

RISK MANAGEMENT

Biodiversity Preservation and Promotion Activity

POSCO INTERNATIONAL: PT.BIA's NEDPE Implementation

POSCO INTERNATIONAL's PT.BIA operates its palm plantation sustainably in compliance with the NDPE policy. PT.BIA Issue Paper

Category	Implementation Plan	Key Achievement
Environmental conservation and management	• Abide by RSPO's BMP (Best Management Practices) and continuously ban the application of chemicals near buffer zones	• Adopted RSPO's BMP to ban the use of chemicals near buffer zones • Strengthened buffer zoning within the estates in line with the buffer zone updates made through GPS tracking and satellite/aerial image analysis • Used drones for more rigorous monitoring of environmental conservation activities (ban on the use of chemicals, etc.) near buffer zones
	• Strengthen biodiversity preservation activities for 6,718ha of HCV (High Conservation Value) areas within forests	• Introduced and used FIATs (Forest Integrity Assessment Tool) to survey HCV areas for biodiversity preservation • Surveyed the diversity of bio species and vegetation status through drone shooting and VMT (Village Monitoring Team) patrols - (Jul. 20~Jul. 24, 2023) Provided training to over 25 persons from the HCV team (including the plasma team), the VMT, and estate representatives to improve understanding on HCV area preservation methods • Bolstered guidance on the prohibition of illegal capture of animals and plants within HCV areas (replaced 37 signboards and 64 banners, and installed additional ones) and provided training to all employees as of 2023
	• Continue to implement the environmental conservation program outside forests	• Signed an MoU between PT.BIA and the Papua Natural Resources Conservation Center (BBKSDA) (Oct. 2023) - Will undertake activities to promote forest protection and biodiversity within the Lake Bian Wildlife Reserve (LBWR) - Will operate forest patrol teams and fire patrol teams for each village of indigenous people to strengthen collaboration with local communities for biodiversity protection
	• Establish a structured water resources management system - Conduct regular water quality inspections and disclose results to stakeholders - Monitor water consumption related to palm oil production and the POME (Palm Oil Mill Effluent) disposal process	• Conduct semi-annual water quality analyses near the rivers of the palm plantation through third-party verification bodies and share the results with local community stakeholders - Engage local residents (including the VMT) early from the water sampling phase to increase transparency - Engaged nearly 40 community stakeholders, including indigenous people, religious leaders, and government officials in the water quality analysis presentation in 2023 • Regularly monitor POME* released from the palm oil production process *Water used and released when steaming fresh fruit bunches in the palm oil production process - Naturally purify POMEs generated from the CPO extraction process in the artificial pond and feed their organic substances back into the plantation for reuse (Land Application)
	• Treat waste	• Ensure rigorous status review on the treatment of hazardous waste - Collect and treat waste generated from the plantation and the CPO mill every two months (nearly 24 tons/year) • Recycle plastics within the plantation - Installed over 300 additional waste sorting facilities, and reviewed ways to collaborate with indigenous people for plastic and glass recycling
	• Bolster prevention activities including trainings and drills for employees and community members to prevent fires	• Set up and operated a fire response team 24/7 - Conducted simulation drills for emergency fire response across all estates (including plasma estates) in August 2023 • Provided students, teachers, and local residents with firefighting drills for potential fire situations that may occur at school and home

Risk Prevention by Stage of Business

Impact Analysis

POSCO Group, operating across a wide range of businesses and geographies, reviews biodiversity impact from the pre-execution to the actual operational phases in the entire business process spanning new investment, business expansion, and plant construction, pursuing sustainable business in so doing.

[New Investment]

POSCO Holdings stipulates that issues reviewed through the ESG checklist be incorporated into investment deliberation reports in the entire investment deliberation process to effectively respond to investment risk. The ESG checklist consists of 10 items including biodiversity-related ones.

[Business Expansion]

In pursuing a large-scale business transformation, POSCO Group is performing environmental impact assessment and collecting feedback from local residents as its mandatory priority in managing transition risk. POSCO is readying itself to switch to hydrogen-based direct reduction ironmaking (HyREX) to achieve net zero, and is implementing its plan to construct a HyREX steel mill in Pohang, Korea.

Presently, environmental impact assessment is underway on the new HyREX facility site within its 5km radius early in the pre-construction phase, and the assessment covers a total of nine items*.

*Marine water quality, marine sediments, marine ecosystem, air quality, odor, noise/vibration, hygiene/public health, soil
From the 3rd round of assessment, the scope will be extended to the 10km radius of the site and the results will be communicated to local residents through public hearings.

[Demonstration Plant Construction]

For the Salar de Hombre Muerto project POSCO Argentina is developing in Salta, Argentina, biodiversity data have been collected and managed since 2020 from the lithium brine demonstration plant phase. POSCO Argentina aimed to investigate and document changes occurring during the construction period, and kept track of biodiversity conditions while the plant was being constructed throughout 2023.

Biodiversity

RISK MANAGEMENT

Risk Management Process: POSCO Holdings' Lithium Operations in Argentina

POSCO Group acquired Hombre-Muerto Salt Lake in Argentina in 2018, and broke ground for the lithium brine demonstration plant in 2020 and for phase 1 of the lithium brine plant in 2022. In 2023, phase 2 construction of the lithium brine plant also started to boost our competitive edge in lithium business. POSCO Argentina commits to minimizing the impact of its salt lake development on the surrounding environment and communities while assessing the environmental impact generated along with experts on a quarterly basis (joined by local residents once a year) and transparently disclosing the details to local communities.

Environmental Monitoring

To transparently disclose the project progress made and its environmental impact, POSCO Argentina regularly performs environmental monitoring joined by its employees, government officials, experts, and representatives of indigenous communities.

- Monitoring is joined by technical staff from the Salta mining office, external experts, residents from the two nearby villages of Estación Salarde Pocitos and Santa Rosa de los Pastos Grandes, and POSCO Argentina employees.
- Training is provided in advance on air quality, water resources, soil, wastewater, and noise and then samples are jointly collected and the results are analyzed.
- The phase 2 facility of the lithium brine plant is located across the two states, and the Catamarca state office and its village residents also participate in community participation monitoring.

Progress Made on Environmental Monitoring

Category	Target Participant	Monitoring Timeline	Key Details
General environmental monitoring	1 employees, 2 consultants	May~Jun. and Sep. in 2023	- Air quality, soil, and water, and other measurement in the surrounding environment - Biodiversity survey
Community participation monitoring	4 employees, 4 indigenous people, 9 biologists, 2 from the office of the deputy secretary of mining, 2 consultants	Jan. and Dec. in 2023	- Air quality, soil, and water, and other measurement in the surrounding environment - Biodiversity survey

Measurements Made through Environmental Monitoring

Measurement Metric	Purpose of Measurement
Fresh water	Compliance with the set legal threshold for water pollution
Ground water	Ground water pollution
Soil	Compliance with the set legal threshold for soil contaminatin
Effleunt points	Compliance with the set legal threshold for treated sewage
Process effluent	
Air quality	Analysis of impact on air quality in the vicinity of operations
Noise and vibration	Analysis of impact of noise and vibration in the vicinity of operations



Environmental monitoring in progress

Environmental Regulations and Training

POSCO Argentina provides new hires and workers from new contractors with environmental management training specific to the alpine region, covering waste sorting, storage of hazardous waste, flora and fauna protection, and proper response to cultural heritage excavation. Constant reviews are made on workers' compliance with environmental management standards and training is provided on cases of non-compliance. Regular training is offered to local employees, truck drivers, and indigenous peoples on driving and general regulations, and reviews are made on the implementation of such training.

[Driving Regulations]

- Drive only roads for which a permit has been obtained and minimize the use of new roads
- Reduce the use of horns and lighting to minimize the threat to animals
- In the event of an accident, take immediate emergency action and document/report it on site as mandatory requirement

[General Regulations]

- Prohibit starting fires or harvesting plants in unauthorized locations
- Prohibit the introduction or breeding of animals such as cats that are not native to the salt lake area
- Ensure water intake access for wildlife and bolster patrols around the operational site
- In the event of detecting harm done to animals, immediately rescue them and support their return to nature after necessary treatment

Special Management for Water Resources

While POSCO Argentina's lithium facility is located in low water stress area (below 10%) according to WRI (World Resources Institute)'s classification, POSCO Argentina nonetheless commits to minimizing the impact of its water use on local communities and ecosystems taking into account the distinctive high elevation of its operations. Sources of water withdrawal are categorized and groundwater is developed and used separately at 80m and below in depth to ensure its water intake does not impact the surrounding environment. Inspections are also made on the quantity and quality of water resources to ensure its groundwater development does not impact surface water resources, and the results are communicated to local residents. In tandem with this, local residents are given the opportunity to directly participate in water quality inspections on a year for joint monitoring. The lithium extraction technology POSCO Group independently developed serves to reduce water consumption by 50~80% compared to competitors, helping to minimize water use. POSCO Argentina is forecast to increase its daily water consumption for future operations, and will prevent water shortages in the alpine region where it is located through such monitoring efforts as groundwater level management and regular water quality analysis.

Biodiversity

RISK MANAGEMENT

Risk Management Process: POSCO Holdings' Lithium Operations in Argentina

Bio Species Survey

POSCO Argentina monitored plants inhabiting the areas in the vicinity of the salt lake in attendance of biodiversity experts and local residents four times in January, June, September, and December of 2023. The rarity of historical records of fauna and flora living near high-altitude salt lakes further adds to the importance of the regular bio species surveys conducted by POSCO Argentina in archiving local biodiversity data.

In the nearby areas, vicugna vicugna, listed as endangered species by the IUCN is the prevailing species, living along with mammals such as flamingos and donkeys, birds, and reptiles as well as numerous plant species observed, which are subject to variations in season distribution. As data accmulate year after year, this will allow us to compare the distribution of animals and plants by season.

Fauna/Mammal

Category	Jan. 2023	Jun. 2023	Sep. 2023	Dec. 2023
	Population	Population	Population	Population
Pseudalopex culpaeus	2	0	0	0
vicugna vicugna	88	137	23	36
Lopardus colocolo	1	0	0	0
Canis lupus	3	0	0	0
Cavia sp	10	0	21	0
Eligmodontia sp.	0	0	4	0
Phyllotis sp.	0	0	0	0
Lagidium viscacia	0	0	0	1
Roedor sp.	0	3	0	0
Ctenomys opimus	50	0	16	1
Leopardus colocolo	0	0	1	0
Felino mediano	0	0	2	0
Puma concolor	0	0	1	0
Lycalopex culpaeus	0	0	2	0
Abrothrix andina	0	0	0	2
Equus asinus[1)]	23	15	11	23
Mula[2)]	0	0	0	0
Total	**177**	**155**	**81**	**63**

1) Invasive wild donkey
2) Mule

Fauna/Bird

Category	Jan. 2023	Jun. 2023	Sep. 2023	Dec. 2023
	Population	Population	Population	Population
Aeronautes andecolus	28	0	0	0
Attagis gayi	0	0	15	0
Cinclodes atacamensis	12	1	0	0
Geositta punensis	0	36	9	25
Lessonia oreas	13	0	0	1
Metriopelia aymara	22	29	15	30
Oressochen melanopterus	15	76	0	2
Phoenicoparrus andinus	3	0	0	70
Phoenicopterus chilensis	0	14	0	0
Phrygilus fruticeti	29	0	0	0
Phrygilus gayi	8	0	0	0
Phrygius attriceps	17	0	0	0
Thinocorus orbignyaunus	16	1	0	0
Tinamotis pentlandii	0	0	6	0
Others	27	14	7	20
Total	**190**	**171**	**52**	**148**

Biodiversity

RISK MANAGEMENT

Flora

Category		Jan. 2023	Jun. 2023	Sep. 2023	Dec. 2023
Family	Species	Population	Population	Population	Population
Asteraceae	Artemisa copa Phil	323	107	411	461
	Chuquiraga atacamensis Kuntze	129	11	131	146
	Senecio viridis	78	257	444	1,274
	Parastrephia lucida	0	0	108	116
	Others	36	45	12	81
Fabaceae	Hoffmannseggia yaviensis Ulibarri	3	0	0	15
	Adesmia erinacea	0	0	0	92
	Adesmia horrida	1,251	1,663	1,197	3,777
Cactaceae	Maihueniopsis glomerata	8	9	11	34
Poaceae	Festuca argentinensis	0	0	495	718
	Festuca orthophylla	73	452	0	370
	Puccinellia frigida	0	0	52	104
	Others	35	0	19	41
Solanaceae	Solanum sinuatirecurvum	0	0	0	400
	Nicotiana sp.	112	0	0	0
	Lycium chanar	0	0	0	288
	Others	29	8	3	0
Verbenaceae	Aloysia deserticola (Phil.) Lu-Irving & O´Leary	860	1,234	678	77
	Acantholippia deserticola	0	0	0	1,450
	Junellia seriphioides	0	0	0	241
Others	Dry cover	328	23	0	0
Total		3,265	3,809	3,561	9,685

Biodiversity Protection and Soil Restoration Plan

POSCO Argentina's plant is situated in an alpine region due to the distinctive characteristics of its process, and a variety of mammals, reptiles, birds are inhabiting the surrounding areas. Its operations follow the principle of minimizing any impact on bio species and soil and restoring the site to its original state during the operational phase and even after its termination. To this end, POSCO Argentina established specific bio species protection plans in December 2023 and is implementing these plans.

[Bio Species Protection Plan]

- Site preparation in the pre-construction phase: Captured lizards and rodents through the traps installed in the site and released them into the nearby environment
- Construction phase: Had biologists permanently stationed to keep animals away during construction and transport them out of the site upon detection
- Future plan: Separately store topsoil and recycle them for restoration when dismantling the plant

[Soil Restoration Plan]

- After the completion of the project, collect soil samples from toil tanks and hazardous waste storage facilities where contamination is possible, analyze these samples, and take remedial measures to restore contaminated soil
- Will dismantle all installed structure and perform leveling work for the project site. Due to the high-elevation location of the project site, it is expected that the rebreeding of animals and plants will occur in a short period of time, allowing for natural rehabilitation.





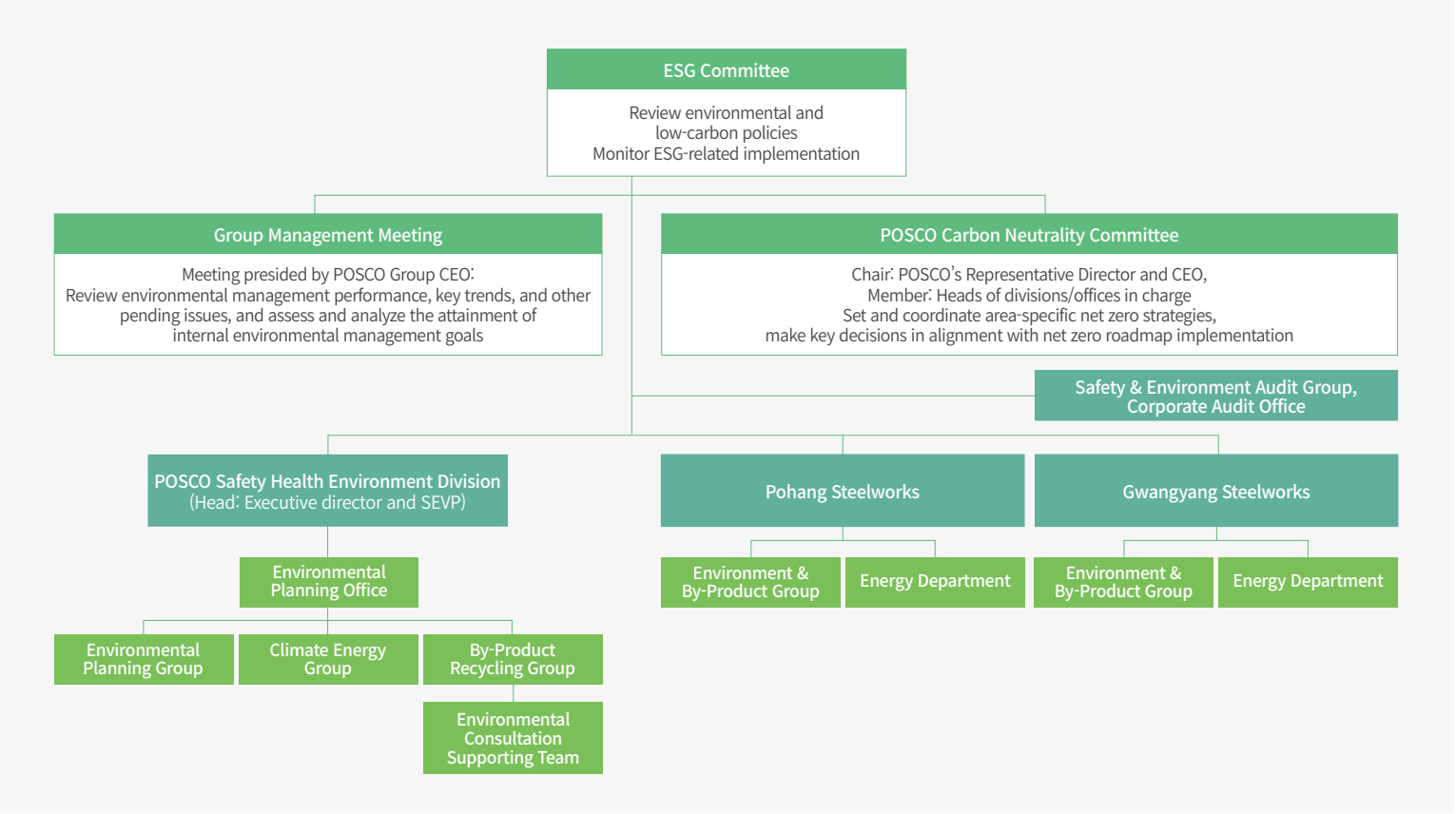
Environmental Management

GOVERNANCE

Environmental Management System

At POSCO, environmental operations spanning air quality, water resources, and by-products are led by the Environment & By-Product Group at the Pohang and Gwangyang Steelworks and the Environmental Planning Office under the Safety Health Environment (SHE) Division. Environmental management performance and key environmental metrics are reported each month as regular agenda items at the internal management briefings supervised by POSCO's CEO.

POSCO's Environmental Management Organization



Board of Directors

POSCO reports mid-term management strategies and management plans for the following year as decision items at the Board meeting held in December each year, and this includes key environmental performance and investment plans concerning air/water quality, chemicals, and by-product recycling.

- 8th Board meeting on Dec. 19, 2023: Reported 2024 environmental management plans as part of the 'mid-term management strategy and 2024 management plan'

Policy

POSCO Group announced the Group-level environmental policy, and each operating company sets their own environmental management guidelines that suit their specific business characteristics.

- POSCO's Integrated Environmental and Energy Management Guideline

Environmental Advisory Committee

POSCO's Environmental Advisory Committee has been up and running since 2022 to collect feedback from experts on the environmental impact of its steelworks on their surroundings, improve the local environment, and engage with local communities.

- Operational Performance in 2023
  - Composition: Chair (Professor Yoon-Seok Chang from UNIST), external members (President of the Korean Society of Environmental Health, professors with environmental expertise), internal members (Head of Safety Health Environment Division, Director of Environmental Planning Office, Deputy Manager of Safety and Environment Sector at the Steelworks, Head of Environment Research Laboratory at RIST)
  - Operation: Held regular quarterly meetings and also met on an as-needed basis

Performance Compensation

POSCO's Representative Director & CEO assesses executive performance in line with a comprehensive set of criteria consisting of KPIs and key performance outcomes, and the results base the determination of executive performance pay.

In 2023, 30% of the KPIs set for the Head of the Safety Health Environment Division, an inside director, were associated with total atmospheric emissions to reflect his/her environmental performance.

Environmental Management

STRATEGY

Water Resources

POSCO commits to minimizing the risk of water shortages by optimizing its water management and increasing water recycling. To keep the environmental impact of its steelworks on the surrounding waters to a minimum, POSCO applies stringent standards to managing the quality of effluents.

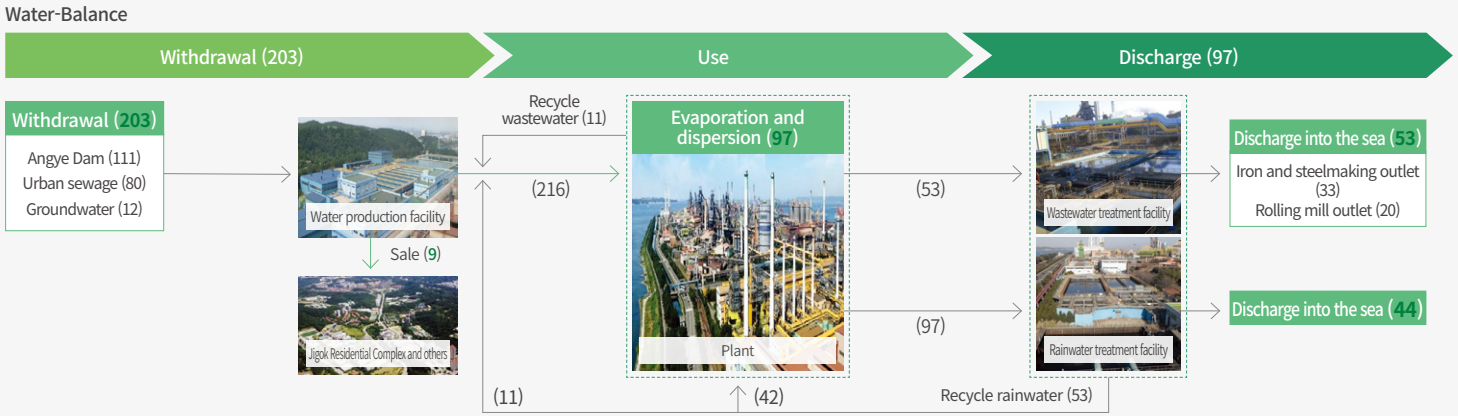
POSCO implements the MES (Manufacturing Execution System) for its steelworks operations to keep track of energy supply/demand in real time, including water consumption by water source, and monitors water consumption of each plant on a monthly basis.

Participation in CDP's Water Assessment

POSCO has received water security assessments under CDP's water disclosure project since 2016. In 2023, POSCO was rated Leadership A- in the leadership band.

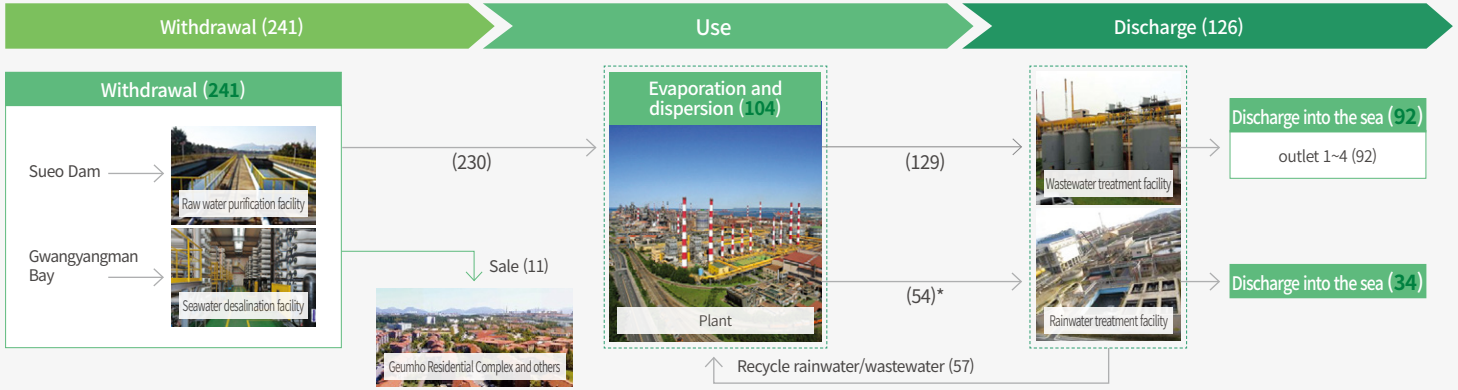
Pohang Steelworks' Water Use Process

(as of 2023, unit: 1,000 tons/day)



Gwangyang Steelworks' Water Use Process

(as of 2023, unit: 1,000 tons/day)



*Water flowing into the rainwater treatment facility: Rainwater, spray water, water used for cleaning, etc.

Environmental Management

STRATEGY

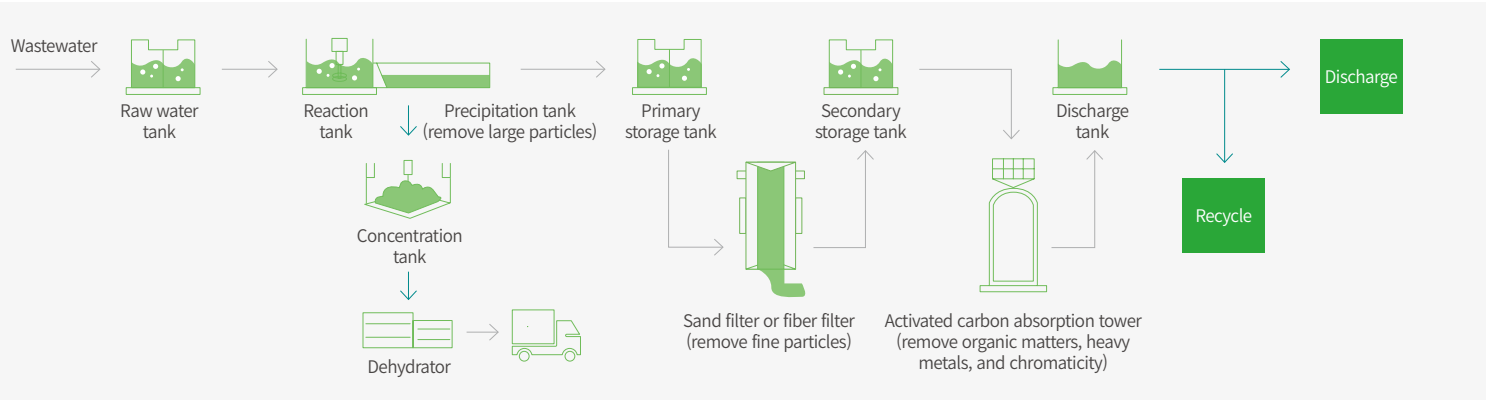
Water Conservation and Wastewater Recycling

POSCO Group committed to minimizing environmental footprint in our environmental policy by reducing the consumption of water and other resources as much as possible and ensuring proper wastewater management. In August 2023, Gwangyang where our key production site is located was ranked Water Stress High, indicating its water stress level is in the 40~80% range according to WRI (World Resources Institute)'s water stress criteria. As the location of the Gwangyang Steelworks was classified as Water Stress High, we are seeking out ways to conserve water and maximize the use of available water resources. These include recycling wastewater discharged at appropriate quality levels from the water treatment facilities of unit plants, and research projects are ongoing to recycle final effluents such as end-of-pipe treated drainage water through reverse osmosis to use them as industrial water rather than for road or yard sprinkling. Such efforts to reduce water withdrawal while increasing water recycling represents our commitment to bracing for water stress concerns.

POSCO, which accounts for 80% and more of Group-wide domestic water withdrawal, is securing alternative industrial water sources to reduce its use of surface and ground water. The Pohang Steelworks has been reusing treated wastewater to avoid the use of 80,000 tons of fresh water a day since 2015, and the Gwangyang Steelworks has been producing desalinated water with its seawater desalination plant since 2014 to replace the use of up to 30,000 tons of freshwater a day. Such efforts enabled POSCO to recycle 26% of its total water withdrawal in 2023, doing its part in addressing the risk of water shortage facing local communities.

While minimizing the generation of wastewater at the steelworks and maximizing the recycling of wastewater, POSCO also ensures that unrecyclable wastewater undergoes rigorous end-of-pipe treatment before released into the environment. Wastewater receives primary treatment (physical/chemical) at each plant within the steelworks and wastewater containing organic matters receives additional secondary treatment (biological) before their final treatment at the wastewater treatment plant. Final effluents are controlled for their discharge concentrations of SS, TOC, T-N and other key pollutants, and POSCO's internal criteria are set at 80% of the legal threshold. Consuming large quantities of water is unavoidable due to the inherent characteristics of integrated still mill operations. Still, POSCO recycles as much water withdrawn as possible to reduce its water consumption. For instance, water use is minimized through wastewater circulation within the process, and stormwater and yard/road spraying water is collected through stormwater treatment facilities for treatment and is recycled afterwards.

Wastewater Treatment System



Seawater Desalination Facility

POSCO collects thermal effluents generated from the power plant and processes them through pretreatment and reverse osmosis to produce usable water. This starts with taking thermal effluents, essentially seawater at 20~30°C in temperature, generated in the condenser cooling process at the power plant, which then undergoes pretreatment such as DAF (Dissolved Air Flotation) and UF (Ultrafiltration) for particulate matters. The next step is reverse osmosis (SWRO+BWRO) using high-pressure pumps to eliminate ionic substances from the seawater to produce usable water.

Gwangyang Steelworks' seawater desalination plant helps lower water withdrawal and promote efficient energy use. This facility converts up to 30,000 tons of seawater into industrial water to substitute for dam water and other water resources. Taking thermal effluents in lieu of general seawater also ensures that the necessary energy requirements are minimized, and the ERDs (Energy Recovery Device) that recover pressure energy from high-pressure pumps ensure the efficient use of pressure energy.



Seawater desalination plant at the Gwangyang Steelworks

Environmental Management

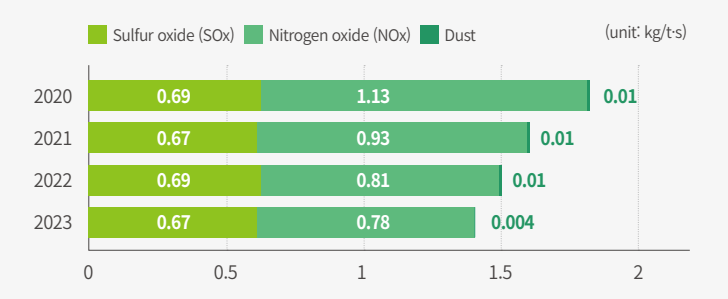
STRATEGY

Air

POSCO abides by the Total Air Pollutant Emissions-Cap Management System, the Particulate Matter Seasonal Management System and other environmental regulations, and strives to curb the generation of particulate matters, engaging in a wide array of activities to improve the quality of air.

In particular, total air pollutant emissions are included in its KPIs to systematically keep track of its implementation of the set goals and specific plans. To ensure the reliable management of such emissions in terms of emission concentrations, rigorous internal management criteria are set to control emission concentrations, and 24/7 Environmental Control Center is performed through the environmental monitoring office.

Annual Emissions Trajectory per Ton of Crude Steel Produced



Installation of Dust Collecting Bleeders

Once initiated, the blast furnace at the steelworks keeps operating for 15 years without ever turning off the fire, and requires parts replacements and repairs every two months. Before and after a repair, the hot air that is supplied into the blast furnace is temporarily blown down and is re-supplied. This is when a safety measure is taken to open the upper safety value or the bleeder to release residual gases inside the blast furnace. When blowing down the air and resuming its supply in 2022, we installed dust collecting bleeders that are able to reduce pollutants within the residual gas by nearly 90% through two-step dust collection, at all the eight blast furnaces (3 in Pohang and 5 in Gwangyang). These bleeders were operated during the air blowing-down and re-supply process for the entire blast furnaces to reduce pollutants.

Improving the Operational Efficiency of Air Pollutant Reduction Facilities

Operating a large number of denitrification, desulfurization, and dust collection facilities has naturally led to increases in the consumption of electricity and chemicals, which raised the need to make improvements. This prompted POSCO to reduce its energy consumption and optimize the operation of these facilities by increasing combustion efficiency and reducing air leaks from DeNOx facilities, hence minimizing energy use all while mitigating the emission of air pollutants.

- Sulfur Oxide (SOx): POSCO has proactively introduced activated carbon absorption facilities and desulfurization facilities using sodium bicarbonate ($NaHCO_3$) for its sintering plants that are considered a major source of air pollutants to reduce the emission of sulfur oxides. Its recent focus is on improving the efficiency of installed desulfurization facilities and enhancing the quality of byproduct gases (increasing H_2S removal efficiency) to minimize SOx emissions.
- Nitrogen Oxide (NOx): To reduce NOx emissions early from their generation phase, POSCO is replacing burners used at its combustion facilities with low-NOx ones. Denitrification facilities deploying SCR*, SNCR** are operated for the sintering/power generation/rolling processes that are major sources of pollutants for rigorous pollutant management.

  *SCR: Selective Catalytic Reduction
  **SNCR: Selective Non-Catalytic Reduction

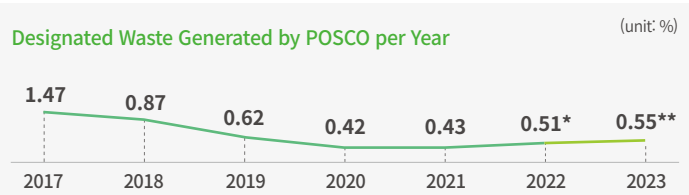
- Dust: While pursuing open yard enclosing to reduce fugitive dust generation at the steelworks, POSCO is taking more stringent reduction measures including covering, water spraying, and surface hardener application before the yard is fully enclosed. In addition, over 1,500 dust collectors are operated across the steelworks to minimize dust generation.

Hazardous Waste

Pursuant to Korea's Wastes Control Act and its Enforcement Rules, waste containing hazardous substances is classified as designated waste. POSCO and POSCO FUTURE M handle such designated waste, and manage specifics of their designated waste treatment on the electronic information processing program of the Ministry of Environment (Allbaro System). Any non-compliance with applicable government standards results in penalties imposed as specified in the Wastes Control Act. In 2023, POSCO and POSCO FUTURE M all lawfully treated designated waste with zero regulatory non-compliance.

POSCO continues to discover new applications of designated waste to minimize its generation. The proportion of designated waste of total waste declined against the 2017 level, which remained almost unchanged at 0.55% as of 2023.

Designated Waste Generated by POSCO per Year



*Some general waste was re-classified as designated waste in line with the amended Wastes Control Act in 2022
**Some general waste was re-classified as designated waste pursuant to the Enforcement Rules of the Wastes Control Act in 2023

Soil Pollution

In conformity with the Soil Environment Conservation Act, POSCO Group reports petroleum-type product manufacturing and storage facilities as facilities subject to specific soil pollution management, and performs regular inspections on soil contamination.

Environmental Management

STRATEGY

Chemical Substances

POSCO

POSCO's steelworks respectively operate a rigorous monitoring system throughout the entire process of safely transporting, using and discarding chemical substances. The location tracking system has been introduced since 2016 for vehicles transporting chemicals according to the conditions of steelworks to ensure prompt response in the event of an accident. POSCO also abides by safety standards for chemical handling facilities, and makes facility improvements including leak detection systems to further raise the bar on safety.

POSCO works on multiple fronts to prevent chemical spills. To this end, the company established an emergency response system to ensure the safety of facilities handling hazardous chemicals and minimize the damage should any accidents occur. The company provides employees with chemical spill response training and safety training to help them strengthen response capabilities. Both steelworks set up departments responsible for chemicals management and appointed over 50 chemicals\ managers to ensure management accountability. POSCO operates the safety disaster prevention center equipped with special vehicles and professionals to enhance its early response capabilities, and conducts regular public-private joint drills and self-defense fire drills for increased response capabilities. Serving as the representative of the chemical safety community organized for local chemical safety, POSCO supports small/mid-sized companies with chemical safety while also joining the chemical safety committee of local governments.

POSCO raises the bar on chemicals management through supply chain partnerships and focuses on the safe distribution and handling of chemicals. The company embraces innovative technology and approaches for the the sustainable development of chemical handling practices, fully adheres to applicable laws and regulations, and works to strike the right balance between environmental protection and economic growth.

POSCO's chemical management system verifies the content of hazardous chemicals designated by the government for their significant hazards/risks within the materials it introduces for the first time through the use of the MSDS. When unauthorized hazardous chemicals are contained, the concerned materials are prevented from entering its operations, and they are replaced with non-hazardous alternatives through collaboration with the supplier. If such a switch is not viable, POSCO makes sure these materials are handled with appropriate protection facilities and equipment, including improved facilities and protective gear, under the approval of the government.

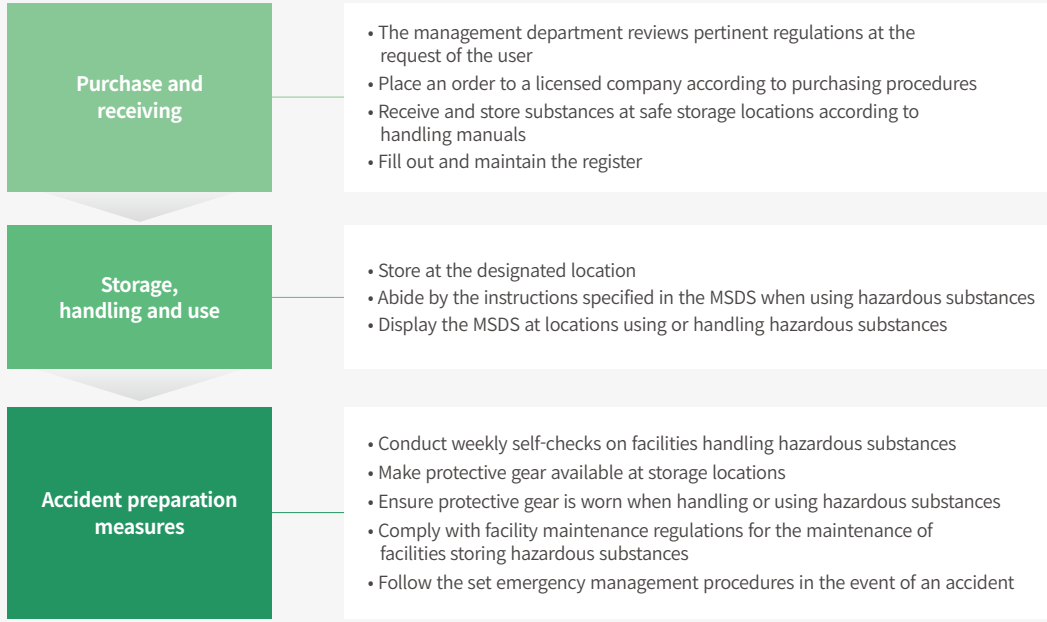
POSCO applies standards more stringent than government regulations to the management of its working environment to minimize the exposure of workers to any hazardous substances. Since 2022, the company has adopted its internal policy specifying prohibited chemicals to shift to low-toxicity alternatives and reduce the chemical exposure for both workers and the environment. POSCO also issues material-specific environmentally hazardous substances reports for respective manufactured products and discloses them on the electronic transaction system (E-Sales) for external stakeholders.

POSCO FUTURE M

POSCO FUTURE M is establishing its regulatory response system in compliance with REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulations as well as the Clean Air Conservation Act and the Water Environment Conservation Act governing the leakage and discharge of hazardous chemicals.

The company will specifically test and analyze the content of per-and polyfluoroalkyl substances (PFAS) and fluorine in its products that will be banned for use in Europe while substituting for these substances by 2026. To this end, POSCO FUTURE M is systematically establishing its chemicals management system to regularly take stock of its use, transport, and storage management and ensure damages do not occur due to relevant hazards or risks, along with integrated management of hazardous chemical information at the operational site level.

POSCO FUTURE M's Hazardous Chemical Management



Environmental Management

STRATEGY

Byproducts

While managing resource circularity goals to recycle byproducts and minimize the resources discarded, POSCO Group also operates subsidiaries specializing in byproduct recycling. POSCO FUTURE M, a rechargeable battery materials maker, recycles 99.1% of its waste, and achieved the Quality Certification of Circular Resources as the first in Korea to do so for its graphite powder generated as waste in the natural graphite anode production process.

POSCO

POSCO is progressing toward a circular economy by maximizing the recycling of byproducts generated from its steel production process such as slag, dust, and sludge. Since designated as an enterprise subject to resource recycling performance management in 2018, POSCO has been setting annual recycling targets and tracking its performance. To minimize the landfill and incineration of waste that is not readily recyclable, POSCO works to increase the recycling of byproducts by discovering potential consumers and developing recycling technology with a goal of maintaining its byproduct recycling rate at 98% and above.

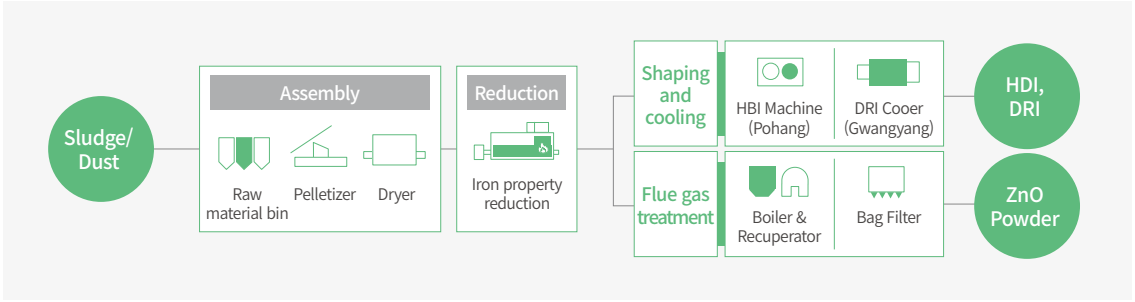
Slag accounts for over 75% of total byproducts generated at the steelworks, and is classified into blast furance slag and steelmaking slag. Blast furnace slag, a rock-like byproduct generated when molten iron is produced at the blast furnace, morphs into sand-like granulated slag by spraying high-pressure water for rapid cooling. Over 90% of blast furnace saag exists in this granulated form. Granulated slag, mostly composed of calcium oxide and silicon dioxide, is able to substitute for cement clinker* and is noted for its environmental benefits for reducing GHG emissions that are normally generated during limestone calcination as part of the conventional cement manufacturing process. In partnership with RIST and POSCO E&C, POSCO is distributing PosMent** it developed to raise the content of granulated slag to up to 58% compared to traditional slag cement, contributing to mitigating GHG emissions and recycling byproducts in so doing. Furthermore, granulated slag can be used as feedstock for silicate fertilizers and contains a large amount of silicate which is an essential nutrient for the growth of rice. Silicate serves to more than triple the strength of the rice stem to increase the crop yield and enhance the overall quality of rice with improved taste and texture. It was also discovered through joint efforts with professional research institutes that iron ions (Fe^{3+}) that exist in trace amounts in slag inhibit the activity of methanogens and produce the effect of lowering GHG (methane) emissions by nearly 14% in the rice cultivation process.

Steelmaking slag is generated when impurities are removed from molten iron in the converter during the steelmaking process. Steelmaking slag undergoes magnetic separation to reclaim the iron content: magnetic slag is repurposed into scrap iron substitutes and non-magnetic slag, which is mainly composed of limestone, silica and other natural rock substances, is used as natural aggregate substitutes. In particular, civil engineering sites using slag aggregates comply with the slag management guidelines published by the Korean Iron and Steel Association to manage potential leachate that may occur when slag aggregates come into contact with water during construction. Meanwhile, dust and sludge are generated when operating duct collectors, water treatment facilities and other environmental facilities: dust and sludge with high iron content are reused in their original form, or processed into pellets or briquettes and are fed back into the ironmaking and steelmaking processes as raw materials.

*Produced when limestone and other cement raw materials are calcinated at high temperatures, and turns into cement when finely ground
**A type of slag cement developed by POSCO by mixing stimulants to raise the content of granulated slag to up to 58% and improve product performance

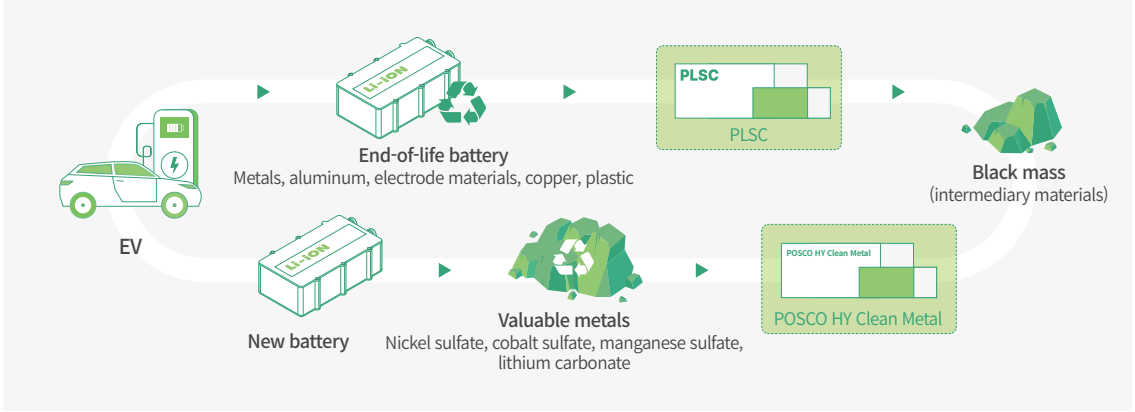
PNR

To recycle steel byproducts, POSCO formed a joint venture PNR (POSCO-Nippon Steel RHF Joint Venture, Co., Ltd.) in partnership with Nippon Steel, as a subsidiary of POSCO Group in 2007. PNR specializes in recycling steel byproducts such as sludge and dust to produce DRI (Direct Reduced Iron) and HBI (Hot Briquetted Iron).



POSCO HY Clean Metal

To promote the recycling of end-of-life batteries at the Group level, POSCO HY Clean Metal was established to recycle valuable metals such as nickel sulfate and lithium carbonate. POSCO HY Clean Metal collects scraps generated from the battery production process, which undergo crushing and thermal treatment to be fed back into the production of Black Mass, an intermediary material.



Environmental Management

STRATEGY

Environmental Training

POSCO provides a range of environmental training that suits the different characteristics and functions of respective departments. In 2023, offline training was provided to ISO 14001 personnel on theoretical environmental management system requirements and internal auditing techniques. Specialized training was also conducted for on-site position holders, environmental personnel, and departments responsible for investment and environmental operations to cover such topics as permit alterations & follow-up management and other key issues by inviting experts from consulting firms. Furthermore, key environmental issues were shared with position holders at the maintenance department, along with training on environmental risks requiring special attention during maintenance work. POSCO's Easy to Learn Environmental Management has been up and running since 2021 as a e-learning course to raise awareness on steelworks environmental management. The Labor-Management Joint Committee also serves to communicate information requiring intensive management in each environmental area with on-site position holders, staff, and contractors operating at the steelworks to improve their practical management capabilities.

Environmental Training Conducted by POSCO

Topic	Target	Outcomes (2023)
ISO 14001 internal auditor and working-level staff training	Departmental personnel	Mar. Apr. (199 persons)
Environmental training for operating departments	On-site position holders and environmental personnel	Feb. (181 persons)
Environmental training for the investment department	Personnel at the investment department	Jun. (67 persons)
Environmental training for the environmental department	Personnel at the environmental department	Aug., Sep. (53 persons)
Environmental training for the maintenance department	Leaders/part leaders at the maintenance department	Dec. (304 persons)
e-learning for steelworks environmental management	All employees	Year-round
Environmental training for new hires	New hires	Year-round
Distribution of Labor-Management Joint Committee materials	Employees at POSCO and contractors	25 occasions

General Environmental Manager

POSCO established an integrated environmental management system and appointed general environmental managers for respective environmental media, taking an important step towards sustainable development and environmental protection. General environmental managers are mandated to expertly manage a variety of environmental issues that may arise within the steelworks and play a supervisor role to ensure full compliance with area-specific regulations. They monitor a range of environmental issues, spanning air pollution, water pollution, and waste treatment, and set strategies for their effective management. These managers receive training to keep current with the ever-evolving and updating environmental regulations, and ensure steelwork operations are compliant with the latest environmental standards. In so doing, POSCO drives environmentally friendly operation of its steelworks, seeks harmony with the surrounding communities, and ultimately contributes to a sustainable society.

Environmental Investment

POSCO continues with environmental improvement investments to reduce air pollutant emissions and increase the recycling of byproducts. For the last six years between 2018 and 2023, the company invested over KRW 1.92 trillion in smokestack telemonitoring system (TMS), dust collectors for steel production, and nitrogen oxide reduction devices. POSCO plans to make KRW 1.2 trillion investment in environmental facilities for the next three years between 2024 and 2026.

POSCO's Environmental Investment Plan

(unit: KRW 100 million)

Category	Description	Total Investments (2018~2026)	
		Cumulative Investments (2018~2023)	Planned Investments (2024~2026)
Air quality improvement	• Reduce nitrogen oxide emissions for sintering, power generation, rolling (SCR, SNCR, etc.) • Reduce fugitive dust for fuel and raw material yards (silo, dust screens, etc.) • Dust collection facilities to reduce fugitive dust emissions in the steelmaking area (rooftop dust collectors, etc.)	17,014	10,380
Water quality improvement	• Waste/turbid water treatment facilities and management systems in raw material areas • Expand wastewater treatment capacity (BET facilities, etc.)	1,560	1,329
Byproduct recycling	• Expand the processing capacity of recycling facilities for slag, dust, and sludge • Install dedicated waste storage facilities and expand utilities	292	79
Others (chemicals, soil, etc.)	• Strengthen the management of facilities handling hazardous chemicals (containment facilities, alarm devices, etc.)	312	70
	Total	19,178	11,858

Environmental Management

RISK MANAGEMENT

Environmental Risk Management

POSCO identifies risks and opportunities amid the rapidly-shifting market landscape and domestic/global environmental regulations and issues, and captures their impact on its business operations to reflect them in its mid/long-term business strategy and investment decision-making. To respond to policy risks including abrupt changes in domestic/overseas environmental regulations, POSCO keeps close tabs on relevant regulations and policies to identify potential business risk and actively engage in relevant discussions to promote reasonable policy development.

In undertaking new projects, POSCO performs environmental impact assessment to understand environmental impact factors and their magnitude while developing and implementing plans to minimize such impact. To prevent the risk of environmental accidents and environmental regulatory non-compliance, POSCO conducts environmental audits with the responsible environmental department taking the lead, and reports audit findings and improvement results to the CEO through steelworks-level operational meetings and regular reports provided to top management. Besides, daily environmental patrols are conducted at respective steelworks to minimize their environmental impact and respond to environmental risk in so doing.

Labor-Management Joint Committee

POSCO operates regular consultative bodies directly attended by plant leaders/managers, employee representative bodies, on-site contractor supervisors, and staff to prevent environmental risks.

- Operational performance in 2023: Distributed and shared environmental issues bi-weekly on 25 occasions
- Operational plan for 2024: Conduct emergency inspections on environmental management and strengthen communication on the latest information including new/amended workplace environmental laws and regulations

Water Risk Management

Operational sites are reviewed each year to check whether they are located in water stress or water risk areas, and water resource risks are subdivided to focus more on sites situated in areas ranked as Water Stress High or areas with extensive water withdrawal.

Gwangyang Steelworks (Water Stress High)

The water stress analysis performed according to WRI criteria in 2023 revealed that the Gwangyang area was ranked Water Stress High as of August 2023. In response, we developed response plans to minimize the risk of reduced plant utilization due to water shortage as well as emergency response plans to address water supply restrictions.

① As-is analysis

- The steelmaking process that should be operable 24/7/365 highlights the need to prepare for possible shutdowns of key processes involving blast furnaces and converters that handle high temperature materials.
- If water supply restrictions reach 5% or above of normal water supply volume, this will force gradual reductions in the utilization of final product manufacturing plants, causing disruptions to steel material supply.

② Emergency response plan for water supply shortage

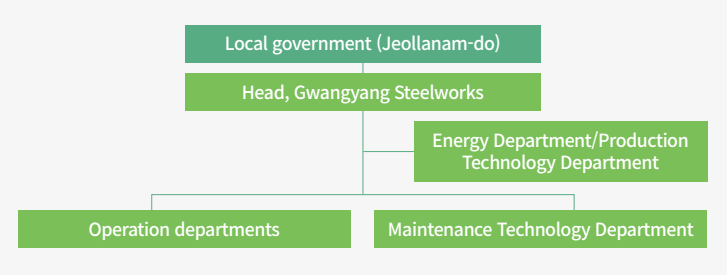
- Analyze possible scenarios of plant utilization rates aligned with water supply volume and incorporate the results in developing phase-specific emergency response plans: if water supply shortfall is less than 10%, operate the seawater desalination facility at the maximum production capacity (30,000 tons/day) and secure the maximum amount of freshwater in the water reservoir storing freshwater (260,000 tons)

Plant Utilization Scenarios Aligned with Water Supply Volume

Water supply rate	100%	95%	89%	84%	79%
Plant utilization rate*	100%	75%	50%	25%	0%

*Refer to the utilization of cold rolling, surface treatment, and pickling and oiling plants, and a minimum of 79% of water supply rate should be secured to additionally operate hot rolling plants

Organizational Chart of the Emergency Response System



Department	Role
Energy Department	• Share issues related with water supply in real time
Production Technology Department	• Operate the emergency task force when water supply restrictions re imposed
Operation departments/ Maintenance Technology Department	• Improve the operational efficiency of water-intensive facilities

③ Response plan and performance (2023)

- **Water saving awards and campaigns in 2023**
  - Awarded plants and groups for excellence in water consumption savings in 2023
  - Launched campaigns to reduce domestic water use (Dec. 2022 ~ Jun. 2023)
  - Conducted repairs early to reduce water wasted in 2023
- **Water conservation plan**
  - Operate the seawater desalination facility at the maximum capacity in the event of an emergency such as drought (20,000 tons/day – 30,000 tons/day)
  - Conduct research projects on maximizing the reuse of treated water from the water treatment facility of the unit plant through internal circulation
  - Conduct research projects on maximizing the reuse of treated water from the final water treatment plant
  - Review participation in Gwangyang-si's sewage reuse project
- **Communication**
  - Meeting with related organizations on water reuse in Yeosu and Gwangyang (Apr. 20, 2023)
  - Business discussion on the desalination of thermal effluents in the Yeosu Industrial Complex (Apr. 27, 2023)

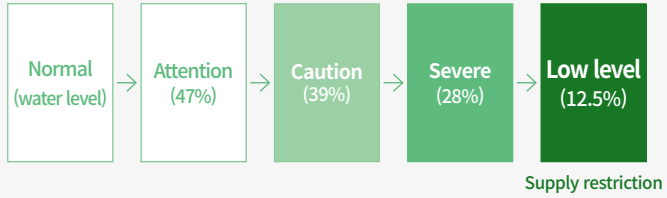
Environmental Management

RISK MANAGEMENT

Pohang Steelworks (Water Stress Medium High)

While Pohang where our Pohang Steelworks is located was rated Water Stress Medium High, and thus is relatively low in water stress risk, we still commit to minimizing water resource risks considering its high level of water withdrawal.

① Phase-specific responses aligned with the water level of the Yeongcheon Dam (water source)



② Emergency response system for water supply shortage

We developed plans to substitute for water supply and reduce water consumption under the different scenarios of water level for the Yeongcheon Dam.

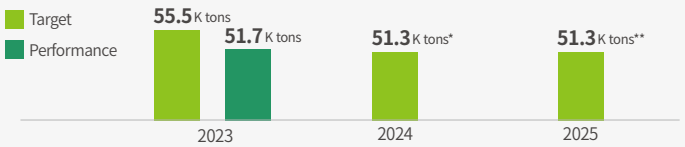
Water Level	Our Response
28% and below **'Severe Drought'**	• Adjust the water pressure value and gradually reduce water supply at the plant • Reduce blowing-down of cooling water and use recycled freshwater • Launch activities to reduce domestic water use at the steelworks
12.5% and below **Supply restriction due to low level**	• Reduce water use by adjusting water supply volume for each facility • Supply water resources to compensate for dam water shortfalls (cooperation from Korea Water Resources Corporation)

ISO 14001 Certification

POSCO established its environmental management system in compliance with the ISO 14001 international environmental management system standard, and operates this system for workplace environmental management accordingly. With the environmental department leading the charge, internal audits are made at the individual department level each year along with follow-up management and renewal audits conducted by external certification organizations. The audit results are reported to its senior leadership, and inform the efforts to fine-tune its environmental strategies and goals to maintain an efficient environmental management system. Internal audits and compliance assessments are performed in line with the checklist designed to review the environmental management system and mandatory compliance requirements to improve their objectivity and consistency.

METRICS AND TARGETS

POSCO's Total Air Emissions Targets and Performance



*The target was revised in line with the construction of Coke Plant 6 in Pohang and an electrical steel plant in Gwangyang

**To be reset in consideration of the 2nd phase allowances (2025~2029) to be allocated under the Total Air Pollutant Emissions-Cap Management System

• Key Reduction Activity in 2023

- Installed NOx reduction facilities for the heating/annealing furnaces of the rolling process to reduce emissions

POSCO's TMS Installation

Pursuant to Attachment Table 3 of the Enforcement Decree of the Air Control Zones Act, the smokestack TMS is installed for outlets exceeding 3 tons in NOx/SOx emissions and 0.15 tons in dust emissions the previous year.

TMS Installed by POSCO

2020	2021	2022	2023	2024 (goal)
72 units	105 units	245 units	246 units	301 units

*The atmospheric TMS installation plan is subject to change according to the investment progress made

POSCO's Target for Byproduct Recycling

Maintain 98% and above in byproduct recycling until 2030

• 2023 Performance

- Byproducts generated: 19,524K tons
- Byproducts recycled: 19,243K tons
- Byproduct recycling rate: Reached 98.6% to meet the set target

Social



Health & Safety	83
Supply Chain Management	90
Human Rights	99
Diversity and Inclusion	103
Working Environment	106
Local Community	112
Product Management	115

Health & Safety

GOVERNANCE

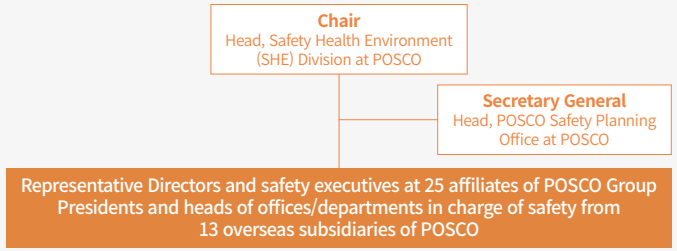
Group Safety Council

POSCO Group created the POSCO Group Safety Council to bolster safety management at the Group level, and has convened the Council semi-annually since April 2022 in attendance of all major operating companies and subsidiaries in Korea and abroad. The Council is led by POSCO's head of the Safety Health Environment (SHE) Division (inside director) and is attended by health and safety managers from respective operating companies to review safety risks and the progress made in improving safety across all our key domestic and global operations.

Operational System of the Group Safety Council

Category	Target Attendant		Description
	Group Affiliate	Overseas Subsidiary	
Group Safety Council	Representative Director	President	Establish health and safety management systems, and review their implementation
Group Safety Communication Day	Head, group	Head, office	Share safety activities, and select agenda items for the following Council meeting
Group Safety Benchmarking Day	Leader	Head, department	Benchmark safety best practices

Organizational Chart of the Group Safety Council



*25 Affiliates: POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO MOBILITY SOLUTION, SNNC, POSCO M-TECH, POSCO WIDE, POSCO MC MATERIALS, POSCO A&C, POSCO HUMANS, PNR, POSCO HY Clean Metal, P&O Chemical, RIST, POSTECH, POSCO PS-TECH, POSCO PR-TECH, POSCO PH-Solution, POSCO GYS-TECH, POSCO GYR-TECH, POSCO GY-Solution

13 Overseas Subsidiaries: POSCO-China, POSCO-Japan, POSCO-Vietnam, POSCO-TCS, POSCO-Malaysia, POSCO-Maharashtra, POSCO-America, POSCO-Mexico, POSCO-Europe, Zhangjiagang Stainless Steel, PT.KP, PY VINA, POSCO-ASSAN TST

Group Safety Council Meetings Held and Key Agendas

Date of Meeting	Key Agenda
Apr. 12, 2023	- Health and safety activity audit analysis results - Group risk assessment operational status - POSCO FLOW's shipping safety incentive scheme, etc.
Jul. 20, 2023	- Group safety metric status and key outcomes - Status of the update on the 10 safety rules - Smart safety implementation status, etc.
Oct. 27, 2023	- Group safety metric status and TRIFR improvement plans - High-risk work definition and management procedure improvement - Status of the update on worksite risk assessment guides, etc.
Mar. 26, 2024	- Safety system support status and planning for contractors with less than 50 employees - Practice/experience/discussion-centered training and exercise planning - Status of pursuing mental health care at POSCO, etc.

Performance Compensation

Quantitative safety metrics are included as KPIs in assessing the performance of the Head of the Safety Health Environment (SHE) Division overseeing POSCO's health and safety management and the Head of the Steel Production and Technology Division responsible for safety and environmental management strategies and operational plans at both steelworks, to motivate further improvements in health and safety performance.

POSCO

- 40% of KPIs for the Head of the Safety Health Environment (SHE) Division (30% for the number of serious injuries and 10% for TRIFR (total recordable injuries per million hours worked), etc.)
- 20% of KPIs for the Head of the Steel Production and Technology Division (occupational fatalities per 10,000 workers)

POSCO E&C

- Head of Strategic Planning Division, Head of General Administration Division: 10% of KPIs (TRIFR)
- Head of Plant Engineering & Construction Division, Head of Infra Division, and Head of Building Works Division: 10% of KPIs (10% for serious accidents, negative points for the failure to reach the set TRIFR target)

Board of Directors

At POSCO Group, key safety issues are regularly reported to the Board of Directors at POSCO Holdings and respective operating companies. POSCO Holdings reports on its safety and carbon emissions reduction performance as part of the mandatory ESG reporting requirements when submitting quarterly performance reports to its Board of Directors.

Safety Performance Reports Submitted to the POSCO Holdings Board of Directors in 2023

- Q1 2023 performance: May 12, 2023
- Q2 2023 performance: Aug. 8, 2023
- Q3 2023 performance: Nov. 3, 2023
- Q4 2023 performance: Jan. 31, 2024
- Q1 2024 performance: May 14, 2024

POSCO develops health and safety plans each year, which is reported to its Board of Directors for approval.
The CEO establishes and reviews detailed action plans and necessary budget for the company, and the Board of Directors is mandated to verify their appropriateness and grant approval.
The reporting items include health & safety management guidelines, organizational structure/staff/role, health & safety budget and facility status, and performance for the previous year and activity plans for the following year. These items are proposed to the POSCO Board of Directors for approval each year.

Safety Performance Reports Submitted to the POSCO Board of Directors in 2023

[2023 Action Plan]
Improve contractors' capabilities, strengthen on-site execution, establish a culture of abiding by rules and processes, achieve zero for serious accidents by providing a pleasant work environment

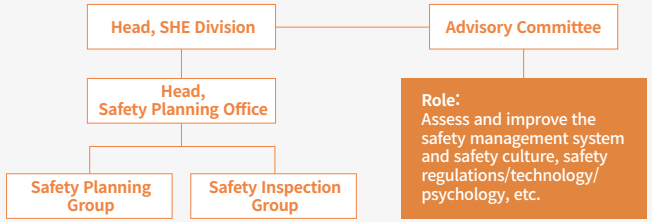
[2024 Action Plan]
Strengthen practice-centered, self-initiated safety management, conduct theme-based assessments on safety vulnerabilities and improve process safety management/smart safety performance, reinforce the occupational health management system to prevent occupational illnesses

GOVERNANCE

Safety Advisory Committee

POSCO launched the Safety Advisory Council in May 2022, which consists of 10 members – five internal experts including the Head of the SHE Division as the Group's chief safety officer, along with five external safety experts. In 2023, the Council met four times to discuss POSCO's safety strategies and PSM management plans among others. In 2024, the Council plans to address safety capacity improvement plans for contractors including outsourced contractors and subcontractors with less than 50 employees, and ways to eliminate unplanned work.

Organizational Chart of the Safety Advisory Committee



- Role: Engage external safety experts to evaluate POSCO's safety management system and safety activities and identify improvement plans from the objective perspective
- Advisory Task: Identify ways to build the groundwork for POSCO Group to emerge as a global safety-assured steel company (Oct. 2022~Oct. 2023)
  - [Task 1] Identify possible responses by analyzing stakeholder perceptions on POSCO's safety activities
  - [Task 2] Implement and evaluate SIF (Serious Injury and Fatalities)-based accident prevention programs
  - [Task 3] Develop metrics to assess the progress made in establishing a health and safety management system

Policy and Guideline

POSCO Group established our group-wide industrial health and safety policy in 2022, and this applies to our on-site contractors and their employees as well as to our own operations.

- Health and Safety Management Regulations

Composition of the Safety Advisory Committee (2024)

Name	Career	Note
Hyuck-Myun Kwon	- Current) Professor, University-Industry Foundation, Yonsei University - Chairman, Korean Institute of Hazardous Materials	Chair
Jae Yeol Lee	- Current) Professor, College of Social Sciences, Seoul National University - Joint Chairman, Win-win Wage Committee, Ministry of Employment and Labor	External consultant
Pil-Rae Jo	- Current) CEO, ALPHA SAFETY - Leader of the Technical Support Team, Major Industrial Accident Prevention Center for Yeungnam Region, Korea Occupational Safety & Health Agency	External consultant
Seok-Jun Yun	- Current) Director of the Research Center, Korean Culture Based Safety - Research Professor, Korea University Health Science Research	External consultant
Sunhee LEE	- Current) Professor, Department of Psychology, Chungnam National University - Associate editor, Safety and Health at Work	External consultant
Baik-Hee Lee	- Head, Safety Health Environment (SHE) Division, POSCO	Internal member
Dong-Geun Hyeon	- Head, Safety Planning Office, POSCO	Internal member
Jong-Ho Shim	- Research Fellow, Safety Health Environment (SHE) Division, POSCO	Internal member
ChangHyun Lee	- Head of the Safety Planning Group, POSCO	Internal member
JoonKweon Park	- Head of the Safety Inspection Group, POSCO	Internal member

Health Advisory Committee

At POSCO, the Health Advisory Committee has been up and running since July 2021, joined by eight members including five internal members – employee representative (worker representative of the Labor-Management Council, Senior Vice Chairman of the POSCO Labor Union) and 3 external health experts (Head of the SHE Division, Head of the Labor and Cooperation Office, Head of the Health Planning Office), along with three external health experts.

Composition of the Health Advisory Committee (2024)

Name	Career	Note
Chi-Nyon Kim	- Current) Deputy Head, Yonsei University Research Institute for Occupational Health - Former President, Korean Industrial Hygiene Association (2019-2021)	Acting chairman
Jee-Yeon Jeong	- Current) Professor, Dept. of Occupational and Environmental Health, Yong In University - Current) President, Korean Industrial Hygiene Association	External consultant
Hyoung-Ryoul Kim	- Current) Professor, Dept. of Occupational and Environmental Medicine, Seoul St. Mary's Hospital - Current) Officer, Korea Society of Occupational and Environmental Medicine	External consultant
Bon-Seok Lee	- Worker representative, POSCO Labor-Management Council	Internal member
Sang-Ho Jeon	- Senior Vice Chairman, POSCO Labor Union	Internal member
Baik-Hee Lee	- Head, Safety Health Environment (SHE) Division, POSCO	Internal member
Dong-Hee Kim	- Head, Labor and Cooperation Office, POSCO	Internal member
Kyoung-Ho Lee	- Head, Health Planning Office, POSCO	Secretary general

Role of the Health Advisory Committee

- Role: Engage in external experts in assessing the health management system and strengthen the external network
- Advisory tasks implemented (2021~2022) and necessary improvements made (2023~2024)
  [Occupational Environment] 3 tasks including work environment measurement
  [Risk Management] 4 tasks including the job exposure matrix
  [Occupational Health] 3 tasks including lifecycle health management

Health & Safety

STRATEGY

9 Elements of the Health and Safety Management System

POSCO defined nine elements of the health and safety management system to stipulate health and safety responsibilities for our leadership.

9 Elements of the Health and Safety Management System

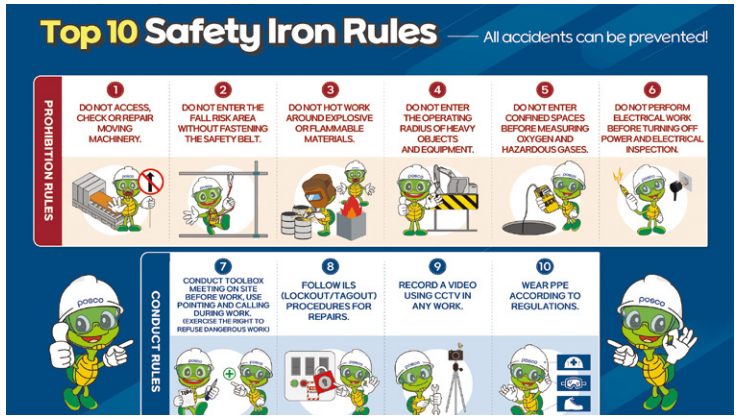
1. Leadership's commitment and objectives
2. Organization, personnel, and budget
3. Interactive communication
4. Hazard/risk factor management
5. Related contractor management
6. Compliance with laws and standard procedures
7. Accident investigation and management
8. Training and exercise
9. Assessment and improvement

Leadership's Commitment and Objectives

To ensure accountability in health and safety management and operation, health and safety managers from POSCO, POSCO E&C, and POSCO FUTURE M are appointed as registered directors.

Compliance with Laws and Standard Procedures

To reinforce its Rule & Process compliance, POSCO completely overhauled the 10 safety rules in 2023 and is embedding a safety culture into its day-to-day routine, including basic safety regulations and standards. POSCO also reviews the implementation of statutory health and safety requirements on a semiannual basis to continuously identify and pursue necessary improvements.



Interactive Communication

POSCO Group operates a range of safety communication channels for both labor and management and for our own employees and contractors. Employee representatives are actively engaged in setting health and safety goals and conducting performance assessments to gather their feedback, and such feedback is incorporated in creating a safe and pleasant work environment.

Category	Target Attendant	Cycle	Description
Safety management committee	Executives from the SHE Division/Pohang and Gwangyang Steelworks, leaders of representative bodies/contractors	Semi-annually	Analyze and decide on company-wide safety activity audits (safety consultation body supervised by top management and higher than the occupational health and safety committee of both steelworks)
Group Safety Council	Representative Directors and safety executives from group affiliates, Presidents and safety executives from overseas subsidiaries	Semi-annually	Review safety risks and progress in making safety improvements at key operations in Korea and abroad
Safety Whistleblowing Center	Own employees, outsourced contractors, on-site contractors, third-parties	Year-round	Issues requiring improvement including unsafe shopfloor conditions and unsafe behaviors
Occupational health and safety committee	Committee chair (head of steelworks), management members, employee members (including leaders of representative bodies)	Quarterly	Deliberate and decide on key health and safety issues at steelworks (develop occupational injury prevention plans, issues on employee health and safety training, etc.)
Labor-Management Committee	Led by plant managers (each plant), working-level staff from contractors and employees from relevant representative bodies	Weekly	Share safety issues and collect/address feedback
Safety cooperation group	Safety department, supplier association, safety personnel from group affiliates/on-site contractors	Monthly	Share and discuss safety issues and implementation status
Business leader council	Lead by deputy heads/department heads (each department), CEO of contractors	Monthly	Share safety performance, collected feedback and improvement activities

The following describes feedback gathered through various committees, major improvements made, and improvement rates throughout 2023.

Category	Meetings Held	Improvement Requests Submitted	Completion of Improvement	Key Improvement Made
Health and safety consultation body (business leader council)	36 occasions	249 cases	81% (202 cases completed, improvement ongoing for 47 cases)	Installed safety facilities, repaired worn-out walls, installed entrances, installing air conditioners at locations vulnerable to heat-related illnesses, installing CCTVs and relocating rest areas at maintenance vendors
Occupational health and safety committee	12 occasions	70 cases	100%	Changed the lining of heat protection gloves for workers engaging in blast furnace tapping, provided night-time physical therapy

[Improvements Made Based on Feedback Collected through the Labor-Management Council]

1. Upgrading the Work Uniform

POSCO completely upgraded its work uniform in response to employee feedback that the existing sky blue-colored uniform was not readily visible in low-light shopfloor conditions to pose risk for accidents. In line with EN ISO 20471, international standards specifying safety requirements for protective clothing, its work uniform was redesigned with the safety colors of orange and navy blue to maximize visibility even in dark environments, along with reflective tapes applied to both the front and back and the upper and lower parts of the garment to improve safety.



2. Creating Rest Areas for Employees

POSCO introduced a process to adjust work and rest times in line with the level of heatwaves. 'Safety Rest Areas' created through modular housing units are provided for shopfloor workers to take rest and receive safety training. On-site medical exams are also offered by healthcare professionals to help prevent heat-related illnesses for employees working in high temperature conditions.



Health & Safety

STRATEGY

Training and Exercise

POSCO provides training and exercise opportunities to all its employees and contractors as deemed necessary for their business conduct and assists them in enhancing their work competency in so doing. In 2024, POSCO's safety training will focus on establishing a life-long safety training system for self-directed safety and supporting contractors with their training system. This will be achieved by improving its training system at all levels, including putting practice/exercise/discussion at the center of the entire training courses, expanding training for employees lacking safety management capabilities, and strengthening accountability for safety training.

Key Training Outcomes in 2023

Course	Participant (persons)	Target				
		Direct Operations	Group Affiliate	On-site Contractor	Outsourced Contractor	Subcontractor
Executive safety leadership	77	●				
Risk assessment training for supervisors	3,056	●				
PSM professional development training	2,412	●				
Level-based safety competency improvement for contractors	14,720		●	●	●	●
Safety Bus	14,459	●	●	●	●	●
Safety training for visitors	76,332				●	●

Facility Safety Management

To bolster expertise in Process Safety Management (PSM), POSCO created the process safety team under the Safety Planning Office and the Process Safety Section at its Pohang and Gwangyang Steelworks in January 2022. POSCO brought in PSM experts and nurtured PSM instructors (301 persons as of 2023) to improve PSM capabilities, reinforcing its PSM system following the PDCA (Plan-Do-Check-Action) cycle. Work is underway at POSCO's steelworks to upgrade P&ID (Piping and Instrumentation Diagram) preparation and management and implement the ILS (Isolation and Locking System) based on drawings as a way to eliminate any blind spots for process safety incidents.

Health Management

Employee Health Checkup and Health Insurance Programs

POSCO fully supports health checkup costs for all employees including contract workers with one year or more of employment, and introduced a new premium health checkup program in 2022 in partnership with general hospitals to provide highest-quality comprehensive health checkups available in Korea.
Since 2013, POSCO has provided employee spouses with basic comprehensive health checkups at no cost every two years, and 33,524 individuals benefited from this program as of 2023 on a cumulative basis. POSCO also supports a portion of the health checkup costs for employee parents and children.

Psychological Counseling Program

POSCO expanded psychological counseling rooms and hired additional counselors to make counseling available for its own employees (including contract workers) and on-site contractor employees. In 2023, 4,297 counseling sessions were provided (4,075 sessions for own employees and 222 sessions for on-site contractor employees).

Bolstering the Safety of On-site Contractors

POSCO operates a dedicated safety organization for on-site contractors to ensure contractor safety management and provides a range of health and safety infrastructure support, and was named an excellent business in recognition of its achievements in this respect.

- Dedicated Organization: Safety Management Section (formerly Outside Services Safety Support Section, renamed in Mar. 2024)
  - Engage in safety activity monitoring, change management, and safety assessments & audits for related contractors
  - Operate an organization dedicated to the safety of related contractors
- POSCO: Named an excellent business in promoting health and safety partnerships among large businesses and SMEs by the Minister of Employment and Labor (Feb. 2024) in recognition of its achievements in assisting three suppliers (Cheong In, FINETEC, SEYOUNG) in establishing their health and safety management system)

Safety Mentoring

The Head of the SHE Division at POSCO provides safety mentoring for POSCO and related contractors as part of the One Plant a Day Check & Feedback activity. In 2024, this will be extended to cover maintenance subsidiaries, on-site contractors, outsourced contractors, and subcontractors.

- Detail: Leadership's roles, mandatory compliance requirements for work safety, theme-based safety education and discussion tailored to work characteristics of related contractors

Occupational Health Committee

POSCO has been operating the Occupational Health Committee since March 2023, joined by 58 Group affiliates and on-site contractors

- Member: 7 Group affiliates, 51 on-site contractors
- Activities Undertaken: [Pohang Steelworks] Q1 2023 (Mar. 29), Q2 2023 (Jul. 24), Q3 2023 (Aug. 21) Q4 2023 (Nov. 29), Q1 2024 (Mar. 21)
  [Gwangyang Steelworks] Q2 2023 (May 18), Q3 2023 (Sep. 5)
- Detail: Occupational illness prevention strategy pursuant to the Serious Accidents Punishment Act, Health Plus, educational program, Iron Health health promotion activity, etc.

Safety Bus

The Safety Bus program is also operated to provide safety training content and shelter from the heat for outsourced contractors and subcontractors who often lack proper safety training conditions. In 2023, four buses were run under this program to provide training to over 15,000 individuals.

Health & Safety

STRATEGY

Smart Safety System

[Smart Integrated Safety Solution]

POSCO Group employs smart CCTVs enabled by AI imaging technology to remotely monitor high-risk work, high-risk areas, and equipment abnormalities on the shopfloor and to automatically detect unsafe worker behaviors to take preemptive action accordingly. POSCO DX applied its independently-developed smart integrated safety solution to over 130 locations, including for manufacturing, construction, and power generation, to verify its effectiveness, and expanded its on-site application to POSCO, POSCO E&C, POSCO FUTURE M and other Group affiliates in 2023.



Introducing Safety Robots

[Robot Safety Solution]

POSCO is embracing robotic safety solutions to replace humans with robots in performing high-risk manual work to fundamentally prevent the risk of injuries.

1. Sealing coke oven doors

POSCO became the world's first to develop technology to seal coke oven doors that pose high risk to workers. Research and development efforts began in 2023 and this technology was successfully brought to life in January 2024 to use multi-joint robots to perform work just as humans do. This technology enables human operators to give instructions at the control room to maneuver the robot to move into the work location and perform work, fundamentally eliminating risk that may occur during operations.



Demonstrating unmanned robotic solution technology adopted for Gwangyang Steelworks' Coke Oven 1 (robot performing gas sealing)

2. Smart Wire Ball

POSCO is introducing the Smart Wire Ball for its 700km-long conveyer belts used to transport raw materials to substitute for the manual inspections performed by human workers currently. These balls travel along with the fixed wire over the conveyer belt and analyze noises and images generated with the help of AI to detect abnormalities in real time. Going forward, this robotic system will be equipped with microphones, cameras, and thermal imaging gas detectors to check any failure of the conveyer belt, detect gas leaks, and serve other advanced functions.



Smart wire robot developed by WITHROBOT

Smart Safety Ball

An enclosed space, due to inadequate ventilation, poses risk for fires and/or explosions caused by oxygen deficiency, harmful gases, or inflammable substances, resulting in the considerably high rates of asphyxiation fatalities. To prevent such asphyxiation accidents, an employee at the POSCO Technology Research Institute initiated the development of the Smart Safety Ball back in 2018, and this was successfully completed as the world's first in 2021 in partnership with Handong Global University and NodeTalks.

Roughly the size of a tennis ball, the Smart Safety Ball is thrown into enclosed spaces to measure the concentration of the three gases of oxygen, carbon monoxide, and hydrogen sulfide. The measured data are made available in real time through the dedicated app on smartphones and tablet PCs. When any risk is identified, an alert message is communicated along with the location of the worker to pre-registered colleagues and supervisors. Today, the Smart Safety Ball is deployed at most of our operations including the Pohang/Gwangyang Steelworks and POSCO E&C.





RISK MANAGEMENT

Hazard and Risk Factor Management

POSCO is obligated to perform work environment measurement as designated by the Korean Ministry of Employment and Labor, and regularly measures employees' exposure to risk factors in the workplace, develops risk factor mitigation plans, and improves outdated facilities to provide pleasant working conditions. Specifically, POSCO monitors enclosed work areas, protective gear, and chemicals management while adhering to occupational health and safety laws, notifications issued by the Ministry of Employment and Labor, and technical guidelines by the Korea Occupational Safety and Health Agency.

Emergency Response Procedure

POSCO operates the Fast Response Guidelines for Major Accidents, which specify emergency response procedures as well as rapid response task force formulation and operation procedures. The rapid response task force is led by the Head of the SHE Division (Vice President, inside director), and relevant information must be immediately reported to the Representative Director. In the event of emergency, work helicopters are converted for emergency patient transfers and optimal treatment is provided in cooperation with medical institutions.

Operational Plan for the Rapid Response Task Force

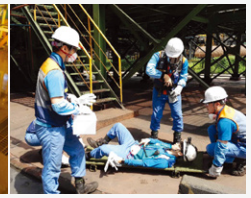
- Enable real-time information sharing and decision-making through group chatrooms to formulate an integrated response to authorities/media
- Benefits: Establish clear factual grounds to speak with one voice towards the government and media



Firefighting drill at the Electrical Steel Plant 3



Enclosed space rescue drill at the FINEX Plant 3



Chemical accident response drill at the Coal and Coke Handling Plant



Firefighting drill at the Raw Materials Handling Plant



Enclosed space emergency rescue drill at the Cold Rolling Plant 4



Chemical accident emergency response drill at the Coke Plant 3

Response Drills for 4 Major Emergencies

At POSCO, response drills are conducted in preparation for the four major emergencies of firefighting, PSM (Process Safety Management), enclosed space, and chemical accidents at respective plants and sections to take stock of its emergency response system.

Drills Conducted in H2 of 2023

Category	Firefighting			PSM		
	Target	Drills Performed	Execution Rate	Target	Drills Performed	Execution Rate
Pohang Steelworks	50	50	100%	39	39	100%
Gwangyang Steelworks	37	37	100%	33	33	100%
Technical Research Laboratories	6	6	100%	N/A	-	-

Category	Enclosed Space			Chemical Accident		
	Target	Drills Performed	Execution Rate	Target	Drills Performed	Execution Rate
Pohang Steelworks	63	63	100%	35	35	100%
Gwangyang Steelworks	61	61	100%	26	26	100%
Technical Research Laboratories	2	2	100%	1	1	100%

Certification of the Health and Safety Management System

POSCO Group ensures that safety risks are regularly reviewed by external experts through the ISO 45001 and KOSHA-MS certification programs at our key operations.

As of the first half of 2024, all of our major operations in Korea and abroad that are subject to safety certification were successfully certified to safety standards.

- Certification achieved at 95 operational sites in Korea and abroad

Self-assessment

Semi-annual reviews are made on all operations in Korea and abroad for their implementation of nine elements of the health and safety management system to encourage necessary improvements. At both steelworks operated by POSCO, year-round and theme-based assessments are performed by the Audit Section under the Safety & Disaster Prevention Group.

Audit Overview at the Pohang Steelworks

- Year-round safety patrol results: Identified nearly 4,000 non-conformities and requested improvement action (~2023)
- Blast Furnace No.4 long-term repair on-site patrol: Identified nearly 200 non-conformities and made improvements
- CCTV-enabled check & feedback activity: Nearly 2,000 cases

Audit Overview at the Gwangyang Steelworks

- Year-round safety patrol results: Identified nearly 900 non-conformities and requested improvement action (~ Nov. 2023)
- Special safety assessment results for the new electrical steel plant: Identified nearly 300 non-conformities and requested improvement action
- Analyzed and requested follow-up action concerning the special plant safety assessment (Coke Plant 3 in Feb. 2023, Blast Furnace Plant 3 in Jul. 2023)
- Special safety patrol for high-risk work during the special safety priority period (Nov. 2023 ~ Jan. 2024)
- Made monthly theme-based safety checks in 2024 (enclosed space in Jan., working at height in Feb. heavy material handling in Mar.)

Health & Safety

RISK MANAGEMENT

Hazard and Risk Identification

POSCO is bolstering proactive risk management by identifying risks and implementing improvement tasks.

- Strengthen the analysis and identification of frequent accidents by plant:
  - On-site safety activity mentoring supervised by the Head of the SHE Division
  - Company-wide analysis of hazard/risk identification status and feedback led by the safety management department (twice/month)
- Hazard/risk management status performance analysis meeting: Company-wide (semiannual), operational site level (quarterly), plant level (monthly)

Category	Target User	Hazards and Risks Identified		Key Improvements Made
		2022	2023	
Safety Whistleblowing Center	All individuals accessing the steelworks	1,201	1,024	Made improvements and solutions to address unsafe conditions of safety facilities and equipment near operations, damaged traffic facilities and roads, and work methods that undermine safety (focus on high-risk ones)
Hazard/risk identification	Our employees and employees of contractors	48,685	41,564	

External Expert Assessment

In 2023, we identified improvements through the health and safety assessments made in 2022 with the help of DNV, a third-party professional organization, and made improvements accordingly to reflect the results in our risk management.

Assessment Item

1 Leadership	6 Project	11 Contractors and suppliers
2 Planning and operation	7 Capability	12 Emergency action
3 Risk assessment	8 Communication and promotion	13 Accident investigation
4 Human resources	9 Risk management	14 Risk monitoring
5 Compliance	10 Asset quality	15 Results and review

Key Improvement Strategy

Category	Assessment Results and Improvement Measures
Leadership	• Focus on swift action to systematically resolve issues - Establish integrated protocols for safety operations - Institutionalize and establish an emergency safety action system
Planning and operation	• Operate a line-driven health and safety management system - Provide support to roll out and establish line-driven safety activities
Risk management	• Re-establish the concept of various safety rules - Integrate and re-align safety rules
Risk monitoring	• Strengthen work observations to provide constructive feedback - Re-define work observations and expand relevant activities

METRICS AND TARGETS

Safety Management Target

To elevate safety awareness, POSCO Group has additionally managed TRIFRs (Total Recordable Injury Frequency Rate) at the Group-wide level since 2022. This helps establish cultural settings to identify even trivial accidents to bolster preventive safety management, and Group Safety Council meetings joined by C-level executives from operating companies on a semi-annual basis serve to further raise the bar on safety management.

Category	2023 Target	2023 Result
Group-level TRIFR	2.0	1.65
Number of POSCO employees who sustained serious injuries*	Zero	Zero
Number of POSCO E&C employees who sustained serious injuries*	Zero	1

*Including employees and on-site contractors

Safety Reward Program

POSCO and POSCO E&C operate the safety reward program, and eligible worksites that met the conditions below received rewards in 2023.

- POSCO: In the event that serious accidents did not occur, incentives aligned with the number of general accidents that occurred are paid to its own employees and on-site contractor employees*
  *Including contract workers with more than 1 year of employment and excluding executives and vice presidents
- POSCO E&C: In the event that serious accidents did not occur across the board, incentives are provided to all employees*, and additional incentives are provided when the target of occurrence of general accidents set by respective divisions is met
  *Including executive vice presidents, permanent positions, and contract positions

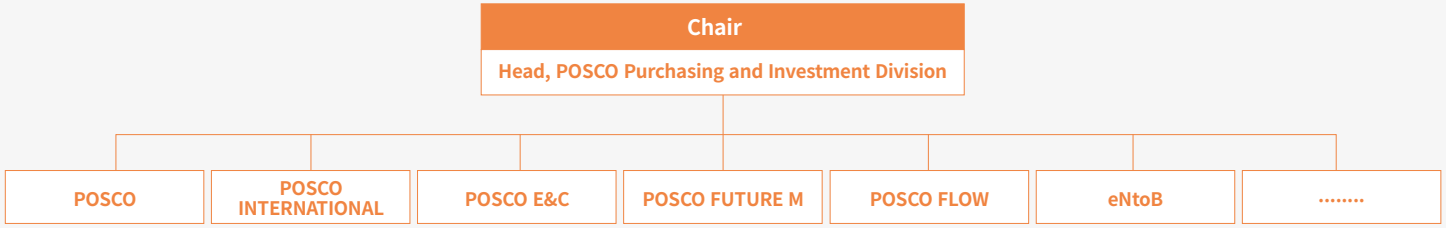
Supply Chain Management

GOVERNANCE

Supply Chain Management System

Group Supply Chain Management Council

To ensure supply chain sustainability at the Group level, we had operated the Group Purchasing Executives Council led by POSCO's Purchasing and Investment Division since 2021. In line with tightening global regulations on human rights and environment issues within the supply chain, we renamed this organization into the Group Supply Chain Management Council in 2023 and have since convened the Council semi-annually to lead innovative efforts to pursue excellence in our supply chain operations.



- Participating companies: POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO MOBILITY SOLUTION, SNNC, eNtoB
- Attendee: Executives in charge of purchasing from respective operating companies
- Agenda for discussion: Review of sustainability issues concerning supply chain environment, human rights, and net zero among others, supply chain risk management process training, etc.
- Meeting frequency: Semi-annual
  *Date of meetings held in 2023: July 5 (H1), November 16 (H2)
- Group Supply Chain Management Council: Develop supply chain ESG management strategies and respond jointly at the Group-wide level
  ❶ Develop supply chain management strategies: Coordinate and integrate diverse supply chain management strategies among Group affiliates and develop strategies to improve efficiency and sustainability across the entire supply chains
  ❷ Manage supply chain ESG risk: Identify and assess potential supply chain ESG risk to develop and implement risk minimization strategies
  ❸ Share supply chain ESG trends: Identify innovative supply chain management methods and share the latest trends to make POSCO Group's supply chain management more efficient
  ❹ Set sustainability goals: Set goals to build sustainable supply chains in accordance with global ESG standards and develop plans to reach these goals
  ❺ Provide training for capacity building: Provide employees with training opportunity to contribute to building sustainable supply chains to strengthen supply chain ESG management capabilities
  ❻ Promote cooperation among Group affiliates: Build partnerships to boost sustainable supply chain competitiveness for Group affiliates
  ❼ Monitor and report supply chain ESG performance: Regularly monitor supply chain ESG performance and share the progress made in attaining sustainability goals

Board of Directors

With the Board of Directors of POSCO Holdings leading the way, POSCO Group establishes Group-level ESG policies, reviews ESG issues affecting operating companies, and discusses response measures.

Supply chain ESG issues are also considered as key ESG issues requiring Group-level management, and are regularly reported to the ESG Committee of POSCO Holdings to review pending issues and deliberate on response measures.

- Agenda reported in 2023: Supply chain ESG due diligence results and future plans (Dec. 5, 2023)
- Agenda reported in 2022: Supply chain ESG management strategies (Dec. 7, 2022)

Policy

- POSCO Holdings Supply Chain Policy
- POSCO Holdings Responsible Minerals Policy

To create a robust industrial ecosystem and achieve excellence in supply chain operations based on mutual trust with suppliers, POSCO stipulated the supply chain (raw materials/facility equipment) ESG management guidelines, and established the supplier code of conduct guidelines in August 2023.

These guidelines govern Tier 1 suppliers who directly provide raw materials, equipment, and industrial inputs to POSCO, and compliance with these guidelines is recommended for Tier 2-3 suppliers who are not in direct transactional relationships with POSCO.

- Supply chain ESG management guidelines: Specify activities undertaken to identify, assess, improve, and monitor supply chain ESG risk for POSCO to ensure supply chain sustainability.

Supply Chain Management

STRATEGY

ESG Purchasing Policy

In line with EU's discussions to adopt the Corporate Sustainability Due Diligence Directive, ESG is emerging as a key consideration for business operations.

In response, POSCO Group engages in a wide array of activities to create a robust industrial ecosystem and improve sustainability across the entire supply chains taking into account the shifting external landscape.

In particular, our ESG purchasing policy applies to our supply chain participants to advance ESG management hand-in-hand with suppliers as our key stakeholders.

ESG Purchasing Policy	
POSCO follows the basic principle of sourcing from suppliers who establish eco-friendly operational processes and fulfill social responsibility, playing a leading role in sustainable procurement.	
Practice fair, transparent, and ethical management	Strengthen supply chain capabilities
• Fair and transparent transactions • Disclosure of purchasing information • Fair trade compliance	• Technological cooperation • Management stability • Training and consulting support
Realize ESG purchasing	Bolster purchasing competitiveness
• Expansion of purchases in line with 3R (Reuse, Recycle, Reduce) principles • Reinforcement of responsible minerals management • Preferential treatment for socially friendly companies	• Optimal value purchasing • Strategic purchasing considering characteristics of goods • Continuous discovery of excellent suppliers

Practice Fair, Transparent, and Ethical Management

Suppliers wishing to do business with POSCO may apply for supplier registration year-round, and POSCO fully discloses data on our sourcing groups (purchasing item categories) in line with our fair procurement policy. The Related Transactions Review Committee is up and running to prevent unfair related transactions and ensure fairness in our purchasing operations.

Strengthen Supply Chain Capabilities

Sustainable management of mid/small-sized suppliers is key to building a reliable supply chain procurement system. As such, POSCO operates programs to pursue technology cooperation with its mid/small-sized suppliers and support their business operations while providing training and consulting to assist suppliers with capacity-building.

Realize ESG Purchasing

POSCO partners with overseas coking coal and iron ore suppliers to develop eco-friendly raw material technology, and engages in systemic supply chain management activities to prevent social issues that may arise in the mineral mining process. While establishing a responsible mineral management system, managing ESG risk, and strengthening communication with internal/external stakeholders, POSCO also raises Go Extra Mile (GEM) funds in 1:1 matching format with raw material suppliers to create social value and offer preferential treatment to socially responsible companies, proactively implementing ESG purchasing practices in so doing.

Bolster Purchasing Competitiveness

POSCO takes the Total Cost of Ownership (TCO) approach considering a comprehensive range of costs – environmental, maintenance, quality, and logistics costs – in making purchasing decisions from the optimal value perspective to boost our competitive edge. POSCO identifies top-tier suppliers and offer them preferential treatment including priority negotiation rights to build robust supply chains, and tailor our purchasing strategies to the characteristics of each item based on business impact and purchasing difficulty to build our purchasing competitiveness.

Supplier Code of Conduct

POSCO's Supplier Code of Conduct urges all companies doing business with the company to provide an eco-friendly and safe work environment, guarantee respect for and dignity of workers, and operate ethical governance.

The Code consists of 49 clauses in seven sections, reflecting basic norms of the Responsible Business Alliance (RBA) and provisions stipulated by POSCO. Any and all suppliers doing business with POSCO are mandated to endorse this Code of Conduct, and we have made our raw material/equipment/industrial input suppliers submit their agreement to abide by the Supplier Code of Conduct to the e-Procurement purchasing portal since 2024.

Key Details of POSCO Group's Supplier Code of Conduct

Environment	Efforts to manage hazardous substances, wastewater, and air pollution and reduce the use of resources
Respect for human rights	Ban on compulsory/child labor, non-discrimination, humane treatment for workers
Quality management	Quality management, obligation to make mutual efforts for quality management
Protection of trade secrets and intellectual property	Management and protection of confidential information, protection of intellectual property
Health and safety	Obligation for occupational safety/occupational injury & illness/occupational hygiene management
Shared growth and Corporate Social Responsibility	Participation in shared growth activities, CSR efforts for community/economic development
Ethics and fair trade	Business integrity, prohibition of unjustified gains, compliance with the Special Ethics Terms and Conditions and fair trade principles

Supply Chain Management

RISK MANAGEMENT

Supply Chain ESG Risk Management

To ensure environmental, human rights, and other critical issues do not occur along supply chains, POSCO operates a systemic ESG risk management process spanning the early phase of supplier registration to performance assessment for contractual execution and follow-up management.

Supplier Relationship Management (SRM) Process

Step 1. New Supplier Registration

Supplier registration application → ESG qualification screening → Paper screening → Screening and final determination

ESG assessment items (new)

Non-compliance with environmental regulations, delay in wage payment, child/compulsory labor, non-compliance with the Fair Trade Act

Screening method

Review candidates based on information provided by credit rating agencies and news articles

*Disqualify candidates when identified for non-compliance (registration is possible when confirmed to have taken corrective action)

Step 2. Performance Assessment

SRM assessment (quarterly and annual)

Assessment items and details

- **Credit** Valid credit ratings from credit rating agencies
- **Delivery** Late delivery days and amounts, etc.
- **Price** Competitive bid prices, etc.
- **Quality** Fail, PosQC certification
- **ESG** Environmental and safety training, anti-corruption activities, etc.
  *Assessment weights (20~30%, additional 5% for extra/deduction points)
- **Extra ESG points** Compliance Program (CP) certification ratings, health and safety management system certification, etc.
- **Deduction of ESG points** Safety incidents, human rights violation, etc.

*Assessment process: Contract signing and delivery – Reflection of objections raised by suppliers for performance assessment – Confirmation of assessment results
Assessment rating: Excellent (90 points and above), Average (60 points and above), Weak (55 points and above), Poor (Below 55 points)

Step 3. Follow-up Management

Follow-up measures after assessment

Criteria for restricting underperforming suppliers from bidding participation

- **Semi-annual assessment**
  1. Weak: Warning
  2. Poor: 3-month restriction on bidding participation
- **Annual comprehensive assessment**
  1. Weak: 3-month restriction on bidding participation
  2. Poor: 1-year cancellation of registration in the sourcing group or 1-year restriction on bidding participation

*Follow-up measures after supplier assessment: Select PHPs based on assessment results, restrict underperforming suppliers from bidding participation

Regular Risk Management

ESG risk management

Ethical non-compliance, safety incidents, child labor, human rights violation, etc.

Supply risk management

Change in credit rating from the time of registration, bidding participation performance, etc

[Step 1] New Supplier Registration

POSCO categorizes purchasing items into distinctive sourcing groups and systematically manages them accordingly in consideration of supply markets, characteristics of items, and contractual convenience. Supplier registration criteria for each sourcing group are made available year-round on the Steel-N.com website, and suppliers wishing to register as its supplier are required to agree to POSCO's Supplier Code of Conduct and Special Ethics Terms and Conditions. When a company applies for inaugural supplier registration, POSCO first verifies the company's non-compliance in the areas of environmental regulations, serious accidents, delay in wage payment, and tax payment. This is followed by the screening of basic qualifications such as credit ratings and financial/supply capacity. On-site visits are made to candidates to take stock of their operations, and quality tests are performed when necessary to verify their reliable quality performance. New supplier registration is made when all pertinent criteria are met.

[Step 2] Performance Assessment

POSCO regularly conducts SRM assessment to evaluate the performance of suppliers. This targets all suppliers who have done business with POSCO, and assessment metrics include credit, delivery, price, quality, and ESG. Ratings are subdivided into Excellent, Good, Average, Weak, and Poor to take a differentiated, rating-based approach to supply chain management. Since 2023, POSCO upgraded its ESG assessment, which had been previously made as part of the SRM assessment process, to conduct separate supply chain ESG due diligence. Supplier ESG due diligence aims to identify, mitigate, and improve overall potential or actual ESG risk factors that may arise within POSCO's supply chains in the areas of environment, human rights, and labor rights among others.

[Step 3] Follow-up Management

POSCO publishes quarterly and annual reports outlining SRM assessment results and makes them available for suppliers. POSCO also offers feedback on the strengths and weaknesses of suppliers identified through assessment results, providing an opportunity to make improvement. In particular, POSCO Honored Partners (PHP) are chosen from Excellent-rated suppliers, and are given access to a range of preferential treatment including priority negotiation rights and waiver of contractual deposit payment. For Poor-rated suppliers, POSCO ensures that these suppliers develop and submit 'improvement activity plans' to encourage their voluntary improvement efforts. Suppliers who fail to make sufficient improvement are restricted from participating in the bidding process from at least three months to up to one year.

Supply Chain Management

RISK MANAGEMENT

Supply Chain Risk Assessment

POSCO keeps monitoring its registered suppliers to establish a robust supply chain system. This allows POSCO to impose sanctions such as suspending business relationships with suppliers identified for ESG issues in the areas of environment and safety among others. Registration is cancelled for suppliers whose credit rating fell below the set criteria (below B rating) from the time of their sourcing group registration or who have no track record of bidding participation for the past one year or transaction for two years. In 2023, sanctions were imposed on 34 suppliers.

Metric	Unit	2020	2021	2022	2023
Total number of suppliers*	Companies	1,398	1,704	1,729	1,700
Excellent	Companies	275	216	237	261
Poor	Companies	60	15	3	1
Percentage of poor-rated suppliers which developed improvement activity plans	%	100	100	100	100
Percentage of suppliers that made improvement following the implementation of their plans	%	50	70	77	86

*All suppliers of facilities and materials who made transactions with POSCO the previous year (including duplicates in sourcing group)

METRICS AND TARGETS

POSCO

POSCO conducted on-site due diligence on 50 suppliers in 2023 to reach 100% of its target, and plans to do so for 500 suppliers on a cumulative basis by 2030.

2023

50 suppliers* (93% of purchase amount)

① PHPs rated Good or below through written due diligence
② Underperforming suppliers rated Good or below through written due diligence in the order of E>G>S

*Based on on-site due diligence

2030

500 suppliers
(subject to change according to written due diligence results)

High-risk suppliers identified through written assessment (for all contracts)

POSCO FUTURE M

POSCO FUTURE M conducted ESG due diligence on 337 suppliers in 2023, and plans to do the same for 450 suppliers by 2027 and introduce bidding thresholds in 2030.

2023

ESG due diligence
337companies

2027

ESG due diligence
450companies

2030

Introduce bidding thresholds

Mutual Growth Index

POSCO operates eight mutual growth programs to help create a robust industrial ecosystem. In recognition of its efforts to establish a culture of fair trade and pursue win-win partnerships with business partners along supply chains, POSCO was rated Most Excellent for four straight years in the Mutual Growth Index published by the Korea Commission for Corporate Partnership.

- 8 mutual growth programs

Operating the Mutual Growth Support Group

POSCO's mutual growth support group provides tailormade consulting to small/mid-sized companies. The group specifically focuses on consulting for supply chain ESG improvement, leading the way in supporting these companies to fulfill their social responsibility.

- Composition: Employees in leader roles with proven expertise for working over 25 years in their field
- Focus: Consulting for small/mid-sized companies to build their ESG management environment (work environment improvement, elimination of safety hazards, energy saving/carbon emissions reduction, etc.)
- Outcome: Helped 28 companies in 2023 to resolve 64 ESG tasks to generate nearly KRW 6.2 billion in financial benefits

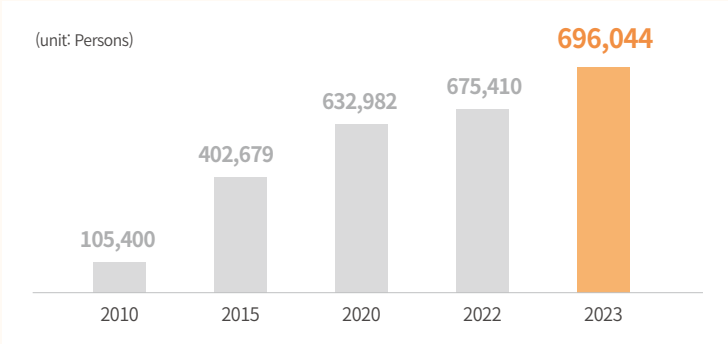


Kick-off ceremony of the POSCO mutual growth support group in 2024

Supplier Training

POSCO has been providing training to suppliers and other SMEs since 2005 with the SMEs Consortium Bureau under the Labor and Cooperation Office of POSCO playing a leading role. In recognition of its efforts to operate a range of specialized training programs for suppliers, POSCO has been serving as the Chair of the Win-win HRD Council for Large & Small Companies since 2012. POSCO was also awarded as an excellent training institution by the Korean Ministry of Employment and Labor for six consecutive years between 2018 and 2023.

[Training Provided to Suppliers (cumulative)]



[Details of Training Provided to Suppliers]

- Topic: Basic job competency for employees at suppliers and other SMEs and for young people
- Target: 491 companies* including suppliers and subcontractors who signed a training agreement
  *482 of them are contractors and suppliers for POSCO Group (98% of total trainees)
- Outcome: 20,634 persons trained in 2023 (off-the-job training for 20,222 persons, online e-learning training for 412 persons)

Item	Consortium Training (2005~)	Training Tailored to Supplier Needs (2020~)	Work and Learn Training (2015~)	Training for Job Seekers (2014~)
Concept	Improve basic job competency to lay the basis for regional, industry-led vocational training	Design and operate training courses by analyzing the tasks performed by companies under the agreement	Provide on-the-job training and off-the-job training in parallel *Off-the-job training conducted by the consortium	Basic job competency program for young job seekers *Off-the-job training conducted by the consortium
Target	All incumbent employees at suppliers/ contractors under the agreement	All incumbent employees at suppliers/ contractors under the agreement	New hires with less than one year of employment	Young job seekers
Content	• Learn and develop technical shopfloor job skills - Mechanical/electrical/welding/crane, etc. • Organizational management, leadership, safety, ESG, innovation, character, etc.	• Support the analysis of core tasks and the design of training roadmaps • Provide career development path designs and HRD guides	• 16 function-related job categories in the National Competency Standards (NCS) - Mechanical element/power machinery/ forklift/crane, etc.	• Qualities required of employees - Character, communication, vision design, etc. • Understanding of shopfloor steelmaking processes/equipment, mechanical/electrical theories and practices
Hour	At least 4 hours per person, off-the-job/ e-learning	At least 4 hours per person, off-the-job	200 hours per person (1 year training), off-the-job	350 hours (2 months), off-the-job camp training

To identify, prevent, and mitigate negative human rights and environmental impacts across the supply chain, POSCO established its supply chain ESG due diligence process in 2023 in reflection of the EU's Supply Chain Due Diligence Directive and requirements of global ESG rating agencies.

Benchmarking global ESG requirements and domestic/global peers, POSCO created a self-checklist for suppliers to perform written assessment in February 2023, and finalized suppliers subject to such written assessment. A total of 379 companies were selected for written assessment by identifying suppliers who have done business with POSCO for three consecutive years and exceeded KRW 500 million in annual transaction volume.

This written assessment conducted on 379 suppliers identified 50 companies as in need of strategic collaboration or falling into the ESG high-risk category, who then received on-site due diligence performed in conjunction with third-party assessors.

Due diligence was performed in the areas of environment, labor/human rights, health/safety, and ethics, and companies were requested to develop improvement plans for the ESG risks identified through on-site due diligence. This was followed by POSCO's purchasing manager monitoring the progress made within 180 days after the submission of improvement plans on the part of suppliers.

POSCO will pursue improvement on the risks identified through its supply chain ESG due diligence conducted in 2023 in collaboration with suppliers while improving ESG capabilities across the entire supply chain. POSCO Group aims to establish a trusted ESG management system together with supply chains to create a robust industrial ecosystem and achieve shared growth with suppliers, venturing into a sustainable tomorrow in so doing.

Establishing a Supply Chain ESG Due Diligence Process

Planning

Detail Benchmark global ESG requirements and domestic/global peers to finalize review items

Timeline Finalize the self-checklist for due diligence and targets (~Feb.)
→ perform supply chain ESG due diligence (~Aug.)

Key requirements of global assessment organizations
- Develop supply chain management strategies
- Establish/implement the due diligence process
- Verify compliance with the code of conduct
- Review/assess risks in each ESG area

Written assessment

Target
- Business transactions for 3 consecutive years/KRW 500 million or more in annual transaction volume
  → Performed written assessment on 379 companies
- Performed on-site due diligence on suppliers identified as requiring strategic collaboration or falling into the ESG high-risk category through written assessment in conjunction with third-party assessors

Due diligence

Review items
- Environment: Compliance with permits, biodiversity, carbon emissions
- Labor/human rights: Compulsory labor, child labor, non-discrimination
- Health/safety: Health and safety regulations, mandatory safety training, health checkups
- Ethics: Grievance mechanism, training on nonethical conduct, periodic audit

Improvement/monitoring

Improvement request The purchasing manager requested suppliers to develop plans to improve ESG risks identified through due diligence.

Improvement implementation Suppliers improved their ESG risk within 180 days after submitting improvement plans, and the purchasing manager monitored the progress made.

Disclosure

Raw materials and industrial inputs Disclosed POSCO's supply chain ESG due diligence results through sustainability reporting

Responsible mineral management Disclosed supply chain management data for customers concerning 6 minerals including those requiring responsible sourcing (tin, tungsten, cobalt)

Supply Chain ESG Due Diligence Results for 2023

Suppliers subject to assessment	Suppliers that completed assessment	Assessment rate
379 companies	364 companies	96%

[Key Improvements Made through On-site Due Diligence]

- Supplier A responded in written assessment that the company was measuring and managing its GHG emissions, but deficiencies were identified through on-site due diligence and was requested to make improvement.
  → Supplier A submitted improvement plans to measure GHG emissions.
- Supplier B did not establish its human rights management policy and was recommended to develop one.
  → Supplier B established its ethics regulations including provisions on human rights.

POSCO FUTURE M's supply chain ESG risk assessment follows the cycle of written assessment, on-site due diligence, and improvement and monitoring.

To clearly identify potential or likely supplier ESG risks, POSCO FUTURE M developed a set of 86 ESG risk assessment index referring to laws and regulations associated with environment, labor & human rights, health & safety, and supply chain due diligence along with domestic/global ESG initiatives and industry initiatives. These index are updated constantly by reflecting ESG issues that affected suppliers in the past, employee feedback, and advice from third-party professional organizations. Prior to risk assessment and due diligence, POSCO FUTURE M first identifies risks that are projected to occur or are actually occurring along its supply chains. POSCO FUTURE M preemptively identifies and manages risks by country where suppliers are located, industry, and type of raw/subsidiary materials, and draws on publications issued by governments and research institutions as well as media articles in this regard.

In 2023, this preliminary identification process identified 315 Tier 1 suppliers requiring intensive management.

ESG Risk Assessment Metric	Environment	Health & Safety	Labor & Human Rights	Governance
	• Environmental policy, hazardous substances management • Environmental laws and regulations • Energy, GHG • Environmental certification • Renewable energy	• Safety management organization • Safety management guidelines • Emergency response procedure development • Safety management system • Safety facility investment	• Non-discrimination • Wages and benefits • Working hours • Freedom of association • Ban child labor and compulsory labor	• Ethics policy • Grievance handing • Whistleblower protection • Presence of responsible minerals policy • ESG disclosure

1. Written Assessment

Written assessment is conducted in online survey format: suppliers self-assess their operations by responding to assessment index and attaching documentary evidence. To facilitate written assessment for suppliers, assessment criteria and requirements are presented in detail, and weights are given to metrics related to likely or critical risks in the areas of compulsory labor, child labor, working hours, and health & safety.

Written assessment results serve as the underlying data in identifying supplier ESG risk and selecting suppliers to receive due diligence in line with high-risk supplier categorization. In 2023, written assessment was made on 315 suppliers in total.

2. On-site Due Diligence

Suppliers identified for ESG risk through written assessment are selected as the target of on-site due diligence. On-site due diligence is performed by independent third-party organizations in attendance of POSCO FUTURE M's internal experts (HR & labor, corporate culture, safety, environment, etc.).

In 2023, on-site due diligence was conducted on 22 suppliers, and this was followed by consulting services including individual supplier assessment reports to set the course for improvement in a way that suits different conditions of each supplier.

3. Improvement and Monitoring

Written assessment and on-site due diligence results inform POSCO FUTURE M's effort to identify necessary improvements for high-risk suppliers, and each supplier develops implementation plans for respective improvement tasks while taking action accordingly. POSCO FUTURE M consults with suppliers on identified risks for their implementation timeline and methods in developing improvement tasks. Implementation status is checked against the plans developed by suppliers, and continuous monitoring is conducted on the completion of improvement tasks. Best practices of other companies are also shared to encourage suppliers to take the initiative in pursuing ESG improvement.

This entire process was completed by supporting training and consulting, developing environmental incident response guidelines, and conducting ethics training for nine high-risk suppliers identified in the final step, and all nine companies are currently making progress against their improvement plans.

ESG Risk Assessment and Due Diligence Results

Category	Number of Companies	Note
Written ESG risk assessment	315	44% of purchases
On-site ESG due diligence	22	
High-risk suppliers making improvement	9	
Suppliers identified for negative impact	9	8% of significant suppliers
Suppliers which developed agreed-upon improvement plans	9	8% of significant suppliers
Suppliers which completed the implementation of improvement plans	9	8% of significant suppliers

Conflict Mineral Management Organization

To resolve the social issues of human rights violation and environmental destruction that arise in the mineral mining process, POSCO Group organized the Responsible Minerals Council with POSCO's Raw Materials Office 1 under the Purchasing and Investment Division serving as the control tower in 2020. This was followed by the responsible minerals management system introduced for respective business divisions in 2023 to ensure proper responses at the individual operating company level. For issues requiring Group-wide responses, the Group Supply Chain Management Council discusses overall supply chain issues.

Our Consumption of Conflict Minerals

Since 2020, POSCO has extended the scope of conflict mineral management from the 3TGs of tin and tungsten to cobalt that raises issues with human rights violation including child labor employed for mining.

As of 2023, all 3TG minerals POSCO sources in CAHRAs* came from RAMP**-conformant smelters only.

*Conflict Affected and High Risk Area
**Responsible Minerals Assurance Program

[POSCO]

Mineral	RMI Smelter ID	Name of Smelter	Country of Origin	RMAP Conformance
Tin	CID001105	Malaysia Smelting Corporation (MSC)	Malaysia	Conformant
Tin	CID001453	PT Mitra Stania Prima	Indonesia	Conformant
Tungsten	CID002315	Ganzhou Jiangwu Ferrotungsten Co., Ltd.	China	Conformant

POSCO INTERNATIONAL separately established its own responsible mineral management guidelines in 2021 by reflecting its identity as a globally integrated corporation in line with POSCO's responsible mineral management guidelines, operating an effective conflict mineral management system.

In 2023, POSCO INTERNATIONAL established its 'responsible minerals sourcing policy' in conformity with POSCO Holding's ESG policy to advance responsible minerals sourcing, and rolled out this policy across the board. As of 2023, POSCO INTERNATIONAL made no transactions for 3TGs and cobalt in their country of origin.

POSCO FUTURE M is purchasing tungsten and cobalt that are categorized as 3TGs, and its sourcing of cobalt is on the rise due to the inherent characteristics of rechargeable battery business. As of 2023, all 3TG minerals POSCO FUTURE M sources came from RAMP-conformant smelters only.

In the event that POSCO FUTURE M finds a non-RMAP-conformant smelter along its supply chains, support will be extended to help ensure conformance under the RMAP.

[POSCO FUTURE M]

Mineral	RMI Smelter ID	Name of Smelter	Country of Origin	RMAP Conformance
Cobalt	CID003291	Guangdong Jiana Energy Technology	China	Conformant
Cobalt	CID003255	Quzhou Huayou Cobalt New Material	China	Conformant
Cobalt	CID003411	Hunan CNGR New Energy Science & Technology Co.,Ltd.	China	Conformant
Cobalt	CID003338	SungEel HiTech	Korea	Conformant
Tungsten	CID002321	Jiangxi Gan Bei Tungsten	China	Conformant
Tungsten	CID002082	Xiamen Tungsten	China	Conformant

Responsible Minerals Policy

POSCO established a 5-step process in line with the OECD Due Diligence Guidance to advance responsible supply chain management. POSCO selected 263 CAHRAs (Conflict Affected and High Risk Area) across 28 countries (as of the Responsible Minerals Report 2023), and ensures that the sourcing of raw materials from CAHRAs is preceded by risk assessment early in the supplier registration phase to red-flag high-risk suppliers and prevent ethical issues from occurring.

In particular, POSCO conducts professional due diligence on high-risk suppliers with the help of independent third-party organizations to monitor potential risk.
POSCO also develops and provides educational content on responsible mineral sourcing for internal/external stakeholders to extend the scope of our responsible minerals policy across the entire supply chains.

5-step Supply Chain Management

Step 1

Firmly establish the responsible minerals policy and its implementation system

Organization
- POSCO's Raw Materials Office 1 under the Purchasing and Investment Division has been operating the Responsible Minerals Council as the control tower along with POSCO INTERNATIONAL, POSCO FUTURE M and other Group affiliates.
- Renamed into the Group Supply Chain Management Council in 2023

Employee training
- Provide e-Card and e-Learning training to raise awareness among employees working at relevant departments that purchase or use conflict minerals

Training Completed (unit: Persons)

2021	2022	2023
15,402	16,464	17,713

Tightening criteria for new supplier registration
- Mandate new suppliers to submit their pledge to abide by our responsible minerals policy at the time of registration
- Include provisions at the time of supply and contract signing which state that suppliers receive due diligence performed by third-party organizations when the country of origin of the materials they supply is identified as CAHRA and that suppliers do business exclusively with RMAP-conformant smelters

Responsible minerals policy
- Establish a Group-wide responsible minerals policy

Step 2

Collect and assess qualitative supply chain information

Identify supply chain information
- Use the supplier and smelter survey questionnaire template independently developed by POSCO to collect information on country of origin, location of mines/smelters, and transport routes among others
- Mandate suppliers to fill out the CMRT and the EMRT provided by the RMI

Grievance/appeals procedures
- Create grievance handling and appeals procedures to collect varying feedback from all supply chain stakeholders: Directly fill out the form and submit, provide feedback through social network channels, or raise grievances during the due diligence process

Risk assessment
- Identify potential supplier risk based on information collected and CAHRA criteria: Comprehensively assess association with CAHRAs, supplier survey response rates, intentional provision of false information, and lack of supplier awareness on conflict minerals
  → Identify and select Red Flag suppliers as the target of management

Step 3

Develop risk identification and mitigation measures

Response Mechanism
- Establish a response mechanism to update the Supplier Code of Conduct, support training, and conduct buyer due diligence and due diligence by independent third-party organizations according to the level of risk identified for Red Flag suppliers
- Place restrictions on suppliers whose raw materials are sourced from CAHRAs* as their country of origin to contract with RMAP-conformant smelters only

  *POSCO Group's CAHRA: Designate and manage 263 areas across 28 countries for their frequent occurrence of social ethics risks such as conflicts, child labor, and human rights violation

List of CAHRAs (as of Mar. 2024)
- Africa: 143 areas in 17 countries including the Democratic Republic of the Congo, Central African Republic, and Burkina Faso
- Asia: 23 areas in 4 countries including Myanmar and Pakistan
- Middle East: 56 areas in 3 countries including Afghanistan and Yemen
- Latin America: 31 areas in the 2 countries of Columbia and Venezuela
- Others: 10 areas in the two countries of Ukraine and Türkiye
- Regulations were tightened to put on hold entering into a contract with potential suppliers when no improvement is made on the findings identified through training, internal due diligence and third-party due diligence or no willingness is detected to respond to the issue of responsible minerals sourcing.

Step 4

Conduct due diligence

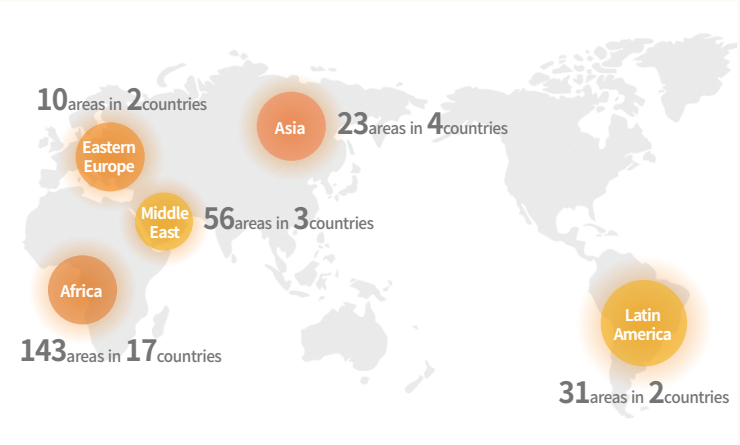
Step 5

Reinforce communication through the transparent disclosure of activities undertaken

Disclose the progress made on responsible minerals sourcing
- Publish Responsible Minerals Reports since 2021 for transparent information disclosure
- Disclose relevant details on the corporate website, US SEC disclosures, and sustainability reporting

Conflict Affected and High Risk Areas under Management

263 areas in **28** countries (as of Mar. 2023)



Human Rights

GOVERNANCE

Board of Directors

Role and Responsibility

POSCO Group commits to protecting human dignity and value in the course of our business conduct, and respects human rights-related international standards. Issues concerning respect for human rights and relevant improvement plans are reported to the Audit Committee under the Board of Directors twice a year as part of internal audit result and plan reporting.

Specifics and the progress made for human rights management, including supply chain human rights and human rights controversies, are reported through the ESG Committee under the Board of Directors and through the ESG session attended by all inside and outside directors.

Establishing the Human Rights Center

In January 2023, a Human Rights Center within the Legal Affairs Office of POSCO was newly established to enhance our risk management expertise on issues related to human rights, such as sexual harassment, bullying, and power harassment in the workplace.

Policy

POSCO Group announced in its Group-wide human rights management policy to abide by human rights-related international standards, from the UN Guiding Principles on Business and Human Rights and the UN Global Compact to the Universal Declaration of Human Rights and the OECD Guidelines for Multinational Enterprises.

This human rights management policy applies to the employees of POSCO Group and its suppliers, and covers detailed implementation plans for grievance mechanisms along with non-discrimination, ban on compulsory and child labor, guarantee of freedom of association and collective bargaining, guarantee of occupational safety, prevention of workplace harassment, responsible supply chain management, anti-corruption & anti-bribery, guarantee of environmental rights, protection of human rights for local residents, and protection of human rights for consumers.

Our supply chain policy and stakeholder engagement policy also stipulate the procedures to communicate, engage, and report concerning human rights across supply chains and local communities.

Since 2014, POSCO Group has implemented work guidelines to protect human rights specifying our basic approaches and responsibilities for human rights issues and our victim protection and grievance handling mechanism.
We also implement specific rules governing employee behaviors by job level and situation to prevent bullying and sexual harassment in the workplace.

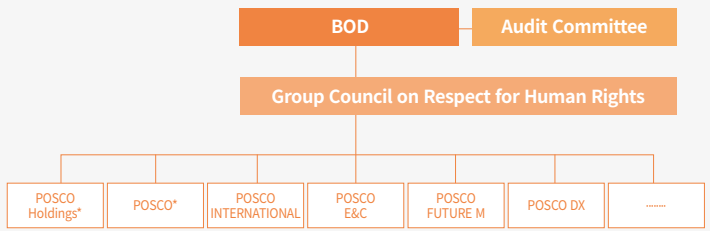
Human Rights Management Policy of Key Operating Companies

- POSCO
- POSCO INTERNATIONAL
- POSCO E&C
- POSCO FUTURE M

Group Council on Respect for Human Rights

In 2023, POSCO Group created the Group Council on Respect for Human Rights attended by Chief of Corporate Audit at POSCO Holdings, heads of the Corporate Audit Office from 20 affiliates, and the heads of the Human Rights Center and the Audit Planning Group of POSCO. The Council discusses issues concerning respect for human rights as well as human rights management guides and monitoring results at overseas subsidiaries. Important agenda items are included in the work results of the internal audit department and reported to the Audit Committee of POSCO Holdings solely composed of outside directors.

Organizational Chart for POSCO Group's Management Respecting Human Rights



*Chair: Head of the Corporate Audit Office at POSCO,
Advisory member: Chief of Corporate Audit, POSCO Holdings

Human Rights

STRATEGY

Joining Human Rights Initiatives

As a member of the UN Global Compact (UNGC), POSCO Group fully commits to abiding by its 10 principles aiming to encourage businesses to fulfill their social responsibility and advance sustainable society.

Our human rights management and due diligence processes are operated in alignment with the 10 UNGC principles in the areas of human rights, labour, the environment, and anti-corruption. In 2024, we joined the Business & Human Rights Accelerator programme supporting the implementation of the UNGC principles to respect human rights.

- Affiliates that joined the UNGC: POSCO Holdings, POSCO, POSCO INTERNATIONAL, POSCO E&C

Grievance Mechanism

POSCO Group operates a grievance procedure to address any human rights-related damages and grievances that may arise throughout our business operations. Any stakeholders–employees, suppliers, local communities, and indigenous peoples–may access our grievance mechanism to raise their concerns through e-mail, phone, post, or in-person visit. Once a report is received, the dedicated human rights team provides prompt responses and, depending on the case, conducts post-feedback, which may include disciplinary action following an audit, based on the severity of the matter at hand. Anonymity and procedural transparency are ensured to prohibit any retaliation against reporters and whistleblowers, and provisions are stipulated to penalize the breach of such measures in an effort to respect human rights throughout the grievance handling process.

Grievance Procedure

Stakeholder registration	Reports received 24/7	Review/handling	Result notification	Closure
(e-mail/phone/post available) Grievance Report Center	Receive and review reports through dedicated organizations at respective affiliates		Provide feedback on review results and handing outcomes	

Change Management

To boost employees' understanding and implementation on human rights, POSCO Group ensures that all our employees across the global operations sign the ethics pledge each year, and provides regular trainings and campaigns.

In April 2023, our employees signed the pledge to uphold gender equality and mutual respect and received special in-person training on respect for human rights. This allowed us to elaborate on concrete actions to be taken in relation to human rights to prevent discrimination, bullying, sexual harassment, spread of harm, secondary harm, and power harassment.

- Pledge to respect human rights: Implementation of digital pledge signing for all employees (including contract workers)
  - Ethics pledge: Conducted once a year in January
  - In December 2022, an additional pledge on gender equality and mutual respect was inaugurated
- Training on respect for human rights: All employees (including contract workers)
  - Compulsory online training: Prevention of workplace bullying, prevention of sexual harassment at work (annual)
  - Offline training: Special training on compliance with respect for human rights (Apr. 2023)
- Respect for human rights campaign: Launch monthly issue-specific campaigns through in-house system notice (at least 6 times a year)

Human Rights

RISK MANAGEMENT

Human Rights Due Diligence

Human rights due diligence is performed by responsible employees to preemptively identify any negative impact on human rights to prevent and/or mitigate such impact.

Human Rights Due Diligence Method (Human Rights Management Policy)

When identifying human rights-related risk at major domestic and global operations, we perform human rights due diligence to analyze the situation and identify improvement measures.	We make it a rule to engage internal experts in performing due diligence, and may seek assistance from external experts to conduct joint due diligence when necessary.	We conduct practical interviews with groups and relevant stakeholders who could potentially be impacted when the need arises.	We identify potential and actual impact in performing due diligence. We share assessment results at all levels and implement pertinent procedures to take prevention/mitigation action for potential impact while ensuring that remedies and solutions are provided for actual impact that has already taken place.	We perform due diligence using a checklist designed to assess key factors for human rights management.

Stakeholder Communication	Response and Follow-up	Internalization and System Improvement
When stakeholders raise concerns over human rights impact, we provide responsible explanations.	We establish a response system to prevent and mitigate potential negative impact on human rights based on the facts revealed through human rights due diligence, and take follow-up action.	We drive substantial improvement in human rights management by incorporating the results of human rights due diligence into our corporate culture and seeking institutional improvement.

Management of Operating Companies

With POSCO Holdings' Chief of Corporate Audit playing a central role, dedicated ethical management organizations at respective operating companies and the Human Rights Center regularly review risks associated with respect for human rights and perform audits when deemed necessary. Each year, audit results from the previous year and improvement plans for the following year are reported to top management and the Audit Committee.

In 2023, an employee survey system was established and has been made available year-round to identify failures to respect human rights. In addition, annual ethics sessions are provided to preemptively identify any ethical misconduct and failure to respect human rights on the part of executives and leaders. In 2023, assessment items were added to measure efforts to create a corporate culture that respects human rights for executive ethics sessions and the results are reviewed accordingly.

Management of Overseas Subsidiaries

To assess overseas subsidiaries for their human rights management performance, POSCO conducted human rights impact assessments on managers and employees at 49 overseas subsidiaries in 2023.

The questionnaire covers nearly 30 items across the eight domains of establishing a human rights management system, respecting the human rights of stakeholders, banning discrimination in employment and work, eliminating compulsory labor, guaranteeing health and safety, recognizing the freedom of association and collective bargaining, abolishing child labor, and respecting privacy and protecting personal data.

For some overseas subsidiaries, on-site visits were made to inspect working conditions and interview employees to identify necessary improvements while improvements were made by providing training to respect human rights and supplementing human rights-related regulations.

Human Rights Assessment Items for Overseas Subsidiaries (2023~)

- Management of human rights management system
- Respect for stakeholder human rights
- Ban on discrimination in employment and work
- Elimination of compulsory labor
- Abolition of child labor
- Guarantee of health and safety
- Recognition of freedom of association and collective bargaining
- Respect for privacy and personal data protection

Human Rights

RISK MANAGEMENT

Remedy for Victims and Prevention of Secondary Harm

In the event of human rights violation, POSCO follows the stepwise response process ranging from incident awareness to follow-up management.
Specifically for incidents requiring remedies for victims and the prevention of secondary harm such as breach of sexual ethics, we prioritize swift handling and victim protection.

Step	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Process	**Incident reporting (awareness)**	**Report submission**	**Protection for victim**	**Investigation**	**HR action**	**Follow-up**
Detail	Reporting made available for anyone	Initial counseling within 24 hours	Swift physical separation	Investigation into factual grounds	Disciplinary review by the HR committee	Secondary harm monitoring
Responsible Department	All employees	Human Rights Center	HR department	Human Rights Center	HR department	Human Rights Center, HR department

Human Rights Due Diligence Case: POSCO STEELEON's MPCC

POSCO STEELEON remains independent in conducting business through Myanmar POSCO C&C (MPCC), its Myanmar corporation, with its majority shareholding of 70%, and continuously engages in consultations to acquire the stakes held by MEHL to ultimately terminate this joint venture partnership. In January 2021, MPCC adopted a resolution through its general shareholder meeting to suspend dividend payments until its human rights issues are resolved. Currently, MPCC is halting land rent payment on its local factory site as well as dividend payments.

While the political and economic unrest in the country poses restrictions on its normal operations, MPCC still remains committed to ensuring stable livelihoods and continued employment for its locally hired staff. Such efforts made by MPCC were alluded to in the End of Mission Statement prepared by the UN Special Rapporteur on the situation of human rights in Myanmar when he visited Korea in 2022. While the statement did not explicitly mention POSCO STEELEON, the Rapporteur, based on the meeting he had with POSCO STEELEON, commented, "They explained that they have worked to stop revenue from flowing to the junta while not hurting the livelihoods of their Myanmar staff. This is commendable." In 2023, POSCO STEELEON teamed up with a PM who previously worked at an NGO specializing in human right issues to conduct third-party human rights due diligence. In 2024, POSCO STEELEON is making progress on the key recommendations outlined on the right.

For further details on other issues associated with our overseas operations, please follow the link below

- Labor Rights Issues at POSCO ASSAN TST in Türkiye
- Indigenous Peoples' Rights Issues at POSCO INTERNATIONAL's Palm Plantation in Indonesia

Third-party Human Rights Due Diligence Results

Issue	Key Recommendations
Human rights management	Specify the grievance handling process and the roles of the responsible department within company regulations, and provide employee training on the process
Non-discrimination	Specify details of the wages MPCC pays during the probationary period within company regulations
Safety	Regularly conduct hygiene checks, conduct training, and report training results to senior management
Ban on child labor	Stipulate that the company does not hire those under 18 in company regulations
Guarantee of freedom of association	Include provisions guaranteeing the employee representative body the right to collective bargaining in company regulations

Remedy for Victims

- Sign the confidentiality agreement: Mandate all participants in the investigation to sign the agreement
- Take protective action for victims: Support legal and medical counseling at the request of victims

In-house Remedy Programs

- Legal support: In-house dedicated lawyer available, and victims may also choose to be represented by an external lawyer if desired
- Medical support: Provide assistance with medical expenses incurred due to breaches of sexual ethics
- Counseling support: Provide psychological counseling programs with the help of professional counselors at the Mindfulness Counseling Center

- Company regulation: Stipulate remedies for victims and the prevention of secondary harm in company regulations

The company takes rigorous disciplinary action against those who concealed bullying/sexual harassment at work or caused secondary harm, and imposes even more severe disciplinary action on those in leader roles who caused secondary harm despite of their responsibility as a leader for protecting victims, including but not limited to the prevention of such secondary damage. The company may also hold those in leader roles supervising perpetrators of secondary harm accountable.

- Preventive management: Mandate all employees to attend anti-sexual harassment training, have employees sign the pledge to uphold gender equality and mutual respect

Supply Chain Human Rights Management

POSCO Group stipulated supply chain ESG management guidelines to prevent human rights issues from occurring along key supply chains, and conducts regular supply chain due diligence for risk management. For details on our supply chain human rights management, please refer to the supply chain management section of this report.

Diversity and Inclusion

GOVERNANCE

Policy

POSCO Group fully respects the UN Sustainable Development Goals, the UN Global Compact (UNGC), the OECD Guidelines for Multinational Enterprises, and sustainability management standards including ISO 26000. POSCO Holdings and our key operating companies (POSCO, POSCO INTERNATIONAL, POSCO E&C), are members of the UNGC and conduct business in line with our Group-wide human rights policy and diversity, equity, inclusion policy.

Committee

POSCO E&C created a human rights subcommittee in 2023 attended by executives to build a corporate culture that respects diversity, and set up DIBE as a diversity consultative body under the subcommittee.

Coined as an acronym of Diversity, Inclusion, Belonging, and Equity, DIBE meets regularly with 12 male and female employees from diverse backgrounds attending.

Board of Directors

As part of efforts to promote diversity at the POSCO Group level, POSCO INTERNATIONAL finalized its female talent promotion plan through the report provided to its Board of Directors on September 21, 2023. This was preceded by the collection of employee feedback, which helped identify the following three approaches to female workforce development.

1. Operate the W-mentoring program to foster female leader candidates
2. Support competency development and external networking opportunity to foster female executive candidates
3. Build a corporate culture that respects diversity and expand infrastructure for work-life balance

STRATEGY

Collaborative Labor Relations

POSCO Holdings operates the Labor-Management Council composed of equal numbers of labor and management representatives. The Council convenes regularly each quarter to discuss pending issues such as welfare program improvement and identify possible improvements while resolving employee grievances and collecting suggestions.

Under the philosophy of 'partners building a better future together', POSCO Group has continued its tradition of win-win labor relations since our foundation. Due to the inherent characteristics of being a holding company, POSCO Holdings' workforce primarily consists of manager-level employees and there is no labor union organized currently. Still yet, we operate the Labor-Management Council whose members are chosen by employees through direct voting pursuant to the Act on the Promotion of Employees' Participation and Cooperation. The Council serves to communicate the varying voices of employees to leadership on an ongoing basis to improve working conditions.

- **POSCO Holdings' Labor-Management Council**
  - Establishment: April 16, 2022
  - Operation: Regular meeting on a quarterly basis
  - Agenda: Labor members collect feedback from employees to consult on wage and welfare & benefits issues, and the deliberation outcomes apply to all employees

Key operating companies that own their worksites guarantee the freedom of association and the right to collective bargaining as specified in the nation's Constitution, and there are two labor unions in operation at POSCO. They each affiliate with the Korean Confederation of Trade Unions and the Federation of Korean Trade Unions, and the former exercises collective bargaining rights to create a unified negotiation channel.

POSCO engages in wage negotiations each year pursuant to the Trade Union and Labor Relations Adjustment Act (Labor Union Act) to conclude the wage agreement, and in collective bargaining negotiations every two years to sign the collective agreement.

- **Collective Negotiation Results in 2023**
  - Date of signing: November 13, 2023
  - Details: Agreement on wage increases and lump-sum payment, implementation of the four-day workweek program on a bi-weekly basis, etc.

Article 9 of POSCO's Rules of Employment specifies statutory working hours to abide by the working hour standards stipulated in the nation's Labor Standard Act. POSCO also included flexible work hours in its Rules of Employment as stipulated by the Act and makes flexible work arrangements available for employees while providing additional pay for overtime work and holiday work.

All across POSCO 's operations in Korea and abroad, it is free to form a labor union as long as the country-specific pertinent requirements are met. As of June 2023, 24 of its overseas operations have their own official labor union in operation. Corporations where no labor union is present operate official employee representative bodies to ensure all employees regularly present their feedback to protect labor rights in the areas of wage, welfare & benefits, and non-discrimination among others, and receive official response from the company.

The Head Office of POSCO has conducted separate labor risk assessments on overseas corporations since 2023 to make sure violation of labor union rights does not occur across its overseas operations, and is pursuing improvement based on the assessment results at the individual corporation level.

Diversity and Inclusion

STRATEGY

Increased Employment of People with Disabilities

In 2007, POSCO Group established POSCO HUMANS as Korea's first subsidiary-type standard workplace for people with disabilities, providing stable regular employment.

As of the end of 2023, POSCO HUMANS employed 325 individuals with disabilities out of total 692 employees (161 with severe disabilities, 164 with moderate disabilities, 231 males and 94 females). The company achieved the Barrier-Free Workplace certification from the Korea Employment Agency for Disabled Persons in 2021, and was honored with the Tower of Steel Medal at the Korea Disabled Employment Promotion Competition in 2023 for its contribution to promoting employment of people with disabilities. POSCO HUMANS also achieved the health-friendly workplace certification along with the Commendation of the Minister of Health and Welfare as the first subsidiary-type standard workplace hiring people with disabilities to do so. Operating companies under POSCO Group employ para-athletes to support their economic self-reliance and stable athletic careers.

Employment of Indigenous Peoples and local People

POSCO Group is considering a policy prioritizing the hiring of local people and indigenous peoples for overseas operations. POSCO's Argentine corporation employees 271 local staff, along with 11 indigenous community members to support alpine camp management, survey activities, parking lot management, and geological studies.

POSCO Group's Overseas Employment (end of 2023)

Region	Locally Hired Employees
Northeast Asia	5,872
Southeast Asia	12,644
Southwest Asia	1,413
Central Asia	2,927
Oceania	961
North/Latin America	1,968
Africa	206
Europe	1,064
Total	**27,055**

Expansion of Female Workforce

At POSCO Group, the percentage of female employees is not high, which is attributable to the historically low representation of women in the steel industry and the relatively delayed participation of women in Korean society. Meanwhile, the proportion of female employees is steadily on the rise as a result of adopting diverse policies and systems. POSCO Holdings continues to foster female leaders: the percentage of female executives and leaders has consistently risen from 2.5% at the end of 2022 to 5.1% at the end of 2023 and 7.4% as of June 2024. POSCO Group's 13 affiliates* implement a range of family-friendly policies to institutionally support women's social advancement. Such efforts allow them to achieve and maintain their family-friendly business certification granted by the Korean Ministry of Gender Equality and Family.

*POSCO INTERNATIONAL, POSCO E&C, POSCO Mobility Solution, POSCO Research Institute, POSCO M-TECH, POSCO Group University, POSCO STEELEON, POSCO FLOW, POSCO FUTURE M, POSCO DX, POSCO WIDE, POSCO HUMANS, POSCO E&C

POSCO Group specifies in the Rules of Employment and HR regulations that our employees are not discriminated against based on their gender in terms of recruitment, assignment, promotion, wage, training, and resignation, and keeps monitoring our performance in this regard to ensure there is no gender-based discrimination in the workplace. Our wage system is exclusively structured by job functions to prevent any wage disparities based on gender, which are solely determined by different duties and roles.

Female Leader Development Program

POSCO INTERNATIONAL has introduced W-Mentoring (female career coaching and networking support) and learning programs (MBA) dedicated to female employees to nurture new female leaders.

POSCO INTERNATIONAL's W-Mentoring Program

- Purpose: Build a pool of future leaders by motivating talented individuals with proactive support
- Method: Select outstanding female talent each year (around 15 individuals in P3 and above positions), provide regular coaching from internal/external executive-level mentors

Mentee selection	• Select 1 or 2 outstanding female talent from each division
Mentor matching	• Internal: Mentoring by division head-level executives • External: Female executives from Group affiliates or industry peers, female coaching experts, lectures by external experts
Details	**Internal** Career coaching by internal executives Provide networking opportunity including growth/career development mentoring **External** Coaching on the future path forward for female leaders Provide coaching with the help of external experts on communication skills and network expansion **Peer** Support the expansion of internal networking Invite Class 1 mentees for Class 2 mentees, support broader networking opportunity

POSCO INTERNATIONAL's Goal for Nurturing Female Leaders



Diversity and Inclusion

STRATEGY

Diversity Training and Programs

POSCO Group provides cultural diversity training courses for all employees to bolster our employee diversity training. In 2023, 3,254 employees (including duplicates) completed relevant training. Our overseas offices also regularly host cultural events to respect local religions and culture to promote harmony and mutual understanding among employees.

Team Building Program for Enhancing Diversity (Empathy Plus WS)

This offline department-level DEI&B (Diversity, Equity, Inclusion, and Belonging) training program helps us improve understanding on organizational diversity, equity, inclusion and belonging.

Target selection → Organizational assessment → Empathy building → Customized activity → Action agenda identification

Global P.A.L Program

POSCO Group's Global P.A.L* program is open for talented individuals all across our overseas operations worldwide. This invites exemplary global staff to the Head Office in Korea to better understand our overall business and Korean culture and pursue mutual growth. In the first cohort of the program in 2023, 60 outstanding employees selected from 12 countries, including Indonesia, Vietnam, China, and Turkey, participated.

*Pride (recognized as key talent), Appreciation (acknowledged for dedication as an exemplary employee of the POSCO Group), and Loyalty (affiliated as a member of the POSCO Group).

RISK MANAGEMENT

Grievance Mechanism

Stipulation of Grievance Mechanisms

POSCO Holdings' human rights management policy specifies our grievance mechanism to ensure all our employees may raise their concerns anonymously or under their real name using our online grievance mechanism in the three languages of English, Korean, and Chinese. Specifically, our Group-level ethics regulations include supplementary provisions stipulating the protection of whistleblowers along with relevant rewards and disciplinary actions to keep whistleblowers safe.

- **Online Grievance Handling System** POSCO Holdings POSCO POSCO INTERNATIONAL POSCO E&C POSCO FUTURE M POSCO China

Operating Wide-ranging Communication Channels

POSCO expands direct communication with employees through Young Board, TongTong/Millennial Committees, and townhall meetings to narrow the emotional distance between leadership and staff and build a horizontal corporate culture. Such communication activities help heed the voice of frontline operations and create or improve systems in relation to corporate culture, work methods, and established practices.

Employee Feedback Channel (2023)

Communication Channel	Target Participants	Communication Cycle	Details
Young Board	Young Board members in their 20's and 30's chosen from diverse functions of production, technology development, marketing, and management support	Semi-annually	Propose ideas on workplace safety, innovative work methods, and improvement in corporate culture
TongTong Committee	Heads of each division and their employees	Semi-annually	Engage in in-depth discussions on improvement of corporate culture
Millennial Committee	Heads of steelworks/groups and their employees	Bi-monthly	
Townhall meetings	Leadership and staff	Semi-annually	Collect candid employee feedback through online anonymous channels

[Improvements Made by Incorporating Employee Feedback]

1. Introducing new work uniforms

In February 2024, POSCO Group upgraded our work uniforms in line with global standards prioritizing shopfloor safety. We focused on enhancing the safety and quality of new uniforms by reflecting employee preferences identified through surveys, and adopted 'T wave eco-friendly fabric' which is normally used for outdoor sportswear, making our new uniforms the first in Korea to do so. These uniforms also featured contrasting orange and navy blue colors to increase their visibility in low-light environments, along with reflective bands applied on the front and back as well as on the top and the bottoms.



Work uniforms with enhanced safety, quality, and design

2. Creating two-wheeler roads and expanding the bus platforms

The Pohang Steelworks significantly improved the Hyeongsan Gate out of its five entrances. Accommodating external construction staff, this gate posed difficulties in conveniently accessing the steelworks. The improvements included the expansion of the three-lane vehicle roads to four lanes and the opening of dedicated two-wheeler roads to support employees' comfortable and safe commuting. To address the feedback raised on the limited space of the bus platform within the parking lot used by supplier employees and external construction staff, the platform was expanded from one unit to three units with cooling/heating devices and seats.

3. Retrofitting commuter bus waiting rooms

The Pohang Steelworks renovated the building where commuter bus waiting rooms were located that was worn-out and small in available indoor spaces for the benefit of its regular and shift workers. The focus of the renovation work was to increase amenities, create a more spacious environment, and prioritize convenience for female employees. The building opened again in January 2024.

Working Environment

GOVERNANCE

Management

Role and Responsibility

At POSCO Group, both appraisers and appraisees pledge to uphold fairness before initiating the performance appraisal process, and training is provided to executives to ensure fairness as appraisers in conducting and managing assessments. Appraisal results for executives, vice presidents and other department heads are reported to the Representative Director for management and oversight, and appraisal results for general staff are communicated to each department head to verify the fairness of assessments made.

Company Policy and Regulation

POSCO Group implements policies, regulations, and guidelines to ensure employees receive fair and reasonable treatment in recruitment, performance assessment, and career development.

- Regulations on organizations and responsibilities: Specify matters, responsibilities, and powers concerning the Company's organization and management standards
- Rules of Employment: Matters on employment pursuant to the Labor Standards Act

> Article 9 (Working Hours) ① Employees work eight hours a day, 40 hours a week in principle. (omitted)
> Article 10 (Break TIme) ① Break time for full-employees is one hour from 12:00, and for shift workers, it is 60 minutes witihn the single shift period. (omitted)
> Specific rules are stipulated in Article 24-1 (Reduced Work Hours for Childcare) and Article 24-2 (Reduced Work Hours for Family Care).

- Pay regulations: Matters on employee pay in conformity with Article 27 of the Rules of Employment
- HR regulations: Standards that apply to employees' HR management
- Performance pay guidelines: Standards used in providing performance pay under the rewards distribution program
- Rewards and disciplinary actions guidelines: Standards to ensure fairness and appropriateness of rewards and disciplinary actions pursuant to Chapter 8 of the Rules of Employment

STRATEGY

Talent Acquisition

POSCO Holdings has established our recruitment roadmap to acquire key talent that will foster advancements in emerging technology fields. We regularly engage with target labs at domestic and overseas universities with whom we are actively pursuing research partnerships, and support research-aligned scholarships to acquire talent customized to our R&D strategies early on. We also frequently arrange opportunities to share our R&D strategies through future technology forums hosted in Korea and abroad and AI Day events, publicizing our New Experience of Technology Hub and undertaking mid/long-term recruiting activities.

POSCO has established its own recruitment roadmap to secure top talent in alignment with its 2050 net zero and smart steelworks initiatives. In addition to open recruitment in the first and second half of each year, the company acquires outstanding engineering talent through industry-academia scholarships and Steel Bridge (recruitment-aligned internships) while recruiting high school students early on through recommendations made by vocational high schools and nurturing them into technical masters. To acquire female talent, the company provides a range of family-friendly programs, including fertility treatment and childcare leave, to support work-life balance.

POSCO's Ideal Employee

Creative talent with a mindset of action and consideration

Action	Consideration	Creativity
Always lead by example with initiative and responsibility and proactively collaborate to create organizational synergy	Communicate with stakeholders with sincerity, humility and respect and pursue the value of co-prosperity	Bring forward ambitious ideas through flexible thinking and continuous learning to take the lead in change and growth

Working Environment

STRATEGY

Talent Development

POSCO Group University

POSCO Group University, POSCO Group's educational corporation, nurtures talent to drive our growth and innovation and build our future competitiveness. In 2023, POSCO Group University provided a total of 5,308 courses, including 101 regular courses, 118 on-demand courses, and 5,089 e-learning courses. Learning Platform, our learning experience platform, ensures both regular and contingent employees receive training for career development and competency improvement.

Strategic Talent Development

To provide talent development solutions from an HRD perspective, POSCO Group University consistently collects employee feedback on their learning needs and offers structured learning programs. All regular training courses are designed to offer long-term learning care based on the ISD (Instructional System Design). In providing courses to new leaders, employee feedback is collected early from the planning phase, and 1:1 leadership coaching is conducted, along with follow-up to assess their transfer of learning.

We harness learning big data analytics on the AI-empowered learning platform to identify learning needs and anlayze learner experience. The results inform our efforts to improve learning courses and provide individual data-based learning curation and tutoring.

Measuring the Benefits of Learning Programs

POSCO Group University measures the impact of each learning program to improve their benefits and ROI (Return on Investment). Standardized assessments are made on learning responses, learner engagement, learning achievements, and transfer of learning, along with qualitative assessments on the contibution made to the attainment of Group strategies and the support provided to working-level project undertakings.

Work is also underway to develop a panel data learning index for all Group employees to proactively identify learning needs and continuoulsy improve the benefits of learning programs. To this end, reports outlining anlaysis results will be published based on regular surveys.

POSCO Group University's ISD-based Long-term Learning Model

Needs analysis	Course design	Curriculum development	Curriculum implementation[1)]	Curriculum assessment[2)]
• Environmental analysis • Learner analysis • Learning needs analysis	• Objective design meetings • Teaching strategy and medium design • Assessment tool design	• Teaching material development • Learning medium development • Syllabus development	• Pre-course training • Curriculum implementation • Follow-up management	• Learning assessment system • Response assessment • Achievement assessment • Transfer of learning assessment

1) Learning Journey: Design long-term learning experiences in diverse ways rather than providing one-off learning for work-learning integration
2) Curriculum assessment: Assess course-specific learning responses/achievements/transfer of learning/contribution to business in line with the four-level Kirkpatrick evaluation model

An Example of Learning Course for New Leaders

AI diagnosis/ tutoring → Special leadership lecture/ case study → Leadership issue discussion → 1:1 leadership coaching → Live talk show for leadership counseling → Action plan development for transfer of learning → Transfer of learning assessment → Follow-up learning (personalized) → Follow-up coaching

Key Learning Outcomes

	Topic	Target	Trainees (persons)*
Safety	Safety laws and others	All employees at relevant departments (including contract workers)	6,747
	Safety license	All employees wishing to take the course (including contract workers)	827
	Mandatory safety courses	Mandatory for all employees (including contract workers)	61,032
Environment	Environmental information and net zero	All employees at relevant departments (including contract workers)	2,030
Ethics	Understanding ethical management	All employees at relevant departments (including contract workers)	45,185
Information security	Understanding and practicing information security	Mandatory for all employees (including contract workers)	47,688
Human rights	Prevention of sexual harassment at work	Mandatory for all employees (including contract workers)	47,794
	Improvement of perceptions on disability at work	Mandatory for all employees (including contract workers)	45,284
	Workplace bullying and right to safe and healthy working conditions	Mandatory for all employees (including contract workers)	46,970
Anti-corruption	Internal accounting control	All employees at relevant departments (including contract workers)	4,445
	Fair trade	All employees at relevant departments (including contract workers)	6,843
Diversity	Understanding cultural differences	Selected regular employees (including overseas staff)	3,254
	Empathy Plus Workshop	All employees at relevant departments (including contract workers)	2,672

*Including duplicates

Working Environment

STRATEGY

Career Development

POSCO Group provides a range of systemic support to help employees develop into experts in their own field through work experience and learning.

Local Expert Program

As we pursue new business and our global business footprint widens as a result, this prompted us to launch the local expert program in 2023 to develop expatriate candidates. This program allows our employees to experience the local language and culture and to work as interns at overseas corporations to learn local business practices in advance.

Diploma Courses

POSCO Technology University was established in 2014 to support shopfloor employees with self-development and life-long learning. As a college officially authorized by the government, POSCO Technology University is able to confer diplomas, and all tuition expenses are covered by the company.

- Target: All employees wishing to develop into essential shopfloor employees at POSCO, POSCO FUTURE M, POSCO STEELEON, and SNNC
- Course: General courses for engineering mathematics, physics, and chemistry and required courses for material strength, machine component design, and control engineering among others
- Academic operation: 2 days of study and 3 days of working per week, 80 credits to be earned for 2 years for graduation
- Operational results: 362 employees completed courses for 10 years

※Available for regular employees only

POSCO Master

POSCO names its employees who demonstrate global top-notch expertise in their own field 'POSCO Masters', the highest honor available in the production technology function, and offers a range of rewards.

- Rewards: Permanent induction to the Hall of Fame, special promotion by level, prize money, financial support for meetings held to share their know-how, and re-employment after retirement, etc.
- Results: Operated since 2015 to name 25 Masters on a cumulative basis as of 2023



POSCO Master designation plague ceremony in 2023

PCE Program

POSCO's PCE (POSCO Certified Expert) program has been up and running since 2017 to motivate employees in the production tecnhnology category to pursue growth and develop into experts in their field. Once certified, PCEs they serve as area-specific experts in supporting technical consulting, registering exceptional proposals and undertaking other improvement projects, and turning their own knwoledge into explicit knowledge through internal lectures while engaging in their day-to-day work.

- Target: 28 areas requiring the maintenance of core technology and the transfer of know-how (23 technology and 5 administrative areas)
- Selection: Each year through rigorous screening
- Participant: 24 persons (as of the end of 2023)

Professional Qualification Support Program

POSCO's professional qualification support program aims to encourage regular employees to obtain licenses across various areas. Anyone may appy and attend relevant training independently developed by POSCO Group University in six mechanical master courses covering metal and safety and seven safety and industrial engineer courses. Its Learning Platform provides technical courses available at MOOC (Massive Open Online Course) and curated third-party specialized content to support employees' self-directed learning.

Employees who obtained licenses among 253 types across 10 areas including metal, machinery, electric/electronics, safety/firefighting, and environment are eligible for receiving incentives according to the level of their license.

- Incentives paid: Nearly KRW 3.6 billion paid to 2,724 employees in 2023

Professional License Acquisition Support Program

POSCO's professional license acquisition support program helps employees to meet their self-development needs and obtain expert knowledge and skills. To this end, e-learning courses are provided for safety-related technical licenses in addition to ironmaking, steelmaking, rolling, metal, and electrical master licenses, along with practice training facilities.

- Results: 5 employees earned the electrical master license in H2 2023

AI Expert Course

To build AI technology capabilities, POSCO operates AI expert courses in alignment with the POSTECH Institute of Artificial Intelligence. The 16-week curriculum spans from basic knolwedge on coding to master degree-level courses on machine learning and data mining among others, and provides systemic support to acquire AI capabilities in undertaking smart working-level projects with the help of POSTECH professors.

- Results
  - Around 25 employees selected each year since 2017
  - 219 employees completed training on a cumulative basis as of 2023
  - 17 employees to enroll in 2024

Working Environment

STRATEGY

Leadership Development

POSCO Group provides a range of training and development programs to support outstanding employees in growing into future leaders and executives.

P-Class

P-Class, a special in-person training session, has been up and running since 2022 at least once a month for all employees to ensure employees from the holding company (including dispatch workers) establish and implement Group-level strategies. P-Class covers a wide range of topics, including ongoing businesses, risk management plans, and future organizational growth strategies.

P-Class Topics in 2023

Topic	Lecture Provided by
Understanding and using ChatGPT	AI Lab at N.EX.T Hub
Understanding energy business strategies	POSCO INTERNATIONAL
Understanding construction/infrastructure business strategies	POSCO E&C
Understanding green steel (hydrogen reduction steelmaking)	Steel Business Team
Understanding battery recycling business	POSCO HY Clean Metal
Hydrogen business strategies (7 core businesses)	Hydrogen Business Team
Anode/cathode production/sales strategies	Battery Materials Business Team
Robotic business strategies and status	POSCO DX
Introducing POSCO MC Materials and its business, and technology development status	POSCO MC Materials
POSCO FLOW's business strategies and status	POSCO FLOW
POSCO FUTURE M's rechargeable battery business strategies and status	POSCO FUTURE M

Individual Development Plan

POSCO Group's Individual Development Plan (IDP) program supports employees' self-directed growth. All employees may prepare their work-related growth goals and capacity-building plans through the IDP management system on Learning Platform, share them with their supervisors and HR/training personnel, and receive support for coaching/career development. To facilitate the IDP program, we provide workshops on IDP setting and career development as well as coaching leadership training for leaders. We are also developing AI curation functionality to recommend necessary training in line with one's IDP.

Videos on POSCO Group University

- EP1. Learning courses along the career journey from joining to leaving the company



- EP2. Competency development training courses spanning language, job competency and digital transformation



- EP3. Learning courses on corporate culture and performance improvement



Fair Performance Assessment

Assessment System

POSCO Holdings operates an absolute assessment system to objectively evaluate individual employees' performance and encourage mutual cooperation. Prior to any assessment, both appraisers and appraisees pledge to uphold fairness in the assesssment process, and appraisees may object their assessment outcomes. Leaders are regularly provided with training on assessment criteria and methods to objectively and fairly evaluate their subordinates, and assessments are followed by monitoring to ensure the fairness of such assessments.

Additionally, a Peer Letter system is in place to gather feedback on strengths and areas for improvement from collaborating colleagues, to enhance communication skills and improve work methods for all employees. Furthermore, certain employees undergo Matrix evaluations based on the nature of their roles, which consider assessment scores from both their direct supervisors and collaborating departments.

- POSCO Holdings' Appraisal System
  - Absolute assessment in reflection of our holding company structure operating s mall-sized teams
  - Ratings: Excellent (S), Good (A), Satisfactory (B+), Improvement Needed (C), Poor (C), Very Poor (D)

※In principle, those who committed ethical misconduct in the four major categoris of bribery/embezzlement/data tampering/violation of sexual ethics are granted C/D ratings in principle.

Compensation System

POSCO Holdings provides equal pay for equal work, regardless of gender, age, disability, or nationality. Salary increases are based on individual performance results, rather than gender, and are classified into six grades (S to D) accordingly. Furthermore, the Variable Performance Pay System ensures that we distribute the collective business outcomes among all employees, and employees who achieve outstanding performance are recognized and rewarded based on their contributions.

Working Environment

STRATEGY

Welfare and Benefits

Welfare and Benefits Programs

POSCO Group provides diverse welfare and benefits programs to improve the health and satisfaction of employees, which apply equally to both regular and contingent employees.

Program	POSCO Holdings		POSCO		POSCO INTERNATIONAL		POSCO E&C		POSCO FUTURE M	
	Regular employees	Contingent employees	Regular employees	Contingent employees	Regular employees	Contingent employees	Regular employees	Contingent employees	Regular employees	Contingent employees
Scholarship for employees' children	Provided	Provided[1]	Provided	Provided[1]	Provided	Not provided	Provided	Provided[2]	Provided	Not provided
Health checkup	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided[1]
Support for family events	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided
Employee Stock Ownership Plan (ESOP)	Provided	Provided[1]	Provided	Provided[1]	Not in operation		Provided	Provided	Provided	Provided[1]

1) Excluding short-term contract employees with 3 months or shorter contract periods
2) Excluding employees in general project roles

Employee Stock Ownership Plan (ESOP)

POSCO Holdings has provided the Employee Stock Onwership Plan (ESOP) since January 2002. All our employees are free to purchase the company shares. The purchase price aligns with market prices, and the annual purchase amounts apply equally to all employees.

Family-friendly Programs

POSCO Group's operating companies introduce various work arrangements to suit their distinctive business characteristics, assisting employees in engaging in work and ensuring the right work-life balance. A wide range of family-friendly programs are adopted to this end, spanning childcare, childbirth, and family care, and all such programs apply qually to contract and regular employees.

Family-friendly Program	Description and Target	Regular Employee	Contingent Employee
Selective work hours	Allow employees to choose their own most efficient working hours	●	●
Work from home during pregnancy	Expecting female employees	●	●
Work from home for childcare	Employees raising children aged 8 years old or younger or in second or below grade	●	●
Work from home for fertility treatment	Female employees receiving fertility treatment	●	●
Work from home for childbirth support	Male employees whose spouse is soon to give birth	●	●
Work from home for family care	Employees who have family care needs due to old age, illness, or injury	●	●
Work form home for self-care	Employees recovering from their own illness or injury	●	●

Introducing New Work Arrangements

POSCO Group provide a range of working hour arrangements according to individual emplyees' conditions and work characteristics. We initiated selective work hours coupled with bi-weekly 4-day workweek in 2024 in addition to selective work hours: this allows employees to work one extra hour between Monday and Thursday for two weeks to take Friday off every two weeks on the condition they work 40 hours per week on average.

POSCO Employees Using Flexible Work Arrangements (as of Jun. 1, 2024)

Category	Description	Target	Number of Users (Percentage)
Selective work hours	Employee are free to choose their work hours, ensuring they do not work more than 52 hours per week on average during the 4-week settlement period (40 basic working hours + 12 hours of overtime work)	All employees (including contract employees)	1,072 (6.0%)
Bi-weekly 4-day workweek	Employees use flexible work hours and take every other Friday off	All employees (including contract employees)	7,789 (43.3%)
8-5 workday	Employees start work at 8 am and end work at 5 pm, leaving early before 6 pm to spend their evening time as they wish	All employees (including contract employees)	1,725 (9.6%)

Opening a Dormitory for New Hires

POSCO continues to improve its working environment and welfare & benefits facilities for employees. In Pohang, the company retrofitted Dongchon Plaza into an employee welfare space in November 2020. In January 2022, POSCO opened Giga Town in Gwangyang as an employee residence facility, built by comparing POSCO A&C's modular technology against the conventional RC technology. Accommodating 500 private living units with bathrooms and shower rooms, this facility provides greater convenience for employee residents.



Aerial view of Gwangyang Giga Town

Working Environment

STRATEGY

Childcare Support for Employees

POSCO operates family-friendly and pregnancy-friendly policies tailored to employees at different stages of their lives. In 2020, the company introduced 'Childcare Remote Work Program without Career Gaps' as the first Korean company to do so to allow employees raising children aged 8 or under or in second or below grade to work at home while taking care of their children. The company also adopted working-at-home during pregnancy to support expecting employees, and has extended the scope of eligible employees into female employees receiving fertility treatment and male employees whose spouse is soon to give birth since 2021.

Meanwhile, POSCO provides KRW 3 million for the first child, and KRW 5 million or more from the second child when employees give birth, which was made equally available for employees who adopt children aged under 6 since September 2020. Since 2022, the company has offered KRW 2 million as honeymoon trip subsidies and gift certificates worth KRW 500,000 to celebrate employee's childbirth. POSCO allows its employees to take up to two years of parental leave, and encourages them to use flexible work schedules to support their pregnancy, childbirth, and childcare without concerns over career discontinuation.

Operating Workplace Childcare Centers

POSCO Group operates workplace childcare centers across our key operations in Korea and abroad. A total of 14 childcare centers are under operation in Seoul, Pohang, Gwangyang, and Songdo in Korea and in Indonesia. POSCO's childcare centers are made avaialble at no cost for children of Group affiliate/partner employees as well as POSCO Holdings' employees. Beyond Korea, POSCO opened the Dreaming Child Childcare Center for PT KRAKATAU POSCO in Indonesia in July 2023, making it the first private company in the nation to open a workplace childcare center within the production site. The facility is located in a safe residential area, about 15-minute drive away from the steel mill, and PT KRAKATAU POSCO fully shoulders its operational costs, except for some activity costs.

POSCO Group's Workplace Childcare Center (2023)

Area	Chilcare Center	Number of Children Using the Faciltiy
Seoul	POSCO Childcare Center 1	38
	POSCO Childcare Center 2	67
Pohang	POSCO Dongchon Childcare Center*	126
	POSCO Jigok Childcare Center	171
	Neul Pureunsol Childcare Center	13
Gwangyang	POSCO Geumdang Chilcare Center*	126
	POSCO Geumho Childcare Center	135
Incheon/ Songdo	Nit Dream Tree Chidlcare Center	54
	POSCO Tower Dream Tree Childcare Center	43
	Blue Dream Childcare Center (Incheon power plant) *	24
	For Kids Childcare Center	60
	For Kids 2 Childcare Center	65
Pangyo	POSCO DX Childcare Center	26
Indonesia	Dreaming Child Childcare Center	45

*Established to also accommodate children of partner employees, and the number of children of partner employees being taken care of is 34 in Pohang, 53 in Gwangyang, and 10 in Incheon.



Pohang POSCO Dongchon Childcare Center

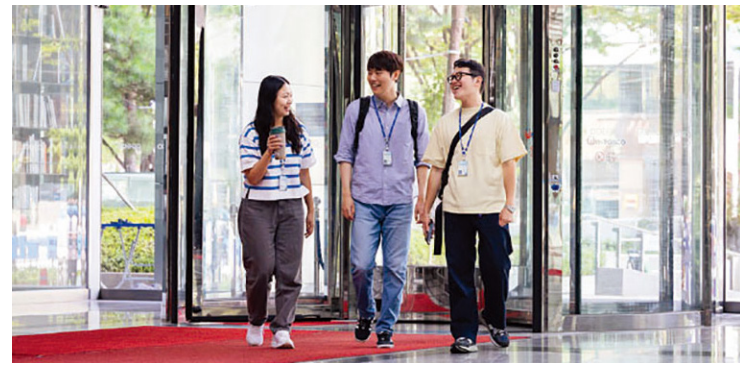
Operating Hub Offices and a Flexible Dress Code Policy

POSCO Group extends the scope of flexibility available for employees in choosing their preferred hours and location of work and even dress code so that they maximize their work efficiency and engagement. This, in turn, enables us to help promote work-life balance and uphold diversity, bringing innovation to the way we work.

Hub offices were first introduced in November 2021 to provide flexible working conditions for employees commuting long distances in Seoul as well as millennial and Gen Z employees. There are 70 seats at Parc1 in Yeouido, Seoul, and 34 seats at POSCO DX Pangyo in Gyeonggi-do avaialble for POSCO and four Group affiliates. These offices have been used by POSCO employees working in Pohang and Gwangyang since 2023, and provide one-person seats, shared lounges, meeting rooms, and other diverse office areas, along with the seat reservation system to make it readily accessible for employees.

- Companies participating in hub office opration: POSCO Holdings, POSCO INTERNATIONAL, POSCO E&C, POSCO DX

Since July 2023, we have introduced a flexible dress code at scale for all employees to create a horizontal and flexible corporate culture respecting the individuality and creativity of each employee. This allows them to dress comfortably and further engage in their work while expressing their uniqueness. We also expect this to facilitate creative communication in a more relaxed environment.



Local Community

GOVERNANCE

Dedicated Organization

POSCO has a dedicated Corporate Social Responsibility Group serving as the control tower for social contribution activities, with additional dedicated teams at the Pohang and Gwangyang steelworks.

Organizational Chart



Board of Directors

Role and Responsibility

At POSCO Group, the Board of Directors and the ESG Committee under the BOD are briefed on the purpose, applications, beneficiaries and timeline of the major donations made for local communities, and make decisions accordingly.

- BOD regulations on donations: Donations and sponsorships exceeding KRW 1 billion are deliberated and decided by the Board of Directors, and donations and sponsorships over KRW 100 million and KRW 1 billion or less are deliberated and decided by the ESG Committee as a specialized body under the BOD.

Policy and Guideline

POSCO Group has been growing together with local communities where we are based since our foundation, and heed their varying voices to pursue community-centered CSR activities. Following the launching of the holding company, we established our human rights policy covering protection of human rights for community members, environmental rights, and grievance mechanisms, along with our stakeholder engagement policy stipulating our adherence to the UN Declaration on the Rights of Indigenous Peoples as well as stakeholder engagement and communication.

STRATEGY

CSR Strategy

3 Strategies and Focus Areas

Since its foundation, POSCO has prioritized growing together with local communities as part of its Corporate Social Responsibility (CSR), driving various CSR initiatives. By collaborating closely with key institutions and social organizations in the Pohang and Gwangyang regions where its steelworks are located, POSCO shares accurate information about its operations and offers diverse support to local communities, fostering a culture of mutual growth and cooperation.



Local Community

STRATEGY

Local Community

Engaging with Local Communities

POSCO Group operates dedicated organizations for community engagement at our key locations to regularly hold public hearings and meetings with community members, reaching out closer to local communities and indigenous peoples in so doing. Our 'grievance handling system' allows any stakeholder to raise their voice to POSCO Group either under their real name or anonymously, and we provide our official feedback in response.

Company	Consultative Body	Feedback Collected and Improvement Made
POSCO	Pohang City Council for Sustainable Development, Gwangyang City Council for Sustainable Environment, etc.	Installed dust collection bleeders to resolve concerns for air pollutant emissions and shared environmental improvement investment performance and plans
POSCO FUTURE M	Local environmental group meetings, Cheongnim-dong Local Security Council in Pohang, etc.	Installed rainwater purification and odor reduction facilities for environmental improvement and shared the progress made
PT.BIA	Meeting with indigenous peoples living near the palm plantation	Established community economic, health, and education program development plans by collecting feedback from indigenous peoples living near the plantation and local residents, and shared the progress made
POSCO ARGENTINA	Meeting with indigenous peoples living around the salt lake	Directly hired 11 indigenous community members

Future Generations & Vulnerable Populations

POSCO Education Foundation

Founded in 1971, the POSCO Education Foundation operates 12 kindergartens and elementary/middle/high schools established in Seoul, Pohang, Gwangyang, and Songdo.

POSCO TJ Park Foundation

The POSCO TJ Park Foundation, initiated as the Steelmaking Scholarship Foundation in 1971, operates a range of scholarship programs to nurture talent in local communities in Korea and abroad.

Category	Key Performance
POSCO TJ Park Award	60 awardees in 4 areas (Science Award, Service Award, Education Award, Technology Award)
POSCO Asia Fellowship	Scholarships for Asian Students Studying in Korea: 535 persons in 33 countries Scholarships for Asian Universities: 5,438 persons in 16 countries Scholarships for Africa Universities: 180 persons in 4 countries Asia Opinion Leader Fellowship: 40 persons in 10 countries
POSCO Science Fellowship	483 persons
POSCO Youth Fellowship	Vision Scholarship: 586 undergraduates in local communities Heroes Fellowship: 85 upstanding citizens and their children Lighthouse Scholarship: 678 high school students in local communities



POSCO TJ Park Award

Employee Engagement

POSCO's Volunteer Corps

POSCO always lends an ear to the voice of local communities through feedback collection channels, and proposes social solutions while working together. Starting with the partnerships forged with Hagwang Village in Gwangyang in 1988, POSCO has engaged in regular volunteering with villages and organizations near Pohang and Gwangyang where its steelworks are located. In 2003, POSCO established the POSCO Volunteer Corps to promote company-wide, well-organized volunteer initiatives, and facilitated volunteering with respective departments forming partnership. In 2014, the 'skillbased volunteer group' system was introduced to go beyond general volunteering to capitalize on the specific skills, talent, and expertise of employees. These groups volunteered for over 8.6 million hours for the past 21 years, and received the Presidential Citation at the Korean Volunteer Awards in 2023.



POSCO's Clean Ocean Volunteer Group

POSCO 1% Foundation

The POSCO 1% Foundation is a non-profit foundation established in 2013, and operates the matching grant program whereby employees at POSCO Group and its suppliers donate 1% of their wage and POSCO Group makes matching donations. As of 2023, 38,516 employees from 35 companies - POSCO Group and its suppliers - participated in this program, and the cumulative donations reached KRW 95.8 billion over the past 11 years. The number of beneficiaries amounted to 58,861 persons on a cumulative basis. In 2023, the Foundation was awarded by the Minister of Health and Welfare (for supporting young people preparing for their self-sufficient life), the Minister of Education (for educational support extended to future generations in Pohang and Gwangyang at the Korea Educational Donation Awards), and the Minister of Employment and Labor (for the digital academy project video presented at the CSR Film Festival to outline IT job training for people with disabilities aligned with their employment).

Local Community

RISK MANAGEMENT

Risk Assessment Process

Minimizing Impact on Local Communities

POSCO ensures that environmental and social risk affecting local communities is identified and managed. In pursuing new business opportunities, POSCO identifies environmental and social impact factors and develops plans to minimize such impact. POSCO also communicates with local communities on an ongoing basis to heed their voice and prevent conflicts from occurring.

Risk Management Process



METRICS AND TARGETS

Expanding the Skill-based Volunteer Groups

POSCO plans to increase the number of skill-based volunteer groups, which empower its employees to put to use their skills, talent, and expertise accumulated in the course of their work for volunteering, from 113 groups in 2023 to 120 groups in 2026, undertaking CSR initiatives that meet the needs of local communities.

- Goal: Operate 120 skill-based volunteer groups by 2026

Employees' Participation in CSR Activities

Category	2021	2022	2023
Total employee volunteer hours	292,870	346,855	402,945
Average volunteer hours per employee	16.2	19.3	21.8
Employees' participation rate in volunteering	66.6	73.0	73.6
Number of skill-based volunteer groups	104	111	113

Product Management

STRATEGY

Quality

Quality Regulations

POSCO operates internal regulations for product quality management.

[Quality Management Manual]

Operating procedures for quality management system to demonstrate a company's ability to consistently provide products that meet customer requirements and/or statutory/regulatory requirements or improve customer satisfaction through the effective implementation of the quality management system

[Quality Management Charter]



QMS Certification

To ensure objectivity in managing the quality of manufactured products and prevent relevant risks, POSCO continues to receive audits for IATF 16949 and other Quality Management System (QMS) standards. All its global steel production sites, from the Pohang and Gwangyang Steelworks in Korea to PT. Krakatau POSCO in Indonesia, Zhangjiagang Pohang Stainless Steel in China and POSCO YAMATO VINA in Vietnam operating upstream processes overseas, remain certified to quality management system standards. As part of the renewal audits performed to maintain QMS certification, the company receives annual audits on such essential quality management practices as management planning, change management, contingency planning, collaborative work, facility management, internal audits, standardization, and quality goals, and ensures robust compliance with phase-specific requirements.

Nurturing and Operating Internal Quality Inspectors

POSCO has implemented internal quality inspector qualification management guidelines since 2017 to regularly maintain accuracy and ensure credibility in handling quality management risks for its steel mill operations. As of 2023, 692 employees at the Pohang Steelworks and 780 employees at the Gwangyang Steelworks were qualified MSA (Measuring System Analysis) professionals. POSCO provides regular training to nurture internal professional inspectors and help them maintain their qualifications.

Preventing and Responding to Quality Incidents

POSCO stipulated internal regulations governing emergency action to take in the event of quality incidents, and braces for emergencies in line with the set internal manuals. The company documented departmental roles and responsibilities and necessary responses in preparation for possible incidents, and provides regular training to minimize quality incidents. POSCO FUTURE M continues to pursue work innovation based on Voice of Customer (VOC) gathered through respective business units to establish its customer complaint response system. To this end, the company analyzes and prevents urgent VOCs and potential quality issues, and aligns the results with VOC data for continuous monitoring.

Quality KPIs

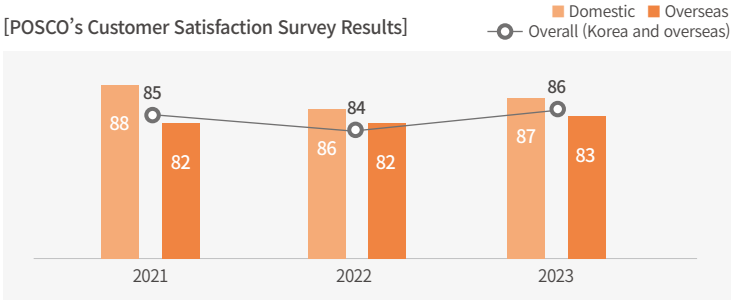
For rigorous quality management, POSCO included quality nonconformity rates as one of the KPIs for its executive-level Deputy Head of Process and Quality.

Customer Satisfaction

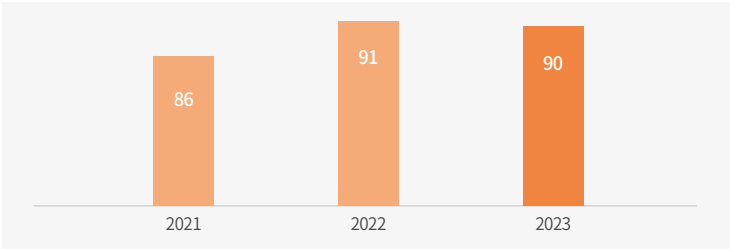
POSCO Group conducts customer satisfaction surveys each year to heed the voice of customers on our products and services and identify their requirements for possible improvement. POSCO as a steelmaker and POSCO FUTURE M producing rechargeable battery materials choose their improvement tasks in reflection of customer satisfaction survey results and customer feedback. This allows them to launch customized marketing efforts that cater to customer needs.

POSCO surveyed customers in the seven categories of order response, product quality, claim response, and solution support among others, and conducts additional in-depth interviews with customers whose satisfaction score is low. POSCO FUTURE M surveyed its customers on technical support and service, deadline and delivery, product quality, construction and maintenance schedule, expertise, VOC response, and brand reputation among others.

[POSCO's Customer Satisfaction Survey Results]



[POSCO FUTURE M's Customer Satisfaction Survey Results]



Product Management

STRATEGY

Certification

POSCO Group moves ahead of the competition in product technology development and certification in each of our business areas to remain agile to shifting market demands.

Company	Certification	Description	Date of Certification
POSCO	Responsible Steel	Pohang and Gwangyang Steelworks became the first steelmaker in Asia to certify to Responsible Steel	Oct. 2022
	EPD (Environmental Product Declaration	Achieved the EPD certification in 14 steel product categories - Applicable to product categories at both the Pohang and Gwangyang Steelworks, and EPD-certified products accounted for 95.2% of total product sales in 2022	Oct. 2019
	GR (Good Recycled)	First in the Korean steel industry to certify stainless products to the GR (Good Recycled) program - POSCO achieved the GR certification for 14 stainless hot-rolled products and 13 cold-rolled products	Jan. 2022
POSCO STEELEON	UL certification	Colored steel sheets which adopted biomass-based paints passed the US-based UL (Underwriters Laboratories Inc) test as the first Korean company to do so - Will develop and mass-produce products with enhanced surface textures and anti-bacterial performance and certify them to UL standards	Feb. 2023
POSCO Thainox	RCS (Recycled Claim Standard)	Stainless cold-rolled products made of 90% and over recycled content were certified to the RCS (Recycled Claim Standard) as the first steelmaker in Thailand to do	May 2023
POSCO YAMATO VINA	UL EPD (Environmental Product Declaration)	Became the first in the Vietnamese steel industry to certify to the EPD program of the US-based UL	Jun. 2023
POSCO Gwangyang Steelworks	Green Data Center	POSCO's Gwangyang Steelworks received a Bronze rating under the Green Data Center program for its achievements in reducing power consumption - Improved cooling/heating systems and HVAC operational methods to save 230,000KWh of energy per year	Dec. 2022
POSCO E&C	Green Technology	Certified to the Green Technology program for its technology to reduce fugitive dust generation at construction sites and its concrete filling synthetic pillar technique	Mar. 2023
	Zero Energy Building	The villa POSCO E&C constructed within the Jack Nicklaus Golf Resort was recognized as exceeding 100% in energy self-sufficiency to receive Grade 1 under the Zero Energy Building program	Sep. 2023
POSCO FUTURE M	ISO 14067	Received carbon footprint verification for the cathode materials of PN6 and PN8 and natural graphite anode materials	May 2024
	EPD (Environmental Product Declaration)	Achieved the EPD certification for natural graphite and cathode materials (PN6, PN8) as the first in the Korean battery materials industry	Nov. 2021 (natural graphite anode) Sep. 2022 (cathode)
	Quality Certification of Circular Resources	Natural graphite anode materials were certified to Quality Certification of Circular Resources	Sep. 2021
POSCO INTERNATIONAL	RSPO (Roundtable on Sustainable Palm Oil)	PT.BIA achieved the RSPO (Roundtable on Sustainable Palm Oil) certification	Sep. 2021

Logistics

Transition to Low-carbon Transportation

Introducing LNG-propelled Large Bulk Carriers



POSCO FLOW is transitioning into greener methods for product transport to help mitigate carbon emissions and ensure timely delivery. To proactively respond to IMO (International Maritime Organization)'s environmental regulations, the company launched two 180,000-ton LNG-propelled dry bulk carriers in 2021 as the world's first to do so. Replacing two existing raw material carriers with these two LNG-fueled vessels is expected to achieve reductions in CO_2 emissions.

Installing Eco-friendly Desulfurization Equipment Onboard



POSCO FLOW equipped its vessels with eco-friendly desulfurization to reduce air pollution caused by their use of fuel oil. In an effort to proactively respond to the tightening regulations of the IMO to limit sulphur content of ships' fuel oil, the company installed desulfurization equipment on 20 of its ships as of 2022. POSCO FLOW reviewed the introduction of three ships armed with the desulfurization system in 2023 and added them to its fleet in the first half of 2024. Desulfurization equipment helps reduce sulfur oxide emissions to play an instrumental role in ensuring the vessel's economic viability and mitigating air pollution.

Joint Investment Partnership between Operators and Shippers to Secure Greener Fleets

To keep current with the environmental regulations of the international shipping industry and the growing demand for shipping logistics companies to advance ESG management, POSCO FLOW signed an MOU to pursue win-win partnerships between operators and shippers in relation to the shipping industry crisis response fund with the Korea Ocean Business Corporation, the Korea Shipowners' Association, and Hyundai Glovis. Working with other signatories, POSCO FLOW will explore a range of cooperation measures between operators and shippers by drawing on the ESG fund raised to support Korea's national flag carriers while making joint investment in eco-friendly ships and establishing a greener logistics ecosystem.

Expanding Eco-friendly Logistics Infrastructure

Introducing Eco-friendly Engines for Port Transporters



POSCO FLOW retrofitted the engines mounted on ETs[1] deployed for product transport into greener ones to help reduce exhaust gas emissions within the port. These ETs are often pinpointed as a primary source of exhaust emissions in the harbor environment. POSCO FLOW targeted ETs that urgently needed improvement for their frequent operations and aging to replace their engines with low-emission ones. In July 2021, the company secured vehicles that comply with EURO 6 standards[2] by improving their engine with eco-friendly technology and piloting their operation, and deployed three ETs equipped with Euro 6-compliant engines in 2023.

1) Elevating Transporter: Large-sized vehicles capable of transporting over 100 tons of steel products at a time
2) Exhaust gas regulations the EU introduced for diesel-powered vehicles

Operating Alternative Maritime Power (AMP)

Since first introducing AMP (Alternative Maritime Power) at the ports in Pyeongtack, Pohang, and Gwangyang through partnerships with POSCO and other public organizations in 2019, POSCO FLOW has continued to provide AMP to ensure greener port operations. While docked ships had to rely on onboard fuel generators to supply power without AMP, the introduction of AMP eliminated the need to operate engines and power generators while docked, reducing the emissions of air pollutants generated during fuel oxidation such as SOx, NOx, and particulate

Opting for Greener Materials

POSCO FLOW switched from hardwood to LVL[1] for coil dunnage[2] to help protect the environment. Previously, this required the consumption of hardwood for durability, which inevitably necessitated lumbering and fumigation[3]. Opting for LVL, engineering wood made of wood residues, POSCO FLOW does its part in promoting greener transportation.

1) Laminated Veneer Lumber
2) Materials used to firmly hold cylindrical-shaped steel products
3) Applying chemicals to prevent wood pests

Health and Safety Management System Certification

POSCO FLOW established its health and safety management system in accordance with international standards to ensure environmental or safety issues do not arise throughout the entire process of product delivery for customers. The company undergoes surveillance audits to maintain its ISO 45001 certification, and operates a circular business process along the PDCA cycle in line with its health and safety management system, ranging from health and safety goal setting and implementation planning to risk assessment and emergency manual development, internal audit, and improvement and corrective action.

Rigorous Safety Activities to Reduce Falling Accidents to Zero

In conjunction with logistics partners, POSCO FLOW launched safety activities to eliminate the occurrence of falling accidents[1] and helped raise safety awareness among freight truck drivers. As falling accidents involve extra heavy steel products, their occurrence may damage nearby local facilities and even harm individuals as well as leading to damaged roads, requiring extra precautions for the risk of serious secondary damages. Working with its logistics partners, POSCO FLOW conducted joint safety patrols to establish a speed limit monitoring system for vehicles transporting steel products. The joint inspections led by the special safety activity team composed of safety managers from partner companies are joined by executives from respective companies to ensure drivers wear safety gear, products are properly secured (100% inspection for compliance with securing standards) and securing devices are properly maintained, strengthening safe driving practices with a goal of reducing falling accidents to zero.

1) Accidents involving steel products – coils, heavy plates, and slabs – falling during transport

Smart Safety System Operation

POSCO FLOW introduced human detection alarms and automatic stop devices to provide a safe workplace. The rear-view imaging system mounted on the forklift issues a first alarm when a worker approaches within a safe distance, followed by a second automatic stop. During crane operations, the approach warning system senses the distance between the crane and passers-by and activates the alarm along with beams to keep workers safe. Furthermore, smart vests were introduced for logistics safety patrols to improve user convenience compared to conventional safety helmets and wearable safety devices while real-time work videos are transmitted to office and management supervisors to perform safety monitoring.

Governance



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Ethics

GOVERNANCE

Ethical Management

POSCO Group Ethical Management Council

In 2023, POSCO Group established the Group Council on Respect for Human Rights. Consisting of POSCO Holdings' executive in charge of ethical management at the Corporate Compliance and Ethics Team, and the heads of the Corporate Audit Office from 20 affiliates along with the heads of the Human Rights Center and the Audit Planning Group of POSCO, the Council serves to share the status of risk management in the areas of ethics, safety, and the environment and discuss necessary improvements. Major agenda items are included in the work results of the internal audit department twice a year and reported to POSCO Holdings' Audit Committee exclusively composed of outside directors.

Operating Companies

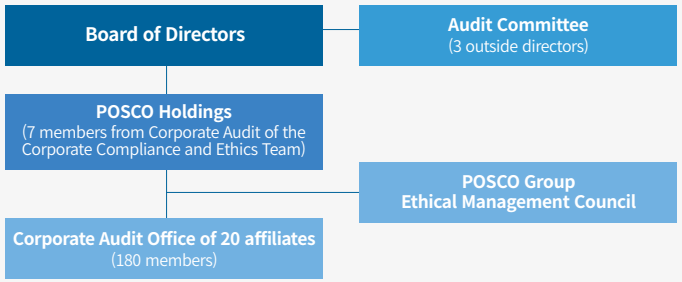
At POSCO Group, Corporate Audit at the Corporate Compliance and Ethics Team and internal audit departments of respective operating companies (department heads, certified public accountants, and professionals in management roles) are responsible for ethical management, engaging in wide-ranging activities including supporting domestic/global operational sites and suppliers to develop and operate ethical management policies, providing ethics trainings and campaigns, and auditing ethical misconduct and failure to respect human dignity.

The results of the ethical management work performed by internal audit departments are regularly reported by POSCO Holdings' Corporate Compliance and Ethics Team to leadership, and are also provided to the Audit Committee twice a year to ensure independence of senior management.

Internal Audit Departments of Operating Companies

- Support the work of the Audit Committee
- Perform financial/accounting audits
- Assess the internal accounting control system
- Audit domestic/overseas operations
- Support the audit work of the holding company
- Implement and review ethical management/respect for human rights policies

POSCO Group's Ethical Management Organization



Policy and Guideline

POSCO Holdings set forth a total of 10 standards and policies for ethical management (5 company regulations, 5 work guidelines), including the Code of Ethics that applies to all employees (including contract workers), operational regulations of the Audit Committee, and internal audit guidelines. As the department in charge, Corporate Audit of the Corporate Compliance and Ethics Team reviews the appropriateness of these internal regulations and work guidelines on an on-going basis.

Company Regulations

- Code of Ethics
- Operational regulations of the Audit Committee
- Action guidelines to prevent conflicts of interest
- Guidelines to prevent workplace harassment
- Guidelines to prevent sexual harassment in the workplace

Work Guidelines

- Internal audit guidelines
- Guidelines on compensation and immunity concerning whistleblowing reports on noncompliance with ethical standards
- Special provisions on the implementation of ethics
- Special provisions on the overseas implementation of ethics
- Work guidelines to protect human rights

Board of Directors

Role and Responsibility

POSCO Group's ethical management organization consists of the Audit Committee under the Board of Directors, Corporate Audit of the Corporate Compliance and Ethics Team, and internal audit departments at respective operating companies.

The Audit Committee is established and operated pursuant to applicable laws (Article 542-11 of the Commercial Act), and is mandated to independently oversee the company's business and accounting operations and ensure management transparency.

Corporate Audit of the Corporate Compliance and Ethics Team assists the Audit Committee in efficiently performing its audit work, develops and operates the Group's audit strategies, and heads the internal audit departments of respective operating companies.

POSCO Holdings' Audit Committee

- Perform accounting audits
- Assess the internal accounting control system
- Grant prior approval on audit/non-audit services provided by external auditors
- Supervise external auditors
- Audit the work of directors
- Approve manager appointment/dismissal at internal audit departments
- Report the audit plans and findings of internal audit departments

POSCO Holdings' Corporate Audit of the Corporate Compliance and Ethics Team

- Support the work of the Audit Committee
- Perform audits on POSCO Holdings and operating companies
- Review audit findings of operating companies
- Report (management, Audit Committee)
- Develop policies and seek institutional improvement for ethical management and respect for human rights

STRATEGY

Ethical Management Strategy

Management Approach to Ethical Management

Since we stipulated and announced our Code of Ethics in 2003, we have prioritized ethics as the utmost value in our business conduct to establish a culture of business ethics to the highest global standards.

Establish the world's top corporate ethics culture		
Shift in employee awareness		Risk assessment and action
• Risk assessment • Prior work consultations • Survey on the corporate culture of respect for human dignity • Ethical dilemma survey	• All employees signing the ethics pledge • On/offline training • Ethical management campaign	• Hotline (reporting center) operation • Whistleblower identity protection • Follow-up monitoring

Practice Pledge and Training

To bolster employees' understanding and practice of ethics, POSCO Group has its employees across the entire global operations sign the ethics pledge each year, and provides regular trainings and campaigns.

- Ethics pledge: Have all employees electronically sign the pledge (including contract workers, every January/annual)
- Ethics training: Mandate regular ethics training for all employees (including contract workers, once a year)

Online Program

- Compulsory e-training (understanding POSCO Group's ethical management, preventing workplace/sexual harassment)
- Share ethical management campaigns across the Group through the GIH (Global Information Hub)
- Operate ethical management campaigns and send letters (unethical conduct, sexual/power harassment, etc.)

Offline Program

- Introductory training for POSCO Group's new/experienced hires and interns
- Training for newly appointed leaders and expatriates before assignment
- Ethics and human rights training for overseas subsidiaries and suppliers
- Customized ethics training tailored to the specific business characteristics of respective operating companies
- Organizational dissemination training led by department heads
- Ethical management campaign: Group-level campaigns for 39 operating companies (at least 6 times a year)

Operating Whistleblowing Mechanisms

POSCO Group operates the Ethical Misconduct section available 24/7 at our website for anyone to report incidents of unethical conduct. All stakeholders may seek counseling and submit reports for work-related ethical misconduct, power harassment, workplace bullying and sexual harassment among others. Internal audit departments serve as a dedicated organization for operating the Ethical Misconduct section to manage and oversee the entire process from the receipt of requests to follow-up. In 2023, Spanish and Vietnamese language services were made available in addition to Korean, English, and Chinese for foreign workers across our global operations to readily access this section in their native language. POSCO Group prohibits any activities that could potentially expose the identity of individuals in the counseling and reporting process, and systematically ensures that any breach in this regard is penalized. Employees at internal audit departments make doubly sure that user identity is protected through the auditor security pledge they sign at the beginning of each year. Overall report investigation procedures, including those on confidentiality guarantee, are specified in the guidelines governing unethical conduct and immunity established by reflecting provisions from Chapter 3 of the Act on the Protection of Public Interest Reporters applicable to private sector companies.

Whistleblowing Mechanism Operation Process

Receive reports (counseling requests)	Investigate factual grounds	Verify facts and request action	Follow up	Notify action taken
Ethical Misconduct section of the website (available 24/7), e-mail, phone, post, personal visit, etc.	Interview with related parties (whistleblower, perpetrator, third-party)	Complete investigation (request HR action when necessary)	Preventive training, monitoring	Inform whistleblowers of investigation results (including HR action taken)

Establishing Ethics Infrastructure for Suppliers

POSCO Group assists suppliers in establishing their ethical management infrastructure to pursue win-win partnerships with them and disseminate POSCO Group's ethical management. Since 2020, we have supported 32 suppliers to date in laying the foundation to independently advance ethical management through introducing ethics regulations and systems, opening whistleblowing mechanisms, and providing ethics training campaigns and counseling for ethical dilemmas. Such support activities are followed by reassessing suppliers for their ethics performance to check the progress made and discuss possible improvements to help them voluntarily establish future plans.

Supporting Suppliers to Establish Ethical Management Infrastructure

Step 1	Step 2	Step 3
• Recruit suppliers wishing to participate • Hold briefings through the supplier council • Assess their current ethics level based on the checklist	• Develop detailed implementation plans for each supplier • Provide consulting on ethical management - Review ethics-related overall regulations and implementation organizations - Operate trainings, campaigns and whistleblowing centers - Assess through ethics sessions and develop plans to prevent reoccurring incidents	• Check specific activities taken by each supplier • Re-assess the level of ethics based on the checklist and provide feedback

Category	Key Checkpoints and Improvements
Operational system and management role	• Establish and operate overall ethics regulations • Create execution organizations • Commitment of leadership
Effective operation of trainings and systems	• Off-the-job training and campaigns • Online training • Counseling and whistleblowing programs
Monitoring, follow-up, and assessment	• Ethics sessions and surveys • Prevention of recurring incidents
Other implementation activities	• Daily ethics implementation

RISK MANAGEMENT

Monitoring

All employees at POSCO Group's internal audit department engage in year-round monitoring to manage the risk of ethical misconduct occurring at operating companies. When critical issues are identified, this is referred to the audit function, and monitoring performance is reflected in employee KPIs.

Some of our operating companies establish the Risk Management System (RMS) to prevent the risk of fraud/error that is repetitive and predictable, and apply this system to their overall operations along with real-time monitoring.

For overseas subsidiaries, core business checklists are used at the Group level considering their geographic conditions which make it difficult to perform real-time monitoring. Overseas subsidiaries independently conduct regular reviews on their management of the entire operations (management, procurement, production, facilities, raw materials, investment, and sales) while identifying risk to prevent incidents. The internal audit department of respective operating companies regularly audits the results of these core business checklist. When the need arises, direct visits are made to overseas subsidiaries to perform inspections.

Key Checkpoints on the Core Operation Checklist for Overseas Subsidiaries

Incorporation into Criteria	• Dissemination of HQ regulations stipulated/updated to overseas subsidiaries • Application of regulations stipulated/updated in the checklist of overseas subsidiaries
Substantial Operation at Overseas Subsidiaries	• Compliance with the process concerning implementation entity, cycle, and management plan • Review on the appropriateness of outcomes submitted during regular inspection

Ethics Assessment

POSCO Group surveys employees at domestic and global operations to assess their level of ethics compliance and preemptively identify the risk of unethical conduct, along with providing ethics sessions to executives and leaders.

Supplier employees are also surveyed to assess any risk for unethical conduct and failure to respect human rights. When risk is identified, this results in additional monitoring and investigation.

Ethics session for executives	• Check executives' mindset for ethical management (annual)
Ethics session for leaders	• Improve ethical leadership for leaders (annual)
Ethical risk identification survey	• Take stock of unethical business conduct and failure to respect human rights(sexual harassment, bullying, etc.) (monthly)

METRICS AND TARGETS

Support for Establishing Ethical Management Infrastructure

POSCO and major operating companies assist newly-created operating companies in establishing their ethical management infrastructure and compliance as a way to prevent the risk of failure to respect human rights and ethical misconduct.

In 2023, three rounds of business presentation were provided to the head of ethical management and working-level staff at new maintenance subsidiaries, and regional onboarding training was conducted to bolster their internal control system and highlight the importance of preventing ethical management risks.

We also provide one-on-one coaching to help establish ethical management infrastructure, and assist responsible organizations and personnel at respective operating companies in setting conditions to independently implement ethical management along the cycle of 'self-assess compliance performance → set improvement goals → pursue company-wide improvement'.

Category	Key Support Activity	Completion
Regulation	Stipulate and update company regulations, including the code of ethics and guidelines to prevent sexual harassment/bullying	~May 2023
CEO's commitment	Host events to make commitment to ethical management (suppliers)	~Jun. 2023
	CEO messages and employees' ethics pledge signing	~Jun. 2023
Organizational and system	Review the grievance handling process and set operational standards	~Jun. 2023
	Introduce and inform whistleblowing programs/channels, review the solicitation prevention process	~Jul. 2023
	Ethical misconduct check app, survey on respect for human rights (ethics session)	~Aug. 2023
Implementation activity	Provide ethics trainings and campaigns for leaders/employees	Each month in 2023
	Launch 'no gift giving and receiving' campaigns and operate the gift return center	Sep. 2023

Compliance

GOVERNANCE

Compliance Management

Group Compliance

Our compliance and Fair Trade Compliance Program (CP) operations are respectively led by the Board of Directors of POSCO Holdings and the ESG Committee serving as the highest decision-making body, and are overseen by POSCO Holding's Corporate Compliance and Ethics Team[1] as a dedicated organization.

The Head of the Corporate Compliance and Ethics Team (senior executive vice president/lawyer) is appointed by the Board of Directors to assume the compliance officer role, and oversees POSCO Group's compliance support operations. This Team runs the Group Compliance Council attended by executives from POSCO Holdings and six major operating companies[2]. The Council convenes each quarter to discuss issues requiring collaboration, including compliance control and response to serious accidents, as well as legal issues occurring among Group affiliates.

The ESG Committee of POSCO Holdings appointed the executive in charge of fair trade at the Corporate Compliance and Ethics Team as the fair trade and compliance manager. The Team assesses operating companies for their CP activities and aligns such assessments with the performance appraisal conducted on top management and responsible executives of operating companies. In line with the strong commitment of our leadership to fair trade CP implementation, a task force team was launched to help facilitate the Compliance Program across the Group and this led 16 Group affiliates to adopt the Compliance Program.

In recognition of the expertise required to perform compliance work, POSCO Holdings' Corporate Compliance and Ethics Team consists of 23 professionals including ISO 37301 auditors, domestic and foreign lawyers and patent lawyers.

1) The Corporate Legal Team was renamed to the Corporate Compliance and Ethics Team in April 2024.
2) The threshold is KRW 500 billion and over in asset value, and six companies that meet this criterion appoint their compliance officer to perform compliance work.

Compliance Organization



Compliance Policy

- POSCO Holdings and 6 operating companies abide by compliance control standard* as company regulations
  *(Organizational responsibility & authority) Compliance support for the CEO, legal risk assessment/management, compliance inspection (Operational procedure) Mandate to report to the BOD annually
- POSCO Holdings and 35 operating companies abide by fair trade and compliance program operating guidelines* as company regulations
  *(Organizational responsibility & authority) Support for the CEO, duty of the fair trade and compliance manager, role of the BOD, etc. (Operational procedure) Mandate to report to the BOD semiannually, training program, self-inspection/monitoring, counseling, whistleblowing and whistleblower protection, sanctions and rewards, etc.

Board of Directors

- Stipulate that the appointment of the fair trade and compliance manager and the operational status of the Fair Trade CP overseen by the manager be reported to the ESG Committee semiannually (fair trade and compliance program operational guidelines)
  - H1 report on Aug. 3, 2023
  - H2 report on Dec. 15, 2023
- Stipulate that deliberations be made on related transactions (BOD operational regulations)
  - Deliberated on 13 cases in 2023
- Stipulate that results of compliance inspections be reported to the Board of Directors annually (BOD operational regulations)
  - Report the results of inspections made on adherence to compliance control criteria (Dec. 19, 2023): Results of compliance self-inspections made on bribery, unfair trade practices, trade secrets, and data privacy as well as improvements made, results of effectiveness assessment conducted on the compliance control system
- Secure compliance expertise of the Board of Directors
  - Brief new outside directors on the standards of affiliates and their governance status
  - Information provision: Send CEO Legal Briefing each month

STRATEGY

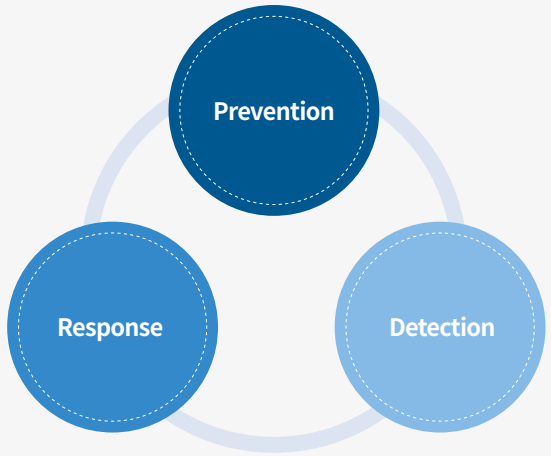
Fair Trade Compliance Program

POSCO Group has implemented the Fair Trade Compliance Program (CP) since 2002 to abide by laws and regulations associated with fair trade. To date, 36 POSCO Group affiliates have introduced the Fair Trade CP and are following nine CP strategies in their business conduct. We established the POSCO CP Certification system for on-site contractors in 2021 as the first Korean company to do so and have since provided incentives to on-site contractors certified to this program.

POSCO Group's Fair Trade CP Management System

CP policy development and preventive activity

- CP activity support from management
- Establishment/revision of compliance guidelines
- Customized training, counseling, and information service



Risk recurrence prevention and follow-up management

- Coaching for institutional improvement, follow-up action
- Conflict resolution, recurrence prevention
- Cooperative networking, CP activity assessment

Fair trade risk monitoring

- Ongoing monitoring
- Compliance risk inspection
- Self-inspection by working-level departments

POSCO Group's 9 Fair Trade CP Strategies

❶ Establish and implement CP criteria and procedures
- Compliance Program operational guidelines
- Work guidelines on enterprise group and holding company regulations
- Fair trade compliance guidelines for overseas subsidiaries

❷ Declare the CEO's commitment and support for compliance
- Commit to fair trade compliance through CEO messages
- Sign the voluntary compliance pledge each year

❸ Appoint the compliance manager
- Appoint the fair trade and compliance manager pursuant to the decision made by the BOD (ESG Committee)

❹ Produce and use the compliance handbook
- Revise and distribute the compliance handbook regularly by division (business, large enterprise group)

❺ Provide continuous and systemic training
- Provide regular fair trade training to working-level departments
- Provide fair trade training by job level for executives, responsible personnel, and new hires)
- Operate e-learning courses

❻ Establish an internal audit system
- Report CP operational performance to the BOD (ESG Committee)
- Operate counseling/whistleblowing centers
- Provide counseling for fair trade concerns and take stock of vulnerabilities by theme

❼ Impose sanctions on employees for violating pertinent laws
- Operate disciplinary regulations according to the severity of regulatory violation
- Impose sanctions on violators and take action to prevent recurrence

❽ Assess effectiveness and make improvement
- Internally assess the effectiveness of the CP and make necessary improvements
- Participate in the CP ratings assessment made by the Fair Trade Commission

❾ Operate the Compliance Committee
- Operate the Compliance Committee composed of heads of fair trade-related working-level departments

Employee Pledge

POSCO Group employees electronically sign the pledge to abide by the principles of fair trade and anti-corruption each year. This pledge is made available in nine languages* for all employees in Korea and abroad.

*Korean, English, Japanese, Chinese, Thai, Indonesian, Turkish, Vietnamese, Spanish

- Pledges signed in 2023
  - Fair trade pledge signed by 26,235 employees, global anti-corruption pledge signed by 10,134 employees

Trainings and Meetings

To bolster our compliance response capabilities across the Group and take a stronger preventive approach, regular trainings and meetings are arranged at all levels, from top management to dedicated organizations at respective companies and all employees of the holding company.

Meeting/Training Course	Target Participants
Compliance training for leadership at POSCO Group	All executives
Training for responsible personnel at operating companies on M&A disputes and regulatory trends	Lawyers in charge of Group's legal affairs
Special training on IP management guidelines in preparation for overseas IP (patents, trade secrets) disputes	Executives and department heads in charge of Group's legal affairs
POSCO Group's fair trade CP executive discussions	Executives in charge of Group CP operations
Compliance training tailormade to different job levels/functions	Fair trade CP personnel and personnel in charge of business group and disclosure operations
POSCO Group Compliance Academy	Group heads and working-level staff in charge of Group CP operations
Fair trade campaigns	All employees
Production and distribution of the fair trade CP handbook	All employees

POSCO's Fair Trade Training

POSCO provides tailormade fair trade training (on/offline) to its domestic and overseas corporations. Regular/year-round group training is provided by job level and function for position holder/general staff/new hires and for sales/purchasing functions, along with e-learning training available 24/7 online. POSCO also regularly convenes legal affairs councils for overseas corporations to provide anti-corruption and anti-trust compliance guides and prevent relevant risks from occurring.

Compliance

RISK MANAGEMENT

ISO 37301 Implementation

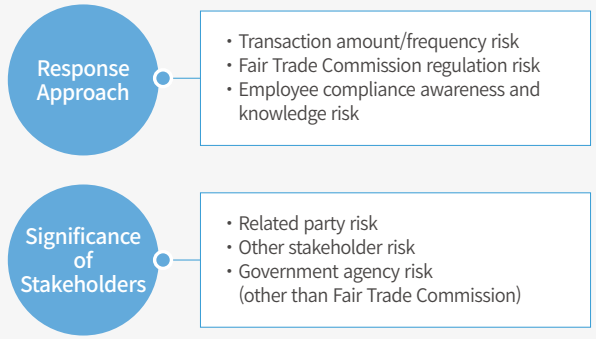
Certification

In an effort to establish a compliance management system and reinforce ESG management in the process, POSCO FUTURE M achieved the ISO 37301 certification (compliance management system) in September 2023 as the first to do so in the Korean battery materials industry.

Risk Assessment

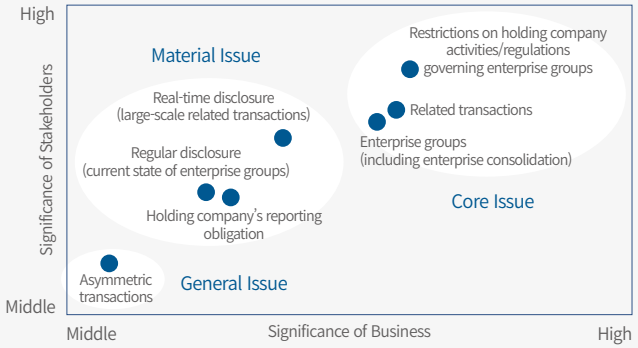
POSCO Holdings has performed fair trade CP risk assessments since its foundation in 2022. Such assessments, based on significance of business and significance of stakeholders, revealed high risk of 'restrictions on holding company activities and regulations governing enterprise groups'. This informed our decision to provide tailormade compliance coaching by regulatory theme and department along with monitoring to prevent relevant risk.

Assessment Items



Assessment Results

Key management item is the 'risk of restrictions on holding company activities and regulations governing enterprise groups'.



Improvements Made

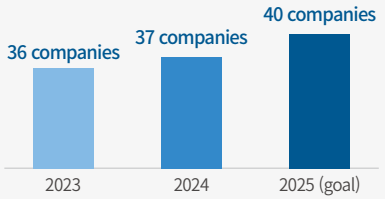
- Operated a task force team on compliance with activity restrictions: Resolved 25 cases and extended the relief period for 5 cases out of all cases subject to restrictions (As of Feb. 2024)
- Regularly reviewed the compliance checklist: Intensive monitoring on compliance requirements for enterprise groups
- Provided level-specific on/offline training: 11 sessions in H1 and 10 sessions in H2 of 2023

METRICS AND TARGETS

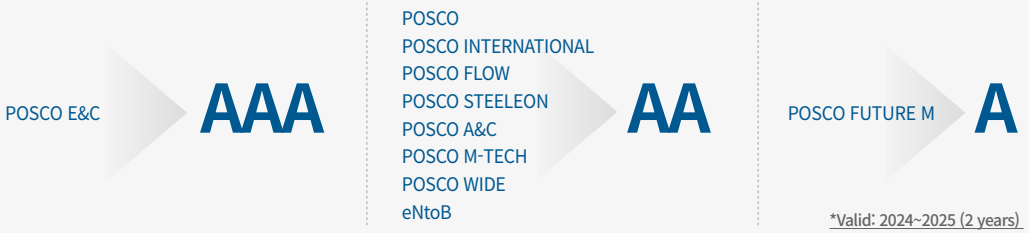
Expanding the Adoption of the Fair Trade CP and Participation in Assessment Schemes

To establish a corporate culture of fairness, POSCO Group will continue to expand the adoption of the Compliance Program.

POSCO Group's operating companies that introduced the Fair Trade CP (cumulative)



CP Ratings Awarded by the Fair Trade Commission to POSCO



Board of Directors

Composition of the Board

Pursuant to Article 542-8 of the Commercial Act, listed companies with KRW 2 trillion or more in assets are required to appoint three or more outside directors who represent a majority of the Board of Directors.

Article 27 of the Articles of Incorporation of POSCO Holdings stipulates that the Board be consist of no less than three and no more than 13 members as well as no more than eight outside directors and no more than five inside directors. As of March 2024, our Board of Directors was composed of 10 members in all, including six outside directors and four inside directors.

To bolster the independence of our Board of Directors, we have separated the Representative Director and CEO and the Chair of the Board roles, and appointed the Chair of the Board among outside directors through the decision made by the Board since 2006. At the Board meeting held in March 2024, outside director Yoo Youngsook was appointed as the Chair of the Board. Yoo Youngsook is the first-ever female Chair of the Board in the history of POSCO Group.



From left >>
Kim Kisoo (inside director), Kim Jun-Hyung (inside director),
Park Sung Wook (outside director), Kim Joongi (outside director),
Kwon Tae-kyun (outside director), Yoo Youngsook (outside director),
Chang In Hwa (inside director), Yoo Jinnyoung (outside director),
Sohn Sungkyu (outside director), Jeong Kiseop (inside director)

Board of Directors

GOVERNANCE

Composition of the Board

Category	Outside Director						Inside Director			
Name	Yoo Youngsook	Kwon Tae-kyun	Yoo Jinnyoung	Sohn Sungkyu	Kim Joongi	Park Sung Wook	Chang In Hwa	Jeong Kiseop	Kim Jun-Hyung	Kim Kisoo
Gender	Female	Male	Male	Male	Male	Male	Male	Male	Male	Male
Age	69	68	66	64	59	66	68	62	61	59
Year of Appointment	2021	2021	2022	2022	2023	2024	2024	2023	2024	2024
Expertise	Environment/climate	Finance, international finance and investment	New technology development	Finance and accounting	International trade, corporate governance	Business management, technology development	Steel production/technology, new business, investment, marketing	Strategy/investment, Group business management	Steel production, rechargeable battery materials	Steel technology, new technology development
Current Position	Head of the Climate Change Center (non-executive)	Outside director at Kumho Petrochemical	CEO of ANGEL 6+	Professor of Business Administration, Yonsei University	· Professor of Law, Yonsei University Law School · Member of the International Court of Arbitration, International Chamber of Commerce	Chair of the Board, National Academy of Engineering of Korea	Group CEO & Representative Director, POSCO Holdings	President & Representative Director, CSO, POSCO Holdings	Senior Executive Vice President for rechargeable battery business, POSCO Holdings	Senior Executive Vice President for technology, CTO, POSCO Holdings
Career	· Vice President, Korea Advanced Institute of Science and Technology (KIST) · Co-CEO, Climate Change Center · Minister of Environment	· Head of Free Economic Zone Planning, Ministry of Finance and Economy · Ambassador to the UAE · Administrator, Public Procurement Service · Head of Trade Investment Office, Ministry of Knowledge and Economy	· CTO/President, LG Chem · Head/Vice-President, LG Chem's R&D Center · Member, Presidential Advisory Council on Science and Technology · Director, National Research Council of Science & Technology	· Outside director, Samsung Asset Management · President of the Korean Accounting Association · Distinguished professor from the Korean Accounting Association, Samil PwC · Non-standing member of the Securities and Futures Commission	· Professor, Yonsei University Graduate School of International Studies · 1st President of the Hills Governance Center, Yonsei University/World Bank/CSIS · Professor of Business Administration, Hongik University · Lawyer, Foley & Lardner	· Management advisor (Vice Chairperson), SK Hynix · Chairman, Korea Semiconductor Industry Association · CEO (President-Vice Chairman) SK Hynix	· Representative Director and President (Head of Steel Business Unit), POSCO · Inside director and Vice President (Head of Steel Production Division), POSCO · Senior Executive Vice President (Head of Technology and Investment Division, Head of Technical Research Laboratories), POSCO	· President and Representative Director (CSO), POSCO Holdings · CEO & Representative Director, POSCO ENERGY · SEVP (Head of Corporate Planning & Management Support Division), POSCO ENERGY · EVP & Head of Domestic Business Management Office, POSCO	· President, POSCO FUTURE M · Representative Director and President, SNNC · Executive Vice President, POSCO CHEMICAL (Head of Energy Materials Division) · Representative Director, POSCO ESM	· Senior Executive Vice President (Head of Technical Research Laboratories), POSCO · Executive Vice President (Head of Steel Manufacturing Process R&D Center), POSCO · Senior Vice President (Head of Engineering Solution Dept.), POSCO
	PhD in biochemistry, Oregon State University, US (1986)	PhD in international studies, Chung-Ang University (2007)	PhD in polymer engineering, Lehigh University, US (1990)	PhD in business administration, Northwestern University, US (1992)	PhD in law, Georgetown University, US (1992)	PhD in material engineering, KAIST (1992)	PhD in marine engineering, MIT, US (1988)	BA in business administration, Yonsei University (1985)	MA in business administration, Golden Gate University, US (1999)	PhD in metallurgy, University of Sheffield, UK (2001)
Committee Association	Chair of the Board	Head of the ESG Committee	Head of the Director Candidate Recommendation Committee	Head of the Audit Committee	Head of the Compensation Committee					
	· Head of the CEO Candidate Pool Management Committee · Member of the ESG Committee · Member of the Compensation Committee	· Member of. he Compensation Committee · Member of the Finance Committee · Member the CEO Candidate Pool Management Committee	· Member of the ESG Committee · Member of the Audit Committee · Member the CEO Candidate Pool Management Committee	· Member of the Compensation Committee · Member of the Director Candidate Recommendation Committee · Member of the Finance Committee · Member the CEO Candidate Pool Management Committee	· Head of the Finance Committee · Member the CEO Candidate Pool Management Committee	· Member of the Director Candidate Recommendation Committee · Member of the Audit Committee · Member the CEO Candidate Pool Management Committee		· Member of the Finance Committee	· Member of the ESG Committee	
Board Attendance in 2023	100%	100%	100%	100%	100%	Newly appointed	Newly appointed	100%	Newly appointed	Newly appointed

Board of Directors

GOVERNANCE

Composition of Board Committees

Pursuant to the Articles of Incorporation and the operational regulations of the Board of Directors updated in March 2024, POSCO Holdings operates six committees under the Board – the ESG Committee, the Director Candidate Recommendation Committee, the Compensation Committee, the Finance Committee, the Audit Committee, and the CEO Candidate Pool Management Committee.

To ensure continuity in the work of these committees, we minimize any change in their composition during the tenure of directors. Outside directors comprise a majority of all these committees, and the Audit Committee, the Director Candidate Recommendation Committee, the Compensation Committee, and the CEO Candidate Pool Management Committee are solely composed of outside directors to enable their independent decision-making.

ESG Committee
- Monitor progress of ESG activities and publish sustainability reports
- Matters on the operation of the Board and its committees
- Related transactions specified by anti-competitive and fair trade laws
- Report important ESG matters of affiliates

3 outside directors, 1 inside director
Head: Kwon Tae-kyun
Member: Yoo Youngsook, Yoo Jinnyoung, Kim Jun-Hyung

Finance Committee
- Deliberate and decide on investment proposals for new and existing projects
- Deliberate and decide on corporate bond issuance and critical financing decisions

3 outside directors, 1 inside director
Head: Kim Joongi
Member: Kwon Tae-kyun, Sohn Sungkyu, Jeong Kiseop

Director Candidate Recommendation Committee
- Assess the qualifications of outside director candidates and make recommendations to the AGM
- Operate the Outside Director Recommendation Advisor Panel

3 outside directors
Head: Yoo Jinnyoung
Member: Sohn Sungkyu, Park Sung Wook

Audit Committee
- Audit the legality of management's business decisions and activities
- Assess the soundness and validity of financial activities and the integrity of financial reporting
- Evaluate the operational status of the internal accounting management system

3 outside directors
Head: Sohn Sungkyu
Member: Yoo Jinnyoung, Park Sung Wook

Compensation Committee
- Matters on executive performance appraisal and the development and execution of compensation plans
- Deliberate on director compensation and retirement package

4 outside directors
Head: Kim Joongi
Member: Yoo Youngsook, Kwon Tae-kyun, Sohn Sungkyu

CEO Candidate Pool Management Committee (newly established)
- Deliberate on the basic qualifications of CEO candidates as defined by the Board
- Pooling results for CEO candidates
- CEO candidate development plans, etc.

6 outside directors
Head: Yoo Youngsook
Member: Kwon Tae-kyun, Yoo Jinnyoung, Sohn Sungkyu, Kim Joongi, Park Sung Wook

Regulations associated with the Board of Directors

- Corporate Governance Charter
- Articles of Incorporation
- Independence/diversity guidelines for outside directors
- Code of Ethics for outside directors

STRATEGY

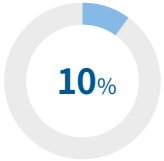
Diversity of the Board

POSCO Holdings upholds the diversity of Board members, and our Articles of Incorporation, Corporate Governance Charter, and Board Independence and Diversity Policy define the qualifications of directors to ensure balanced representation of interests at the Board of Directors. The Annual General Meeting of shareholders held in March 2024 appointed Yoo Youngsook, an outside director, as the Chair of the Board to boost its diversity. In March 2024, Park Sung Wook was appointed as an outside director for his expertise in business management and R&D in the manufacturing sector and his previous work experience as a company CEO. As such, POSCO Holdings remains committed to bringing greater diversity to the Board of Directors.

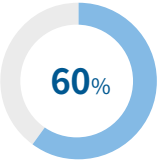
- POSCO Holdings' Corporate Governance Charter
- Board Independence and Diversity Policy

Outside Director Candidates

Category	As of Dec. 2019		As of Dec. 2023		Change (against 2019)	
	Total	Female	Total	Female	Total	Female
Finance	9	1	55	7	46	6
Accounting	21	2	99	13	78	11
Industry	48	7	153	20	105	13
Academia	28	2	161	35	133	33
Law	18	2	102	24	84	22
Public	18	4	96	12	78	8
Total	**142**	**18**	**666**	**111**	**524**	**93**



Diversity
1 female member out of 10 Board directors



Independence
6 outside directors out of 10 Board directors



Board Attendance (FY2023)
100% attendance of all members in 2023

Board of Directors

STRATEGY

Independence of the Board

To meet and exceed the legal standards governing independence of the director appointment process, POSCO Holdings' BOD Operational Regulations stipulate that the Director Candidate Recommendation Committee be exclusively composed of outside directors.

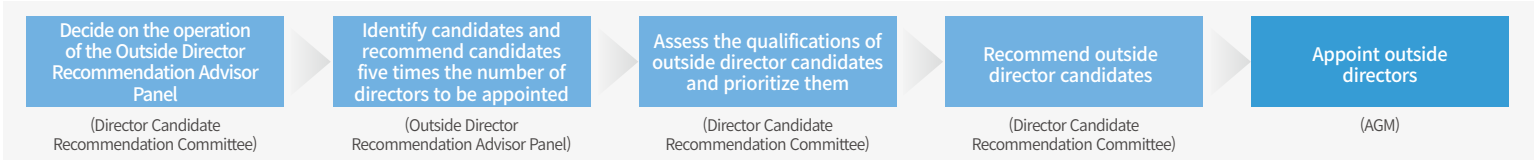
POSCO Holdings' Director Candidate Recommendation Committee is mandated by the Board of Directors to assess the qualifications of outside director candidates and recommend candidates to the Annual General Meeting of shareholders, review inside director candidates and assess their qualifications, appoint members of the Board committees, and appoint representative directors other than the Representative Director and Chairman, to bolster the independence of the director appointment process and overall Board operations.

To ensure independence and transparency in our outside director appointment process, we have operated the Outside Director Recommendation Advisor Panel since 2004 through the decision made at the Director Candidate Recommendation Committee. This Panel consists of five highly credible senior leaders in the fields of industry, finance, academia, and law. The Panel proposes candidates five times the number of directors to be appointed to the Director Candidate Recommendation Committee while prioritizing independence as the utmost value and ensuring no specific interest groups influence the process. The Director Candidate Recommendation Committee then assesses their qualifications and recommends finalists to the AGM where the final decision is made on the appointment of new directors. We regularly update our pool of outside directors at least once a year to ensure a top calibre of candidates.

Inside Director Appointment Process



Outside Director Appointment Process



Shareholder Proposal

POSCO Holdings has initiated the shareholder proposal system since 2018 to directly engage shareholders in the discovery of outside director candidates with an aim to reach closer to shareholders and build a diverse pool of outside director candidates. This starts with sending an official letter three to four months before the AGM under the name of the Head of the Director Candidate Recommendation Committee to shareholders entitled to exercising their shareholder proposal rights pursuant to the Commercial Act. Each shareholder may recommend one outside director candidate, and may do so either through e-mail or in writing through post. Those candidates recommended by shareholders are assessed for their qualifications by the Outside Director Recommendation Advisor Panel just as other candidates.

Outside Directors Holding Concurrent Positions

POSCO Holdings abides by the Commercial Act and other pertinent laws and regulations concerning outside directors holding concurrent positions outside the Company. Our outside directors are required to inform the Board of Directors and the Company of any other activities that may materially impact their Board attendance and relevant activities. In conformity with Article 542-8 of the Commercial Act and Article 34 of its Enforcement Decree, outside directors should comply with requirements specifying the grounds for possible disqualifications, and current outside directors could jeopardize their position if found to be non-compliant with such requirements. The table below illustrates our current outside directors holding concurrent positions, and none of them are in violation of our policy governing outside directors functioning in more than one capacity.

Name	Date of First Appointment	Organization	Responsibility	Tenure at the Organization	Listing of the Organization
Yoo Youngsook	Mar. 12, 2021	Microgen	Outside director	2021~present	Listed
Kwon Tae-kyun	Mar. 12, 2021	Kumho Petrochemical	Outside director	2022~present	Listed
Yoo Jinnyoung	Mar. 18, 2022	Angel 6+	CEO	2019~present	Not listed
Sohn Sungkyu	Mar. 18, 2022	Samsung Asset Management	Outside director	2019~present	Not listed
Kim Joongi	Mar. 17, 2023	-	-	-	-
Park Sung Wook	Mar. 21, 2024	-	-	-	-

*Note: Excluding concurrent positions held at non-profits or foundations
- Yoo Jinnyoung: President, Seoul Center for Creative Economy & innovation (public organization, foundation)
- Park Sung Wook: Chair of the Board, National Academy of Engineering of Korea (non-profit)

Conflict of Interest Concerning Outside Directors

To ensure the independence and impartiality of outside directors, POSCO Holdings crosschecks the career history of outside director candidates, along with the transactions they engaged in, to verify any mutual transactions or contracts entered into between the candidates and POSCO Holdings. We also ensure that final candidates submit a confirmation stating that they have no business relationship or special interest with the Company. Presently, none of our outside directors have worked for the Company nor other companies we invested in, and neither have they entered into transactions with us over the last three fiscal years (2021~2023).

Board of Directors

STRATEGY

Expertise of the Board

POSCO Holdings' six outside directors were chosen for their breadth of expert knowledge and experience, and further bolster their expertise through specialized training and visits to our operations.

Board Skills Matrix

Skills Metrics	Category	Yoo Youngsook	Kwon Tae-kyun	Yoo Jinnyoung	Sohn Sungkyu	Kim Joongi	Park Sung Wook
General	① ESG/sustainability management	●	●	●	●	●	●
	② Leadership	●	●	●	●	●	●
	③ Risk management	●	●	●	●	●	●
Specific	① Industry experience			●			●
	② Technology, digital, and innovation	●		●			●
	③ Finance and accounting		●		●	●	●
	④ Law and public policy	●	●	●		●	
	⑤ International business management		●	●		●	●
	⑥ Business development and M&A			●			●

Training for Outside Directors

Date of Training	Key Topic
Mar. 28, 2023	• Induction training for new outside directors - POSCO Group's strategic approaches - POSCO's steel business: current status and mid/long-term strategy - Future growth strategy for rechargeable battery materials - Future growth strategies for hydrogen business - Green infrastructure business: current status and mid/long-term strategy - POSCO Group's ESG management strategy and others
Jun. 8~9, 2023	• Tour of POSCO's Gwangyang Steelworks • Tour of POSCO FUTURE M's Gwangyang cathode material plant • Tour of POSCO HY Clean Metal's plant • Tour of POSCO Pilbara LITHIUM SOLUTION's plant
Jun. 16, 2023	• Key issues of ESG and sustainability disclosures and the status of ISSB standards

CEO Succession

The appointment of POSCO Holdings' Group CEO and Representative Director is governed by Article 29 of the Articles of Incorporation stipulating pertinent provisions: the CEO Candidate Recommendation Committee exclusively composed of outside directors assesses the qualifications of the candidate, who is then recommended by the Board of Directors to the Annual General Meeting of shareholders. The candidate is appointed as an inside director at the AGM and appointed as the Group CEO and Representative Director at the Board of Directors to bring the entire appointment process to a close.

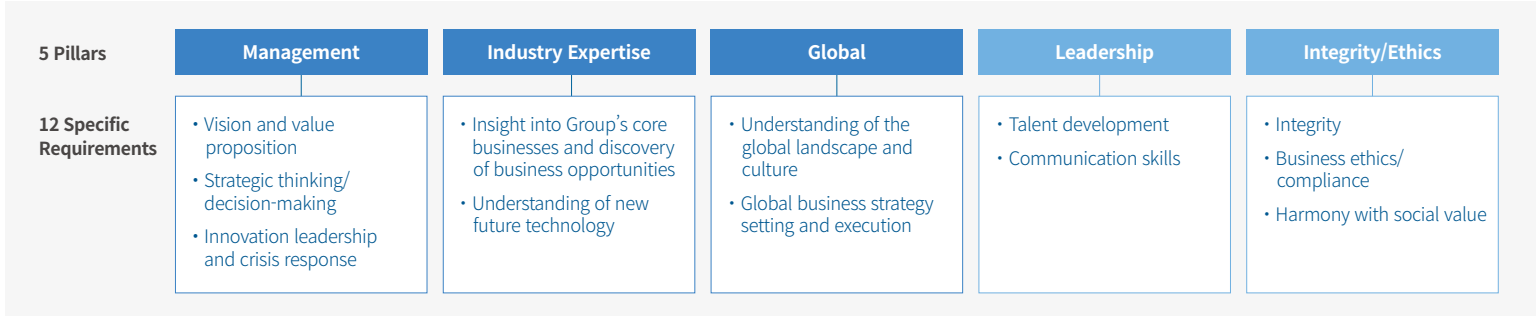
To ensure independence and transparency throughout this process, the CEO Candidate Recommendation Committee is launched through the decision made by the Board of Directors. This Committee, which consists of outside directors only, serves to identify CEO candidates, develop specific assessment criteria based on the qualifications defined by the Board of Directors, and engage in multi-faceted, in-depth assessments.

In December 2023, the Board of Directors approved the 'draft proposal to establish POSCO-style Governance' to create the Outside Director Recommendation Advisor Panel joined by renowned leaders outside the Company with an aim to perform objective assessment of the candidates identified by the CEO Candidate Recommendation Committee. In line with this new system, the Committee incorporated the feedback gathered from the Panel in assessing the qualifications of CEO candidates. POSCO Holdings operates the CEO Candidate Recommendation Committee and the Outside Director Recommendation Advisor Panel to reinforce both the independence and expertise of the Board of Directors in the CEO appointment process.

In particular, the CEO Candidate Pool Management Committee was created in March 2024 as a standing committee solely composed of outside directors under the Board to ensure systemic discovery and development of CEO candidates as well as fairness in their management. This will allow us to identify and manage internal candidates verified through our own CEO candidate development program and external candidates recommended by executive search firms, improving the predictability of the entire appointment process.

Basic Qualifications for CEO Candidates

In December 2023, the Board approved the draft proposal to establish POSCO-style Governance to elaborate on the qualifications of CEO candidates and publicly disclose them to render our CEO appointment process more transparent. The newly-developed CEO candidate assessment and development guidelines define five competency pillars and 12 specific requirements for CEO candidates.



Board of Directors

RISK MANAGEMENT

Our Compliance with Key Metrics for Corporate Governance

POSCO Holdings complies with all 15 key metrics for corporate governance suggested by the Korea Exchange, and keeps our governance system current to further advance our governance.

Key Metric	Compliance	Description
Issue a convocation notice 4 weeks before the AGM	O	We issued the convocation notice for this year's AGM approximately four weeks before the meeting.
Adopt electronic voting	O	We introduced electronic voting in March 2019 and have since provided this option each year to make it easier for shareholders to exercise their rights.
Hold the AGM outside the peak AGM dates	O	This year's AGM was held on March 21, 2024, outside the peak AGM dates.
Ensure predictability in relation to cash dividends	O	We implemented advanced dividend procedures to determine the dividend amount first and set the dividend reference date later in making year-end dividend payments during the disclosure period, ensuring predictability in relation to dividend payments.
Notify shareholders of the company's dividend policy and dividend payment plan at least once a year	O	Along with disclosures, we make specifics of dividend payments, our mid-term shareholder return policy, and information related with treasury shares available on our website, and operate a separate website on 'POSCO Holdings' dividend information service' to provide at-a-glance view of our dividend-related information.
Establish and operate the CEO succession policy	O	In appointing our Group CEO and Representative Director, the CEO Candidate Recommendation Committee solely composed of outside directors assesses his/her qualifications to recommend the candidate to the AGM. To render this process even more transparent and fairer, we approved the draft proposal to establish POSCO-style Governance in December 2023. To systematically develop CEO candidates, we select and manage key talent by level among employees in executive and manager roles since 2017. To systematically nurture the candidates chosen as such, we encourage them to perform key roles, receive training to improve expert management competency, and work with external mentors. Our annual leadership sessions held between all outside directors and the CEO serve to share performance in fostering CEO candidates.
Establish and operate internal control policies for risk management and others	O	We classify risk into business risk (management strategy, finance, Group business) and non-business risk (ESG) in operating our risk management system. To advance compliance management, we incorporated compliance control standards into our company regulations and appoint the compliance officer to monitor the legality of our business operations. We proactively adopted the internal accounting control system in the year when it was first introduced in Korea, and have our consolidated internal accounting control system audited by external auditors. We established disclosure management guidelines to make timely disclosures, and abide by the internal control procedures set for regular reporting to ensure regular reports are approved by the responsible department head or personnel.
Ensure the Board is chaired by outside directors	O	We have separated the Board Chair and the Group CEO & Representative Director roles since 2006, and appoint the Board Chair among outside directors through the decision made at the Board.
Adopt cumulative voting	O	Our Articles of Incorporation do not exclude cumulative voting in relation to shareholders' exercising their rights.
Establish policies to prevent individuals responsible for undermining corporate value or infringing shareholder rights and interests from being appointed as an executive	O	Executive candidates are verified for their expertise, leadership, and past performance on an ongoing basis by the responsible department, and our Code of Ethics stipulates our fiduciary duty towards shareholders and investors. In particular, we apply the zero tolerance principle to bribery, embezzlement, information manipulation, and violation of sexual ethics, and have established policies to prevent individuals responsible for undermining corporate value or infringing shareholder rights and interests from being appointed as an executive.
Ensure all Board members are not of a single gender	O	At the time of submitting this report, members of our Board of Directors are not of a single gender.
Establish an independent internal audit body (organization supporting internal audit operations)	O	Our Corporate Audit under the Corporate Compliance and Ethics Team plays a supporting role for the internal audit body to assist the Audit Committee in performing its audit work. Activities spanning operating the Audit Committee and supporting its work and assessing the internal accounting control system are all undertaken independently of top management and controlling shareholders, and the results are directly reported to the Audit Committee on a regular basis.
Ensure the presence of accounting or financial experts within the internal audit body	O	The Audit Committee is solely composed of three or more outside directors pursuant to our Articles of Incorporation and the Operational Regulations of the Audit Committee. One or more members of the Audit Committee are appointed for their accounting of financial expertise as stipulated by the Commercial Act.
Ensure the internal audit body convenes meetings with external auditors at least once every quarter without the attendance of senior management	O	Our external auditors report quarterly/semi-annual financial statement review results and yearly audit results to the Audit Committee at least once every quarter without the attendance of top management, and the consultations made with external auditors are incorporated into our internal audit work when deemed necessary.
Establish procedures for the internal audit body to access business-related critical information	O	The Audit Committee operates in accordance with the Articles of Incorporation and the Operational Regulations of the Audit Committee independently of top management and controlling shareholders. Pursuant to the Operational Regulations, the Audit Committee may audit the work of directors as part of its corporate accounting and work audit operations, request directors to report on the Company's operations, or investigate the Company's business operations and financial status. The Committee may also seek advice from external experts at the Company's expenses if necessary, and utilize the supporting organization of our internal audit body to perform necessary procedures including accessing and reviewing important work documents.

Board Assessment

We introduced the Board assessment system in 2010 and have since performed annual assessments in the first quarter of each year. All directors evaluate the Board of Directors and their associated committees, and the assessment results serve as reference data in determining director compensation and appointing outside directors. Such assessments cover four areas and 27 items, including the roles and responsibilities of the Board and its structure and operation, along with six to nine additional items set for each committee.

Board Compensation

Director compensation is determined by the Compensation Committee under the Board which is exclusively composed of outside directors within the limit approved by the Annual General Meeting of shareholders pursuant to Article 388 of the Commercial Act and Article 36 of our Articles of Incorporation.

Compensation for the CEO and Inside Directors

- Pay: 1/12 of total base annual salary paid each month in full consideration of the position and the roles and responsibilities assumed to perform the given duty
- Performance bonus: 60% quantitative assessment tied to financial performance of the fiscal year and 40% qualitative assessment made on ESG implementation and other key business activities
- Assessment items for performance bonus (as of FY 2023)
  - Quantitative assessment (60%): Consolidated operating profit (20%), consolidated operating cash flow (10%), consolidated sales (10%), consolidated ROA (10%), stock prices (10%)
  - Qualitative assessment (40%): ESG (10%), business (15%), investment/technology (10%), personnel (5%) and other key business activities

*ESG (10%) covers total carbon emissions (environment), Total Recordable Injury Frequency Rate (TRIFR) (safety), and global ESG issue management status among others.

**Our criteria for determining individual compensation for the CEO and registered executives and specific payment details are disclosed through annual reports. Please refer to the Business Report for FY2023 (pp.719-728).

Compensation for Outside Directors

- Compensation for outside directors is determined at an appropriate level by taking into account the work they perform, benchmarks of similar-sized companies, and social perceptions among others.

Board of Directors Special Page

Robust ESG Risk Management Led by the Board

Following the launching of POSCO Holdings in 2022, we have been establishing a Group-wide ESG risk response system to effectively address internal/external ESG risks as a holding company. Specifically, the Group ESG Council engages in in-depth discussion of key ESG agendas facing POSCO Group under the leadership of top management and the ESG Session gathers together all inside and outside directors, systematically ensuring that the Board of Directors leads the way in making important ESG decisions at the Group level.

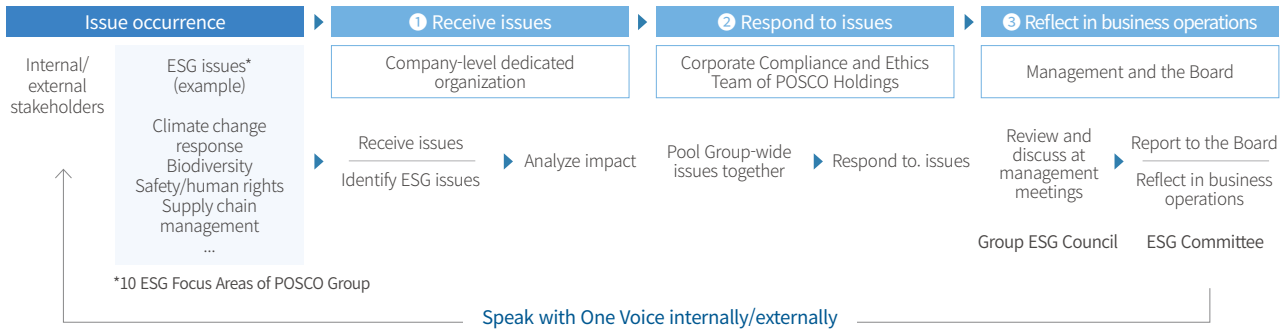
POSCO Group's ESG Risk Management System



Category	Attendees	Key Roles
ESG Session (annual)	• Board of Directors (all outside directors and inside directors) • Representative Directors of key operating companies	• Discuss Group's mid/long-term ESG management strategic directions • Discuss Group's pending ESG issues
ESG Committee (year-round)	• 3 outside directors, 1 inside director	• Establish Group-wide ESG strategies, policies, and management systems • Regularly consult with leadership of key operating companies to review ESG issues and responses • Publish POSCO Holdings' sustainability reports and communicate with investors
Group ESG Council (quarterly)	• CEO of the holding company • Representative Directors of 4 key operating companies, Head, Safety Health Environment Division of POSCO • Executives from the holding company: Chief Strategy Officer, Battery Materials Business Office, Head of Carbon Neutral Team, Head of Corporate Strategy Team, Head of Finance IR Team, IR, Carbon Neutral Strategy, Infrastructure Business Management, Head of Corporate Compliance and Ethics Team (Secretary General)	• Review operating companies' low-carbon policies and safety/environmental/health plans • Review/discuss implementation status and issues at respective operating companies • Report the consultations made to the Board of Directors or the ESG Committee of the holding company
Group ESG Working-level Committee (bi-monthly)	• Corporate Compliance and Ethics Team of the holding company • Dedicated organizations at 11 operating companies	• Share ESG issues at respective operating companies and discuss countermeasures → Propose key ESG issues as agendas for the Group ESG Council • Support operating companies to enhance ESG response capabilities and jointly respond to ESG assessment

ESG Issue Management Process

Systematically receive and manage ESG-related requirements from key stakeholders at the Group level and incorporate them into business operations when the need arises for response, and operate a communication system to speak with One Voice in handling ESG issues



Incorporation into Business Operations(example)

Category	Agenda Reported to the Board of Directors	Agenda Incorporated into Business Operations
Policy revision/ development	POSCO Holdings' sustainability reporting plan	• Established a Group-wide ESG strategic framework • Established/revised Group-wide ESG policies (14 policies)
System change/ process improvement	POSCO's carbon reduction results and plans	• Approved the installation of electric arc furnaces • Initiated the design of a HyREX demonstration plant
	Supply chain ESG management strategy	• Created a supply chain management organization, work ongoing to establish a supply chain due diligence system
	POSCO's ESG data portal app development results and future responses	• Pursued the standardization of Group-wide ESG data • Work ongoing to develop an integrated Group-level portal app

Board of Directors Special Page

Board Operations in 2023

Board of Directors

Session	Date of Meeting	Attendance	Agenda	Result of Voting
1st	Jan. 27, 2023	12/12	1. Approval of the 55th financial statements and schedule for the general meeting of shareholders	Modified and approved
			※**Reporting items** - Consolidated business performance in 2022 - Operational status of the internal accounting control system in 2022 - Operational status assessment of the internal accounting control system in 2022 - Implementation of the decisions made by the Board - Status of and plans for robotic automation solution business	
2nd	Feb. 16, 2023	12/12	1. Recommendation of inside director candidates and non-standing director candidates	Approved
			※**Reporting items** - Results of assessing adherence to compliance control standards - Construction of EAF #1 at the Gwangyang Steelworks	
	Feb. 16, 2023 Feb. 20, 2023	12/12	2. Revisions to the Articles of Incorporation	Approved
			3. Agendas for the 55th general meeting of shareholders	Approved
3rd	Mar. 17, 2023	12/12	1. Appointment of the Chair of the Board of Directors	Approved
			2. Appointment of committee members	Approved
			3. Appointment of Representative Directors and their designation as inside director	Approved
			4. Treasury stock disposal with regards to executive stock grant in 2022	Approved
			5. Relocation of the Headquarters	Approved
			※**Reporting items** - Establishment of POSCO's maintenance subsidiary	
4th	Apr. 7, 2023	12/12	1. Investment in Indonesian nickel refinery business for battery production purposes	Approved
			※**Reporting items** - Mid-term shareholder return policy	
5th	May 12, 2023	12/12	1. Resolution on dividend payment for Q1 2023	Approved
			2. Domestic nickel sulfate refining joint venture	Approved
			※**Reporting items** - Consolidated business performance for Q1 2023 - Ways to improve POSCO Group's IP competitiveness - Operational status of the ESG risk management system in 2022 - Board activity outcomes and assessment results for 2022 - Key management issues of operating companies	
6th	Jun. 16, 2023	12/12	1. Investment in hydrometallurgy processes for nickel used for battery in Indonesia	Approved
7th	Aug. 8, 2023	12/12	1. Resolution on dividend payment for Q2 2023	Approved
			2. Transfer of steel-related business previously owned by POSCO Holdings and acquisition plan of POSCO's asset	Approved
			※**Reporting items** - Key management issues of operating companies	
8th	Nov. 3, 2023	12/12	1. Resolution on dividend payment for Q3 2023	Approved
			2. Amendments to the model house acquisition plan	Approved
			3. 2024 safety and health plan	Approved
			※**Reporting items** - Consolidated business performance for Q3 2023	
9th	Dec. 19, 2023	12/12	1. Amendments to the Operational Regulations of the Board of Directors to establish POSCO-style Governance	Modified and approved
			2. Medium to long-term management strategies and 2024 consolidated management plans	Approved
			3. Liquidation of financial investment stocks	Approved
			4. Acquisition of POSCO WIDE shares from POSCO E&C	Approved
			5. FY2024 brand licensing contract for POSCO	Approved
			※**Reporting items** - Results of assessing adherence to compliance control standards in 2023 - Operational plans for the year-end dividend reference date in 2023	
10th	Dec. 21, 2023	12/12	1. Operation plan of the CEO Candidate Recommendation Committee	Approved

Board of Directors Special Page

Board Operations in 2023

Director Candidate Recommendation Committee

Date of Meeting	Attendance	Agenda	Result of Voting
Jan. 11, 2023	3/3	1. Qualification assessment and recommendation of outside director candidates	Approved
Feb. 16, 2023	3/3	1. Qualification assessment and recommendation of outside director candidates	Approved
		2. Qualification assessment of inside director and non-standing director candidates	Deliberated
		3. Deliberation on the appointment of committee members	Deliberated
Nov. 2, 2023	3/3	1. Resolution on the operation of the Outside Director Recommendation Advisor Panel in 2024	Approved
		※**Reporting items** - Improvement of the outside director appointment process in 2024	

Compensation Committee

Date of Meeting	Attendance	Agenda	Result of Voting
Jan. 27, 2023	4/4	1. Company-wide business performance assessment in 2022	Approved
Nov. 17, 2023	4/4	1. Establishment of operational guidelines in line with the clawback mandate for the New York Stock Exchange-listed company	Approved

Finance Committee

Date of Meeting	Attendance	Agenda	Result of Voting
Apr. 4, 2023	4/4	1. Investment in battery-grade nickel refining business in Indonesia	Deliberated
May 9, 2023	4/4	1. Domestic nickel sulfate refining joint venture	Deliberated
Jun. 14, 2023	4/4	1. Investment in hydrometallurgy processes for nickel used for battery in Indonesia	Deliberated
		※**Reporting items** - POSCO's stainless steel upstream joint venture in Indonesia	
Aug. 2, 2023	4/4	1. Transfer of steel-related business previously owned by POSCO Holdings and acquisition plan of POSCO's asset	Deliberated
		※**Reporting items** - Consolidated business performance for Q2 2023 - Dividend payment for Q2 2023	
Oct. 31, 2023	4/4	1. Venture fund investment to discover new growth business	Approved
		※**Reporting item** - Amendments to the model house acquisition plan	
Dec. 14, 2023	4/4	1. Liquidation of financial investment stocks	Deliberated
		2. Acquisition of POSCO WIDE shares from POSCO E&C	Deliberated
Dec. 14, 2023 Dec. 21, 2023	4/4	3. Establishment of a rare gas separation and purification joint venture *Meeting adjourned and resumed in December 21 to approve this item	Approved

Audit Committee

Date of Meeting	Attendance	Agenda	Result of Voting
Jan. 26, 2023	3/3	1. Agreement on the appointment of the person in charge of the internal audit department	Approved
		2. Operational status assessment of the internal accounting control system in 2022	Approved
		3. Approval of the audit/non-audit service contract for POSCO Holdings and subsidiaries	Approved
		4. Audit Committee activities in 2022	Approved
		※**Reporting items** - Operational status of the internal accounting control system in 2022	
Feb. 15, 2023	3/3	1. Internal audit results for 2022	Approved
		2. Internal audit results for 2022 and 2023 plan	Approved
		※**Reporting items** - External audit results for 2022	
Feb. 20, 2023	3/3	1. Deliberation of the agenda items for the general meeting of shareholders	Modified and approved
Mar. 17, 2023	3/3	1. Appointment of the Chair of the Audit Committee	Approved
Apr. 27, 2023	3/3	1. Internal audit results for consolidated financial statements for Q1 2023	Approved
		※**Reporting items** - 20-F audit results for 2022 and external review results for Q1 2023 consolidated financial statements	
Aug. 4, 2023	3/3	1. Internal audit results for H1 2023 and plans for H2 2023	Approved
		2. Internal audit results for Q2 2023 consolidated financial statements	Approved
		3. Assessment results for external auditor activities in 2022	Approved
		※**Reporting items** - External review results for Q2 2023 consolidated financial statements	
Oct. 13, 2023	3/3	※**Reporting items** - PCAOB inspection trends and others	
Nov. 6, 2023	3/3	1. Approval of the non-audit service contract for POSCO FUTURE M	Approved
		2. Internal audit results for Q3 2023 consolidated financial statements	Approved
		※**Reporting items** - External review results for Q3 3023 consolidated financial statements	
Dec. 19, 2023	3/3	1. Approval of the audit/non-audit service contract for POSCO Holdings and subsidiaries	Approved

Board of Directors Special Page

Board Operations in 2023

ESG Committee

Date of Meeting	Attendance	Agenda	Result of Voting
Jan. 26, 2023	4/4	1. Participation in the rights issue of POSCO Silicon Solution to expand its Si anode capacity	Approved
		※**Reporting items** - Group-wide ESG performance in 2022 - Rolling out of the 2050 net zero roadmap	
Mar. 15, 2023	4/4	※**Reporting items** - Comparison of hydrogen reduction steelmaking technology developments - Status of government support for net zero and overseas cases - POSCO Group's ESG management plan for 2023	
May 10, 2023	4/4	1. Appointment of the Fair Trade and Compliance Manager	Approved
		2. POSCO INTERNATIONAL brand licensing agreement	Approved
		3. POSCO Holdings' sustainability reporting plan	Approved
		※**Reporting items** - Operational status of the ESG risk management system in 2022 - Group-wide ESG performance in Q1 2023	
Jun. 14, 2023	4/4	※**Reporting items** - Low-carbon, eco-friendly global oversight/supervision policies and implications - Investment in hydrometallurgy processes for nickel used for battery in Indonesia - POSCO's stainless steel upstream joint venture in Indonesia	
Aug. 3, 2023	4/4	1. Transfer of steel-related business previously owned by POSCO Holdings and acquisition plan of POSCO's asset	Deliberated
		2. Acquisition of POSTECH's stake in POSCO Venture Capital	Approved
		※**Reporting items** - Operational status of the fair trade Compliance Program in H1 2023	
Sep. 27, 2023	4/4	1. Amendments to the POSCO Center lease agreement in 2023	Approved
Oct. 31, 2023	4/4	1. Venture fund investment to discover new growth business	Approved
		※**Reporting items** - Amendments to the model house acquisition plan - Group-wide ESG performance in Q3 2023 - Physical risk analysis results for key operations and responses	-
Dec. 15, 2023	4/4	1. Liquidation of shares in Woori Financial Group	Deliberated
		2. FY2024 brand licensing contract for POSCO	Deliberated
		3. Acquisition of POSCO WIDE shares from POSCO E&C	Deliberated
		4. Liquidation of POSCO Holdings' shares in POSCO E&C and NEH	Approved
		5. POSCO Center lease agreement for 2024	Approved
		6. Purchase of RIST-owned research equipment in line with the transfer of research function to RIST	Approved
		※**Reporting items** - Operational status of the fair trade Compliance Program in H2 2023 - Status of POSCO Group's ESG expert acquisition and development - Supply chain ESG due diligence results and future plans	-

ESG Session

Date of Meeting	Attendance	Agenda
Jun. 16, 2023	12/12	Key issues for ESG/sustainability disclosure and status of the ISSB standards POSCO FUTURE M's net zero roadmap POSCO INTERNATIONAL's net zero roadmap

ESG Reporting in 2023

Group ESG Council

Date of Meeting	Agenda
Mar. 24, 2023	POSCO Group's ESG management plans for 2023 POSCO's corporate citizenship implementation directions for 2023 2023 Plan to reinforce health and safety at the Group level 2050 net zero roadmap rolling-out and One-Voice EU CBAM trends and response plans Mid/long-term plan to respond to RE100 2022 sustainability reporting plan
Jun. 16, 2023	Substituted by the ESG Session
Aug. 25, 2023	Supply chain ESG due diligence results and future plans Cases of establishing supplier ESG assessment systems Advance into resource circulation business by building a value chain for discarded fishing nets Physical risk analysis results for key operations and response plans
Nov. 9, 2023	Group-wide ESG data portal app development results and future plans Human rights management assessment results for Myanmar operations Scope 3 emissions calculation results for POSCO FLOW's logistics operations and reduction plans Plans to adopt internal carbon pricing

Protecting Shareholder Rights

STRATEGY

Overview of Shareholding and Shareholders

Share Issuance

According to the Articles of Incorporation, POSCO Holdings is authorized to issue 200,000,000 shares. Out of 96,480,625 shares issued, 11,909,395 shares were retired, and this brings the total number of shares outstanding to 84,571,230 (common) shares as of May 2024. We do not have any different classes of shares but issued common shares only.

Overview of Shareholding and Shareholders (as of the end of 2023)

Category	Shared Owned (number of shares)		Ownership (%)
	End of 2022	End of 2023	End of 2023
Largest shareholder: National Pension Service	7,706,725	5,393,999	6.4
BlackRock*	4,390,734	4,206,522	5.0
Registered executives	11,317	15,249	0.0
Treasury shares	8,722,053	8,695,023	10.3
Others	63,740,401	66,260,437	78.3
Total	**84,571,230**	**84,571,230**	**100**

*Based on the US SEC disclosure made on Apr. 6, 2023

Stock Trends

Category	2021	2022	2023
High (KRW)	409,500	306,500	658,000
Low (KRW)	245,500	211,000	272,000
Year-end closing price (KRW)	274,500	276,500	499,500
KOSPI Index (year-end)	2,978	2,236	2,655
Market capitalization (year-end, KRW million)	23,932,786	23,383,945	42,243,329

Shareholder Participation System

Promoting Participation of Minority Shareholders

POSCO Holdings introduced electronic voting to facilitate the participation of minority shareholders and protect their rights. We also promote proxy solicitation for all shareholders through disclosures, and upload the proxy solicitation form on our website to make it easier for shareholders to exercise their voting rights through proxy. Our Annual General Meeting of Shareholders held in March 2024 was broadcast live online to improve shareholders' convenience.

- Electronic voting: Inform the methods of electronic voting through AGM convocation notices and pop-ups on our website
- Disclosure of proxy solicitation

Protecting the Rights and Interests of Shareholders

Voting Rights

We follow the one share one vote principle to guarantee equal rights for all shareholders.

- Date of the AGM: Mar. 21, 2024
- Date of convocation notice: Feb. 21, 2024 (4 weeks prior to the AGM)
- Disclosure of audit reports: Mar. 13, 2024 (after convocation notice)
- Webpage detailing shareholders' exercise of voting rights

Category	54th AGM	55th AGM	56th AGM
Date of AGM	Mar. 18, 2022	Mar. 17, 2023	Mar. 21, 2024
AGM held outside the peak dates	Yes	Yes	Yes
Voting via mail	Yes	Yes	No
Electronic voting	Yes	Yes	Yes
Proxy solicitation	Yes	Yes	Yes

Shareholder Proposals

POSCO Holdings operates the shareholder proposal process pursuant to the nation's Commercial Act.

- Our minority shareholders may make shareholder proposals pursuant to Article 363-2 of the Commercial Act (Shareholders' Right to Make Proposals) in accordance with applicable laws and regulations.
- Shareholders who own at least 3% of the voting shares issued or at least 0.5% of shares issued at least six months before the AGM may propose certain matters as the agenda for the AGM six weeks prior to the AGM, and may submit their proposals to directors either in writing or electronically.

[Adoption of Cumulative Voting (2004)]

- When the AGM is convened for the purpose of appointing two or more directors, shareholders who own shares equal to or more than one hundredth of total shares issued excluding non-voting shares may request the company to implement cumulative voting either in writing or electronically at least six weeks before the AGM.
- In the case of cumulative voting, each shareholder has a number of votes that equal the number of directors to be appointed per every share they own. This ensures that shareholders exercise their rights in a way to allocate their votes to one or more director candidates. When directors are appointed through cumulative voting, the candidate who received the highest number of votes is appointed first, with other candidates following suit in the order of votes they earned.

[Introducing Shareholder Nomination for Outside Director Candidates (2018)]

Apart from shareholder proposals laid out in the Commercial Act, we have been receiving shareholder nominations since 2018 to allow shareholders to directly participate in identifying outside director candidates as a way to strengthen shareholder communication and build a pool of diverse outside director candidates. To this end, an official letter under the name of the Chair of the Director Candidate Recommendation Committee is sent to shareholders who have the right to make shareholder proposals pursuant to the Commercial Act approximately three to four months before the AGM, requesting them to nominate their candidates for outside director positions. Such nominations can be submitted either via e-mail or post.

- Candidates nominated by shareholders are reviewed for their qualifications by the outside director candidate recommendation advisory panel just like other candidates.
- At the AGM held in March 2024, shareholder nominations were received between November 9 and November 30 of 2023.

Protecting Shareholder Rights

STRATEGY

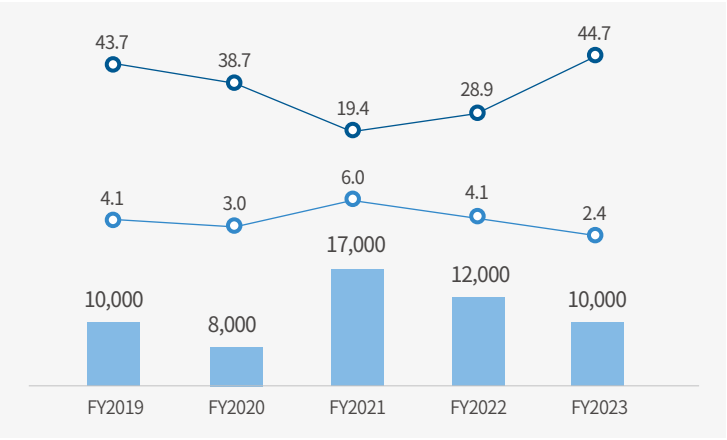
Dividends

Shareholder Return Policy

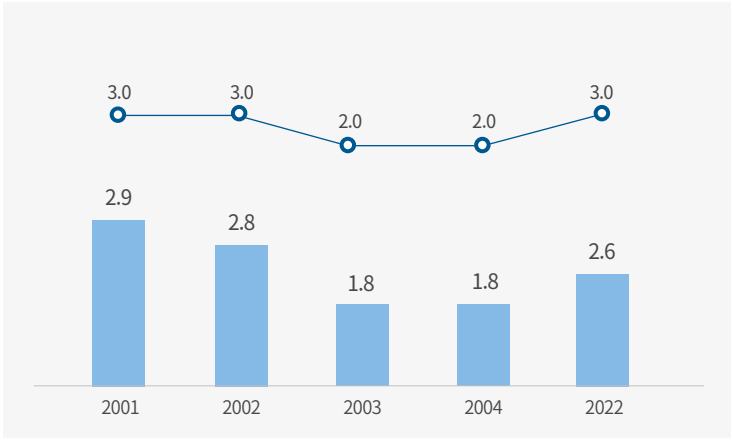
At the Board meeting held in January 2020, POSCO Holdings elaborated on our mid-term dividend policy to improve transparency and predictability for dividend payments. We disclosed our shareholder return goal of maintaining payout ratios in the 30% range, and determined payout ratios in a way to reconcile non-cash, one-time expenses based on consolidated net income attributable to controlling interests so that payout ratios are better aligned to business performance. During the period of our mid-term dividend policy between 2020 and 2022, we paid KRW 2.8161 trillion in cash dividends (24.8% in consolidated payout ratio) and retired treasury shares worth KRW 567.5 billion (based on book value) or 3% of total shares issued in 2022, setting a record in our corporate history by reaching 29.8% in total shareholder return or KRW 3.3836 trillion.

In April 2023, we announced a new 3-year shareholder return policy (2023~2025) to pay KRW 10,000 in base dividend per share by allocating 50~60% of annual non-consolidated free cash flow to dividendable funds and to direct the remaining dividendable funds towards additional shareholder return. This policy aims to achieve balanced shareholder return by seeking business growth for greater shareholder value all while ensuring stable dividend payments. In particular, shareholder return will be based on free cash flow that considers investment expenses to support our growth into a leader in eco-friendly future materials through the seamless implementation of our growth strategy. This will be paired with the decision to introduce base dividends to minimize the risk of fluctuation in shareholder return that may arise due to uncertainty in free cash flow. Meanwhile, our Articles of Incorporation were amended to proactively adopt an advanced dividend process of determining the dividend amount first and setting the dividend reference date later. Going forward, we will transparently communicate with stakeholders with regards to shareholder return and ensure our shareholders duly exercise their rights.

Dividends Paid



Treasury Shares Retired



Shareholder Communication

POSCO Holdings hosts conference calls presided by the CSO to make yearly and quarterly earnings releases. This is followed by regular Non-Deal Roadshows (NDR) held for institutional investors in Korea, Asia, the Americas, and Europe to introduce our mid/long-term strategic directions.

Our corporate information including IR materials is disclosed to all shareholders in a timely and equitable manner through the Korea Exchange, the electronic disclosure system of the Financial Supervisory Service, our website, and other disclosure inquiry systems. As we have listed our American Depository Receipts (ADR) on the New York Stock Exchange, we fulfill the obligation to make English disclosures on the electronic disclosure system of the US Securities and exchange Commission (SEC), and are working to release English disclosures on our website for foreign shareholders.

- Audit reports in English: Consolidated reports / Non-consolidated reports
- Business reports in English: 20-F disclosures (SEC)/ Abridged version of business reports submitted to the Korean Financial Supervisory Service

In March 2023, we opened the POSCO Holdings IR YouTube channel to meet the needs of individual investors and better connect to them. For one year, we uploaded 119 videos illustrating our key operations from the viewpoint of retail investors, and our subscribership reached over 23,100 persons with more than 29.97 million in total video views as of June 2024.

IR Activities in 2023

- AGM in 2023: 1 occasion
- IR events: 4 occasions
- SEC disclosures: 54 cases
- Conferences, NDRs and other IR activities: 161 occasions
- Financial Supervisory Service/Korea Exchange disclosures (excluding English disclosures and Fair Trade Commission disclosures): 66 cases

Information Security

GOVERNANCE

Group CISO Council

Group CISO Council

Following its establishment in March 2022, POSCO Holdings appointed its information security executive as the CISO (Chief Information Security Officer). The CISO also serves as the Chief Privacy Officer (CPO), overseeing both information security and privacy management. At POSCO Group, information security management is performed by the CISO and dedicated personnel in the Technology Strategy Team.

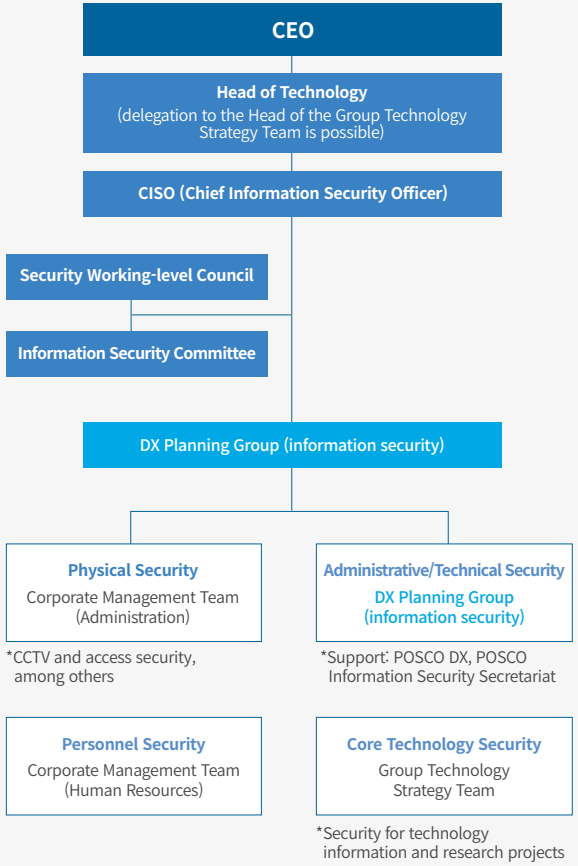
POSCO Holdings' CISO convenes the Group CISO Council quarterly to strengthen information security management across the Group. The Information Security Committee is tasked with discussing the strategic direction and implementation plans for company-wide information security policies. The Committee is chaired by the CISO of POSCO Holdings, and includes information security executives and group heads from 25 operating companies.

Bolstering Expertise

To enhance the information security expertise of its executives, POSCO Holdings mandates information security training as a core component of the annual orientation for newly appointed executives. In 2023, this training was conducted in for newly appointed executives.

Information Security Management System

Strengthen the information security system through collaboration with departmental experts at POSCO Holdings



Board of Directors

Policy and Guideline

POSCO Holdings has established regulations on information security and data privacy based on its core information security principles, implementing nine detailed guidelines. These regulations and guidelines are revised annually to reflect the latest laws, institutional frameworks, and both internal and external conditions, after review and approval by the company-wide Information Security Committee. Information security regulations and guidelines are made accessible by all employees through the company regulation system, and updates are posted on the Enterprise Portal. Through these measures, POSCO Holdings ensures systematic management of its regulations and guidelines, actively encouraging all employees to comply fully with them.

Nine Types of Information Security Guidelines

Information Security Regulations, Personal Information Protection Regulations, Document Management Guidelines, Information System Security Guidelines, Head Office Access and Facility Security Guidelines, Technology Information Security Management Guidelines, Future Technology Institute Security Guidelines, Security Guidelines for Retired Executives with Key Technologies Knowledge, Personal Video Information Management Guidelines

Information Security Policy Operation System

Plan	**Develop information security policies and plans** Establish information security regulations and guidelines and develop information security plans aligned with business goals
Do	**Allocate resources and implement policies** Allocate human, technology and financial resources to implement regulations and guidelines, and conduct trainings and exercises for employees
Check	**Measure and review outcomes** Assess the effectiveness of policies and continuously monitor their implementation
Act	**Seek continuous improvement** Identify issues and enhance policies, plans and processes

Information Security

STRATEGY

Establishing Group-level Information Security Strategy

POSCO Holdings' establishes and implements the next year's information security strategy based on the previous year's security operations.

Ensure information security operations in line with global standards
- Maintain ISO 27001 certification through follow-up audits

Respond to information security laws
- Information security disclosures by June, data privacy breach liability insurance by July, and support for joint actions at the Group level

Ensure change management for employees
- Security training to executives and new/experienced hires (year-round), e-learning training management for all employees

Update information security regulations and guidelines
- Manage nine types of information security guidelines
- Deliberate and consult on regulations through the Information Security Committee

All Operating Companies

Conduct internal/external security inspections
- Inspection for phishing emails, data leaks and conduct internal simulation hackings.

Improve information security management performance at the Group level
- Information security consulting for operating companies: Provide tailored consulting to enhance their security performance
- Information security assessment for operating companies: Update the checklist in line with ISO 27001 and ISMS-P and perform on-site assessments
- Group CISO Council (quarterly): Share issues from various operating companies for a collective response, gather feedback individually from these companies, and implement improvements

Bolster information security expertise at the Group level
- Provide ISO 27001 auditor qualification courses (completed by 35 persons)
- Ensure change management for information security personnel at operating companies

Improve vulnerabilities to substantially improve technical security performance
- Advance information leak monitoring
- Establish Group-wide basic security infrastructure, integrate management through security cloud migration
- Integrate Group security infrastructure with the integrated security monitoring system, enhance security control scenarios
- Make assessment and improvement through simulation hacking of Group websites (75) to prevent external intrusion threats

Promote external cooperation (government and private sector)
- Host industry security conferences (National Core Technology Security Academy of Korea, National Intelligence Service, Korean Association for Industrial Technology Security, etc.)

Possession and Management of National Core Technologies

To protect national core technologies, POSCO Group proactively adopts advanced security technology and policies and has established a stringent information security framework. This minimize the risk of technology leaks and strengthens security consciousness through ongoing security training and awareness activities. We regularly review and update our security system to respond to cyber threats, ensuring that national core technologies are securely managed and protected.

National core technologies possessed by POSCO Group 8 technologies: 6 for steel, 1 for electrical and electronics, and 1 for automobiles

*Companies possessing national core technology are obligated to take seven protective measures pursuant to Article 14 of the Enforcement Decree of the Act on the Prevention of Divulgence and Protection of Industrial Technology, to receive regular compliance assessment by the government.

Personnel Capacity Building

POSCO Group provides a range of training courses to help its information security personnel bolster their expertise.

Conduct international information security auditor qualification courses in August
- Target: Information security personnel of operating companies (35 persons)
- Content: ISO/IEC 27001 (information security management system), audit standards, mandatory control items, testing case studies, etc.

Manage ongoing changes for Group's information security personnel throughout the year
- Share updated regulations/guidelines in line with security-related regulatory amendments
- Share training content for data privacy, breach analysis and response, and cloud security

Training for All Employees

POSCO Group conducts mandatory annual training for all employees to enhance information security management. Information security personnel also conduct department-specific training and specialized training for employees in roles that require it. Each year, all employees at POSCO Holdings sign a security pledge and consent to the collection, use and third-party sharing of their personal information.

Information security trainings provided in 2023 (including contract workers)
- Compulsory training: 100% completion rate among employees
- Company-wide notice: Relevant training materials posted 4 times
- Security training for employees performing special tasks: 100% completion rate for separate training provided to secretarial positions with high exposure to confidential tasks

Information Security Budget and Investment

POSCO Holdings' information security investments constitute 6% of the total IT budget, reflecting organizational priorities, internal and external threats, and regulatory demands. The effectiveness of Investments made in information security is verified through regular performance measurement, and such investments contribute to organizational risk management and regulatory compliance.

Information Security

RISK MANAGEMENT

ISO 27001 Operation

POSCO Group manages information security risk by conducting follow-up and renewal audits for ISO/IEC 27001 and ISMS certifications at its major operating companies.

Operating companies certified to ISO 27001 and the ISMS

- 8 companies: POSCO Holdings, POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, eNtoB, POSCO WIDE

*Two companies, POSCO DX and eNtoB, have achieved 100% ISMS certification, as it is essential for their operations, while the other six companies have voluntarily obtained certification.

Company	Certification
POSCO Holdings	ISO/IEC 27001
POSCO	ISO/IEC 27001
POSCO INTERNATIONAL	ISO/IEC 27001
POSCO E&C	ISO/IEC 27001
POSCO FUTURE M	ISO/IEC 27001
POSCO DX	ISMS
eNtoB	ISMS
POSCO WIDE	ISO/IEC 27001

Internal Information Security Audit

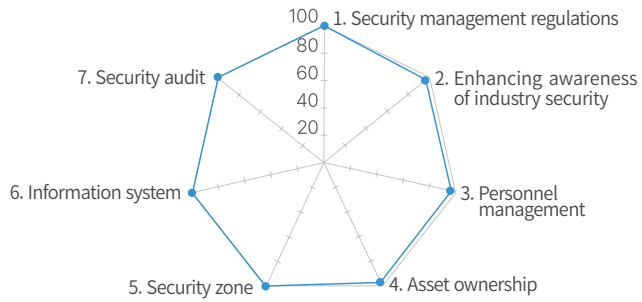
To mitigate information security risk, POSCO Group conducts annual information security audits for its operating companies, overseas subsidiaries, and on-site contractors. The results of these assessments guide our targeted support for improvement in areas lacking dedicated information security personnel, managing information security risks across our supply chains.

Domain (71)	Key Detail
Security management System (13)	Specify security management and organization, criteria, activities, etc.
Raising security awareness (9)	Improve training, reward programs, and personnel expertise
Personnel management (6)	Security control in each of the hiring, employment, and retirement stages
Owned assets (5)	Information asset classification, management, and leak control
Security zones (7)	Security zone designation, management, and access control
Information system (18)	IT and security infrastructure development and operational management
Security audit (2)	Security audit and inspection, security incident response system
Personal information (11)	Collection, retention, destruction of personal information, management of video information, etc.

Improvements made in 2023 based on information security assessment results

- Operating company (20 companies): Conducted on-site information security assessments
- Overseas subsidiary: Took action on vulnerabilities for websites (70 sites) and internal systems (262 cases)
- On-site contractor: Delivered tailored consulting to 65 companies through on-site visit

Management Level by Domain



METRICS AND TARGETS

Metrics and Targets

Enhancement of Group-wide information security management performance

- Vulnerability improvement based on information security assessment results: Achieving over 85% across all levels

Implementation Plan for 2024

POSCO Holdings plans to develop and implement a wide array of plans to elevate information security management performance at the Group level over the mid-to-long term. We have analyzed the types of emerging hacking attacks and integrated the results into developing an information security review checklist. We focused on preemptively addressing information security threats and protecting core technologies, and developed assessment plans centered around preventing any leak of core technology for rechargeable battery materials. To establish a system capable of effectively detecting and responding to cyber threats, we are planning to refine the phase-specific operational methods of our integrated security monitoring system to promptly respond to external intrusions across the Group. Furthermore, simulation hacking checks will be made at all levels to identify and improve vulnerabilities of our internal system with an aim to pursue comprehensive security reinforcement and prevent external intrusion threats.

Tax Payment

Policy

POSCO Group fully abides by our tax policy stipulating compliance with tax laws of the Republic of Korea and countries where we operate, prohibition of tax evasion, and basic principles on transfer pricing.

Transparent Tax Compliance

POSCO Group sincerely fulfills our obligation to file and pay taxes in accordance with the regulations of countries where we operate as well as domestic laws and regulations. We also faithfully adhere to our obligations as a taxpayer by submitting documents as stipulated by laws while maintaining transparent relationships with country-specific tax authorities.

POSCO Group affiliates make it a rule to engage in arm's length transactions with related parties pursuant to the OECD Transfer Pricing Guidelines and applicable country regulations, and provide tax authorities with BEPS (Base Erosion and Profit Shifting) reports each year. They also submit relevant reports when requested by foreign tax authorities for their transaction with related parties abroad.

Taxes Paid

(unit: KRW 100 million)

Financial Reporting	FY2022	FY2023	Note
Earnings before Tax	40,144	26,352	
Reported Taxes	4,539	7,893	
Reported Taxes Rate	11.31%	29.95%	
Corporate Income Taxes	9,321	6,230	Taxes paid according to applicable tax rates
Corporate Income Taxes Rate	23.22%	23.64%	
Cash Taxes Paid	27,736	7,274	
Cash Tax Rate	69.09%	27.60%	

Corporate Income Taxes Paid by Region (FY2023)

(unit: KRW 100 million)

Category	Country	Operating Company/Subsidiary	Major Business	Sales*	Operating Profit	Corporate Income Tax
Total				**1,270,800**	**50,357**	**8,423**
Domestic	Korea			925,324	43,568	6,191
		POSCO	Manufacturing and sale of steel materials	389,716	20,826	4,284
		POSCO INTERNATIONAL	Trading, resource development	285,369	9,510	2,007
		POSCO E&C	Plant, infrastructure, construction	95,346	1,707	912
		POSCO FUTURE M	Anode, cathode, refractory products	44,572	350	-270
		Others		110,321	11,176	-742
Overseas				345,476	6,789	2,232
Southeast Asia				116,883	3,905	357
	Indonesia	PT. KRAKATAU POSCO/POSCO-IJPC, etc.	Processing and sale of steel materials	38,641	3,388	222
	Vietnam	POSCO-Vietnam/POSCO-VST/PY-VINA, etc.	Manufacturing and sale of steel materials	25,394	123	21
	Singapore	POSCO INTERNATIONAL SINGAPORE, etc.	Trading	30,258	104	51
	Thailand	POSCO Thainox/POSCO-TBPC/POSCO-TCS, etc.	Processing and sale of steel materials	15,378	17	18
	Malaysia	POSCO-MKPC/POSCO-Malaysia, etc.	Processing and sale of steel materials	5,944	249	31
	Others	Others		1,268	24	14
	China	Zhangjiagang Pohang Stainless Steel, etc.	Processing and sale of steel materials	72,889	-1,290	162
	Japan	POSCO-JAPAN/POSCO INTERNATIONAL JAPAN, etc.	Trading of steel materials and others	35,791	589	159
	India	POSCO Maharashtra/POSCO-IPPC, etc.	Manufacturing and sale of steel materials	32,337	1,221	140
North America				29,805	1,477	703
	US	POSCO INTERNATIONAL AMERICA, etc.	Trading	25,462	536	73
	Canada	POSCAN	Sale of coal	4,343	940	630
Latin America				24,924	17	179
	Mexico	POSCO-Mexico/POSCO-MPPC, etc.	Manufacturing and sale of steel materials	24,921	433	179
	Others	Others		3	-416	-
Europe				26,259	-487	-19
	Poland	POSCO-PWPC, etc.	Processing and sale of steel materials	1,517	-38	8
	Italy	POSCO INTERNATIONAL ITALIA/POSCO-ITPC, etc.	Processing and sale of steel materials, trading	9,011	-20	-8
	Germany	POSCO INTERNATIONAL DEUTSCHLAND, etc.	Trading	9,470	60	9
	Others	Others		6,261	-489	-28
	Australia			5,555	1,613	543
Other regions	Others	Others		1,033	-257	9

*Sales before excluding related transactions

ESG Bonds

Issuing Convertible Green Bonds

In September 2021, POSCO Holdings successfully issued convertible green bonds* worth EUR 1.1 billion. This represents the first euro-denominated convertible green bonds that we ever issued. Following the issuance of USD 500 million sustainability bonds as the first to do so among global steel makers in July 2019, we have continued to build our successful track record in issuing ESG bonds, garnering attention among numerous ESG investors.

*Bonds issued specifically to fund eco-friendly projects designed to promote environmental preservation in the areas of renewable energy, EVs, and high-efficiency energy

How We Use ESG Bond Proceeds

POSCO Holdings is actively pursuing rechargeable battery lithium material business in step with the booming eco-friendly EV era. On the strength of our technology acquired in steel business and our relationship with global automotive customers, we aim to emerge as a key player in rechargeable battery materials such as lithium, cathode, and anode materials.

PosLX (POSCO Lithium Extraction), POSCO's proprietary lithium extraction technology, is conveniently applicable to both lithium brine and ore. To ensure reliable battery material supply, POSCO Holdings secured reliable suppliers of high-quality lithium brine (Argentina) and ore (Australia).

In 2021, we allocated EUR 216 million out of the bond proceeds to acquire a stake in the ownership of an Australian company producing nickel for battery. In 2022, EUR 473 million went to constructing a lithium brine commercialization plant in Argentina and a downstream plant in Korea, and EUR 122 million to building a lithium ore commercialization plant. In addition, EUR 103 million were spent in acquiring a stake in an all-solid-state battery and silicon anode materials maker. In 2023, the remaining proceeds were all invested in making additional investment in our lithium brine commercialization plant in Argentina.

[Sustainable Financing] Convertible Green Bonds Issued in September 2021

ISIN	Maturity	Currency/Issuance Value	Exchange Price (number of convertible shares) *As of the end of Dec. 2022	Premium	Convertible to
XS2376482423 (Reg S)	Sep. 1, 2026 (5 years)	EUR 1,065,900,000	KRW 456,470 (3,176,474 shares)	45%	POSCO Holdings' treasury shares

Green-qualified Project Investment Plan (EUR 1.1 billion)

Plan to invest in lithium, nickel and other rechargeable battery materials for the EV market

EUR 1.1 billion

EUR **913** million

Establish a lithium brine commercialization plant in Argentina, acquire a stake in an Australian nickel producer, etc.

EUR **154** million

Continue investing in rechargeable battery materials

Policy Support

Organization

POSCO Holdings provides policy support within the boundary deemed legitimate, and our Communication Team engages in handling Group-level government affairs.

POSCO Group's Policy Support Organization (2023)

Category	Company		Personnel	Key Activity
Domestic	POSCO Holdings	Policy support	11 persons	Oversee Group-level activities towards the government and the National Assembly
		International cooperation	10 persons	Oversee Group-level activities towards international associations, Korean diplomatic missions, and overseas chambers of commerce & industry
	POSCO		14 persons	Steel-related activities towards the government and the National Assembly
	POSCO INTERNATIONAL		6 persons	Energy/trade-related activities towards the government and the National Assembly
	POSCO E&C		5 persons	Construction/infrastructure-related activities towards the government and the National Assembly
	POSCO FUTURE M		4 persons	Rechargeable battery-related activities towards the government and the National Assembly
Overseas	POSCO EUROPE		1 person	Networking with EU's think tanks and policy experts, etc.
	POSCO EUROPE Brussels Office		2 persons	Respond to the EU Parliament/European Commission and monitor key legislative trends in the EU in relation to CBAM
	worldsteel		2 persons	Undertake projects under the section committee of the World Stainless Association
	POSCO AMERICA		3 persons	Monitor policy trends in the US

Policy

POSCO Group strictly prohibits any donations or sponsorships made for political purposes pursuant to our Code of Ethics, anti-corruption policy, and Korea's Political Funds Act.

- Code of Ethics: Specify that money and valuables, entertainment, or congratulatory/condolatory money should not be provided or requested under any circumstances, along with exceptions and detailed monetary thresholds
- Anti-corruption Policy: Abide by regulations in all countries where we conduct business, including the FCPA of the US and the Bribery Act of the UK as well as international standards including the OECD Convention on Combating Bribery, the UN Convention against Corruption, and the UN Global Compact
- POSCO Holdings' Board of Directors Operational Regulations: Donations worth KRW 100 million or more and below KRW 1 billion are subject to deliberations made by the ESG Committee, and donations and sponsorships valued at KRW 1 billion or more are deliberated and decided by the Board of Directors.

Policy Support

Memberships Fees Paid

(UNIT: KRW 1,000)

Company	Association	Country Affiliated with the Association	Purpose of Participation	Our Role	Fees Paid in 2022	Fees Paid in 2023
POSCO Holdings	worldsteel	Belgium	Jointly respond to global issues across the steel industry, from trends of industries in demand of steel to climate change and safety with an aim to promote the interests of the global steel industry	Help accelerate the low-carbon transition of the global steel industry by playing a leading role in hosting the worldsteel Breakthrough Technology Conference among others	908,125	929,010
	WEF (World Economic Forum)	Switzerland	Understand global economic trends and gain insights required to establish POSCO Holdings' business strategy	Strengthen networking with potential business partners and join hands in resolving global issues as a member	399,000	450,000
	American Chamber of Commerce in Korea	Republic of Korea	Expand opportunity to invest in the US and promote information exchange to promote bilateral trade	Contribute to promoting trade with the US including in steel and rechargeable battery businesses	-	180,000 (membership fees paid for the period from 2023 to 2025)
	Australian Chamber of Commerce in Korea	Republic of Korea	Engage in information exchange to ensure POSCO Holdings' smooth business conduct in Australia and promote bilateral trade	Contribute to promoting bilateral trade including in eco-friendly steel raw materials and lithium business	10,000	20,000
	Korea H2 Business Summit	Republic of Korea	Lead global hydrogen partnerships and engage in technology cooperation and exchange	Participate in the annual assembly in our capacity as a co-chair (founding member) and in global cooperation/technology cooperation/policy cooperation subcommittee meetings	450,000	150,000
	Clean Ammonia Council	Republic of Korea	Engage in domestic/overseas technology and information exchange to introduce ammonia-based hydrogen from overseas and use carbon-free fuel	Pursue cooperation and its alignment with lifecycle demonstration to lay the technological foundation for the entire life cycle of CO_2-free ammonia production, transport, extraction, and application to achieve net zero as a full member	2,000	2,000
	H2KOREA	Republic of Korea	Private sector-led consultative body to facilitate the hydrogen economy in Korea	Collect and use hydrogen-related data on domestic/overseas trends and statistics as an associate member	25,000	25,000
POSCO	Korea Iron & Steel Association (KOSA, including affiliated organizations)	Republic of Korea	Consultative body to strengthen the global competitiveness and sustainability of the Korean steel industry	Support public policy activities as the chair of the association (response to climate change/trade issues, etc.)	3,647,343	3,228,000
	Korea Enterprises Federation (KEF)	Republic of Korea	Economic organization aimed at improving corporate competitiveness and establishing a labor-management cooperation system	Attend various meetings on labor relations, ESG and others with the Group CEO serving as the vice chair	327,196	327,590
POSCO-EUROPE (Head Office)	Korean Economy & Business Association in Germany	Germany	Increase collaboration with Korean companies based in Germany and local response capabilities	Regularly meet with economic officials at state governments and investment authorities and participate in events hosted by the Korean Economy & Business Association in Germany	-	2,000 (EUR 2,850)
	European Steel Association	Germany	Secure market and distribution network data to expand exports	Attend conferences held by steel distributors to optimize POSCO Holdings' sales channels	4,967 (EUR 3,500)	4,987 (EUR 3,500)
POSCO-EUROPE (Brussels Office)	Association of Korean Industries in Belgium	Belgium	Collaborate with Korean companies operating in Belgium and boost local response capabilities	Identify EU's economic/political policy trends by attending regular/non-regular discussions	1,703 (EUR 1,200)	1,633 (EUR 1,200)
POSCO-AMERICA	National Foreign Trade Council	US	Foreign trade council to represent foreign companies in relation to tariff	Represent the position of foreign companies concerning tariffs at the Council	13,192 (USD 10,000)	13,192 (USD 10,000)
	Washington International Trade Association	US	Collect information on pending trade/industry policy issues and trends	Collect information on pending trade/industry policy issues and trends	462 (USD 350)	462 (USD 350)
	American Metals Supply Chain Institute	US	Engage in collective steel industry activities representing importers to the US market	Engage in collective steel industry activities representing importers to the US market	5,277 (USD 4,000)	5,277 (USD 4,000)
	US Chamber of Commerce	US	Collect information on trade/industry policies and trends and support outreach activities	Collect information on trade/industry policies and trends and support outreach activities	13,192 (USD 10,000)	13,192 (USD 10,000)
POSCO INTERNATIONAL	Chamber of Commerce and Industry (Seoul, Incheon, and Gwangyang)	Republic of Korea	Improve the core value of businesses based on diverse information and business networks	Serve as the chair of the international trade committee and support business networking	261,000	256,400
POSCO E&C	Construction Association of Korea	Republic of Korea	Contribute to the sound development of the construction industry	Collect information on the construction industry's pending issues and trends, participate in various policy and institutional improvements	647,417	673,471
POSCO FUTURE M	Korea Battery Industry Association	Republic of Korea	Consultative body to promote the global competitive edge of the Korean battery industry and its evolution into a national core strategic industry	Collaborate to boost the competitiveness of the Korean battery industry and undertake research projects, attend major exhibitions and forums (Interbattery, The Battery Conference, etc.)	65,000	90,000
	Battery R&D Association of Korea	Republic of Korea	Share R&D information across the battery industry and consult on technology development projects	Collaborate to boost the competitiveness of the Korean battery industry and undertake research projects, attend major exhibitions and forums (Interbattery, The Battery Conference, etc.)	-	30,000

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1. Labor Rights at POSCO ASSAN TST in Türkiye

WHAT IS THE MATTER?

Issues brought by the dismissal of employees at POSCO ASSAN TST, an overseas subsidiary of POSCO, in November 2017

POSCO ASSAN TST

A cold-rolled stainless manufacturing subsidiary established as a joint venture between POSCO and Kibar Holding of Türkiye in 2011

Overview of POSCO ASSAN TST (as of the end of 2023)

- ○ Equity structure: POSCO (60%), Kibar Holding (30%), POSCO INTERNATIONAL (10%)
- ○ Annual sales: Nearly 200,000 tons
- ○ Annual revenue/operating profit: KRW 416.7 billion/ -KRW 59.5 billion
- ○ Employees: 492 directly-employed persons (470 persons at the Izmit plant, 22 persons at the Istanbul office)



PROGRESS & PROSPECTS

We fully disclose the accurate facts, the efforts we have made so far, and our future plans as to the concerns over labor rights issues raised by stakeholders in relation to POSCO ASSAN TST.

1) Dialogue with the Union

PROGRESS

Facts

- In January 2018, the Birleşik Metal Workers' Union raised a lawsuit to challenge the company's decision not to approve the establishment of a labor union. While POSCO ASSAN TST won the first and second trials, the company lost the case in the final trial in June 2022.

※Grounds for losing the case
The first and second trials supported the company's claim that both the Istanbul office and the Izmit plant constitute POSCO ASSAN TST and thus the quorum was not reached to form a labor union. However, the final trial recognized the Izmit plant as a separate worksite to determine the quorum was reached (50% of total headcount).

Date	Union Members/ Total Employees	Compliance with the Quorum	Basis for the Court's Determination: Criteria for Union Membership Calculation
Nov. 15, 2017	212 / 440	Non-compliant (48.2%)	Included employees at the Istanbul office (Ministry of Labor)
Apr. 8, 2021	212 / 440	Non-compliant (48.2%)	Included employees at the Istanbul office (1st trial)
Jan. 20, 2022	214 / 442	Non-compliant (48.4%)	Included employees at the Istanbul office and 2 dismissed labor members (2nd trial)
Apr. 28, 2022	211 / 420	**Compliant (50.2%)**	**Excluded 22 employees at the Istanbul office (Supreme Court)**

- **It is not true that the company deliberately changed its location not to recognize the labor union.**
  Meanwhile, it is correct that the company modified its business registration. At the time of incorporation, the Izmit plant had not been built yet and the Istanbul office was initially registered as sales business in March 2011.
  Following the construction of the Izmit plant in February 2014, the plant was registered as metal business and the Istanbul office also followed suit in November 2017.
- **The company is more than willing to engage in dialogue with an official labor union should there be one, and has not done so since there was no official labor union to engage with following the court rulings.**
  It was the Birleşik Metal Workers' Union that has requested for engagement so far, not an official labor union of POSCO ASSAN TST.
  No company engages in dialogue with a specific labor union federation in the absence of an official labor union.

Progress

- The Birleşik Metal Workers' Union pursued once again the establishment of a labor union at POSCO ASSAN TST, and notified the company that it would stage a general strike on February 24, 2023, which did not happen.
  In March 2023, the Ministry of Labor in Türkiye made its final confirmation that the Union's request to approve a labor union at POSCO ASSAN TST was invalidated on the grounds that the Birleşik Metal Workers' Union failed to comply with the legal procedures and requirements specified in the nation's local Trade Unions and Collective Bargaining Law No. 6356.

※**Basis for the determination made by the Ministry of Labor in Türkiye to invalidate the request for establishing a labor union**
While Türkiye recognizes the individual freedom to join trade unions, such unions should meet the majority requirements within their company and gain approval as company union in order to exercise collective bargaining rights.

※**Legal requirements for labor unions to secure collective bargaining rights**
a. A trade union is established.
b. The trade union is recognized as official one when 1% or more of total employees working in the industry the union associates itself with join the union.
c. If the number of employees who are a member of the official trade union accounts for more than a majority of total employees of a company, the union may apply to form a labor union and gain collective bargaining rights.
d. The labor union may engage in collective bargaining negotiations, and if such negotiations fail to reach agreement, the union earns the right to stage a general strike.
- If a general strike is not staged within 60 days after the right to strike was granted, the company labor union is deprived of the right to collective bargaining (Article 60-1).
- For a general strike to be recognized as legitimate, one fourth or more of initial union members should retain their membership. If this number declines to below one fourth, it is possible to request that the general strike be suspended, and the strike ceases to have legal validity.

e. If a legitimate general strike is not viable, the labor union loses its approval. (see Q1, Article 75-6)

※**Article 75-6 of the Trade Unions and Collective Bargaining Law No. 6356 of Türkiye**
If it is confirmed that, for the purpose of verifying the authority of the union staging a general strike, three-quarters or more of the union members at the workplace have left the union on the date of applying for the union's establishment, either party may apply to the court to end the general strike. The notification on ending the general strike shall be issued on the date specified by the court according to the procedures laid out in Article 75-2 of this Law.

※**Article 60-1 of the Trade Unions and Collective Bargaining Law No. 6356 of Türkiye**
The decision to strike shall be based on the conditions specified in the 5th paragraph of Article 50 of this Law. Such a decision may be obtained within 60 days from the date of notification of the dispute report, and can be implemented from the date of notifying to the other party six working days in advance. If a strike decision is not made within this period or the date of strike implementation is not notified to the other party, the authority to engage in collective bargaining shall be forfeited.

1. Labor Rights at POSCO ASSAN TST in Türkiye

2) Reinstatement of Dismissed Employees

PROGRESS

Facts

- Dismissed employees raised a lawsuit to confirm that they were wrongfully dismissed in November 2017, and the decision of the Supreme Court was finally issued in May 2021. **The Supreme Court ruled that 67 out of 69 dismissed employees, excluding two who dropped their lawsuit midway, (1) be reinstated, and (2) be paid labor union compensation.**

> ※**Specifics of the final ruling issued by the Supreme Court**
> (1) Reinstate those employees who were unfairly dismissed
> (2) Pay wages for the period between the submission of reinstatement application and the actual date of reinstatement (up to 4 months of pay)
> Pay employees who were members of the trade union at the time of dismissal one year of wages as labor union compensation

- It is not true that nearly 70 employees were dismissed and involved in litigation as reported by some media.
Of those 69 dismissed employees, two were dismissed for personal misconduct irrelevant to the labor rights issues and voluntarily dropped their lawsuit during the proceedings.

Progress

- **The company (2) paid all labor union compensation, and (1) determined that it was preferable to provide additional compensation rather than abruptly reinstating dismissed employees who should have found new jobs to maintain their livelihood more than three years after their dismissal on the basis of the 'employer's elective right to labor contracts' stipulated in Article 21 of the nation's Labor Law No. 4857.**

> ※**Article 21 of the Labor Law No. 4857 of Türkiye**
> If an employer does not re-employ a dismissed employee, the employer shall provide the employee with compensation worth 4 months' pay at a minimum and up to 8 months' pay. When a court rules that the dismissal was wrongful, the court should determine the amount of compensation to be paid to the employee who was not re-employed.
> The employee, until the court's ruling is finalized, may receive maximum possible pay and other entitlements for the period of unemployment until he/she finds employment.

- The company transferred compensation for all 67 plaintiffs to the litigation representative, and these dismissed employees all received their compensation.
- If dismissed employees wished to be reinstated, they should have refused to accept the compensation and requested reinstatement to the company. None of them have made such reinstatement requests, and all of them received compensation.
- **Afterwards, 62 of the 67 plaintiffs who had received compensation filed a separate lawsuit to 'seek additional compensation', and 56 of the 62 cases raised have been resolved through the payment of extra compensation* to date.**
*The plaintiffs demanded compensation corresponding to the ① wage raises and ② benefits that they missed during the dismissal period, and individually filed 62 lawsuits as the amount of compensation varies according to their job level and other factors. The proceedings are currently ongoing.
- As to the remaining six lawsuits, it is not that they are pending due to any unresolved disputes, and will be consecutively closed as the court determines their individual compensation amounts.
→ **All 62 cases were closed as of October 31, 2024, following the court's orders (updated on Nov. 11, 2024).**
- Both the president and the HR manager who were with the company back in 2017 have been replaced. Currently, the company holds regular labor-management meetings between 4 leaders of the employee representative body and the president, which serves as an official channel to heed employee feedback.

PROSPECTS

Future Plan

- The new president, as the chief executive of POSCO ASSAN TST, is fully aware of the importance of these labor rights issues, and has disclosed a letter under his name to commit to transparent communication with external stakeholders and responsible improvement efforts.

This letter specifies that no request for reinstatement has been made by dismissed employees over the years, and embodies the company's strong commitment to respecting labor rights.



POSCOASSAN TST

Dear Recipient

We would like to thank you for your organization's interest and support for POSCO ASSAN TST.

POSCO ASSAN TST is a POSCO-invested company in Türkiye with an annual production capacity of 250,000 tons of stainless steel and 500 employees.

We have a production plant in Izmit, Türkiye and an office in Istanbul.

I would like to respond to the inquiries from JPMorgan on behalf of the company.

In accordance with the local law in Türkiye, we have paid the compensation to all litigants after losing the reinstatement case.

In addition, none of the terminated employees refused to accept the compensation and requested reinstatement, so our company has never refused to reinstate them.

If any of the terminated employees had refused to accept the compensation and requested reinstatement from the company, the company would have proceeded with reinstatement according to legal procedures.

However, not a single employee has refused to accept the payment and requested reinstatement, and all of them have accepted the payment.

Under local law, receiving compensation is considered a mutual agreement.

Currently, we are making various efforts to focus on ESG management and to build trust and communication with our employees. We discuss and consult with employees in various areas such as employee safety, welfare, health, and work environment, and strive to create a workplace where employees are happy.

The corporation has four employee representatives directly elected by employees in accordance with the Labor Law and 20 Happiness Team members who support the employee representatives to communicate with employees to improve their rights and welfare, and I, as the head of the corporation, am running the labor-management council, which was previously run by the head of the labor department.

Recently, we have been discussing various employee issues such as improving benefits, adjusting commuting time, operating holiday work, and optimizing commuting bus routes.

POSCO ASSAN TST will not forget the past labor-management issues, respect the human rights of our employees, and strive to become a workplace that protects labor rights.

Once again, we thank you for your interest and support for our company.

CEO of POSCO ASSAN TST
SUH, JONGDUK

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1. Labor Rights at POSCO ASSAN TST in Türkiye

3) POSCO ASSAN TST's Efforts to Improve Labor Rights

PROGRESS

Progress

① Improving the operation of the employee representative body (Jan. 2023 ~)

- While there is no labor union at POSCO ASSAN TST currently, an employee representative body elected by employees through direct voting pursuant to local labor laws is up and running officially, and its roles have been effectively strengthened since 2023.

Category	Previous	After Improvement
Employee representative	4 persons	4 employee representatives, 20 members of the Happiness Team
Cycle	Semi-annual	Quarterly
Company representative	HR manager	President
Discussion results	Partially communicated	Employee representatives and the Happiness Team hold briefings for all employees

Meeting	Key Discussion Topics and Progress Made
Q1	• Agreed to increase wages in line with the MESS agreement* through consultations made on pay raises • Reduced working hours through consultations on changing shift work hours • Agreed to raise allowances for Ramadan and Kurban Bayram from 1,000TL to 1,750TL • Agreed to provide Sodx cards as Ramadan gift certificates • Agreed to extend paternity leave from 4 days to 15 days
Q2	• Agreed to host a labor-management sports day event • Agreed to offer leave by closing the plant before and after Sacrifice Day • Decided to shut down operations two days during Ramadan through production schedule coordination
Q3	• Agreed to provide 10,000TL as incentives for all employees in consideration of the nation's inflationary pressure • Agreed to hold a family invitation event
Q4	• Agreed to shorten the cycle of on-site staff performance assessment from two to once a year • Decided to retrofit the CGPL locker room

*Agreement reached between the Türkiye association of labor unions and the Employers' Association of Metal Industries (MESS) through wage negotiations

② Re-assessing the company's working environment with the help of a third-party organization (Apr. 2023)

- To objectively assess the human rights conditions of POSCO ASSAN TST, due diligence was performed in partnership with intertek, a global organization, in April 2023.
- Intertek made assessment in the five areas of Labor, Wage and Work Hour, Safety and Health, Management System, and Working Condition through written assessments and employee interviews. Specifically, Intertek looked into six subcategories of child labor, compulsory labor, discrimination, unjustifiable disciplinary action/bullying, freedom of association, and employment contract in the labor category.
- This revealed that POSCO ASSAN TST employees were highly aware of labor rights, were guaranteed their freedom of association and right to organize, had access to whistleblowing mechanisms for raise concerns over misconduct, and were free from any retaliatory action by the company for their justifiable behaviors. All in all, the company gained 97 points, far above the average score of 75 points among local companies, and scored perfect 100 points in the labor category for zero non-compliance.

Category	Score
Labor	100
Wage and Work Hour	100
Safety and Health	95
Management System	96
Working Condition	100
Total Score	**97**

③ Stipulating the company's Human Rights Management Guideline in local language (Apr. 2023)

- While there did not exist human rights management policies specifying freedom of association among others, the company officially stipulated its Human Rights Management Guideline in both local and English languages, and disclosed it on its POSCO ASSAN TST website.



POSCO ASSAN TST "Human Rights Management Guideline"

④ Celebrating Labor-Management Harmony Day

- The company celebrates Labor-Management Harmony Day each year. In 2023, a company-wide sports day event and a family invitation event were held with the labor-management council taking the lead.



Labor-management sports day (May 3, 2023)



Family invitation event (Sep. 6, 2023)



Employee representatives at the labor-management council attended the safety training provided by POSCO (Sep. 18, 2023)

1. Labor Rights at POSCO ASSAN TST in Türkiye

4) Headquarters' Efforts to Improve Labor Rights

PROGRESS
Progress

- **Establishing a Group-wide human rights management policy**
  - POSCO Holdings publicly disclosed our human rights management policy which covers labor rights through reporting this policy to the Board of Directors in August 2022, and recommends that other operating companies to abide by this policy.
- **Robust monitoring at the holding company level and ensuring transparent external communication**
  - POSCO Holdings engages in continuous communication with POSCO and overseas corporations to monitor the improvements made, and holds ESG Non-Deal Roadshows overseas and video conference calls to fully communicate the progress made.
  - We keep the UN PRI Advance updated on this specific issue through regular meetings, and our CSO held a meeting with the organization in January 2024 to deliver leadership's opinion from the viewpoint of the holding company on this issue.
- **POSCO's assessing labor risks at overseas corporations**
  - Following the assessment made on labor rights issues at POSCO ASSAN TST, POSCO's Human Resources and Corporate Culture Office conducted 'labor risk assessment' on all overseas corporations in Q1 2024 in an aim to prevent the reoccurrence of labor issues and provide a workplace where everyone feels respected.

Results of the labor risk assessment POSCO performed on overseas corporations in 2024

- Target: 11,991 employees at 23 overseas corporations in 9 countries
  - Criteria: 13 overseas steel mills and 10 processing centers with 200 or more local employees
- Period: Feb. 22 ~ Mar. 6, 2024 (2 weeks)
- Method: On/offline survey
- Assessment item: 18 items* across 4 areas

*These include three for organizational management, 8 for HR and labor systems, 4 for labor-management cooperation, and 3 for protection of employee rights and interests, and the following 7 items are directly associated with labor issues.

Category	Description
Labor-management cooperation (4)	There are official mechanisms or channels for employees to raise and resolve their concerns.
	Handling outcomes for employee grievances or VOC are promptly communicated to employees.
	Leadership regularly gathers employee feedback through discussions.
	Please share with us any improvements to be made or VOC to address in relation to labor-management relations. *Open-ended question
Protection of employee rights and interests (3)	The company recognizes the employee representative body, such as labor unions, as an equal partner and engages in proactive communication.
	The company does not take any disadvantageous action against employees for reasons of exercising their due rights at the employee representative body.
	Leadership regularly interacts with the employee representative body to consult on labor issues and employee grievances.

- Assessment results: 79% in response rate (9,414 persons), 85.2 points in score

Category	Target	Respondent	Response Rate	Average Score by Area				
				Total	Organizational Management	HR and Labor	Labor-Management Cooperation	Protection of Rights and Interests
23 corporations in 9 countries	11,991	9,414	79%	**85.2**	88.4	83.8	84.7	85.6

- Overall result: While the score was above the average in most Northeast Asian and Southeast Asian countries, corporations in India and Mexico among others scored relatively low.
- Key VOC: Risks such as labor rights violation were not identified. Yet, there were strong demands to improve labor income/welfare & benefits amid the stagnant economic situation, arrange employee feedback channels and operate other relevant systems, and provide opportunity for professional training.

Category	Key VOC	Improvement Plan
Organizational management/ HR and labor	• Need to strengthen closer ties between labor and management which were undermined during the pandemic • Provide technical training, seminars and other training opportunities • Articulate employees' job functions and ensure systemic performance management	• Hold townhall meetings presided by the president to expand communication between leadership and employees • Identify training courses appropriate for different job functions and provide top talent with training opportunity • Systemize job descriptions and introduce a performance assessment system
Labor-management cooperation/ protection of rights and interests	• Improve welfare & benefits programs • Elaborate on policy changes and labor-management consultation results	• Create an online anonymous proposal bulletin board and hold quarterly discussions between labor and management representatives • Heed diverse employee needs and discuss improvements through the joint labor-management task force

1. Labor Rights at POSCO ASSAN TST in Türkiye

4) Headquarters' Efforts to Improve Labor Rights

PROGRESS

Progress

- **Establishing the Human Rights Center as a dedicated human rights organization**
  - In January 2023, the Human Rights Center was established under the Legal Affairs Office. As of June 2024, five employees are working at this dedicated human rights organization.
- **Conducting human rights audits at overseas corporations**
  - POSCO's Human Rights Center under the Legal Affairs Office established a human rights audit system for global operations, and conducted human rights audits (human rights impact assessment) on all 49 overseas corporations, excluding POSCO ASSAN TST (received third-party on-site due diligence) to gauge their human rights management performance.
  - The audit results based its efforts to pay direct on-site visits to some overseas corporations to assess the validity of audit items, interview employees, and provide training. This also involved process improvements so that important HR/labor decisions are not made internally at the corporation level but are immediately escalated to the Human Resources and Corporate Culture Office for decision-making.

POSCO's Human Rights Audit Operation System for Overseas Corporations

• Overseas corporation
POSCO analyzes their human rights performance through ① self-reviews and ② employee awareness surveys, and ③ conducts on-site due diligence on corporations identified for issues.

❶ Self-review at overseas corporations	Responsible expatriates assign scores through internal checks on audit items and surveys (reviewed by the president of the corporation)
❷ Awareness survey on overseas employees	Assign scores to the corporation's human rights protection performance based on survey responses from global staff
❸ Overseas on-site due diligence	Directly visit 2-3 corporations noted for issues, analyze area-specific strengths/weaknesses, and propose improvements

※Result feedback: Communicate area-specific scores, issues, key VOCs, and improvement plans to all corporations following audits

• Audit areas 8 focus areas of human rights suggested by the UN and governments
① Human rights management system
② Respect for stakeholders
③ Non-discrimination in employment/work
④ Elimination of compulsory labor
⑤ Guarantee of health/safety
⑥ Abolishment of child labor
⑦ Recognition of freedom of association and collective bargaining rights
⑧ Respect for privacy and data privacy

Results of POSCO's Human Rights Audit and On-site Due Diligence in 2023

- Target: Nearly 8,000 locally hired employees at overseas corporations (40% in response rate)
  *POSCO ASSAN TST was excluded as it received due diligence conducted by a specialized organization
- Period/method: Apr.~May 2023 / Online survey on responsible expatriates and global staff (9 languages)
- Audit results: While the score was good (80 points and above) at 41 corporations (84%), a majority of total, there was room for improvement in addressing the gap in perceptions between companies and employees
  - [Excellent] Ban on compulsory/child labor, guarantee of health/safety [Improvement needed] Human rights management system, respect for stakeholder human rights
- Improvement activity: Communicate to all corporations results (Jul. 2023)* and vulnerabilities requiring improvement, standardize requirements on respect for human rights and communicate grievance mechanisms/responsible staff, and conduct on-site due diligence on corporations in relatively poor conditions
  *Feedback: Corporation-specific audit scores, VOCs, relevant issues, and area-specific improvement plans

On-site due diligence

- Target: 3 corporations in Latin America
- Period: Jul. 24 ~ Jul. 28, 2023
- Details: Interview with the president and local staff, review work documents, check working conditions, etc.
- Results
  - Generally established systems and regulations on par with global standards and took activities to respect human rights
  - Attributed negative responses to declining income and increasing work burden (new customers) due to revised local laws
  - Proposed to improve employee awareness through continuous training/promotion, strengthened internal activities

Audit results by region

- Out of seven regions (Northeast Asia/Southeast Asia/Southwest Asia/North America/Central and Latin America/Oceania) where overseas corporations are based, human rights awareness was generally high among managers and local staff in Oceania, Northeast Asia, and Southeast Asia while such awareness was low among both managers and local staff in Central and Latin America.
- For corporations with high awareness, efforts will be made to highlight their strengths in terms of human rights system management operations and freedom of association and discover/disseminate best practices to help raise human rights performance across all regions. For corporations with low awareness, standardized formats will be presented for human rights management and training to improve their management efficiency.

Audit results by level

- Ages: Tendency among young staff (20's and 30's) to score low on human rights assessment
- Years of employment: Human rights awareness tends to increase in proportion to the years of employment.
- Gender: Female employees showed a high level of awareness on average. Male employees assigned low scores specifically in such items as unnecessary overtime work and disadvantages associated with labor union activities.
  → Corporations will be requested to perform internal analysis to be more careful with their change management for relatively more vulnerable groups.

1. Labor Rights at POSCO ASSAN TST in Türkiye

4) Headquarters' Efforts to Improve Labor Rights

PROGRESS
Progress

- Human rights audit results by audit area and actions taken for risks
  - Out of eight human rights areas, 'abolishment of child labor, ban on compulsory labor, elimination of compulsory labor, guarantee of health and safety, and respect for privacy and data privacy' showed excellent results. In particular, abolishment of child labor scored the highest as both managers and employees concurred on its importance.
- The following four areas showed relatively poor audit results or discrepancies in perceptions between managers and staff, and work is ongoing to take action to mitigate risk for respective issues.

Areas of Low Awareness	Audit Area	Issue	Action Taken for Risk
1	Human rights management system operations	• Greatest gap in perceptions of employees between high-performing and low-performing corporations - Lack of relevant regulations and insufficient system dissemination among low-performing corporations (in Central and Latin America and others) • Lack of awareness on grievance mechanisms/procedures and concerns on confidentiality	• Establish human rights management policies and actively disseminate related details (campaigns, individual e-mails, etc.) • Designate personnel dedicated to human rights issue handling, and establish and communicate official remedies • Strengthen regular human rights training, and regularly share human rights guidelines/cases of failing to respect human rights
2	Guarantee of freedom of association and collective bargaining rights	• VOC submitted from some corporations on concerns over disadvantages associated with labor union activities (some cases were identified where HR-related disadvantages are unconditionally associated with labor issues) • Discrepancies among corporations in a single country according to company-level communication efforts and employee treatment	• Establish labor risk audit procedure aside from human rights audits for overseas corporations (Human Resources and Corporate Culture Office) - Undertake activities to prevent labor risk and internally make improvement, with consulting provided by the HQ when necessary • Forge closer ties between labor and management, arrange regular communication channels, and share agreements made between labor and management
3	Non-discrimination in employment and work	• Greatest disparities in perceptions between managers and employees (right to work under fair conditions, etc.) • Lack of consensus and understanding on differential allowances tied to positions/functions	• Clearly communicate corporate systems, provide training, and build consensus among employees
4	Respect for stakeholder human rights	• VOC submitted on disrespectful or threatening behaviors among employees - Relatively low awareness among corporations located in Central and Latin America compared to other regions • Lack of awareness on standards to respect human rights of internal/external stakeholders	• Conduct on-site visits on corporations in Central and Latin America, and provide training to prevent bullying and sexual harassment • Focus on managers at overseas corporations in elevating responses to internal/external stakeholders - Take appropriate action on human rights-related external VOCs and provide stakeholders with human rights training or relevant information

PROSPECTS
Future Plan

- **Conducting regular human rights audits on overseas corporations and reporting the audit results to the Board of Directors**
  - We will perform regular human rights audits on overseas corporations each year, and report the audit results to the Audit Committee under the POSCO Holdings' Board of Directors to ensure relevant issues are handled at the holding company level.

POSCO's overseas corporation human rights audit plan for 2024

[First half] Conduct online on-site due diligence on the Indonesian corporation based on 2023 human rights audit results

- Target: Corporation in Indonesia (steel mill, nearly 2,670 global staff)
- Period/method: May~Jun. 2024 / Online human rights due diligence
- Audit area: 6 areas where employee awareness scores were lower than the average of all overseas corporations out of 8 human rights audit areas in 2023
  *Human rights management system operations, respect for stakeholder human rights, non-discrimination in employment and work, etc.
- Details: Conduct detailed checks on work documents to assess area-specific compliance (system/training/on-compliance, etc.) and interview expatriates/global staff online

[Second half] Conduct human rights audits on all overseas corporations and on-site due diligence on corporations identified for issues (plan)

- Target: all 50 overseas corporations
- Period/method: Q3, 2024, self-checks at the corporation level and employee awareness surveys
  *Conduct on-site due diligence on corporations identified for issues based on audit results (Q4, 2024)

※Conduct another round of reviews on each of the eight human rights audit areas based on 2023 results and pursue improvements when needed, upgrade the audit by making better use of open-ended questions

- **Group-wide human rights management and human rights due diligence system audits**
  - Plan to revisit POSCO Group's human rights management system and human rights due diligence guidelines with the help of external organizations specializing in human rights in H2 2024
  - Develop Group-level human rights management plans accordingly, report to the Board of Directors to finalize these plans, and elaborate on the finalized plans and their implementation through the following year's sustainability report

1. Labor Rights at POSCO ASSAN TST in Türkiye

THE FACTS

Timeline	Facts
Nov. 13, 2017	• The Birleşik Metal Workers' Union, a trade union in Türkiye (the trade union hereinafter), requested the nation's Ministry of Labor to approve the establishment of a labor union at POSCO ASSAN TST.
Nov. 14~Nov. 21, 2017	• POSCO ASSAN TST dismissed 69 employees. - Reasons for dismissal: Violation of the Türkiye Constitution and labor laws, and the company's internal regulations (These employees, who were members of the trade union, unfairly coerced their coworkers to join the union to expand its membership)
Lawsuit 1. **Lawsuit to confirm that they were wrongfully dismissed**	• As of June 2024, there were no further litigations over reinstatement, and only those lawsuits concerning the payment of additional compensation were ongoing. • Additional compensation was provided in most cases in line with the compensation amount determined by the court for individual plaintiffs, and the remaining six cases will be resolved by paying compensation immediately after the course makes its decision.
Nov. 30, 2017 Lawsuit raised by dismissed employees **May 2021** Final ruling	• All 69 dismissed employees raised a lawsuit to confirm that they were wrongfully dismissed. • Two of them dropped their lawsuit during the proceedings. A Total of 67 lawsuits were raised individually by 67 dismissed employees, and the company lost in its final appeal. • Final ruling (1) Reinstate those employees unfairly dismissed (2) Pay wages for the period between the submission of reinstatement application and the actual date of reinstatement (up to 8 months of pay), and pay employees who were members of the trade union at the time of dismissal one year's worth of pay as labor union compensation
May 2021 ~ present	• Pursuant to Article 21 of the nation's Labor Law No. 4857 specifying 'employer's elective right to labor contracts', the company paid compensation to dismissed employees to honor both (1) and (2) of the final ruling. • Out of dismissed employees who actually received compensation, none of them requested reinstatement to the company as of June 2024. Meanwhile, 62 of these employees raised lawsuits demanding extra compensation: 56 of them received additional compensation and their cases were closed as of June 2024. • For the remaining six lawsuits, compensation will be provided according to the court ruling determining the amount of additional compensation. ※Reason: Request additional compensation for the wage raises and benefits they missed during the dismissal period
Lawsuit 2. Lawsuit to counter the decision not to approve the establishment of a labor union at POSCO ASSAN TST	• While the labor union won the case in the final trial, the union no longer satisfied the necessary legal requirements as of March 2023, and the nation's Ministry of Labor made its final confirmation that the request of the trade union to approve a labor union at POSCO ASSAN TST was no longer valid.
Jan. 3, 2018 Lawsuit raised by the trade union **Mar. 2020** 1st trial ruling **Apr. 2021** 2nd trial ruling **Jun. 2022** Final ruling	• The trade union raised a lawsuit to counter the company's decision not to approve a labor union • POSCO ASSAN TST won the case in the 1st trial (Mar. 2020) and the 2nd trial (Apr. 2021) ※Grounds for winning the case: The trade union failed the meet the quorum required to establish a labor union • POSCO ASSAN TST lost the case in the final trial (Jun. 2022) ※Grounds for losing the case: The court determined that the trade union met the quorum when only employees working at the Izmit plant were counted with those working at the Istanbul office excluded.
Jun. 2022 ~ present	• The trade union pursued again to establish a labor union at the POSCO ASSAN TST, and requested the Ministry of Labor to engage in mediation to resolve the issue. The Ministry stated its position that such mediation was not possible. • In February 2023, the trade union notified the company that union members would stage a general strike on February 24, 2023, which did not happen.
Mar. 9, 2023 ~	• After confirming that the general strike did not happen, the Türkiye Ministry of Labor made its final confirmation on March 9, 2023 that the request of the trade union to approve a trade union at POSCO ASSAN TST was invalidated as the trade union failed to meet the necessary legal procedures and requirements specified in the nation's labor laws, and notified this decision to POSCO ASSAN TST.

2. Human Rights and the Environment at PT.BIA in Indonesia

WHAT IS THE MATTER?

Environmental and social concerns over the operation of POSCO INTERNATIONAL's palm plantation in Indonesia

PT.BIA

Established a palm plantation subsidiary in 2011, started planting at the end of 2012, and initiated CPO (Crude Palm Oil) sales in 2017

Overview of PT.BIA (as of the end of 2023)

- ○ Equity structure: POSCO INTERNATIONAL (85%), local partner (15%)
- ○ Annual sales/production capacity: 210,167 tons / 208,048 tons
- ○ Annual revenue/operating profit: USD 164 million / USD 53 million
- ○ Employees: 3,471 persons



Video introducing our palm oil business in Indonesia

PROGRESS & PROSPECTS

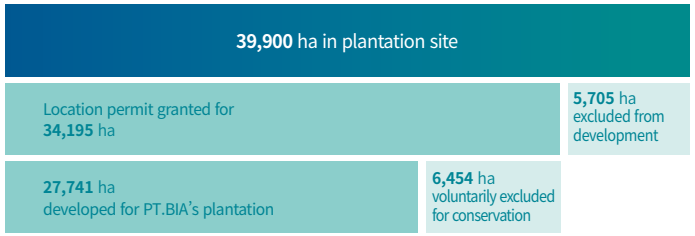
We fully disclose the accurate facts, the efforts we have made so far, and our future plans as to the issues raised by stakeholders in relation to POSCO INTERNATIONAL's palm plantation in Indonesia.

1) Forest Restoration

PROGRESS

Facts

- PT.BIA conducted environmental impact assessment (AMDAL) on the 39,900ha-sized land for which it was granted a Location Permit pursuant to Indonesian local laws (2007).
  ※The AMDAL report revealed that the plantation site mostly consisted of bushes, reeds and secondary forests.
- PT.BIA earned land use rights (HGU) for 34,195ha of land, excluding 5,705ha which included areas requiring protection such as wildlife protection areas, swamps, and waterways (2009).
- PT.BIA voluntarily excluded an additional 6,454ha of land covering forests, swamps, and waterways of high conservation value and eventually developed 27,741ha into a palm plantation (completed in 2017).
  ※ Controversy - Palm Oil Business in Indonesia



Progress

Certification

- **Announced the NDPE** (No Deforestation, No Peat, No Exploitation) policy (Mar. 2020))
- **Achieved the RSPO** (Roundtable on Sustainable Palm Oil) certification (Sep. 2021)
- Achieved the ISO 45001 international health and safety standard certification for plantation safety (Jul. 2022)

Efforts for environmental improvement



Banned the use of chemicals in riparian buffer zones: Strengthened monitoring by deploying drones



Reinforced stakeholder training and regulations: Improved understanding on HCV (High Conservation Value) areas, notified the ban on illegal poaching



Bolstered community engagement and performed water quality inspections with the help of third-parties: Engaged indigenous peoples in collecting samples for water quality inspection, disclosed analysis results to local communities through public hearings (semi-annual)

PROSPECTS

Future Plan

- PT.BIA plans to implement the **RaCP (Remediation and Compensation Procedure)** approved in alignment with its RSPO certification to **protect 139,600ha of forests and ecosystems, about five times larger than the 27,741ha of land cleared** for palm plantation development.
  - Target area: Lake Bian Wildlife Reserve (LBWR, 139,600ha in total area) near the plantation
  - **Implementation budget: USD 62 million/25 years (2021~2046)**
  - Specific plan: Procedure implementation for the following 5 areas
    (1) Forest and biodiversity conservation
    (2) Support for sustainable economic activity of indigenous peoples (support for economic self-sufficiency)
    (3) Operate programs to encourage environmental conservation among indigenous peoples
    (4) Integrated fire management
    (5) Water quality management



Support for economic independence of indigenous peoples (produce Noken, Papua's traditional multi-purpose hand-knitted bag

2. Human Rights and the Environment at PT.BIA in Indonesia

2) FPIC* and Grievance Mechanisms *Free, Prior & Informed Consent

PROGRESS
Facts

- Starting from 2007, when the environmental impact assessment was performed, a total of 27 public hearings were held among PT.BIA, the local government in Papua and indigenous peoples until 2016.
- **These public hearings were all conducted in local language, and were attended by heads the Mahuze and Basik-Basik clans** who had customary **land rights over PT.BIA's plantation site to reach written agreement.**
- Afterwards, the local Papua government recognized through an official letter that PT.BIA reached agreement with local communities in full compliance with legitimate procedures.


Public hearing with indigenous peoples on land compensation

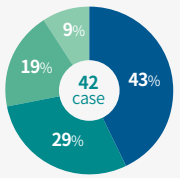

Signing the agreement on land compensation and payment of compensation

Progress

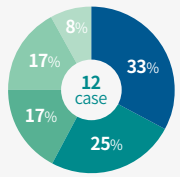
- PT.BIA stipulated its grievance mechanism established in line with RSPO's Complaints System on its website (2020).
- PT.BIA engages in regular socialization activities with community stakeholders, including indigenous peoples, and incorporates the feedback gathered in its palm plantation operations.

Date	Topic	Attendees	Implementation Detail
Jun. 2023	Disclose LBWR (Lake Bian Wildlife Reserve) conservation activities and community development programs	PT.BIA, indigenous peoples, Papua Natural Resources Conservation Center (BBKSDA), and stakeholders	- Hosted a pre-explanatory session on ① biodiversity protection programs for forests and wildlife in LBWR and ② economic, medical, and educational programs for indigenous peoples and local residents - Improved those programs in full consideration of feedback from the local Papuan government and indigenous peoples
Aug. 2023	Disclose the results of water quality management and inspection for the riparian zones near the concession	PT.BIA, local Papua government, representatives of indigenous peoples (VMT: Village Monitoring Team)	- Took riparian water inspection samples along with the VMT consisting of PT.BIA's sustainability management team, officials from the local Papuan government, and leaders of indigenous peoples - Performed water quality analyses through external professional organizations - Disclosed water quality analysis results through community public hearings: Attended by nearly 40 stakeholders, including indigenous peoples, religious leaders, and local government officials

- As proposed by the UN PRI Advance and other stakeholders, PT.BIA improved its disclosure of how it handles grievances and complaints on the company website. (May 2024)
  - In 2023, zero grievances were raised, and general complaints concerning requests for medical expenses, funeral support, and education expenses declined from 42 cases in 2022 to 12 cases in 2023.



General Complaint Category (2022)
- Medical expenses (18)
- Funeral support (12)
- Religious and culture support (8)
- Education expenses (4)



General Complaint Category (2023)
- Medical expenses (3)
- Funeral support (2)
- Religious and culture support (4)
- Education expenses (2)
- Another event support (1)


Medical support for indigenous peoples

- Support for indigenous peoples
  - Support for economic independence: Voluntarily support their economic activities by establishing village-owned enterprises for three villages near the concession (Selil, Kindiki, Muting)
  - Educational support: Support teacher assistants for local schools to help reduce teen illiteracy, hold public hearings to highlight the importance of education for future generations among local people to promote school attendance
  - Medical support: Operate nutritional improvement programs for children and teens, improve residential and healthcare conditions by building water supply infrastructure for villages near the concession

PROSPECTS
Future Plan

- PT.BIA will ensure continuous and transparent disclosure of public hearings held for indigenous peoples and community stakeholders through annual NDPE implementation reports.
  - PT.BIA is preparing NDPE implementation reports in Korean, English, and Indonesian, and is regularly uploading them on its website and POSCO INTERNATIONAL's website.

2. Human Rights and the Environment at PT.BIA in Indonesia

3) Feedback on Supply Chain Management in Line with POSCO INTERNATIONAL's Advancement into Palm Oil Refining Business

PROGRESS **Facts**	• POSCO INTERNATIONAL is preparing to construct a palm oil refinery in Kalimantan, Indonesia, with a goal of initiating its operation in Q4 2025 through PT.ARC, an oil refining subsidiary established in 2023. • The oil refinery will be built within the industrial complex in Kalimantan, and is free from issues of deforestation and compensation for indigenous peoples associated with plant construction.
PROSPECTS **Future Plan**	• The company is proactively establishing a management roadmap to cater to the needs of the international community and stakeholders for transparent supply chain management. - PT.ARC is developing plans to increase the use of RSPO-certified CPO from the commencement of its refinery operations. - POSCO INTERNATIONAL set a goal of achieving the RSPO SCC (Supply Chain Certification) within three years after initiating the refinery operation.

4) Feedback on TNFD Membership and Natural Capital (Biodiversity) Disclosure

PROGRESS **Facts**	• POSCO INTERNATIONAL was approved for its TNFD membership in June 2024 - POSCO Group's TNFD Forum membership: 5 companies - POSCO Holdings (holding company), POSCO, POSCO INTERNATIONAL, POSCO E&C, and POSCO FUTURE M
PROSPECTS **Future Plan**	• POSCO INTERNATIONAL will make biodiversity disclosures in step with the disclosure mandate issued under TNFD guidelines.

5) NDPE Implementation Disclosure (FY2023)

Implementation Commitment	Milestones	Yearly Progress
Policy, Systems, and Management	• Release the NDPE implementation plan for 2023	• Released the time-bound NDPE implementation plan for 2023
	• Pursue awareness-raising activities to ensure compliance with the NDPE policy among plasma smallholders and out-growers - Update the supply chain checklist and monitor external supply chains	• External fruit suppliers declared an NDPE policy (2022) and announced a sustainability policy (2023) • Distributed the TTP (Traceability to Plantation) forms to plasma smallholders and out-growers to monitor external supply chains (Jan. 2023 ~) - Will conduct regular socialization and update the checklist • Conducted regular monitoring on deforestation toward supply chains
	• Establish directions for implementing the NDPE policy from the mid-to long-term perspective	• Will disclose in the 2024 NDPE implementation report

2. Human Rights and the Environment at PT.BIA in Indonesia

5) NDPE Implementation Disclosure (FY2023)

Implementation Commitment	Milestones	Yearly Progress
Environmental Conservation and Management	• Continue compliance with RSPO Best Management Practices (BMP) for sustainable agriculture management and prohibition of chemical usage in riparian zones	• Adopted RSPO BMP to prohibit the use of chemicals in riparian buffer zones • Updated the delineation of riparian areas within the plantation through GPS tracking and analysis of satellite/aerial images • Strengthened monitoring of environmental conservation activities in the riparian buffer zones (including the prohibition of chemical usage) by utilizing drones
	• Strengthen conservation efforts for biodiversity in the 6,718ha of High Conservation Value (HCV) areas within the concession	• Adopted FIAT (Forest Integrity Assessment Tools) for biodiversity conservation, and utilized them to conduct monitoring on HCV areas within its concession • Utilized drone filming and VMT (Village Monitoring Team) patrols to assess biodiversity and vegetation status - (Jul. 20~Jul. 24, 2023) Provided training to 25 participants, including HCV teams (including the plasma team), VMT, and representatives from various regions to enhance their understanding HCV area conservation methods • Strengthened activities to prohibit illegal capture of flora and fauna (replaced and installed 37 signboards and 64 banners) within HCV areas and conducted training sessions for incumbent staff members in 2023
	• Continue implementing environmental conservation programs beyond the concession	• Signed an agreement with the Papua Natural Resources Conservation Center (BBKSDA) (Oct. 2023) - Will engage in activities aimed at strengthening conservation efforts and promote biodiversity within the Lake Bian Wildlife Reserve (LBWR) - Will strengthen collaboration with local communities through the operation of Indonesia Forest Rangers Community Partnership or Fire Awareness Community
	• Establish a systematic water management system - Conduct periodic water quality inspections and disclose the results to stakeholders - Continue to disclose and monitor water usage and POME treatment processes related to palm oil production	• Conduct bi-annual water quality analysis of the rivers surrounding the concession through a third-party verification, and share the results with local community stakeholders - Engage local residents (including VMT) starting from the sampling stag to emphasize the transparency of analysis - Conducted socialization to share water quality test results with nearly 40 community stakeholders, including indigenous peoples, religious leaders, and government officials • Regularly monitor the discharge of palm oil mill effluent (POME) generated during the palm oil production process *Residual water generated during the process of extracting palm oil - Treat POME in ponds through natural purification and send them back to the plantation for reuse as an organic nutrient source (Land Application)
	• Dispose of waste	• Put particular emphasis on strengthening the inspection of hazardous waste disposal - Collect and process waste generated from the plantation and mills bi-monthly (24 tons/year) • Recycled plastics within the concession - Installed over 300 additional recycling facilities - Collaborate with indigenous communities to recycle plastic and glass
	• Strengthen preemptive measures such as employee and community education/ training to prevent fire incidents	• Established and operate a 24/7 emergency response team - In August 2023, conducted an emergency fire response simulation across the entire area • Educated and socialized the basics of combating fires for local schools, including children and teachers, and extended this education to housewives, providing guidance on how to handle fire incidents in the house

2. Human Rights and the Environment at PT.BIA in Indonesia

5) NDPE Implementation Disclosure (FY2023)

Implementation Commitment	Milestones	Yearly Progress
Stakeholder Engagement and Communication	• Actively respond to registered grievances and disclose the resolution progress	• Has been receiving internal reports and complaints through its grievance handling mechanism (2020~) - Transparently disclose detailed records of grievance handling through the Grievance Log on the PT.BIA website
	• Continue to strengthen collaboration with local stakeholders to minimize negative environmental or social impacts of palm oil production - Implement new programs to enhance economic self-sufficiency among local communities	• Monitor the implementation of Social Impact Assessments (SIA) annually to minimize the negative social impact resulting from plantation operations • Conducted baseline studies on social-economy within local villages and held a public hearing to share the results (Jun. 2023) - Collected opinions and suggestions from participants (nearly 90 persons) regarding the operation of community economic development programs • Attended the Annual RSPO Round Table 2023 (Nov. 20 ~ Nov. 22, 2023) - Discussed sustainable palm oil production and social responsibility with various stakeholders associated with palm oil business - Showcased PT.BIA's major achievements in environmental and biodiversity conservation and corporate social responsibility
	• Publish an annual activity report illustrating the 2023 progress on NDPE implementation	• Published a progress report for 2023 on its NDPE policy implementation to improve transparency and promote communication with stakeholders
Protection of, and Respect for, Human Rights	• Continue providing training programs to enhance the capacity of employees	• Collaborated with educational institutions to develop a staff development strategy aligned with the company's mid-to long-term goals - Work is ongoing to establish diagnostic criteria to assess the current level of staff competence and develop training programs along with detailed implementation plans
	• Continue communication activities aimed at providing local communities information on environmental conservation programs beyond the concession area	• Conducted a pre-explanatory session for indigenous peoples within the LBWR to initiate environmental conservation and community development programs within LBWR (end of 2022) • Held a public hearing for stakeholders, including indigenous peoples (Jun. 2023) - Shared the progress and future plans of the multi-faceted programs covering environmental conservation, healthcare, education, and economic development, and discussed concerning the participation and collaboration of stakeholders from each sector
	• Enhance the capacity of the industrial safety and health management team and maintain ISO 45001 certification	• Focused on strengthening management of potential workplace hazards and educating workers - Workplace accident assessments, enhancement of safety officer competencies, training for chemical safety data MSDS (Material Safety Data Sheet), and safety inspection meetings (Tool Box Meeting, TBM) • Conducted annual regular health checkups for all employees, with a special emphasis on conducting specific health examinations for high-risk workers
	• Implement community programs aimed at improving the quality of life of local residents	• Established a village-owned enterprise called BUMK and is operating programs to achieve sustainable financial independence - Established a BUMK for local villages (Selil, Kindiki, Muting) near the concession and is currently piloting economic programs - Help increase household income through the production and sale of specialty village products • Strengthened literacy of students in local villages - Checked the literacy status of students in local villages in H1 2023 - Organized a workshop inviting village heads, officials from educational institutions, and community stakeholders to discuss the necessity of operating educational programs and their specific implementation plans - Operating literacy improvement programs for elementary school students in local villages (Selil, Kindiki, Muting) as of H2 2023
	• Encourage women's participation in various committees to establish a culture of social equality and respect for diversity	• Operate the Gender Equality Committee to provide education on human rights, sexual harassment, and sexual violence prevention (2 sessions, in 2023) - Will provide ongoing support to ensure the Gender Equality Committee operates fairly to eliminate harassment and violence in the workplace

PART 3

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ESG Factbook

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Summary of Financial Status of Segment

(Unit: KRW million)

Business area	Assets						Sales					
	FY2021		FY2022		FY2023		FY2021		FY2022		FY2023	
Steel	62,835,459	69%	57,229,302	58%	**56,345,940**	**56%**	41,093,405	54%	44,546,966	53%	**40,393,273**	**52%**
Rechargeable Battery Materials	4,527,396	5%	6,101,655	6%	**14,557,130**	**14%**	1,241,957	2%	2,451,785	3%	**3,816,042**	**5%**
Infrastructure (Trade)	10,487,551	11%	11,744,812	12%	**8,765,648**	**9%**	25,065,608	33%	25,955,458	31%	**24,033,506**	**31%**
Infrastructure (Construction)	7,334,937	8%	8,027,388	8%	**1,973,626**	**2%**	6,398,366	8%	7,667,696	9%	**8,301,130**	**11%**
Infrastructure (Logistics and others)	4,724,994	5%	5,569,901	6%	**9,206,723**	**9%**	2,061,277	3%	3,998,959	5%	**470,613**	**1%**
Other	1,561,277	2%	9,733,723	10%	**10,096,327**	**10%**	471,732	1%	129,340	0.2%	**112,633**	**0.1%**
Total	**91,471,614**	**100%**	**98,406,781**	**100%**	100,945,394	100%	**76,332,345**	**100%**	**84,750,204**	**100%**	**77,127,197**	**100%**

Sales by Region

(Unit: KRW million)

Region	Sales					
	FY2021		FY2022		FY2023	
KOREA	49,732,699	65%	54,519,647	64%	**50,658,510**	**66%**
Asia (Others*)	8,878,781	12%	9,331,724	11%	**7,287,382**	**9%**
China	7,146,695	9%	7,430,619	9%	**6,152,191**	**8%**
Indonesia	2,546,732	3%	3,282,888	4%	**3,422,647**	**4%**
Europe	2,172,064	3%	2,811,444	3%	**2,468,508**	**3%**
Japan	2,200,855	3%	2,651,584	3%	**2,691,788**	**4%**
North America	2,083,309	3%	2,413,054	3%	**2,095,705**	**3%**
Other regions	1,571,210	2%	2,309,244	3%	**2,350,466**	**3%**
Total	**76,332,345**	**100%**	**84,750,204**	**100%**	**77,127,197**	**100%**

*Excluding China, Indonesia, and Japan

Major Companies' Financial Data (FY2023)

(Separate, Unit: KRW million)

Name of company	Category	Assets	Sales	Profit
Holding company, listed	Holding company, listed	51,646,198	1,454,079	799,578
POSCO	Share of the holding company: 100%, unlisted	45,825,529	38,971,567	1,179,665
POSCO INTERNATIONAL	Share of the holding company: 70.71%, listed	12,565,027	28,536,917	632,519
POSCO E&C	Share of the holding company: 52.8%, unlisted	7,816,704	9,534,592	198,203
POSCO FUTURE M	Share of the holding company: 59.72%, listed	5,756,556	4,457,201	32,140
POSCO DX	Share of the holding company: 65.38%, listed	871,343	1,445,326	88,527
POSCO FLOW	Share of the holding company: 100%, unlisted	531,165	2,210,883	35,475
POSCO STEELEON	Share of POSCO: 56.87%, listed	529,525	1,132,510	32,276
POSCO M-TECH	Share of POSCO: 48.85%, listed	154,927	341,410	4,868

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① The following illustrates consolidated indicators for POSCO Holdings and its major operating companies in Korea, and the scope of consolidation by year is as below.
- 2021 (7 companies): POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO STEELEON, POSCO M-TECH
- 2022 (8 companies): POSCO Holdings (new), POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO STEELEON, POSCO M-TECH
- 2023 (10 companies): POSCO Holdings*, POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO FUTURE M, POSCO DX, POSCO FLOW (new), POSCO STEELEON, POSCO Mobility Solution (new), POSCO M-TECH

*Including POSCO Center and the Gangneung operational site, and excluding New Experience of Technology Hub for its calculation system is still under development

② In line with its merge with POSCO ENERGY in January 2023, POSCO INTERNATIONAL's data include energy operations for its 2023 data only.

GHG

Category	Unit	2021					2022						2023[1]					
		POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[2]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[2]	Total	POSCO HOLDINGS[3]	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[2]	Total
Direct/indirect GHG emissions (Scope 1 & 2)	tCO_2e	78,490,212	3,560	2,441,598	186,798	**81,122,168**	6,380	70,185,623	1,917	2,232,308	166,714	**72,592,942**	6,645	71,971,900	4,218,149	2,388,831	244,358	**78,829,883**
Direct emissions (Scope 1)	tCO_2e	77,101,095	469	2,174,342	78,649	**79,354,555**	1,339	68,305,993	316	1,916,392	65,611	**70,289,651**	1,358	70,588,012	4,155,769	2,022,088	87,906	**76,855,132**
Indirect emissions (Scope 2)	tCO_2e	1,389,117	3,091	267,261	108,149	**1,767,618**	5,041	1,879,630	1,602	315,920	101,103	**2,303,296**	5,289	1,383,895	62,383	366,750	156,457	**1,974,774**
GHG emissions intensity[4]	tCO_2e/ (ton, KRW 100 million)	2.05	0.01	125.9	-	**-**	0.07	2.05	0.01	73.4	-	**-**	0.46	2.02	15.1	53.6	-	**-**
Other indirect GHG emissions (Scope 3)	tCO_2e	12,872,905	-	-	1,108,412	**13,981,317**	-	7,107,502	-	8,575,445	3,231,159	**18,914,106**	-	7,419,787	363,471	1,604,844	3,256,747	**12,644,849**

1) At the time of publishing this report in June 2024, government verification on our GHG emissions is not completed yet and this may result in discrepancies between reported data and final verification data.
2) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO E&C, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
3) POSCO Center's data are the sum of tenant Group affiliates, excluding companies designated under the government's emissions trading and target management system.
4) Intensity data are based on sales, and POSCO's data are based on crude steel production.

*The data were aggregated by rounding off to the nearest whole number at the site level in accordance with the GHG emissions inventory calculation criteria, which may result in discrepancies between the data and the sum of emissions presented by scope of emissions.

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Domestic Scope 3 Emissions [1)]

Scope 3 emissions of respective operating companies received external third-party verification, and GHG emissions inventories are available through the sustainability reports of corresponding operating companies.
*Sustainability report: POSCO, POSCO E&C, POSCO FUTURE M, POSCO DX

GHG (Scope 3)

Category	Unit	2021			2022				2023				
		POSCO	POSCO E&C	POSCO DX	POSCO	POSCO E&C	POSCO FUTURE M	POSCO DX	POSCO	POSCO INTERNATIONAL[2)]	POSCO E&C	POSCO FUTURE M	POSCO DX
Other indirect GHG emissions (Scope 3)	tCO_2e	12,872,905	1,108,020	392	7,107,502	3,230,543	8,575,445	616	7,419,787	363,471	3,255,792	1,604,844	955
Upstream	tCO_2e	5,038,027	1,108,020	392	4,570,474	1,262,309	4,586,268	616	5,229,508	363,471	1,672,496	1,535,016	955
Purchase of raw materials and services①	tCO_2e	3,422,572	1,075,883	-	2,583,823	1,224,667	3,434,090	-	2,764,127	340,691	1,635,110	664,089	-
Investment of capital goods②	tCO_2e	-	172	-	857	179	-	-	563	14,249	26	20,906	-
Fuel and energy related activities (not included in Scope 1/2)③	tCO_2e	-	-	-	298,540	-	1,091,102	-	334,942	140	-	754,908	-
Transportation of purchased raw materials④	tCO_2e	1,605,907	15,642	-	1,537,143	18,779	57,365	-	1,926,052	3,977	23,797	60,940	-
Waste generated in operations⑤	tCO_2e	-	14,912	131	141,520	16,667	1,250	197	195,608	96	10,281	30,072	513
Employees' business travels⑥	tCO_2e	174	877	261	346	1,496	443	419	486	4,318	2,725	846	442
Employee commutes⑦	tCO_2e	9,374	534	-	8,245	521	2,019	-	7,730	-	557	3,255	-
Leased assets⑧	tCO_2e	-	-	-	-	-	-	-	-	-	-	-	-
Downstream	tCO_2e	7,834,878	-	-	2,537,028	1,968,234	3,989,176	-	2,190,279	-	1,583,296	69,826	-
Transportation and distribution⑨	tCO_2e	-	-	-	489,786	-	6,233	-	26,936	-	-	-	-
Processing of sold products⑩	tCO_2e	-	-	-	-	-	1,137,422	-	-	-	-	-	-
Use of sold products⑪	tCO_2e	-	-	-	-	1,968,158	2,843,555	-	-	-	1,583,296	-	-
treatment of sold products⑫	tCO_2e	-	-	-	-	-	-	-	-	-	-	-	-
Leased assets⑬	tCO_2e	2,087,193	-	-	1,888,240	-	-	-	1,974,893	-	-	-	-
Franchises⑭	tCO_2e	-	-	-	-	-	-	-	-	-	-	-	-
Investments⑮	tCO_2e	5,747,685	-	-	159,002	76	1,967	-	188,450	-	-	69,826	-

1) Refer to emissions before excluding related transactions among Group affiliates, and disclosed from the time of company-specific calculations
2) The sum of purchased power plant fuels and purchased products and services falling into the SG&A expenses category.
Trading of products involves steel, energy, food, automotive parts and other various items, and we will develop reasonable calculation methods for these items and disclose them later on.

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Energy

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS[2]	POSCO[3]	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total
Energy consumption	GJ	380,052,800	77,375	15,977,211	3,717,930	**399,825,316**	130,790	333,781,599	43,941	15,870,214	3,326,944	**353,153,488**	137,263	354,002,733	83,814,137	17,765,118	4,904,508	**460,623,759**
Energy directly consumed	GJ	369,264,360	7,512	10,421,661	1,471,130	**381,164,664**	55,885	319,078,303	4,679	9,367,653	1,210,811	**329,717,331**	26,752	342,940,165	82,483,745	10,129,127	1,585,231	**437,165,021**
Coal	GJ	0	0	737,411	0	**737,411**	0	0	0	125,305	0	**125,305**	0	0[4]	0	36	0	**36**
Natural gas	GJ	41,270,222	2,269	169,602	1,332,995	**42,775,089**	55,885	30,750,384	0	191,188	1,118,720	**32,116,177**	26,752	45,697,279	82,425,303	255,371	1,442,268	**129,846,974**
By-product gas	GJ	327,800,350	0	8,611,905	0	**336,412,255**	0	288,103,292	0	8,571,553	0	**296,674,845**	0	294,493,858	0	9,373,190	0	**303,867,048**
B-C oil	GJ	0	0	372,045	41,027	**413,072**	0	0	0	190,351	0	**190,351**	0	0	0	245,826	0	**245,826**
Lamp oil	GJ	0	0	154	38,922	**39,076**	0	0	0	81	41,054	**41,135**	0	2,643	0	125	58,866	**61,634**
Petroleum coke	GJ	0	0	517,476	0	**517,476**	0	0	0	276,346	0	**276,346**	0	0	0	241,066	0	**241,066**
B-A oil	GJ	0	0	1,129	0	**1,129**	0	0	0	1,173	0	**1,173**	0	0	0	2,298	0	**2,298**
Gasoline	GJ	4,587	4,482	2,860	13,221	**25,150**	0	6,249	1,840	2,916	23,708	**34,713**	0	5,569	4,624	2,776	19,184	**32,154**
Diesel fuel	GJ	189,168	761	9,077	40,815	**239,821**	0	218,348	2,839	8,741	24,920	**254,848**	0	189,682	53,078	8,440	63,919	**315,119**
Liquefied petroleum gas (LPG)	GJ	34	0	0	2,020	**2,054**	0	30	0	0	2,409	**2,439**	0	0	741	0	993	**1,734**
Other fuels	GJ	0	0	0	2,130	**2,130**	0	0	0	0	0	**0**	0	2,551,134	0	0	0	**2,551,134**
Energy indirectly consumed	GJ	10,788,169	69,863	5,555,056	2,246,800	**18,659,888**	74,905	14,703,073	39,262	6,501,933	2,116,073	**23,435,246**	110,511	11,058,453	1,334,392	7,635,200	3,319,051	**23,457,608**
Electricity	GJ	10,746,994	57,500	5,440,842	2,100,279	**18,345,615**	74,905	14,618,973	26,471	6,375,993	1,953,957	**23,050,299**	110,511	10,834,095	1,286,324	7,550,603	3,110,707	**22,892,241**
Steam	GJ	41,175	12,363	114,214	146,521	**314,273**	0	84,100	12,791	125,940[5]	162,116	**384,947**	0	224,358	48,068	84,597[5]	208,345	**565,368**
Renewable energy consumed	GJ	270	0	494	0	**764**	0	223	0	628	59	**910**	0	4,116[6]	0	790	224	**5,130**
Percentage of renewable energy	%	0.0001	0	0.003	0	**0.0002**	0	0.0001	0	0.004	0.002	**0.0003**	0	0.001	0	0.004	0.005	**0.001**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO E&C, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) POSCO Center's data are the sum of tenant Group affiliates, excluding companies designated under the government's emissions trading and target management system.
3) Energy consumption for 2021 and 2022 is for the Pohang/Gwangyang Steelworks only, and energy consumption for 2023 is on a company-wide basis.
4) Not included in the calculation of energy consumption for its use as iron ore reductant, and included in the consumption of byproduct gases.
5) For POSCO FUTURE M, the use of waste heat was included for its steam consumption in 2022 and 2023 only.
6) Renewable energy consumption for 2021 and 2022 refers to the consumption of self-generated renewable energy,
and renewable energy consumption for 2023 refers to certified renewable energy consumption (renewable energy purchased + self-generated renewable energy consumed).

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Water

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total
Total water withdrawal	ton	143,218,271	149,798	32,092,533	1,644,343	**177,104,945**	184,721	145,115,608	166,760	25,207,003	1,105,005	**171,779,097**	151,253	153,645,403	1,204,521	28,712,835	2,144,130	**186,866,260**
Freshwater	ton	0	149,798	3,161,173	1,520,953	**4,831,924**	184,721	0	166,760	2,884,101	1,051,975	**4,287,557**	151,253	0	1,204,521	3,152,901	981,607	**5,964,688**
Surface water	ton	100,116,109	0	0	0	**100,116,109**	0	108,957,548	0	0	26,936	**108,984,484**	0	115,497,855	0	0	94,614	**115,687,083**
Groundwater	ton	6,298,260	0	0	112,861	**6,411,121**	0	3,451,420	0	0	26,094	**3,477,514**	0	4,154,290	0	0	422,025	**4,993,752**
Desalinated water	ton	7,390,041	0	0	0	**7,390,041**	0	3,608,003	0	0	0	**3,608,003**	0	5,044,618	0	0	0	**5,044,618**
municipal sewage treatment water[2]	ton	29,413,861	0	0	0	**29,413,861**	0	29,098,637	0	0	0	**29,098,637**	0	28,948,640	0	0	624,223	**29,572,863**
Others	ton	0	0	28,931,360	10,529	**28,941,889**	0	0	0	22,322,902	0	**22,322,902**	0	0	0	25,559,934	21,661	**25,603,256**
Total water withdrawn in regions with 'High' baseline water stress[3]	ton	0	0	0	52,650	**52,650**	184,721	0	0	0	59,771	**244,492**	0	79,009,396	112,118	797,301	70,194	**79,989,009**
Total water withdrawn in regions with 'Extremely High' baseline water stress[3]	ton	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
Total water consumed	ton	68,353,529	149,798	1,075,322	871,226	**70,449,875**	184,721	73,375,512	166,760	847,760	619,409	**75,194,162**	151,253	72,416,383	865,550	794,707	1,447,808	**76,683,819**
Total water consumed in regions with 'High' baseline water stress	ton	0	0	0	52,650	**52,650**	184,721	0	0	0	59,771	**244,492**	0	35,888,873	0	283,067	70,194	**36,242,134**
Total water consumed in regions with 'Extremely High' baseline water stress	ton	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
Total wastewater discharge	ton	74,864,742	0	31,017,211	655,995	**106,537,948**	0	71,740,096	0	24,359,243	485,596	**96,584,935**	0	81,229,020	338,971	27,918,128	696,322	**110,182,441**
Total recycled/reused water	ton	47,804,712	0	0	5,064	**47,809,776**	0	44,625,210	0	0	6,907	**44,632,117**	0	40,390,660	192,449	0	8,292	**40,591,401**
Percentage of total recycled/reused water	%	25.0	0	0	0.3	**21.3**	0	23.5	0	0	0.6	**20.6**	0	20.8	17.1	0	0.4	**17.8**
Water pollutant discharged																		
COD	ton	-	-	62.0	-	**62.0**	-	-	-	-	-	**-**	-	-	-	-	-	**-**
TOC	ton	-	-	-	-	**-**	-	96.0	-	31.0	4.7	**131.7**	-	291.0	0.03	34.8	204.0	**529.8**
BOD	ton	-	-	40.5	8.3	**48.8**	-	-	-	18.4	6.3	**24.7**	-	-	-	21.9	9.8	**31.7**
T-N	ton	948.0	-	46.0	1.4	**995.4**	-	685.0	-	32.0	1.4	**718.4**	-	671.0	-	42.9	2.0	**715.9**
T-P	ton	-	-	0.3	0.01	**0.3**	-	-	-	0.5	0.02	**0.5**	-	-	-	0.3	0.1	**0.4**
SS	ton	169.0	-	177.8	0.5	**347.3**	-	135.0	-	81.0	1.7	**217.7**	-	137.0	-	55.3	507.2	**699.5**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO E&C, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) Change from the previous report: Re-classified as re-treated urban sewage
3) Calculated as of May 2024 in line with the Water Stress Map of the WRI (World Resources Institute) Aqueduct 4.0

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Water Use by Key Operational Site (FY2023)

Water

Category	Unit	POSCO HOLDINGS	POSCO		POSCO INTERNATIONAL			POSCO FUTURE M	
		POSCO Center	Pohang Steelworks (including HQ)	Gwangyang Steelworks	HQ (Song-do)	Incheon LNG Combined Cycle Power Plant	Gwangyang LNG Terminal	HQ (Pohang)	Gwangyang Cathode Material Plant
Total water withdrawal	ton	151,253	69,591,389	84,054,014	157,437	934,966	112,118	27,442,991	339,932
Freshwater	ton	151,253	0	0	157,437	934,966	112,118	1,883,057	339,932
Surface water	ton	0	36,488,459	79,009,396	0	0	0	0	0
Groundwater	ton	0	4,154,290	0	0	0	0	0	0
Desalinated water	ton	0	0	5,044,618	0	0	0	25,559,934	0
municipal sewage treatment water	ton	0	28,948,640	0	0	0	0	0	0
Others	ton	0	0	0	0	0	0	0	0
Total water consumed	ton	151,253	34,235,266	38,181,117	157,437	595,995	112,118	260,316	265,837

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Waste

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total
Total waste	ton	21,806,614	250	336,659	1,036,995	**23,180,518**	173	19,116,670	322	311,144	1,154,383	**20,582,691**	202	19,523,945	1,015	298,756	706,094	**20,530,011**
Waste recycled	ton	21,509,991	250	333,358	1,033,258	**22,876,857**	113	18,787,137	322	307,713	1,151,675	**20,246,960**	114	19,242,974	765	295,977	703,475	**20,243,305**
Percentage of waste recycled	%	98.6	100	99.0	99.6	**98.7**	65.4	98.3	100	98.9	99.8	**98.4**	56.8	98.6	75.4	99.1	99.6	**98.6**
Waste incinerated	ton	60,302	0	844	919	**62,065**	0	62,031	0	660	1,421	**64,112**	0	52,034	162	717	1,270	**54,183**
Percentage of waste incinerated	%	0.3	0	0.3	0.1	**0.3**	0	0.3	0	0.2	0.1	**0.3**	0	0.3	16.0	0.2	0.2	**0.3**
Waste landfilled	ton	236,196	0	1,818	2,817	**240,831**	0	267,470	0	1,950	1,285	**270,704**	0	228,633	82	1,461	1,339	**231,514**
Percentage of waste landfilled	%	1.1	0	0.5	0.3	**1.0**	0	1.4	0	0.6	0.1	**1.3**	0	1.2	8.0	0.5	0.2	**1.1**
Waste disposed in other ways	ton	125	0	639	1	**765**	60	32	0	821	2	**915**	87	304	6	600	10	**1,007**
Percentage of Waste disposed in other ways	%	0.001	0	0.2	0.0001	**0.003**	34.6	0.0002	0	0.3	0.0002	**0.004**	43.2	0.002	0.6	0.2	0.001	**0.005**
Designated waste	ton	94,485	0	1,242	2,224	**97,951**	0	96,579	0	1,425	2,060	**100,064**	0	108,491	51	2,405	2,995	**113,942**
Waste recycled	ton	76,740	0	942	1,617	**79,299**	0	59,344	0	1,113	770	**61,227**	0	58,307	34	1,991	2,214	**62,547**
Percentage of waste recycled	%	81.2	0	75.8	72.7	**81.0**	0	61.4	0	78.2	37.4	**61.2**	0	53.7	67.1	82.8	73.9	**54.9**
Waste incinerated	ton	10,401	0	284	577	**11,262**	0	16,546	0	279	1,244	**18,069**	0	8,691	11	355	638	**9,694**
Percentage of waste incinerated	%	11.0	0	22.9	25.9	**11.5**	0	17.1	0	19.6	60.4	**18.1**	0	8.0	21.0	14.7	21.3	**8.5**
Waste landfilled	ton	7,219	0	16	29	**7,264**	0	20,657	0	32	45	**20,734**	0	41,188	0	58	133	**41,379**
Percentage of waste landfilled	%	7.6	0	1.3	1.3	**7.4**	0	21.4	0	2.3	2.2	**20.7**	0	38.0	0	2.4	4.4	**36.3**
Waste disposed in other ways	ton	125	0	0	1	**126**	0	32	0	0	2	**34**	0	304	6	2	10	**322**
Percentage of Waste disposed in other ways	%	0.1	0	0	0.04	**0.1**	0	0.03	0	0	0.1	**0.03**	0	0.3	11.8	0.1	0.3	**0.3**
General waste generated	ton	21,712,129	250	334,778	28,364	**22,075,521**	113	19,020,091	322	308,898	20,035	**19,349,460**	114	19,415,454	964	295,752	14,784	**19,727,068**
Waste recycled	ton	21,433,251	250	332,416	25,443	**21,791,361**	113	18,727,793	322	306,599	18,650	**19,053,478**	114	19,184,667	731	293,986	13,273	**19,492,771**
Waste incinerated	ton	49,900	0	560	205	**50,664**	0	45,485	0	381	154	**46,020**	0	43,342	151	363	480	**44,337**
Waste landfilled	ton	228,978	0	1,802	2,714	**233,494**	0	246,813	0	1,917	1,231	**249,961**	0	187,445	82	1,403	1,031	**189,961**
Waste disposed in other ways	ton	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
Construction waste generated	ton	0	0	639	1,006,410	**1,007,049**	60	0	0	821	1,132,277	**1,133,158**	87	0	0	598	688,316	**689,002**
Waste recycled	ton	0	0	0	1,006,198	**1,006,198**	0	0	0	0	1,132,255	**1,132,255**	0	0	0	0	687,988	**687,988**
Waste incinerated	ton	0	0	0	138	**138**	0	0	0	0	13	**13**	0	0	0	0	153	**153**
Waste landfilled	ton	0	0	0	74	**74**	0	0	0	0	9	**9**	0	0	0	0	175	**175**
Waste disposed in other ways	ton	0	0	639	0	**639**	0	0	0	821	0	**821**	87	0	0	598	0	**685**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO E&C, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)

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Air

Category	Unit	2021					2022						2023					
		POSCO HOLDINGS	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total
Emissions of air pollutants	ton	61,445	-	1,027	177	**62,649**	-	51,806	-	939	206	**52,950**	-	51,707	508	992	264	**53,470**
NOx	ton	35,755	-	936	72	**36,762**	-	27,877	-	824	99	**28,800**	-	27,796	507	881	120	**29,304**
SOx	ton	25,474	-	34	14	**25,523**	-	23,750	-	64	7	**23,821**	-	23,764	1	58	12	**23,835**
Dust	ton	216	-	54	5	**275**	-	180	-	49	8	**237**	-	147	-	50	11	**208**
Others	ton	-	-	3	86	**89**	-	-	-	2	92	**94**	-	-	-	2	119	**121**

Environmental Management

Category	Unit	2021					2022						2023					
		POSCO HOLDINGS	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO FUTURE M	POSCO E&C and Others[1]	Total
Hazardous chemicals consumed	ton	-	-	5,439	4,271	**9,710**	0	-	-	9,009	3,951	**12,960**	0	-	4,431	4,329	3,132	**11,892**
Percentage of ISO 14001 certified	%	100	-	100	100	**100**	-	100	-	100	100	**100**	-	100	100	100	100	**100**
Worksites requiring ISO 14001 certification[2]	facility	2	0	8	11	**21**	0	2	0	8	11	**21**	0	2	2	9	16	**29**
Certified worksites with ISO 14001	facility	2	0	8	11	**21**	0	2	0	8	11	**21**	0	2	2	9	16	**29**
Certified worksites with ISO 50001	facility	2	-	-	-	**2**	-	2	-	-	-	**2**	0	2	0	0	1	**3**
Number of incidents of non-compliance with environmental laws[3]	Case	12	0	5	3	**20**	0	9	0	5	3	**17**	0	12	0	4	0	**16**
Number of eco-friendly vehicles owned[4]	units	71	0	3	8	**82**	1	156	5	3	18	**183**	15	171	129	11	48	**374**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO E&C, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) Sites graded from 1 to 3 under the air pollutant or water pollutant emitting site classification system (including sites certified at the request of stakeholders or to meet other specific needs)
3) Compiled in line with respective affiliates' business report disclosure standards
4) Sum of EVs, hydrogen vehicles, and hybrid vehicles (excluding heavy equipment)

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Employees Status

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Number of employees	Persons	18,259	1,503	5,897	5,367	**31,026**	232	18,122	1,445	6,178	5,966	**31,943**	542	17,985	1,898	6,279	7,727	**34,431**
Executive level	Persons	86	26	25	49	**186**	38	67	26	29	58	**218**	46	67	34	33	72	**252**
Male	Persons	84	25	25	46	**180**	36	66	25	29	54	**210**	44	63	33	32	70	**242**
Female	Persons	2	1	0	3	**6**	2	1	1	0	4	**8**	2	4	1	1	2	**10**
Percentage of female	%	2.3	4.0	0	6.1	**3.2**	5.3	1.5	4.0	0	6.9	**3.7**	4.3	6.0	2.9	3.0	2.8	**4.0**
A breakdown by age group																		
Under 30 years old	Persons	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
30-50 years old	Persons	2	0	1	0	**3**	1	0	0	1	0	**2**	2	0	0	1	2	**5**
Over 50 years old	Persons	84	26	24	49	**183**	37	67	26	28	58	**216**	44	67	34	32	70	**247**
Employees excluding executive	Persons	18,173	1,477	5,872	5,318	**30,840**	194	18,055	1,419	6,149	5,908	**31,725**	496	17,918	1,864	6,246	7,655	**34,179**
Male	Persons	17,126	1,073	5,197	4,858	**28,254**	141	17,046	1,025	5,411	5,372	**28,995**	397	16,918	1,394	5,499	6,963	**31,171**
Female	Persons	1,047	361	675	460	**2,543**	53	1,009	394	738	536	**2,730**	99	1,000	470	747	692	**3,008**
Percentage of female	%	5.8	27.0	11.5	8.6	**8.2**	27.3	5.6	28.0	12.0	9.1	**8.6**	20.0	5.6	25.2	12.0	9.0	**8.8**
A breakdown by age group																		
Under 30 years old	Persons	2,921	230	660	854	**4,665**	10	3,035	231	737	1,055	**5,068**	51	3,241	243	726	1,607	**5,868**
30-50 years old	Persons	7,365	1,081	3,958	3,064	**15,468**	157	7,353	1,014	3,959	3,340	**15,823**	359	7,472	1,318	3,951	4,212	**17,312**
Over 50 years old	Persons	7,887	166	1,254	1,400	**10,707**	27	7,667	174	1,453	1,513	**10,834**	86	7,205	303	1,569	1,836	**10,999**
Management level[2]	Persons	4,030	298	482	728	**5,538**	61	4,068	288	496	776	**5,689**	115	4,041	410	483	1,184	**6,233**
Male	Persons	3,974	286	474	711	**5,445**	58	3,997	274	487	759	**5,575**	103	3,970	394	474	1,159	**6,100**
Female	Persons	56	12	8	17	**93**	3	71	14	9	17	**114**	12	71	16	9	25	**133**
Percentage of female	%	1.4	4.0	1.7	2.3	**1.7**	4.9	1.8	5.0	1.8	2.2	**2.0**	10.4	1.8	3.9	1.9	2.1	**2.1**
A breakdown by age group																		
Under 30 years old	Persons	0	0	0	1	**1**	0	1	1	0	0	**2**	0	2	1	0	8	**11**
30-50 years old	Persons	1,088	200	195	401	**1,884**	51	1,193	199	189	452	**2,084**	95	1,363	268	174	724	**2,624**
Over 50 years old	Persons	2,942	98	287	326	**3,653**	10	2,874	88	307	324	**3,603**	20	2,676	141	309	452	**3,598**
Regular employees	Persons	17,559	1,443	3,582	4,851	**27,435**	169	17,107	1,394	3,607	5,243	**27,520**	426	16,926	1,765	3,641	6,989	**29,747**
Male	Persons	16,561	1,058	3,371	4,439	**25,429**	127	16,147	1,011	3,374	4,762	**25,421**	351	15,970	1,323	3,388	6,349	**27,381**
Female	Persons	998	385	211	412	**2,006**	42	960	383	233	481	**2,099**	75	956	442	253	640	**2,366**
Percentage of female	%	5.7	27.0	5.9	8.5	**7.3**	24.9	5.6	27.0	6.5	9.2	**7.6**	17.6	5.7	25.0	6.9	9.2	**8.0**
Contingent employees (contractors)[3]	Persons	685	36	2,290	492	**3,503**	51	1,007	26	2,542	699	**4,325**	104	1,052	133	2,605	708	**4,602**
Male	Persons	635	17	1,826	442	**2,920**	39	957	15	2,037	641	**3,689**	79	1,004	104	2,111	655	**3,953**
Female	Persons	50	19	464	50	**583**	12	50	11	505	58	**636**	25	48	29	494	53	**649**
Percentage of female	%	7.3	53.0	20.3	10.2	**16.6**	23.5	5.0	42.0	19.9	8.3	**14.7**	24.0	4.6	21.8	19.0	7.5	**14.1**
Percentage of contingent employees (contractors)	%	3.8	2.0	38.8	9.2	**11.3**	23.2	5.6	2.0	41.2	11.7	**13.5**	19.6	5.9	7.0	41.5	9.2	**13.4**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) The criteria for manager positions were redefined to refer to employees receiving position allowances.
3) Including executive-level vice presidents

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Diversity

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Employees with disabilities	Persons	588	42	159	160	**949**	6	565	41	188	187	**987**	22	580	55	198	251	**1,106**
Employees entitled to veterans benefits	Persons	711	21	61	146	**939**	3	738	19	50	143	**953**	8	705	31	67	151	**962**

Employment & Turnover & Retirement

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Total employee turnover	Persons	1,070	58	187	610	**1,925**	9	1,180	66	76	418	**1,749**	36	962	67	93	659	**1,817**
Voluntary employee turnover	Persons	359	43	149	361	**912**	7	568	56	52	224	**907**	24	424	53	58	331	**890**
Non-voluntary employee turnover	Persons	711	15	38	249	**1,013**	2	612	10	24	194	**842**	12	538	14	35	328	**927**
Retirement	Persons	691	1	34	114	**840**	0	588	3	22	86	**699**	2	519	2	25	120	**668**
Redundancy	Persons	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
Others	Persons	20	14	4	138	**176**	2	24	7	2	108	**143**	10	19	12	10	208	**259**

New Employee Hires

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Total hiring	Persons	1,192	104	1,611	683	**3,590**	9	1,336	98	1,705	1,027	**4,175**	82	1,512	79	1,764	1,230	**4,667**
Male	Persons	1,114	67	1,286	595	**3,062**	7	1,276	73	1,403	891	**3,650**	54	1,467	49	1,486	1,115	**4,171**
Female	Persons	78	37	325	88	**528**	2	60	25	302	136	**525**	28	45	30	278	115	**496**
Percentage of female	%	6.5	36.0	20.2	12.9	**14.7**	22.2	4.5	26.0	17.7	13.2	**12.6**	34.1	3.0	38.0	15.8	9.3	**10.6**
A breakdown by age group																		
Under 30 years old	Persons	681	70	514	373	**1,638**	-	882	61	499	583	**2,025**	32	974	45	429	753	**2,233**
30-50 years old	Persons	78	29	876	194	**1,177**	-	103	32	913	188	**1,236**	42	119	25	896	298	**1,380**
Over 50 years old[2]	Persons	433	5	221	116	**775**	-	351	5	293	256	**905**	8	419	9	439	179	**1,054**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) Including those re-employed after retirement

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Evaluation

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Number of employees' performance evaluations	Persons	15,819	1,331	3,628	3,552	**24,330**	212	15,300	1,288	4,019	3,727	**24,546**	437	15,663	1,563	4,241	4,538	**26,442**
Male	Persons	14,952	996	3,439	3,223	**22,610**	171	14,464	951	3,769	3,354	**22,709**	376	14,795	1,175	3,956	4,001	**24,303**
Female	Persons	867	335	189	329	**1,720**	41	836	337	250	373	**1,837**	61	868	388	285	537	**2,139**
A breakdown by employee category																		
Regular employees	Persons	15,663	1,331	3,427	3,512	**23,933**	165	15,137	1,288	3,607	3,689	**23,886**	378	15,492	1,536	3,641	4,401	**25,448**
Contingent employees (contractors)	Persons	156	0	201	40	**397**	47	163	0	412	38	**660**	59	171	27	600	137	**994**

Training

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Employee training	Hours	1,332,271	53,110	195,472	306,636	**1,887,489**	10,465	1,769,947	58,634	234,413	483,232	**2,556,691**	35,243	1,808,072	75,856	204,408	352,667	**2,476,246**
Average hours of training per employee	Hours	73	35	33	57	**61**	71	98	41	38	81	**80**	65	101	40	33	62	**72**
Training expenses	KRW million	26,954	1,746	1,848	3,207	**33,755**	983	22,938	1,899	2,403	4,567	**32,790**	1,240	31,934	2,955	2,060	5,282	**43,471**
Average training expenses per employee	KRW million	1.5	1.2	0.3	0.6	**1.1**	4.2	1.3	1.3	0.4	0.8	**1.0**	2.3	1.8	1.6	0.3	0.9	**1.3**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)

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Labor/Management Relations

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Percentage of employees covered by collective bargaining agreements	%	100	100	100	100	**100**	100	100	100	100	100	**100**	100	100	100	100	100[2]	**100**[2]
Number of lockouts due to strikes	times	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**

Working Conditions

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Employees under flexible work program	Persons	4,935	148	2,652	1,922	**9,657**	57	5,316	217	2,729	2,496	**10,815**	392	8,185	1,197	2,892	3,293	**15,959**
Employees who took parental leave	Persons	106	38	85	53	**282**	5	152	55	85	71	**368**	7	260	39	61	75	**442**
Male	Persons	57	28	52	31	**168**	1	96	19	59	39	**214**	1	156	12	35	46	**250**
Female	Persons	49	10	33	22	**114**	4	56	36	26	32	**154**	6	104	27	26	29	**192**
Employees who took fertility treatment leave	Persons	85	5	18	14	**122**	1	81	6	14	36	**138**	0	111	9	30	31	**181**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) 2) Restated the data due to input errors (July 22, 2024)

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Work-Related Accident

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Total Lost Time Injury Frequency Rate (LTIFR)	Persons/1 million hours	0.51	0	0.96	-	-	0	0.93	0	1.14	-	-	0	0.35	0.30	0.71	-	-
Employee LTIFR	Persons/1 million hours	0.52	0	0.00	-	-	0	0.56	0	0	-	-	0	0.17	0.39	0	-	-
Supplier LTIFR	Persons/1 million hours	0.51	0	1.17	-	-	0	1.26	0	1.39	-	-	0	0.50	0	0.87	-	-
Total Recordable Injury Frequency Rate (TRIFR)	Persons/1 million hours	0	0	1.60	-	-	0	1.73	0.23	1.55	-	-	0	1.67	0.89	1.98	-	-
Employee TRIFR	Persons/1 million hours	0	0	0.00	-	-	0	1.37	0.34	0.00	-	-	0	1.76	0.79	0	-	-
Supplier TRIFR	Persons/1 million hours	0	0	1.95	-	-	0	2.06	0	1.89	-	-	0	1.60	1.21	2.41	-	-
Employee accidents																		
Fatalities	Persons	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
Injuries	Persons	7	0	0	4	**11**	0	14	0	0	10	**24**	0	4	2	0	11	**17**
Incidents	Counts	7	0	0	4	**11**	0	14	0	0	10	**24**	0	4	2	0	11	**17**
Accidents	Counts	5,149	0	-	393	**5,542**	0	6,391	11	-	976	**7,378**	1	5,987	197	-	745	**6,930**
Suppliers accidents																		
Fatalities	Persons	1	0	1	0	**2**	0	1	0	0	0	**1**	0	0	0	1	1	**2**
Injuries	Persons	15	1	62	2	**80**	0	30	0	78	1	**109**	0	16	0	57	11	**84**
Incidents	Counts	15	1	62	2	**80**	0	30[2]	0	78	1	**109**	0	16	0	57	11	**84**
Near Miss	Counts	362	0	-	186	**548**	0	289	5	-	162	**456**	0	1,909	16	-	68	**1,993**

Occupational Health and Safety Management System (ISO45001 or KOSHA MS) Certification

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Worksites requiring OHSMS (ISO 45001) certification[3]	sites	2	0	1	14	**17**	0	2	2	1	14	**19**	0	2	3	1	22	**28**
Certified worksites with OHSMS (ISO 45001)	sites	2	0	1	14	**17**	0	2	2	1	14	**19**	0	2	3	1	22	**28**
Percentage of worksites with OHSMS (ISO 45001) certification	%	100	-	100	100	**100**	-	100	100	100	100	**100**	-	100	100	100	100	**100**

Quality Management Systems (ISO 9001 or IATF 16949) Certification

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Worksites requiring QMS (ISO 9001) certification[4]	sites	2	0	1	18	**21**	0	2	0	1	18	**21**	0	2	0	1	25	**28**
Certified worksites with QMS (ISO 9001)	sites	2	0	1	18	**21**	0	2	0	1	18	**21**	0	2	0	1	25	**28**
Percentage of worksites with QMS (ISO 9001) certification	%	100	-	100	100	**100**	-	100	-	100	100	**100**	-	100	-	100	100	**100**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) Restated the data due to input errors (July 1, 2024)
3) Sites owning production facilities or construction sites that are required to establish a dedicated health and safety organization pursuant to the Serious Accidents Punishment Act (including sites certified at the request of stakeholders or to meet other specific needs)
4) Sites operating processes that impact product quality or services and covered under the scope of ISO 9001 (including sites certified at the request of stakeholders or to meet other specific needs)

ESG Factbook_Major Domestic Corporations Consolidated - Social

Training on Information Security

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Total hours of employee training on information security	Hours	31,953	2,620	9,086	12,621	**56,280**	134.5	24,338	4,192	11,070	30,046	**69,781**	331	14,228	2,731	5,836	26,959	**50,084**
Employee training on information security	Persons	17,589	1,310	4,543	3,525	**26,967**	269	17,180	1,323	5,535	5,552	**29,859**	661[2]	17,073	1,675	5,720	7,540	**32,669**
Regular employees	Persons	16,795	1,288	3,174	3,266	**24,523**	145	16,158	1,292	3,494	5,100	**26,189**	411	15,980	1,576	3,588	6,865	**28,420**
Contingent employees (contractors)	Persons	794	22	1,369	259	**2,444**	124	1,022	31	2,041	452	**3,670**	250	1,093	99	2,132	675	**4,249**

Suppliers (supply chain) Management

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Suppliers (supply chain) management	Counts	1,469	-	760	2,214	**4,443**	14	1,408	-	841	2,434	**4,697**	99	1,380	1,002	752	3,150	**6,383**
Number of suppliers	Counts	1,159	-	678	888	**2,725**	0	1,182	-	705	973	**2,860**	0	1,132	598	752	1,269	**3,751**
Percentage of suppliers evaluated	%	78.9	-	89	40	**61**	0	84	-	84	40	**61**	0	82	60	100	40.3	**58.8**

Social Contribution

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Voluntary works of employees	Hours	296,729	2,388	69,996	50,035	**419,148**	1,725	346,855	18,151	97,872	71,104	**535,707**	2,373	402,945	26,990	89,484	89,578	**611,370**
Social contribution expenses	KRW million	49,115	2,155	6,855	2,603	**60,728**	279	54,257	2,163	9,974	2,727	**69,400**	350	52,171	3,654	7,597	3,903	**67,674**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) Including employees participating in the personnel exchange programs of Group affiliates

ESG Factbook_Major Domestic Corporations Consolidated - Social

Fair Trade

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Non-compliance with fair trade[2]																		
Instances for which fines were incurred	Case	0	0	1	0	**1**	0	0	0	0	1	**1**	0	0	0	0	0	**0**
Instances for which non-monetary sanctions were incurred	Case	0	0	1	0	**1**	0	0	0	0	1	**1**	0	0	0	0	0	**0**
Total monetary value of fines for instances	KRW million	0	0	14	0	**14**	0	0	0	0	580	**580**	0	0	0	0	0	**0**

Ethics/Anti-Corruption

Category	Unit	2021					2022						2023					
		POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total	POSCO HOLDINGS	POSCO	POSCO INTERNATIONAL	POSCO E&C	POSCO FUTURE M and Others[1]	Total
Training hours provided to employees on ethics standards	Hours	36,444	1,274	10,895	10,396	**59,009**	1,666.2	35,198	2,889	16,716	16,609	**73,078**	1,534.2	23,320	6,811	11,522	14,598	**57,785**
Employees who have undertaken training on ethics standards	Persons	18,222	1,274	5,466	5,153	**30,115**	1,210[3]	17,599	879	5,802	5,707	**31,197**	2,627[3]	17,490	1,628	5,761	7,463	**34,969**
Number of issues filed	Case	322	3	22	37	**384**	4	403	5	25	39	**476**	5	420	36	51	51	**563**
By type[4]																		
Bribery and corruption	Case	107	1	-	8	**116**	1	165	1	2	12	**181**	0	124	8	5	15	**152**
Violation of human rights	Case	34	0	-	18	**52**	2	46	1	15	15	**79**	0	68	9	29	22	**128**
Abuse of power	Case	19	0	-	5	**24**	0	16	0	8	5	**29**	0	23	4	6	6	**39**
Others	Case	162	2	-	6	**170**	1	176	3	0	7	**187**	5	205	15	11	8	**244**
Number of issues rectified	Case	322	3	18	35	**378**	4	403	5	25	34	**471**	5	420	28	51	46	**550**

1) Sum of other operating companies within the scope of consolidation for the reporting year (POSCO FUTURE M, POSCO DX, POSCO FLOW, POSCO STEELEON, POSCO Mobility Solution, POSCO M-TECH)
2) Incidences of non-compliance identified by the Korean Fair Trade Commission
3) Including employees participating in the personnel exchange programs of Group affiliates
4) The number of submissions by type was disclosed from 2021 due to the revision of classification standards in 2021, and data for POSCO E&C have been compiled since 2022.

ESG Factbook_Major Domestic Corporations Consolidated - Governance/Economy

Board Of Directors

Category	Unit	POSCO HOLDINGS		
		2021	2022	2023
Board size and independence				
Number of inside directors	Persons	5	4	**4**
Number of outside directors	Persons	7	7	**7**
Number of Non-executive directors	Persons	0	1	**1**
Percentage of outside directors	%	58.3	58.3	**58.3**
Board Diversity				
Number of male directors	Persons	11	11	**11**
Number of female directors	Persons	1	1	**1**
Attendance rate of BOD	%	100	100	**100**
Average term of directors	Year	3.4	2.9	**2.6**
Number of BOD meetings held	times	9	11	**10**
Number of Agenda deliberated at BOD meetings	Counts	27	24	**24**
Passed	Counts	26	23	**22**
Amendment passed	Counts	1	1	**2**
Rejected	Counts	0	0	**0**

Economy

Category	Unit	POSCO HOLDINGS		
		2021	2022	2023
Economic performance				
Revenue	KRW million	39,920,201	8,589,819	**1,454,079**
Net income	KRW million	5,181,227	-467,852	**799,578**
Earning Per Share (EPS)	KRW	68,360	-6,185	**10,539**
Total cash dividend	KRW million	1,285,635	910,190	**758,764**
Propensity to cash dividend	%	19	29	**45**
Dividend amount through interim and quarterly dividends	KRW million	907,507	758,492	**569,073**
Dividends per share	KRW	17,000	12,000	**10,000**
Shareholder composition				
Percentage of government agencies holding 5% or more shares	%	9.25	9.11	**6.38**
Percentage of founders and their families holding 5% or more shares	%	N/A	N/A	**N/A**
Percentage of CEO stock holdings to basic salary	-	0.46	0.42	**1.95**
Percentage of inside director stock holdings to basic salary	-	0.71	0.51	**1.14**

Compensation

Category	Unit	POSCO HOLDINGS		
		2021	2022	2023
Remuneration				
CEO	KRW million	1,829	2,893	**3,441**
Average wage of employees (excluding registered executives)	KRW million	109	121	**149**
CEO to Employees Pay Ratio	-	16.8	23.9	**23.1**

ESG Factbook_Steel Consolidated

The following consolidated indicators cover POSCO Group's entire crude steel production corporations, and two steel re-rolling mills were added in 2023.

*Crude steel production corporations: POSCO (sum of the Pohang and Gwangyang Steelworks), PT Krakatau POSCO (Indonesia), POSCO Zhangjiagang Stainless (China), and POSCO YAMATO-VINA (Vietnam)

Financial Information of Production Companies

(Unit: KRW million)

Category	Name of corporation	Nation	2021	2022	2023
Integrated mill	POSCO	Korea	39,920,201	35,152,358[1]	38,971,567
	PT. Krakatau POSCO	Indonesia	2,694,601	3,006,300	3,130,551
	POSCO (Zhangjiagang) Stainless CO., LTD.	China	3,747,283	4,208,952	3,359,087
	POSCO Yamato Vina Steel Joint Stock Company	Vietnam	473,386	461,530	395,261
Re-rolling mill	POSCO Maharashtra Steel Private Limited	India	1,679,472	1,901,490	1,763,374
	POSCO Thainox Public Company Limited	Thailand	715,151	900,653	551,000
Total			49,230,094	45,631,283	48,170,840

1) Established through split-off from POSCO Holdings on March 1, 2022, and its 2022 sales span 10 months between March and December

(Unit: USD, millions[1])

Name of corporation	2021	2022	2023
POSCO	33,674	27,738	30,225
Five overseas steel subsidiaries	7,853	8,269	7,135
Total	41,527	36,007	37,360

1) Data converted into USD were illustrated for global stakeholders, and such data were calculated using the exchange rate as of the last day of each fiscal year. (2021: USD 1 = KRW 1,185.5, 2022: USD 1 = KRW 1,267.3, 2023: USD 1 = KRW 1,289.4)

Crude Steel Output *Indicating steel mills operating upstream processes only

(Unit: 1,000 tons)

Name of corporation	Nation (FY2023, Separately, Unit: KRW, millions)	Nation	2021			2022			2023			
			Blast furnace/ Converter	Electric furnace	Total (Crude steel)	Blast furnace/ Converter	Electric furnace	Total (Crude steel)	Blast furnace/ Converter	Electric furnace	Total (Crude steel)	Crude steel production rate by nation
POSCO	45,825,529	Korea	36,907	1,356	38,263	33,255	964	34,219	34,625	1,057	35,682	89.4%
PT. Krakatau POSCO	3,475,929	Indonesia	3,135	-	3,135	3,030	-	3,030	3,005	-	3,005	7.5%
POSCO (Zhangjiagang) Stainless CO., LTD.	936,933	China	-	989	989	-	989	989	-	839	839	2.1%
POSCO Yamato Vina Steel Joint Stock Company	434,496	Vietnam	-	577	577	-	397	397	-	416	416	1.0%
Total			40,042	2,922	42,964	36,285	2,350	38,635	37,630	2,312	39,942	100%
Rate			93%	7%	100%	94%	6%	100%	94%	6%	100%	

ESG Factbook_Steel Consolidated - Environmental

The yearly scope of consolidation of key overseas steel production corporations is as follows.

- 2021 and 2022 (3 integrated steel mills): PT Krakatau POSCO (Indonesia), POSCO Zhangjiagang Stainless (China), and POSCO YAMATO-VINA (Vietnam)
- 2023 (3 integrated steel mills + 2 re-rolling mills): PT Krakatau POSCO (Indonesia), POSCO Zhangjiagang Stainless (China), and POSCO YAMATO-VINA (Vietnam), POSCO Maharashtra (India), POSCO Thainox (Thailand)

GHG

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Direct/indirect GHG emissions (Scope 1 & 2)	tCO_2e	78,490,212	8,349,261	**86,839,473**	70,185,623	8,412,126	**78,597,749**	71,971,900	8,383,419	**80,355,319**	315,223	**80,670,542**
Direct emissions (Scope 1)	tCO_2e	77,101,095	7,074,668	**84,175,763**	68,305,993	7,153,995	**75,459,988**	70,588,012	7,015,365	**77,603,377**	129,855	**77,733,232**
Indirect emissions (Scope 2)	tCO_2e	1,389,117	1,274,593	**2,663,710**	1,879,630	1,258,131	**3,137,761**	1,383,895	1,368,054	**2,751,949**	185,368	**2,937,316**
GHG emissions intensity (based on crude steel production output)	tCO_2e/ton	2.05	1.78	**2.02**	2.05	1.90	**2.03**	2.02	1.97	**2.02**	-	-

Energy

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Energy consumption	GJ	380,052,800	41,650,863	**421,703,663**	333,781,599	41,445,903	**375,227,502**	354,002,498	41,816,745	**395,819,243**	3,704,869	**399,524,674**
Energy directly consumed	GJ	369,264,360	31,090,941	**400,355,301**	319,078,303	31,168,327	**350,246,630**	342,940,165	31,324,428	**374,264,593**	2,310,560	**376,575,153**
By-product gas	GJ	327,800,350	25,218,611	**353,018,961**	288,103,292	25,479,428	**313,582,720**	294,493,858	25,067,681	**319,561,539**	0	**319,561,539**
Coal	GJ	0	481,616	**481,616**	0	455,618	**455,618**	0	578,042	**578,042**	0	**578,042**
Natural gas	GJ	41,270,222	5,228,960	**46,499,182**	30,750,384	5,056,149	**35,806,533**	45,697,279	5,506,875	**51,204,154**	2,286,575	**53,490,729**
Diesel fuel	GJ	189,168	161,755	**350,923**	218,348	177,131	**395,479**	189,682	171,830	**361,512**	19,483	**380,995**
Gasoline	GJ	4,587	0	**4,587**	6,249	0	**6,249**	5,569	0	**5,569**	1,665	**7,234**
Liquefied petroleum gas (LPG)	GJ	34	0	**34**	30	0	**30**	0	0	**0**	2,837	**2,837**
Other fuels	GJ	0	0	**0**	0	0	**0**	2,553,777	0	**2,553,777**	0	**2,553,777**
Energy indirectly consumed	GJ	10,788,169	10,553,264	**21,341,433**	14,703,073	10,269,947	**24,973,020**	11,058,453	10,481,093	**21,539,546**	1,176,663	**22,716,209**
Electricity	GJ	10,746,994	8,802,615	**19,549,609**	14,618,973	8,559,689	**23,178,662**	10,834,095	8,837,160	**19,671,255**	1,176,663	**20,847,918**
Steam	GJ	41,175	1,750,649	**1,791,824**	84,100	1,710,258	**1,794,358**	224,358	1,643,933	**1,868,291**	0	**1,868,291**
Renewable energy consumed	GJ	270	6,658	**6,928**	223	7,629	**7,852**	4,116	11,224	**15,340**	217,974	**233,314**
Energy intensity (based on crude steel production output)	GJ/ton	9.9	8.9	**9.8**	9.8	9.4	**9.7**	9.9	9.8	**9.9**	-	-
Electricity sold	GJ	13,840	2,896,944	**2,910,784**	8,671	2,917,124	**2,925,795**	4,338	2,910,039	**2,914,377**	0	**2,914,377**

ESG Factbook_Steel Consolidated - Environmental

Water

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Total water withdrawal	ton	143,218,271	14,375,125	**157,593,396**	145,115,608	13,708,923	**158,824,531**	153,645,403	15,115,560	**168,760,963**	2,051,931	**170,812,894**
Freshwater	ton	0	9,947,095	**9,947,095**	0	9,062,532	**9,536,820**	0	10,825,856	**10,825,856**	2,051,931	**12,877,787**
Surface water	ton	100,116,109	4,428,030	**104,544,139**	108,957,548	4,172,103	**113,129,651**	115,497,855	4,289,704	**119,787,559**	0	**119,787,559**
Groundwater	ton	6,298,260	0	**6,298,260**	3,451,420	0	**3,451,420**	4,154,290	0	**4,154,290**	0	**4,154,290**
Desalinated water	ton	7,390,041	0	**7,390,041**	3,608,003	0	**3,608,003**	5,044,618	0	**5,044,618**	0	**5,044,618**
municipal sewage treatment water	ton	29,413,861	0	**29,413,861**	29,098,637	0	**29,098,637**	28,948,640	0	**28,948,640**	0	**28,948,640**
Total water withdrawn in regions with 'High' baseline water stress	ton	0	0	**0**	0	0	**0**	79,009,396	9,685,311	**88,694,707**	518,177	**89,212,884**
Total water withdrawn in regions with 'Extremely High' baseline water stress	ton	0	0	**0**	0	0	**0**	0	0	**0**	0	**0**
Total water consumed	ton	68,353,529	10,682,193	**79,035,722**	73,375,512	10,036,479	**83,411,991**	72,416,383	11,355,436	**83,771,819**	1,697,599	**85,469,418**
Total water consumed in regions with 'High' baseline water stress	ton	0	0	**0**	0	0	**0**	35,888,873	7,270,732	**43,159,605**	163,845	**43,323,450**
Total water consumed in regions with 'Extremely High' baseline water stress	ton	0	0	**0**	0	0	**0**	0	0	**0**	0	**0**
Total water withdrawal intensity (based on crude steel production output)	ton/ton	3.7	3.1	**3.7**	4.2	3.1	**4.1**	4.3	3.5	**4.2**	-	-
Total wastewater discharge	ton	74,864,742	3,692,932	**78,557,674**	71,740,096	3,672,444	**75,412,540**	81,229,020	3,760,124	**84,989,144**	354,332	**85,343,476**
Total recycled/reused water	ton	47,804,712	1,936,166	**49,740,878**	44,625,210	1,796,870	**46,422,080**	40,390,660	1,669,314	**42,059,974**	750,455	**42,810,429**
Percentage of total recycled/reused water	%	33.4	13.5	**31.6**	30.8	13.1	**29.2**	26.3	11.0	**24.9**	36.6	**25.1**
Number of worksites using recycled water	sites	2	3	**5**	2	3	**5**	2	3	**5**	1	**6**

ESG Factbook_Steel Consolidated - Environmental

Waste

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Total waste	ton	21,806,614	2,302,405	**24,109,019**	19,116,670	2,317,573	**21,434,243**	19,523,945	2,247,683	**21,771,628**	78,398	**21,850,026**
Waste recycled	ton	21,509,991	2,144,155	**23,654,146**	18,787,137	2,298,264	**21,085,401**	19,242,974	2,223,646	**21,466,620**	62,450	**21,529,069**
Percentage of waste recycled	%	98.6	93.1	**98.1**	98.3	99.2	**98.4**	98.6	98.9	**98.6**	79.7	**98.5**
Waste incinerated	ton	60,302	4,642	**64,944**	62,031	4,764	**66,795**	52,034	5,112	**57,145**	256	**57,401**
Percentage of waste incinerated	%	0.3	0.2	**0.3**	0.3	0.2	**0.3**	0.3	0.2	**0.3**	0.3	**0.3**
Waste landfilled	ton	236,196	273	**236,469**	267,470	16	**267,486**	228,633	0	**228,633**	2,590	**231,224**
Percentage of waste landfilled	%	1.1	0.01	**1.0**	1.4	0.001	**1.2**	1.2	0	**1.1**	3.3	**1.1**
Waste disposed in other ways	ton	125	13,920	**14,045**	32	14,516	**14,548**	304	18,926	**19,230**	13,102	**32,332**
Percentage of Waste disposed in other ways	%	0.001	0.6	**0.1**	0.0002	0.6	**0.1**	0.002	0.8	**0.1**	16.7	**0.1**
Designated waste	ton	94,485	464,142	**558,627**	96,579	434,374	**530,953**	108,491	464,957	**573,448**	65,126	**638,574**
Waste recycled	ton	76,740	447,346	**524,086**	59,344	418,759	**478,103**	58,307	444,934	**503,242**	60,192	**563,434**
Waste incinerated	ton	10,401	1,191	**11,592**	16,546	1,069	**17,615**	8,691	1,097	**9,789**	256	**10,045**
Waste landfilled	ton	7,219	273	**7,492**	20,657	16	**20,673**	41,188	0	**41,188**	2,555	**43,743**
Waste disposed in other ways	ton	125	13,920	**14,045**	32	14,516	**14,548**	304	18,926	**19,230**	2,123	**21,353**
General waste generated	ton	21,712,129	1,838,264	**23,550,393**	19,020,091	1,883,199	**20,903,290**	19,415,454	1,782,726	**21,198,179**	13,272	**21,211,451**
Waste recycled	ton	21,433,251	1,696,809	**23,130,060**	18,727,793	1,879,505	**20,607,298**	19,184,667	1,778,712	**20,963,378**	2,257	**20,965,635**
Waste incinerated	ton	49,900	3,451	**53,351**	45,485	3,695	**49,180**	43,342	4,014	**47,357**	0	**47,357**
Waste landfilled	ton	228,978	0	**228,978**	246,813	0	**246,813**	187,445	0	**187,445**	36	**187,480**
Waste disposed in other ways	ton	0	0	**0**	0	0	**0**	0	0	**0**	10,979	**10,979**
Total waste generated intensity (based on crude steel production output)	ton/ton	0.57	0.49	**0.56**	0.56	0.52	**0.55**	0.55	0.53	**0.55**	-	**0.55**
Percentage of total waste recycled	%	98.6	93.1	**98.1**	98.3	99.2	**98.4**	98.6	98.9	**98.6**	169.5	**98.5**

ESG Factbook_Steel Consolidated - Environmental

Air

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Emissions of air pollutants	ton	61,445	15,420	**76,865**	51,806	13,081	**64,887**	51,707	13,376	**65,083**	-	**65,083**
NOx	ton	35,755	7,366	**43,121**	27,877	6,367	**34,416**	27,796	6,607	**34,403**	-	**34,403**
SOx	ton	25,474	5,500	**30,974**	23,750	4,548	**28,298**	23,764	4,736	**28,500**	-	**28,500**
Dust	ton	216	2,554	**2,770**	180	1,994	**2,174**	147	2,031	**2,178**	-	**2,178**
Environmental Management Systems (ISO 14001) certified												
Worksites requiring ISO 14001 certification	sites	2	3	**5**	2	3	**5**	2	3	**5**	2	**7**
Certified worksites with ISO 14001	sites	2	3	**5**	2	3	**5**	2	3	**5**	2	**7**
Percentage of ISO 14001 certified	%	100	100	**100**	100	100	**100**	100	100	**100**	100	**100**

ESG Factbook_Steel Consolidated - Social

Employees Status

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Number of employees	Persons	18,259	4,717	**22,976**	18,122	5,059	**23,181**	17,985	5,031	**23,016**	1,324	**24,340**
Executive level	Persons	86	6	**92**	67	9	**76**	67	10	**77**	7	**84**
Male	Persons	84	6	**90**	66	9	**75**	63	10	**73**	7	**80**
Female	Persons	2	0	**2**	1	0	**1**	4	0	**4**	0	**4**
Percentage of female	%	2.3	0	**2.2**	1.5	0	**1**	6.0	0	**5.2**	0	**4.8**
A breakdown by age group												
Under 30 years old	Persons	0	0	**0**	0	0	**0**	0	0	**0**	0	**0**
30-50 years old	Persons	2	0	**2**	0	0	**0**	0	2	**2**	4	**6**
Over 50 years old	Persons	84	6	**90**	67	9	**76**	67	8	**75**	3	**78**
Employees excluding executives	Persons	18,173	4,711	**22,884**	18,055	5,050	**23,105**	17,918	5,021	**22,939**	1,317	**24,256**
Male	Persons	17,126	4,318	**21,444**	17,046	4,646	**21,692**	16,918	4,620	**21,538**	1,197	**22,735**
Female	Persons	1,047	393	**1,440**	1,009	404	**1,413**	1,000	401	**1,401**	120	**1,521**
Percentage of female	%	5.8	8.3	**6.3**	5.6	8.0	**6.1**	5.6	8.0	**6.1**	9.1	**6.3**
A breakdown by age group												
Under 30 years old	Persons	2,921	1,575	**4,496**	3,035	1,583	**4,618**	3,241	1,270	**4,511**	253	**4,764**
30-50 years old	Persons	7,365	2,930	**10,295**	7,353	3,228	**10,581**	7,472	3,502	**10,974**	880	**11,854**
Over 50 years old	Persons	7,887	206	**8,093**	7,667	239	**7,906**	7,205	249	**7,454**	184	**7,638**

ESG Factbook_Steel Consolidated - Social

Employees Status

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Management level	Persons	4,030	358	**4,388**	4,068	404	**4,472**	4,041	411	**4,452**	188	**4,640**
Male	Persons	3,974	322	**4,296**	3,997	360	**4,357**	3,970	368	**4,338**	169	**4,507**
Female	Persons	56	36	**92**	71	44	**115**	71	43	**114**	19	**133**
Percentage of female	%	1.4	10.1	**2.1**	1.7	10.9	**2.6**	1.8	10.5	**2.6**	10.1	**2.9**
A breakdown by age group												
Under 30 years old	Persons	0	19	**19**	1	12	**13**	2	6	**8**	0	**8**
30-50 years old	Persons	1,088	295	**1,383**	1,193	348	**1,541**	1,363	365	**1,728**	121	**1,849**
Over 50 years old	Persons	2,942	44	**2,986**	2,874	44	**2,918**	2,676	40	**2,716**	67	**2,783**
Regular employees	Persons	17,559	4,355	**21,914**	17,107	4,686	**21,793**	16,926	4,636	**21,562**	1,307	**22,869**
Male	Persons	16,561	4,012	**20,573**	16,147	4,337	**20,484**	15,970	4,291	**20,261**	1,187	**21,448**
Female	Persons	998	343	**1,341**	960	349	**1,309**	956	345	**1,301**	120	**1,421**
Percentage of female	%	5.7	7.9	**6.1**	5.6	7.4	**6.0**	5.6	7.4	**6.0**	9.2	**6.2**
Contingent employees (contractors)	Persons	685	362	**1,047**	1,007	373	**1,380**	1,052	395	**1,447**	17	**1,464**
Male	Persons	635	312	**947**	957	319	**1,276**	1,004	339	**1,343**	17	**1,360**
Female	Persons	50	50	**100**	50	55	**105**	48	56	**104**	0	**104**
Percentage of female	%	7.3	13.8	**9.6**	5.0	14.7	**7.6**	4.6	14.2	**7.2**	0	**7.1**

ESG Factbook_Steel Consolidated - Social

New Employee Hires

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Total hiring	Persons	1,192	310	**1,502**	1,336	327	**1,663**	1,512	211	**1,723**	84	**1,807**
Male	명Persons	1,114	268	**1,382**	1,276	278	**1,554**	1,467	182	**1,649**	80	**1,729**
Female	Persons	78	42	**120**	60	49	**109**	45	29	**74**	4	**78**
Percentage of female	%	6.5	13.5	**8.0**	4.5	15.0	**6.6**	3.0	13.7	**4.3**	4.8	**4.3**
A breakdown by age group												
Under 30 years old	Persons	681	202	**883**	882	264	**1,146**	974	117	**1,091**	48	**1,139**
30-50 years old	Persons	78	76	**154**	103	41	**144**	119	65	**184**	31	**215**
Over 50 years old	Persons	433	32	**465**	351	22	**373**	419	29	**448**	5	**453**

Employment & Turnover & Retirement

Category	Unit	2021			2022			2023				2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	Overseas re-rolling mill (2 companies)	
Total employee turnover	Persons	1,070	264	**1,334**	1,180	244	**1,424**	962	253	**1,215**	72	**1,287**
Voluntary employee turnover	Persons	359	250	**609**	568	226	**794**	424	225	**649**	66	**715**
Non-voluntary employee turnover	Persons	711	14	**725**	612	18	**630**	538	28	**566**	6	**572**
Retirement	Persons	691	8	**699**	588	10	**598**	519	14	**533**	4	**537**
Redundancy	Persons	0	2	**2**	0	4	**4**	0	11	**11**	0	**11**
Others	Persons	20	4	**24**	24	4	**28**	19	3	**22**	2	**24**

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Work-Related Accident

Category	Unit	2021			2022			2023			Overseas re-rolling mill (2 companies)	2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total		
Employee accidents												
Fatalities	Persons	0	0	**0**	0	0	**0**	0	0	**0**	0	**0**
Injuries	Persons	7	0	**7**	14	0	**14**	4	1	**5**	0	**5**
Suppliers accidents												
Fatalities	Persons	1	0	**1**	1	0	**1**	0	0	**0**	0	**0**
Injuries	Persons	15	1	**16**	30	0	**30**	16	2	**18**	1	**19**

Safety Management

Category	Unit	2021			2022			2023			Overseas re-rolling mill (2 companies)	2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total		
Occupational Health and Safety Management System (ISO45001) certification												
Worksites requring OHSMS (ISO 45001) certification	sites	2	3	**5**	2	3	**5**	2	3	**5**	2	**7**
Certified worksites with OHSMS (ISO 45001)	sites	2	2	**4**	2	3	**5**	2	3	**5**	2	**7**
Percentage of worksites with OHSMS (ISO 45001) certification	%	100	67	**80**	100	100	**100**	100	100	**100**	100	**100**

Quality Management

Category	Unit	2021			2022			2023			Overseas re-rolling mill (2 companies)	2023 Total
		POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total	POSCO (Korea)	Overseas integrated mill (3 companies)	Total		
Quality Management Systems (ISO 9001 or IATF 16949) certification												
Worksites requiring QMS (ISO 9001) certification	sites	2	3	**5**	2	3	**5**	2	3	**5**	2	**7**
Certified worksites with QMS (ISO 9001)	sites	2	3	**5**	2	3	**5**	2	3	**5**	2	**7**
Percentage of worksites with QMS (ISO 9001) certification	%	100	100	**100**	100	100	**100**	100	100	**100**	100	**100**

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ENVIRONMENTAL POLICY

Purpose

The purpose of this policy is to establish a sustainable management and environmental management system, improve its ability to respond to environmental risks, and contribute to protecting the environment and overcoming climate crisis through cooperation among POSCO Holdings and POSCO Group's all affiliates and stakeholders.

Scope of Application

This policy applies to POSCO Holdings. POSCO Holdings shall encourage all of POSCO Group's affiliates and partners to comply with this policy or establish an equivalent policy.

Basic Principles

1. Compliance with Environmental Laws and Mitigation of Environmental Impacts

- We shall comply with international conventions and applicable laws on the environment and energy and endeavor to mitigate environmental impact throughout our entire process of development, production, use, and disposal of products.
- We shall minimize emissions of pollutants by implementing eco-friendly production methods and the best available technology.

2. Response to Climate Change

- We shall establish a risk self-assessment framework in response to climate change, set achievable goals, and self-evaluate performance.
- We shall endeavor to reduce GHG emissions by reducing our dependence on fossil fuels and fossil raw materials, improving energy efficiency, and developing and using renewable energy.

3. Protection of Biodiversity and Restoration of the Natural Environment

- We shall endeavor to restore the natural ecosystem and protect biodiversity by using natural resources and by-products in an efficient manner.
- In order to minimize damage to the environment, including green areas, forests, wetlands, and oceans, we shall conduct risk assessments when constructing or expanding workplaces and endeavor to restore the existing natural environment through reforestation and afforestation efforts when withdrawing from work sites.

4. Raw and Subsidiary Materials and Water

- We shall take into account the amount of resources used to manufacture finished products and endeavor to replace traditional materials with eco-friendly ones, such as raw materials that are renewable or with fewer impurities. We shall also endeavor to reduce the amount of resources used in production activities by adopting new facilities that consume less resources, such as water saving machines, and by implementing clean technologies.

5. Waste and Wastewater

- We shall minimize waste and wastewater generated during the production process and recycle inevitably generated waste and wastewater as much as possible. We shall also establish waste management and/or water treatment facilities required to minimize the impact that waste and wastewater from our workplaces may have on the environment.

6. Hazardous Chemicals

- We shall systematically manage hazardous chemicals to prevent chemical accidents, such as chemical leaks or spills, and endeavor to use and release less hazardous chemicals.

Action Plans

1. Establishment of Environmental Management System

- We shall establish an environmental management system ("EMS") to assess and respond to environmental risks unique to our business activities, set specific environmental performance targets, and continually improve such targets.
- The board of directors and the executive management shall actively participate in the decision-making and management/supervision of the EMS and provide ample support in both human and material resources, such as assigning dedicated working-level employees, to ensure that the EMS is fully installed and operated.
- For the operation of the EMS, we shall incorporate environment-related factors in existing policies with specific consideration of each company's business situation and, if necessary, establish and comply with specific policies, guidelines, and bylaws on specific environmental concerns such as biodiversity, forest, wetland, and climate risk.
- We shall discuss the importance of environmental protection and response to climate change with stakeholders, such as contractors, suppliers, and counterparties, and provide support so that they can establish their own EMS.
- The officers and department heads shall provide training to the officers/employees under their supervision so that they can recognize the importance of environmental management and comprehend the EMS.

ENVIRONMENTAL POLICY

2. Response to Climate Change

- We shall integrate transition and physical risk related to climate change into company-wide risk assessments and business strategies and document and manage such risk.
- We shall ensure that risks, strategies, and assessments related to climate change are properly reported to the board of directors and executive management.
- We shall establish and implement concrete and feasible plans to mitigate GHG emissions and achieve carbon neutral goals.
- We shall apply environmental certification and disclosure frameworks related to climate change (e.g. the TCFD), or establish a comparable reporting framework to disclose to a reasonable extent our ongoing efforts and achievements in responding to climate change.

3. Management of Production and Workplace Environment

- We shall ensure that the production and workplace environment is properly managed through processes including KPIs and other performance management indicators, education/training, establishment and management of guidelines, internal inspections, etc.
- We shall apply eco-friendly production processes and the best available technology to minimize the amount of pollutants and the impact of pollutants on the environment.
- We shall establish and operate environmental management manuals tailored to the specific needs of production facilities and workplaces and continually monitor and strive to improve the environmental impact of our operating facilities.
- We shall endeavor to thoroughly assess risks and achieve a zero net environmental impact in order to protect the ecosystem and the environment when building, expanding, and closing down our workplaces. We shall not engage in business activities that destroy forests and wetlands but pursue and implement the best available measures to mitigate the impact on the ecosystem, e.g. through engaging in forest and wetland restoration activities.

4. Development and Distribution of Products and Services

- We shall identify the challenges and opportunities in the process of transitioning to a low-carbon economy, increase the supply of eco-friendly products and by-products, and assess environmental risks in the transportation and logistics process. By doing so, we shall minimize the environmental impact throughout the entire process of developing and providing goods and services.
- We shall enhance our competitiveness by developing low-carbon, eco-friendly, and new and renewable energy products.

5. Supply Chain Management, and Selection and Evaluation of Suppliers

- When selecting our partners (suppliers, contractors, service providers, etc.), we shall evaluate their level of environmental management to minimize environmental impact.
- We shall provide support to suppliers and contractors so that they can establish their own EMS at a superior level and preemptively manage environmental risks throughout the entire supply chain by conducting performance evaluations regarding suppliers' environmental management levels.
- We shall procure materials and equipment in compliance with the green procurement policy.

6. New Projects and M&A

- We shall review environmental management plans and environmental impact assessments when reviewing new projects/investments to minimize environmental risks that may arise from projects.
- We shall conduct due diligence when reviewing potential M&As to identify and respond to environmental risks in advance.

Enacted on August 31, 2022
Amended on June 19, 2024

BIODIVERSITY POLICY

Purpose

The purpose of this policy is to establish a system whereby POSCO Holdings can protect and promote biodiversity while performing its business activities and establish a code of conduct and action plans in order to develop a business model that can promote sustainable growth with the natural environment.

Scope of Application

This policy applies to POSCO Holdings. POSCO Holdings shall encourage all of POSCO Group's affiliates and partners to comply with this policy or establish an equivalent policy.

Code of Conduct

1. We shall shift away from a linear economy where we exploit resources to produce and use products only to eventually discard them, and move instead toward a business model based on a circular economy which is decoupled from the consumption of finite resources and promotes recycling and sustainability.
2. We shall identify the potential impact on biodiversity at each stage of our business, endeavor to prevent or minimize such impact, and in cases of damages to biodiversity, strive to recover previous levels of biodiversity through restoration, closure, etc. of affected habitats and land areas.
3. When the loss of biodiversity is inevitable, we shall endeavor to minimize the loss of biodiversity, such as creating alternative habitats in other places, and shall not operate in areas of high biodiversity value.
4. We shall designate areas where our business activities directly or indirectly affect biodiversity, monitor designated reservation areas inside and outside of workplaces and other areas of high biodiversity value, and evaluate and manage the impact on biodiversity.
5. We shall identify factors that may threaten endangered animals and plants discovered in our workplaces as well as partners' workplaces and develop strategies to protect such species.
6. We shall carry out ecosystem restoration projects in areas where our business activities directly or indirectly affect the biodiversity and disclose the process of establishing and implementing plans, local communities' participation efforts, and the results of the projects.
7. We shall actively participate in research and development using biological resources, projects to promote biodiversity and protect animals, and international initiatives related to biodiversity.

Action Plans

1. We shall establish procedures and governance where biodiversity issues are considered in our business strategies, decision-making process, and long-term risk analysis, and the board of directors shall monitor the above.
2. We shall integrate biodiversity management into the Group's EMS and set goals and standards to control and monitor the EMS.

Enacted on August 31, 2022

GREEN PROCUREMENT POLICY

Purpose

The purpose of this policy is for POSCO Holdings to prevent the overconsumption of resources and environmental pollution in the entire process of our business activities and comply with relevant laws while implementing sustainable procurement to fulfill our social responsibilities.

Scope of Application

This policy applies to POSCO Holdings. POSCO Holdings shall encourage all of POSCO Group's affiliates and partners to comply with this policy or establish an equivalent policy.

Definition

Definitions of terms used in this policy are as follows.

1. "Green procurement" refers to purchasing activities where we operate purchase contracts and supply chain management in an eco-friendly manner by evaluating the environmental impact of the production, supply, distribution, and postprocessing process of products which are necessary for our business activities, such as raw/subsidiary materials, office supplies, and other equipment, at the stage of procuring such products.

2. "Green products" refer to the following products.

A. Products that have received a certification for their eco-friendliness in accordance with the relevant laws and regulations of the Republic of Korea and the policies of the government and public institutions or that meet the standards for the above certifications (including green products listed below as well as those products added/extended according to changes in relevant laws and policies)

- Products that can minimize the consumption of energy and resources, GHG emissions, and pollutants under Article 66 (4) of the Framework Act on Carbon Neutrality and Green Growth for Response to Climate Crisis and that have been certified for conformity under Article 60 (2) of the above Act
- (Eco-labeled products) Products that have been recognized for their environmental improvement by the Minister of Environment under Article 17 (1) of the Environmental Technology and Industry Support Act or products that meet the certification standards announced by the Minister of Environment under paragraph (3) of the above Article
- (Low-carbon products) Among products certified for eco-labeling under Article 18 (1) of the Environmental Technology and Industry Support Act and Products, products with reduced GHG emissions under Article 2, Item 5 of the Framework Act on Carbon Neutrality and Green Growth for Response to Climate Crisis in accordance with the standards determined and announced by the Minister of Environment
- (Excellent recycled products) Among products subject to quality certification of recycled products determined and announced by the Minister of Trade, Industry and Energy under Article 33 of the Act on the Promotion of Saving and Recycling of Resources and Article 15 of the Industrial Technology Innovation Promotion Act, products that have been certified or meet certification standards, or products that meet the criteria announced by the Minister of Environment through discussion with the relevant ministries

B. Products certified as eco-friendly, sustainable, low-carbon, and/or green by foreign governments in accordance with relevant certification systems comparable to those listed under A. above (e.g. EU Ecolabel, Nordic Swan, etc.)

C. Products certified as eco-friendly, sustainable, low-carbon, and/or green by internationally trusted independent certification bodies such as LEED, OEKO-TEX, Green Seal, ENERGY STAR, Cradle to Cradle, etc.

Code of Conduct

1. We shall conduct effective and practicable green procurement activities that consider eco-friendliness and sustainability throughout the entire process of business activities, from the procurement of raw/subsidiary materials, manufacturing, operation, and logistics/distribution to waste treatment.
2. In order to ensure feasible and effective environmental management, we shall implement green procurement not only in purchasing materials for main business activities but also for the company-wide procurement of consumable materials such as office supplies, workplace tools, etc.

Action Plans

1. Strong Recommendation for Green Procurement

- We shall actively purchase green products, and prepare support programs to ensure that green products can be considered as a priority in the process of purchasing materials, etc.
- When it is difficult to purchase green products because there is no certification system or certified product in the market, we shall purchase eco-friendly products as much as possible using available information on the impact of products on the environment, taking into consideration whether recycled raw materials are used, whether the products contain hazardous chemicals, the recyclability of products and packaging materials, and the amount of carbon generated in the manufacturing and distribution process.

2. Establishment of Green Procurement System

- In order to ensure effective implementation of green procurement and continuous improvement of effective green procurement activities, we shall establish a green procurement system whereby we can monitor the status of green procurement, discover and introduce green products and suppliers of such products, evaluate green procurement performance, and establish mid-to-long term goals.
- We shall prepare measures to share information on green procurement performance and goals with stakeholders.

3. Encourage the Supply Chain to Implement Green Procurement

- We shall encourage our affiliates, contractors, suppliers, and counterparties to implement green procurement to the extent permitted by law. In particular, we shall consider whether candidates have established and implement their own green procurement policies when selecting contractors.

Enacted on August 31, 2022

OCCUPATIONAL SAFETY AND HEALTH POLICY

Purpose

This policy ensures that POSCO Holdings complies with domestic and international laws and standards for occupational safety and health and continuously improves the occupational safety and health management system, and ultimately create a safe working environment that is optimized for the physical and mental health and safety of workers in terms of occupational safety and health.

Scope of Application

This policy applies to POSCO Holdings and its officers/employees. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/employees as well as its partners and their officers/employees to comply with this policy or establish an equivalent policy.

Code of Conduct

1. Workplaces

- We shall identify hazards and risks associated with all facilities and operations of workplaces, prioritize the identified hazards and risks, and establish and implement plans to address such hazards and risks. We shall set quantified goals for performance evaluation so that hazards and risks can be managed on an ongoing basis.
- We shall establish and strictly comply with workplace safety rules and ensure that workers can work in a safe and pleasant workplace.

2. Products and Services

- We shall make safety a top priority in the process of producing and delivering goods and services to consumers.
- We shall regularly identify issues that may harm the safety of our products and services, find solutions to those issues, and set goals. We shall transparently disclose the above issues and goals to our stakeholders, including consumers.

3. Promotion of Officer/Employee Health

- We shall promote the health of our officers/employees by providing learning programs on personal health management and routines. We shall provide programs for mental health improvement and therapy/counseling in order to prevent and manage work-related stress. We shall also provide assistance to officers/employees so that they can get treatment and counseling, if necessary.

Action Plan

1. We shall evaluate hazards and risks related to occupational safety and health, establish a safety and health management system that can respond to the above hazards and risks, set specific performance goals, and endeavor to continuously improve them.
2. The board of directors and the executive management shall actively participate in important decision-making and management/supervision regarding the establishment and operation of the safety and health management system and discuss with workers or workers' representatives, if necessary.
3. Executives and department heads shall recognize the importance of the safety and health of their officers/employees and provide appropriate training to them so that they can understand the safety and health management system.
4. We shall make a plan to prepare for and respond to emergencies.

Enacted on August 31, 2022

HUMAN RIGHTS MANAGEMENT POLICY

Purpose

This policy aims to ensure that POSCO Holdings complies with international human rights standards such as UN Guiding Principles on Business and Human Rights, UN Global Compact, Universal Declaration of Human Rights, and OECD Guidelines for Multinational Enterprises and implements human rights management based on respect for labor principles recommended by the International Labor Organization and ratified by the government.

Scope of Application

This policy applies to POSCO Holdings and its officers/employees. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/employees as well as its partners and their officers/employees to comply with this policy or establish an equivalent policy.

Code of Conduct

1. General Principles

- We shall respect the UN Guiding Principles on Business and Human Rights and acknowledge that all human beings have the right to dignity, including the following related rights: right to life and physical safety; freedom of thought, expression, and religion; freedom of association; freedom of family life and privacy; right to food and water; freedom from torture, slavery, or forced labor; right to fair and decent working conditions; and anti-discrimination.
- To this end, we shall prevent infringement on the human rights of others and take appropriate measures to prevent and address negative impacts on human rights that may occur in the course of our business activities.
- To meet the expectations of stakeholders by fulfilling our responsibility to respect human rights, our officers/employees shall comply with the following recommendations regarding human rights management:

① We shall comply with applicable laws and internationally recognized global human rights standards wherever we operate our business;
② When faced with conflicts with local regulations, we shall pursue ways to comply with global human rights standards; and
③ We shall treat the risk of serious human rights violations as an important management issue of the company.

2. Major Human Rights Issues

- We shall manage human rights risks that may occur in the following areas of human rights at the company-wide level and fulfill its responsibility to respect human rights.

① Anti-discrimination

We shall not discriminate or harass anyone on the ground of race, nationality, gender, age, educational background, religion, region, disability, marital status, gender identity, etc. We shall provide equal employment opportunities to those with appropriate qualifications and abilities to perform the duties assigned to them and respect cultural diversity. We shall not discriminate against people on the ground of gender and employment type. We shall provide equal wages to workers for equal work to prevent disparities in wages and working conditions without reasonable reasons. We shall fairly evaluate officers/employees' individual capabilities and performance and systematically reflect the evaluation results to provide appropriate compensation.

② Prohibition of Forced Labor and Child Labor

We shall not coerce anyone to work against his/her free will by means including human trafficking, intimidation, confinement, and other unreasonable restriction of mental or physical liberties. We shall not sign a labor contract that requires the other party to pay a penalty if he/she fails to perform the labor contract. In addition, we shall prohibit child labor and comply with labor conditions for minors and minimum working age standards under national labor laws and international standards.

③ Guarantee of Freedom of Association and Collective Bargaining

In accordance with the basic labor rights under domestic laws and regulations and as defined by the International Labor Organization, we shall recognize workers' freedom of association and membership, including the freedom to unionize. We shall not penalize workers for joining labor unions or engaging in union activities. In addition, we shall not reject collective bargaining without reasonable grounds and shall respect and fully implement the results of collective bargaining.

④ Guarantee of Occupational Safety

Under the principle that all kinds of accidents and work-related diseases must be prevented, we shall establish a companywide health and safety policy, fully comply with international safety rules and regulations, and take appropriate measures for any identified occupational hazards.

⑤ Prevention of Workplace Harassment

We shall strive to strictly prevent any cases of employees taking advantage of their positions or relationships at work to cause unwarranted physical or mental distress to another employee or cause harm to the work environment. We shall prevent any employee from violating the human rights of others or engaging in verbal, physical, or visual behavior that is offensive to others, including sexual harassment, and create a workplace culture in which everyone is respected.

⑥ Responsible Supply Chain Management

In order to monitor and manage forced labor and violations of children's rights in our supply chain, we shall manage human rights risks of our suppliers, subcontractors, subsidiaries, and other key partners under our influence. In addition, we shall ensure fair trade with our partners based on mutual respect and equality and support partners to comply with fair trade laws and regulations.

⑦ Anti-corruption and Anti-bribery

In order to maintain fair trade in all areas, we shall comply with all domestic and international anti-bribery and anticorruption laws and regulations, including the Improper Solicitation and Graft Act, the UN Convention against Corruption, the Foreign Corrupt Practices Act, and the Act on Combating Bribery of Foreign Public Officials in International Business Transactions.

HUMAN RIGHTS MANAGEMENT POLICY

⑧ Guarantee of Environmental Rights

We shall endeavor to reduce GHG emissions by reducing the use of fossil fuel and fossil fuel-derived raw materials and improving energy efficiency. We shall strive to restore the natural ecosystem and protect the biodiversity by using natural resources and by-products in an efficient manner. In addition, we shall establish an EMS, improve our ability to respond to environmental risks, and conduct eco-friendly management through open communication.

⑨ Protection of Human Rights of Local Residents

If a human rights violation occurs in the local community due to the company's business activities, we shall collect opinions and endeavor to resolve such human rights issues. In addition, we shall minimize and prevent human rights risks as we may have a social and environmental impact on local residents and the region in the process of running our business. We shall also evaluate the impacts on the safety, health, food, and economic activities of the local environment and local residents and take into account protection of the local culture and biodiversity issues in the region.

⑩ Protection of Human Rights of Consumers

We shall operate a customer-centric business in which we listen to and respect our customers. We shall actively accept customers' legitimate requests and reasonable suggestions. We shall not provide products and services that threaten their safety and health based on considerations for the safety and health of customers in our business activities. We shall also protect customer-related information.

3. Establishment of Policies and Procedures

- We shall prepare the following policies and procedures to fulfill our responsibility to respect human rights.
  - ① Implementation of appropriate policy regimes, including enactment of rules containing the company's responsibility to respect human rights
  - ② Human rights due diligence procedures to identify, prevent, and mitigate any negative impact on human rights and inspect and investigate any activities that affect human rights
  - ③ Procedures to remedy the negative impact on human rights that the company has had

Action Plans

1. Human Rights Management Governance

- The ESG Committee, an expert committee under the board of directors, shall set overall policies and directions related to human rights management and monitor the implementation of such human rights management. The ESG team shall support the ESG committee to facilitate the performance of duties and provide human rights training, disclose information, conduct human rights due diligence, and provide relief to victims.

2. Human Rights Due Diligence

A. Key Considerations

- Officers/employees shall identify, prevent, and mitigate any negative impact on human rights and conduct human rights due diligence when considered necessary to fulfill their responsibilities. Such due diligence shall include identifying and evaluating any actual and potential impact on human rights, responding to problems identified, recording response activities, and communicating with stakeholders. Human rights due diligence shall consider the following:
  - ① Include negative impacts on human rights that may be directly or indirectly triggered in the course of the company's business activities;
  - ② Consider the location and size of workplaces, human rights risk exposure, characteristics and features of business, and other various matters depending on the political and economic conditions and characteristics of the host country; and
  - ③ Recognize that human rights risks gradually change as the company's activities and business environment change, and continue to conduct due diligence.

B. How to Conduct Due Diligence

- We shall endeavor to identify and inspect any actual and potential negative impact on human rights related to their business activities at home and abroad according to the following process.
  - ① If human rights risks are identified in major domestic and foreign workplaces, we shall conduct human rights due diligence, analyze the situation, and make improvement plans;
  - ② In principle, due diligence shall be carried out by internal experts, and if necessary, it may be conducted with the support from external experts;
  - ③ In some cases, groups and stakeholders who may be potentially affected may be interviewed;
  - ④ We shall identify any potential and actual impact during due diligence, share the evaluation results at the companywide level regarding the potential impact, take measures to prevent or mitigate such impact by carrying out relevant procedures, and endeavor to remediate and resolve any existing impact; and
  - ⑤ We shall conduct due diligence using a checklist that identifies key elements related to human rights management.

C. Response and Follow-up

- We shall establish a response system and take follow-up actions based on findings from human rights due diligence to prevent and mitigate any negative impact on human rights.
  - ① Establishment of Internal Response System
    - i. We shall clarify roles and responsibilities with relevant departments to solve identified problems.
    - ii. We shall apply internal decision-making, budget allocation, and monitoring procedures to effectively respond to the above impact.
    - iii. We shall accurately explain the problems identified through human rights due diligence to the relevant departments and respond to the problems by managing them as important issues.

HUMAN RIGHTS MANAGEMENT POLICY

② Follow-up and Remedies

i. We shall take the necessary steps to prevent or mitigate any potential or existing adverse impact on human rights.

ii. In cases of unexpected negative impact on human rights despite our best policies and procedures, we, alone or in collaboration with other entities, shall endeavor to address such negative impact.

iii. When we have not directly contributed to negative impacts on human rights but the negative results are related in a complex way to our operations, production, and services through our relationship with other entities (e.g., suppliers), while we are not directly responsible for devising plans for systematic improvement, but we shall play a certain role.

iv. We shall use the influence that the company has to prevent or mitigate the negative impact on human rights, and otherwise may strive to strengthen our influence by collaborating with the relevant entities to protect human rights.

v. We shall operate a grievance mechanism that shall serve as an effective remedy for potentially affected stakeholders.

D. Communication with Stakeholders

- When stakeholders raise concerns about human rights impacts, we shall take responsibility in communicating with them.
  - ① We shall communicate responsibly and transparently with our stakeholders, including affected groups, individuals, and investors. To facilitate stakeholders' access to information, we may consider various forms of communication, such as face-to-face meetings, publication of official reports, and online channels (e.g., the company's official website and Helpline).
  - ② We shall include actual and potential negative impacts in the official reports we publish and may consider independent verification procedures to enhance the credibility of the reports.
  - ③ We shall provide stakeholders with information so that they can better assess whether the company is responding appropriately to specific human rights impacts.

E. Internalization and Program Improvement

- Based on the results of human rights due diligence, we shall contribute to the actual improvement of human rights management through internalization of organizational culture and activities for improving programs.
  - ① We shall carry out activities to internalize human rights management into the organizational culture by providing training on rapport-building and human rights management norms to all officers/employees and sharing successes and failures.
  - ② We shall continue to improve the human rights management system by consulting with experts, communicating with stakeholders, and discovering areas for improvement through implementing programs.

3. Grievance Mechanism

A. Key Considerations

- We shall operate a grievance mechanism for negatively affected individuals and communities so that their grievances can be promptly discussed and addressed.
- We shall endeavor to address grievances swiftly and reasonably by using existing methods such as the Ethics Counseling Center (Helpline) and the Unethical Conduct Reporting Center (Hotline). We shall not penalize those who file a complaint, victims, and cooperators on the ground that they apply for counseling or investigation and provide cooperation.
- The grievance mechanism shall perform the following important functions in relation to the company's responsibility to respect human rights:
  - ① Facilitation of the identification of negative impacts on human rights and acceptance of concerns raised by those directly affected or likely to be affected. Affected persons may report their human rights concerns to the ESG team in person, by mail, by phone, or by email and apply for grievance handling;
  - ② Collection of grievances and provision of early relief to victims in order to prevent the spread of human rights violations; and
  - ③ Analysis of operations progress to identify and solve problems in human rights policies and procedures.

Enacted on August 31, 2022

DIVERSITY, EQUITY, AND INCLUSION POLICY

Purpose

The purpose of this policy is to prevent discrimination, harassment, and sexual harassment in the workplace by improving diversity, equity, and inclusion for all officers/employees of POSCO Group and to create a healthy working environment where officers/employees can reach their full potential.

Scope of Application

This policy applies to POSCO Holdings and its officers/employees. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/employees as well as its partners and their officers/employees to comply with this policy or establish an equivalent policy.

Code of Conduct

1. Diversity and Inclusion

"Diversity" means respecting the characteristics of each employee, including culture, gender, nationality, race, religion or belief, social and economic status, and abilities. "Inclusion" means enabling all officers/employees to carry out their duties with a sense of belonging to the organization for which they work so that they can reach their full potential. "Diversity and inclusion" means creating a work environment in which members of an organization respect one another without unreasonably discriminate against others. Particularly, diversity can be achieved by doing the following:

- Respect cultural diversity and maintain an inclusive work environment;
- Create an environment in which all officers/employees can contribute to the company's business operations by utilizing their abilities, experiences, and knowledge to the fullest;
- Support officers/employees to achieve their personal goals and allow them to work flexibly in terms of time, place, and method;
- Remove barriers to communication between organizations and pursue an open corporate culture that promotes open communication and mutual cooperation;
- Provide diverse networking groups where officers/employees can interact with one another;
- Recognize that some officers/employees may have difficulties in working due to physical or mental disabilities and do not alienate or exclude them from the company on the ground of their disabilities;
- Recognize that the company is a place where officers/employees from different generations, with different abilities, backgrounds, nationalities, and races, gather together and work together;
- Create an environment in which all officers/employees with different family relationships such as marital status, divorce status, and children can coexist;
- Introduce a performance-based promotion system; and
- When artificial intelligence ("AI") is used in the hiring, HR management, and training process, avoid using algorithms that may fuel prejudice against specific groups and be careful not to produce any discriminatory results.

2. Equity

"Equity" means providing equal opportunities in promotion, recruitment, and education so that officers/employees can reach their full potential. Particularly, equality can be achieved by doing the following:

- Do not discriminate against anyone on the ground of race, nationality, gender, age, educational background, religion, region, disability, marital status, or gender identity, which is irrelevant to his/her ability;
- Ensure that the company, affiliates, suppliers, and contractors comply with the principle of gender equality;
- Devise and implement a plan that can effectively promote equality in departments with disproportionate gender representation so that they can achieve a reasonable gender balance;
  - Analyze the gender wage gap and disclose the results every year;
  - Devise and implement a plan to promote gender balance of the company's decision-making body;
  - Ensure that female officers/employees are not discriminated against based on pregnancy, childbirth, and child rearing;
  - Ensure that in no event is an employee's personal and career development impeded because of his/her gender;
  - Provide equal working environment for equal work and work of equal value;
  - Fairly evaluate officers/employees' individual capabilities and performance and systematically reflect the evaluation results to provide appropriate compensation;
  - Ensure that equal employment opportunities are provided to those with appropriate qualifications and abilities; Treat others without prejudice based on social, cultural, or educational background; and

3. Anti-workplace Harassment

The following activities which take advantage of his/her position or relationship at work to cause physical or mental distress to another employee or cause harm to the work environment beyond the appropriate scope of workplace interactions shall be prohibited:

- Physical Harassment;
- Mental Harassment;
- Work-related harassment; and
- Personal Harassment.

4. Anti-sexual Harassment

Officers/employees are prohibited from the following: abusing their position and/or workplace context to make sexual remarks/gestures or request sexual favors and thereby making others feel sexual humiliation, disgust, etc.; penalizing a person in terms of his/her employment on the ground that he/she refuses to respond to sexual remarks/gestures or to requests for sexual favors; expressing intention to give benefits to a person on the condition that the person responds to sexual remarks/gestures or accepts requests for sexual favors.

Action Plans

- Improve diversity, equity, and inclusion; provide regular training to prevent discrimination, harassment, and sexual harassment in the workplace; and take necessary precautions.
- The executive management or the board of directors shall install a dedicated department responsible for monitoring implementation of this policy, receiving reports of violations, providing counselling, conducting investigations, and handling such reports. In particular, the responsible department should operate a separate team dedicated to provide counseling and reporting services regarding sexual harassment.
- Anyone who becomes aware of a violation of this policy shall report to the responsible department in person, by mail, by phone, or by email. The responsible department shall establish and operate appropriate reporting systems.
- When the responsible department becomes aware of a violation of this policy, it shall investigate the violation and, depending on the results of the investigation, take necessary measures, such as disciplinary action, transferring the offending party to another department, or providing training to prevent recurrence.
- Victims and allies shall not be subjected to disadvantages in employment or other discriminatory treatment and information related to victims' cases shall be kept strictly confidential, except as necessary for investigating or handling the case.

Enacted on August 31, 2022

RESPONSIBLE MINERALS POLICY

Purpose

This policy prohibits the use of conflict minerals such as tin, tantalum, tungsten, and gold ("3TGs") that have been used to fund warlords and rebel groups in African countries affected by civil wars such as the Democratic Republic of Congo and other minerals such as cobalt that are linked to human rights abuses and environmental issues during the mining process. This policy outlines POSCO Holdings' commitment to using only "responsible minerals" mined in a way that respects human rights and protects the environment without financing armed conflict and sets out the code of conduct and action plans for achieving the above goal.

Scope of Application

This policy applies to POSCO Holdings. POSCO Holdings shall encourage all of POSCO Group's affiliates and partners to comply with this policy or establish an equivalent policy. Furthermore, POSCO Holdings expects partners to encourage their partners to comply with this policy as well.

Code of Conduct

1. We shall endeavor to prevent negative impact on society and the environment by preventing human rights violations such as child labor and forced labor in the mining process and minimizing environmental destruction.
2. We shall disclose information on partners using minerals that cause conflict, including 3TGs and cobalt, in the Democratic Republic of Congo and neighboring countries.
3. We shall comply with regulations related to conflict minerals, including the Dodd-Frank Act of the United States and the Conflict Minerals Regulation of the EU. We shall endeavor to ensure that due diligence is conducted in accordance with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas ("OECD Due Diligence Guidance"), which provides a framework for detailed due diligence to identify and mitigate risks in the supply chains for 3TG and cobalt.
4. We shall require our partners to purchase 3TG and cobalt from smelters that meet the Responsible Minerals Assurance Process ("RMAP") standards under the Responsible Minerals Initiative ("RMI") or any other similar standards. We shall also require smelters included in POSCO Group's supply chains that have failed to meet the RMAP standards to meet the above standards.

Action Plans

Based on the five-step framework recommended by the OECD Due Diligence Guidelines for responsible resource procurement in consideration of human rights protection and conflict risk, we shall manage as follows so that minerals can be mined in a way that respects human rights and protects the environment:

1. Establish an internal management system to manage risks related to minerals mined in conflict-affected and high-risk areas;
2. Identify and evaluate risks that may arise from mining, trading, and exporting minerals in conflict-affected and highrisk areas;
3. Establish and implement a risk management system and strategy to manage and respond to identified risks, monitor implementation performance and improve the management system and strategy on an ongoing basis;
4. Conduct due diligence on smelters in the supply chains in conflict-affected and high-risk areas and plan and conduct independent audit, if necessary; and
5. Publicly report the results of the due diligence very year.

Enacted on August 31, 2022

SUPPLY CHAIN POLICY

Purpose

This policy enables POSCO Holdings to promote fair trade based on mutual trust with its supply chain and partners, build a sustainable supply chain, and ultimately create an inclusive business environment where POSCO Holdings can coexist and grow together with its stakeholders.

Scope of Application

This policy applies to POSCO Holdings. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/ employees as well as suppliers and partners (collectively "partners") and their officers/employees to comply with this policy or establish an equivalent policy. Furthermore, POSCO Holdings expects partners that deal directly with POSCO Group to encourage their partners to comply with this policy as well.

Partner Code of Conduct

1. Human Rights

Partners shall not tolerate unlawful child labor, human trafficking, or any other form of forced labor under the UN Guiding Principles on Business and Human Rights and the International Labor Standards of the International Labor Organization. Partners shall endeavor to respect and protect the human rights, working hours, and freedom of association and collective bargaining of all workers. In addition, partners shall not discriminate against workers on the ground of race, nationality, gender, age, educational background, religion, region, disability, marital status, or gender identity.

2. Environment

Partners shall not only comply with environmental regulations and laws but also evaluate the impact that their business activities may have on the environment and the risk that their business activities may pose to the environment. Partners shall establish an EMS to systematically manage/analyze environmental management performance throughout the entire process from product development and production to use. Partners shall endeavor to reduce GHG emissions by using less fossil fuels and fossil raw materials and improving energy efficiency and to restore the natural ecosystem and protect biodiversity by using natural resources and by-products in an efficient manner.

3. Health and Safety

Partners shall establish a company-wide health and safety policy and fully comply with safety rules at international level. Partners shall take appropriate measures to prevent deaths, injuries, and illnesses in the workplace so that they can ensure that all officers/employees are protected from accidents and work-related diseases and work in a safe and healthy environment. Partners shall place top priority on consumer safety when manufacturing products.

4. Anti-corruption

Partners shall neither engage in nor tolerate any form of corruption, graft, or improper solicitation. Partners shall comply with domestic and international anti-bribery and anti-corruption laws and regulations, stick to the basics and adhere to the principles over the course of their business activities, and endeavor to establish an ethical corporate culture.

5. Fair Trade

Partners shall comply with international standards and national fair trade laws and shall not engage in unfair cartel activities with competitors, such as collusion on production, price, bidding, and market division, and unfair trade practices that may undermine fair trade. Partners shall respect the rights and properties of others, including intellectual property rights, and shall not operate business or take profits while infringing on the intellectual property rights of others. Partners shall obtain and use information of other companies, including their competitors, only through legitimate means.

6. Prevention of Money Laundering and Tax Evasion

Partners shall comply with laws for the prevention of domestic and international illegal money laundering, tax evasion, and financing of terrorism and weapons of mass destruction.

7. Avoiding Conflicts of Interest

Partners shall avoid situations that may conflict with or likely to conflict with the company's interests. Partners shall not disclose or improperly use any confidential or non-public information that they have obtained while doing business with the company.

8. Whistleblower Program

Partners shall prepare and operate a whistleblowing program that allows workers to anonymously report unethical behavior or potential violations. Partners shall investigate any report filed and take appropriate action to address any concerns.

9. Wage

Partners shall comply with all laws related to wage including minimum wage, salary, overtime work pay and deduction from salary.

SUPPLY CHAIN POLICY

Code of Conduct

1. Risk Management and Due Diligence of Supply Chain

- We shall identify partners' failure to comply with the basic principles of this policy and resultant risks that may undermine sustainability in the supply chain and prepare a system to manage and monitor the above risks in order to minimize any negative impacts.
- When selecting a partner, we shall check whether the candidates are complying with the Partner Code of Conduct in this policy.
- When entering into contracts with a partner in the supply chain, it shall be clearly stated in the contract that the partner shall comply with this policy and ensure that the partner includes a similar clause in its contract with its own partners.
- We may identify negative impacts on human rights, the environment, and product safety in the process of managing supply chain risks. We may conduct supply chain due diligence to the extent permitted by law, as is necessary to prevent or mitigate such risks.
- Supply chain due diligence shall include identification and evaluation of actual or potential negative impacts on the supply chain, preparation and implementation of action plans to prevent/mitigate/address negative impacts, communication with stakeholders about the process and results of due diligence, and procedures through which stakeholders can express their grievance.
- We may determine the scope of the supply chain subject to due diligence at our own discretion in consideration of expected group-wide effects. Depending on the situation, the scope of due diligence may be limited to direct contractors or be expanded to include entities further up/down the supply chain.
- We may evaluate a partner's level of implementation of this policy through supply chain risk management and due diligence. Based on the evaluation results, we may request the partner to establish and implement a plan to address and mitigate negative impacts caused by the partner's business activities. Regardless of the above, if it is determined that such negative impacts is unlikely to be mitigated due to the partner's insufficient efforts, we may suspend business with the partner.

2. Co-prosperity with Partners and Establishment of Mutually Beneficial Relationship

We shall endeavor to promote fair trade based on mutual trust with its partners and create an inclusive business environment where we can coexist and grow together with its partners.

- We shall respect the rights of its partners (intellectual property rights, property rights, etc.) and endeavor to ensure fair trade with partners based on mutual respect and equality.
- We shall share achievements with partners and pursue mutual benefits. We shall further ensure smooth communication and mutual cooperation with partners so that the latter can provide high-quality products and services.
- We shall endeavor to improve payment procedures for partners and to establish a stable supply chain by providing technical and financial support. We shall also support partners to help comply with fair trade laws and regulations.
- We shall continue to expand the scope of partners subject to our co-prosperity efforts for the promotion of mutually advantageous coexistence in the business ecosystem.

Enacted on August 31, 2022

STAKEHOLDER ENGAGEMENT POLICY

Purpose

POSCO Holdings declares that if we pursue changes and innovations while communicating and empathizing with all stakeholders, including customers, members, and shareholders, we can ultimately increase our corporate value. This policy sets out the code of conduct and action plans to actively listen to the needs and opinions of stakeholders and communicate with them in order to promote coexistence and co-prosperity.

Scope of Application

This policy applies to POSCO Holdings its officers/employees. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/employees as well as its partners and their officers/employees to comply with this policy or establish an equivalent policy.

Code of Conduct

1. Definition of Stakeholder

"Stakeholder" means any individual or entity that may influence a company's business activities, products, services, and decision-making or that may be affected by a company's business activities. Stakeholders can include a variety of groups, such as customers, officers/employees, shareholders, partners, local communities, governments, civic groups, and domestic/foreign investors.

2. Stakeholder Engagement and Communication

- We shall put truth, fairness, and honesty as the top priority; recognize that building a trustworthy image for her stakeholders is an immovable value; and encourage the participation of stakeholders and actively communicate with them.
- We shall objectively evaluate the positive and negative impacts that business activities may have on society and the environment from the perspective of a third party through engagement and regular communication with stakeholders. We shall further strive to reflect the demands and expectations of stakeholders regarding corporate social responsibility issues identified in our business activities.

3. Respect for and Participation of Community

- We shall respect and protect the culture and traditions of the local community. We shall also provide support to minimize the negative impact that business activities may have on the local community and the environment and to maximize the positive impact from business activities.
- We shall respect the rights of indigenous peoples in the local community based on the ILO's Convention No. 169 or the UN Declaration on the Rights of Indigenous Peoples, and endeavor to realize the social, economic, and cultural rights of indigenous peoples.

4. Community Development

- We shall endeavor to lay the foundation for sustainable growth by contributing to the development of the local community and to ensure that the local community's active participation can lead to creation of social and economic value.

Action Plans

1. Establish Procedures for Stakeholder Identification, Participation and Communication

- We shall establish procedures to identify individuals or groups that are affected by or may affect our business activities and the level of such influence.
- We shall establish procedures and methods to efficiently listen to stakeholder opinions to encourage their active participation. The above procedures and methods shall include stipulations on communication channels and those responsible for their operations, frequency of collection of stakeholder opinions, and method of operation.

2. Establish Procedures for Community Protection and Participation

- Where business activities may affect the rights of local residents, we shall have procedures in place to identify and protect the rights of local residents. We shall also provide local residents with sufficient information on whether and how to carry out our project and prepare a mechanism where local residents can freely voice their opinions in advance based on the above information.
- We shall actively identify how business activities affect the issues regarding resettlement and compensation of local residents and endeavor to systematically address such issues.
- We shall start discussions with the local community from the initial stage of our business activities and endeavor to carry out our business activities through continuous discussions with the local community.

3. Community Development Initiatives

- We shall prepare community development initiatives based on discussions with stakeholders in the community. We shall further monitor the progress of the initiatives and regularly share the results with stakeholders throughout the implementation process of the initiatives.

4. Grievance Mechanism

- We shall operate a grievance mechanism for individuals and communities negatively affected by our business activities. We shall endeavor to address grievances swiftly and reasonably by using existing methods such as the Ethics Counseling Center (Helpline) and the Unethical Conduct Reporting Center (Hotline). We shall endeavor not to penalize those who file a complaint, victims, and cooperators on the ground that they apply for counseling or investigation and provide cooperation.

Enacted on August 31, 2022
Amended on June 19, 2024

TAX POLICY

Purpose

This policy provides the tax policies that POSCO Holdings shall comply with so that it can faithfully fulfill tax obligations and comply with tax laws in the Republic of Korea and other countries in which it operates its business.

Scope of Application

This policy applies to POSCO Holdings. POSCO Holdings shall encourage all of POSCO Group's affiliates and partners to comply with this policy or establish an equivalent policy.

Code of Conduct

1. Compliance with Tax Laws

We shall comply with the tax laws of the Republic of Korea and the countries in which it operates its business, and in the process, it shall consider not only the literal text of the tax laws but also the legislative purposes behind such laws.

2. Building a Transparent Relationship with Tax Authorities

We shall build a transparent relationship with the tax authorities to faithfully fulfill its tax reporting obligations, check its fulfillment of tax obligations, and closely discuss with the tax authorities when it needs clarification of tax issues in order to minimize potential risk.

3. Prohibition of Tax Evasion

We shall not establish an offshore company in tax havens with the intention to unscrupulously minimize its tax obligations or transfer income to regions where favorable tax rates apply under tax treaties. We shall also determine transaction prices in accordance with the arm's length principle and the OECD Transfer Pricing Guidelines when transacting between affiliates. Further, we may undergo verification by an external professional organization regarding the appropriateness of prices determined as above, if necessary.

Action Plans

1. Establishment of Tax Risk Management System

We shall establish a system to monitor, evaluate, and identify tax risks in advance. We shall minimize identified risks using the risk response strategies and action plans that we have established in advance.

2. Roles and Responsibilities of the Board of Directors

The board of directors shall review and approve this policy and establish a tax-related organization and a risk management system to identify and respond to tax risks.

3. Use of External Specialized Agencies and Disclosure of Information

We shall receive an objective review by an independent agency on major tax-related issues and minimize tax risk with the help of an external professional agency when making important decisions, if necessary.

4. Transparent Information Disclosure

We shall transparently disclose the amount of tax we pay in the Republic of Korea and other countries in which we operate our business.

Enacted on August 31, 2022

BOARD INDEPENDENCE AND DIVERSITY POLICY

Purpose

In order for the board of directors, the highest decision-making, management, and supervisory body of POSCO Holdings, to make objective, efficient, and reasonable decisions that maximize the profits of companies and shareholders and contribute to the development of stakeholders and civil society, it is important to have an independent and diverse structure. Based on the above belief, this policy aims to constitute the board of directors of POSCO Holdings with directors from various backgrounds, experiences, abilities, and significant independence.

Scope of Application

This policy applies to POSCO Holdings.

Code of Conduct

1. Board Independence

- The board of directors shall abide by relevant laws such as the Commercial Act and the Financial Investment Services and Capital Markets Act and perform decision-making and management/supervision functions independently of the executive management, controlling shareholders, and stakeholders.
- In order for the board of directors to actually maintain independence and supervise and oversea the executive management, the board of directors shall include outside directors under the Commercial Act and other relevant laws.
- Qualifications and independence of outside directors shall be more strictly regulated than that of inside directors. Outside directors shall be independent in accordance with relevant laws and this policy. Stronger independence requirements than the relevant laws and this policy may be set by referring to the global standards to the extent that such requirements do not violate the relevant laws and the articles of incorporation.

2. Board Diversity

- The board of directors shall be composed of people with diverse knowledge, experiences, abilities, and gender so that they can fulfill their roles and responsibilities and make objective and reasonable decisions based on effective discussions from various perspectives.

Action Plans

1. Selection of Candidates with Expertise and Independence

- A person with the ability, experience, and competency to fulfill his/her role and responsibilities as a candidate shall be recommended and selected as a candidate. More careful consideration shall be given to selecting/appointing a person who is liable for damage to corporate value and infringement of shareholders' rights and interests or those who may have a conflict of interest with the company or shareholders as a candidate.

2. Securing Independence of Outside Directors

- Outside directors shall be particularly independent and neutral. Therefore, when appointing a person as an outside director, it shall be comprehensively reviewed whether there are any circumstances in which the person cannot actually secure his/her independence. Persons who can neutrally and objectively perform their duties for the benefit of the company and shareholders shall be appointed as outside directors.
- Outside directors who satisfy the following requirements shall be considered independent. In addition, it shall be comprehensively considered whether an outside director is significantly related to the company.
  - A person who has not been hired as an officer/employee of the company in the last five years
  - A person who has not worked as a managing director (samgmu) of an affiliate in the last three years
  - A person whose immediate family has not served as an officer of the company or its subsidiary for the past three years
  - A person or any of his/her family members who has not received an annual salary of KRW 120 million (equivalent to USD 100,000) or more from the company in the last three years
  - A person who has not been employed by an external auditing agency of the company for the past three years
  - A person who is not an advisor or consultant to the company's executive management
  - A person who is not an officer/employee (including a person who has served as an officer/employee in the last two years) of a corporation that has signed a contract for legal and management advice with the company
  - A person who is not an executive/employee of a corporation (including a person who has served as an officer/employee in the last two year) whose total transaction with the company in the last three business years is 10% or more of the company's total assets or total sales
  - A person who is not an executive or employee of a corporation (including a person who has served as an officer/ employee in the last two year) that has singed a single transaction contract worth 10% or more of total sales with the company during the recent business year
  - Any other person who is not related to any matter decided by the board of directors

3. Securing Diversity of Board of Directors

- We shall promote gender equality in the board of directors.
- When recommending/reviewing candidates, diversity factors such as gender, nationality, age, professional ability, experience, background, race, religion, and ethnicity shall be fully considered in order to enhance the diversity of the board of directors.
- In order for the board of directors to make reasonable decisions, people with rich experience and expertise in various fields such as industry, finance, academia, law, accounting, or public sector shall be appointed as outside directors, instead of appointing them all from a single field.

Enacted on August 31, 2022

ANTI-CORRUPTION POLICY

Purpose

This policy is to ensure POSCO Holdings' compliance with the Criminal Act, the Act on the Aggravated Punishment of Specific Crimes, the Act on the Aggravated Punishment of Specific Economic Crimes, the Improper Solicitation and Graft Act of the Republic of Korea, laws of other countries where POSCO Holdings operate its business including the US Foreign Corrupt Practices Act of the United States and the UK Bribery Act, and international standards such as the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, the UN Convention Against Corruption, and the UN Global Compact.

Scope of Application

This policy applies to POSCO Holdings, its officers/employees, and any person who acts on its behalf. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/employees as well as its partners and their officers/employees to comply with this policy or establish an equivalent policy.

Definition

Definitions of terms used in this policy are as follows.

1. "Money and valuables" refer to things that can bring economic benefits, such as money (cash, gift certificates, vouchers, etc.) and goods.
2. "Facilitation payment" refers to a small amount of money paid to a public official to expedite the daily and repetitive tasks of the public official, such as receiving and processing visa-related administrative documents and customs inspection.
3. "Agent" refers to a person, regardless of his/her designation, who performs tasks such as participating in project bidding, customs clearance, licensing, and taxation on behalf of the company.
4. "Stakeholder" refers to a person with an interest in the company, including domestic and foreign public officials and counterparties.
5. "Conflict of interest" refers to a case in which an officer/employee's personal interest with an officer/employee of a trading partner improperly affects the performance of the officer/employee's duties.
6. "Provision of entertainment" refers to various activities of networking and gathering for the purpose of business, such as dining and wining, golfing, performances, and entertainment.
7. "Convenience" refers to providing or receiving benefits such as transportation, accommodation, sightseeing tours, and assistance for events.

Code of Conduct

1. Legal Compliance

- To maintain fair trade, we shall comply with all domestic and international anti-bribery and anti-corruption laws and international standards in all transactions. When this policy conflicts with any law and international standard, we shall follow the strictest one.
- Even if any conduct that violates this policy is recognized as a local practice, such fact shall not justify the violation.

2. Money and Valuables

- We shall neither offer, solicit, or receive money or valuables to/from any stakeholder under any pretext nor provide facilitation payments to public officials to expedite the performance of his/her duties.

3. Provision of Entertainment

- We may provide or receive entertainment to or from stakeholders only when it is reasonably necessary for legitimate business purposes, provided that in such case the cost of entertainment shall not exceed KRW 100,000.
- In cases where legitimate purposes such as facilitation of performance of duties, socializing, and rituals are recognized, we may provide food and drink worth less than KRW 30,000 per person to those who are subject to the Improper Solicitation And Graft Act ("Anti-Graft Act"), such as public officials, journalists, and faculty members.

4. Convenience

- We shall not provide or receive convenience such as transportation and accommodations that exceed the normal level unless such convenience is generally provided to all participants of an event, etc.

5. Solicitation/Recommendation

- We shall not make solicitations/recommendations related to the company's business through acquaintances in the company or outsiders. We shall register any solicitation/recommendation that we receive in the company's Clean POSCO System.
- We shall not make an improper solicitation directly or through a third party in connection with the duties listed in the Anti-Graft Act.

6. Money Transactions

- We shall not engage in money transactions, including loans, loan guarantees, and real estate leases with stakeholders.
- We shall not engage in money laundering activities such as illegal financial transactions.

7. Selection of Agents or Business Partners

- When selecting agents and business partners, we shall inform candidates of this policy and ensure that they comply with applicable regulations.
- We shall conduct detailed due diligence on our agents and business partners to review whether there is any risk of violating this policy when concluding a contract.
- After we select a candidate and a business partner, we shall continuously monitor whether the person complies with this policy.

ANTI-CORRUPTION POLICY

8. M&A
- In mergers and acquisitions ("M&A"), we shall identify whether the companies that we intend to acquire and their suppliers comply with anti-corruption laws. If corruption issues are identified during the due diligence process, efforts shall be made to end the corruption.

9. Donation and Sponsorship
- Donation and sponsorship activities shall comply with the law. Donations or sponsorships shall not be provided for the purpose of obtaining business profit or receiving any compensation or consideration in the future. Donations or sponsorships may be provided only through legitimately established charities.
- All donations and sponsorships shall be reported to and approved by the decision maker, and records shall be kept.
- No officer/employee shall provide donations or sponsorship to political parties, those who enter politics, or political candidates in the name or on behalf of the company.

Action Plans

1. Establishment of Anti-corruption Management System
- We shall establish an internal anti-corruption monitoring system. We shall also establish an anti-corruption management system that can regularly identify and assess corruption risks and effectively prevent them.
- Based on the anti-corruption management system, we shall establish standards to regularly assess corruption risks.
- We shall have documented information to prove that the management system to prevent the assessed corruption risks is designed and improved on an ongoing basis.
- When we assess that the level of corruption risk is moderate or higher, we shall conduct appropriate due diligence on related transactions, projects, and stakeholders to identify the nature of the corruption risk and prepare measures to address such risk.
- The anti-corruption due diligence may be carried out in connection with or integrated with the human rights due diligence that inspects and investigates activities affecting human rights.

2. Responsibilities of Officers and Department Heads
- Officers and department heads shall take appropriate measures to ensure that their employees do not violate this policy.
- Officers and department heads shall provide regular anti-corruption training so that their employees can fully understand this policy. They shall also provide a channel through which officers/employees can discuss ethical issues related to anticorruption.

3. Provision of Whistleblower Programs
- If anyone becomes aware of his/her or others' violation of this policy, he/she shall immediately report to or consult with the department head or the ESG team.
- Officers/employees shall not take adverse action against anyone for whistleblowing or reporting such whistleblowing compliant or disclose the identity of the whistleblower or reporter.

4. Disciplinary Action
- Officers/Employees who violate this policy may be disciplined, including layoff, in accordance with relevant regulations.
  Anyone who commits any of the following acts may be disciplined:
  - Violation of this policy or requiring others to violate this policy;
  - Failure to promptly notify acknowledged or suspected violations;
  - Failure to cooperate with the ESG team's investigation of potential violations; or
  - Retaliation against other employees who file a whistleblowing complaint in relation to ethical management issues.

5. Accounting and Records Management
Invoices, receipts, and other related documents shall be kept in the internal accounting management system and accurately book and record all expenses. False books or records shall be prohibited.

Enacted on August 31, 2022

DATA PROTECTION AND PRIVACY POLICY

Purpose

The purpose of this policy is to protect POSCO Holdings' information assets safely and effectively and to set out the compliance requirements that officers/employees shall comply with in order to protect the personal information of customers who use POSCO Holdings' services, officers/employees, and contractors.

Scope of Application

This policy applies to POSCO Holdings and its officers/employees. POSCO Holdings shall encourage all of POSCO Group's affiliates and its officers/employees as well as its partners and their officers/employees to comply with this policy or establish an equivalent policy.

Code of Conduct

- We shall make our best effort to secure and maintain global competitiveness by complying with international standards and domestic/foreign information protection laws and protecting information assets such as core technologies and human resources, which are the source of our competitiveness.
- Officers/employees shall recognize that they are the subject of information protection and regularly participate in information protection education and training in order to improve their level of information protection.
- Officers/employees shall ensure that they protect information on a daily basis and establish a corporate culture on information protection.
- The purpose of collecting personal information shall be clearly specified when the information is collected, and the data controller shall process personal information only to the extent directly necessary to achieve such specified purpose.
- We shall use personal information within the scope of the purpose for which it was collected and select methods that can minimize the infringement of privacy of information principals.

Action Plans

1. Information Security Management System

- We shall ensure the stable operation of information systems and establish and operate an information protection management system to minimize industrial losses that may be caused by security accidents.
- We shall establish and operate procedures to control security risks and monitor and review information protection activities.
- We shall establish methods and standards to identify and assess risks to key information assets and regularly conduct risk assessments.
- We shall provide regular training to all officers/employees and establish a regular management and inspection system to ensure the effectiveness of information security.

2. Personal Information Protection Measures

- We shall prepare protective measures for each stage of processing, including collection, storage, use, provision, and destruction of personal information, in order to protect privacy, freedom, and rights of information principals throughout the above stages.
- We shall manage personal information safely through appropriate technical, administrative, and physical protection measures that are appropriate to the degree of risk and possibility of infringement of the rights of information principals.
- We shall generally disclose matters related to the processing of personal information, such as the personal information processing policy. We shall also prepare reasonable procedures to ensure that the rights of information principals, such as the right to request access to their information, are guaranteed.
- The department in charge of personal information shall provide training on personal information protection to raise awareness of personal information handlers, including officers/employees, and to prevent personal information from being misused, abused, and leaked.

3. Role of the Information Protection and Personal Information Protection Officer

- The information protection and personal information protection officer shall oversee the information protection policy and personal information protection policy. The above officer shall also establish and manage a management system.
- The competent department shall monitor the implementation of information protection and personal information policies and address vulnerabilities.

4. Report and Discipline

- Officers/Employees shall immediately report security incidents to the officer or department head in charge security.
- The company shall establish violation standards and operating standards for violations of information protection and personal information protection. The company may discipline officers/employees based on such standards.

Enacted on August 31, 2022

ESG POLICYBOOK

CODE OF ETHICS

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CODE OF ETHICS

I. Ethics Charter

POSCO Group aspires to become a trusted and respected enterprise by deeply understanding that ethical management is the greatest value we must uphold in order to co-exist and co-prosper with our many stakeholders as a member of society.

Members of the POSCO family[1] must comply with laws and ethics based on the ethical management philosophy of "doing the right thing in the right way," while also seeking to achieve Integrity, Respect, and Mutual Empathy and establishing an ethical corporate culture in business activities that cover all the basics and comply with the rules.

At the employee level, we must pursue individual growth and company success by achieving a work-life balance, and create a positive work environment by establishing a corporate culture of mutual respect. We must fulfill our duty to respect everyone as human beings and to respect the human rights universally pursued by human society.

For our customers, we must understand that our future depends on customer trust and success. We must respect the customer voice at all times and create value that promotes customer prosperity.

For our shareholders, we must enhance shareholder value by making fair profits through transparent decision making and efficient business activity.

With our business partners, we must establish a fair trading system based on mutual trust and strengthen our corporate ecosystem in which we co-exist with our business partners through mutual growth.

At the community level, we must contribute to the development of society by fulfilling our duties and obligations. We must be deeply aware of the importance of environmental issues and do our best to protect the environment in all of our business activities.

POSCO family members must always be aware of the fact that our actions are directly linked to our self-respect as well as corporate value and reputation. We pledge to comply with the Code of Conduct and to ensure that ethics and integrity are at the heart of our culture and business operations.

July 2024

1) All employees of POSCO Holdings and its subsidiaries

II. Ethical Principles

1. Roles and responsibilities of all employees

- We comply with relevant laws and company regulations and guidelines anywhere in the world where POSCO Holdings conducts business.
- We endeavor to maintain our dignity as employees and protect our corporate reputation.
- We make our best efforts to establish an ethical culture by taking responsibility for practicing ethical behavior.
- We report to or consult an authority figure or the department in charge of ethical management[2] immediately upon becoming aware of the fact that a situation faced or an action performed by us or another person violates or is likely to violate the Code of Ethics.
- We fully cooperate with investigations conducted by the department in charge of ethical management regarding matters that are likely to violate the Code of Ethics.
- We do not retaliate against informants or individuals who participate in an investigation in relation to Code of Ethics violations.
- We are aware of the fact that by violating the Code of Ethics, soliciting another person to violate the Code of Ethics, failing to report a Code of Ethics violation or cooperate with an investigation, or taking retaliatory action against an informant or individual participating in an investigation, we may become subject to disciplinary action as appropriate.

  In particular, we are aware that there is zero tolerance for the four major ethical violations[3]: acceptance of bribery, misappropriation, fabrication of information, and sexual misconduct.

2) In accordance with guidelines on roles and responsibilities
3) Acceptance of bribery: Accepting money or goods beyond a socially acceptable amount from a stakeholder
Misappropriation: Taking unlawful possession of company funds or assets
Fabrication of information: Falsifying, concealing, or distributing business-related information in a manner that contradicts the truth
Sexual misconduct: Conduct that causes distress through sexual harassment or sexual assault

CODE OF ETHICS

2. Special responsibilities of executives and authority figures

Executives and authority figures have the responsibility to set an example of ethical compliance and prevent ethical misconduct among staff members. To this end, they must be aware of the following principles and put them to practice:

- When the company's profits and ethics are in conflict, you have a duty to prioritize ethics in your operational and administrative decision making.
- You must exemplify ethical conduct in your work and fulfill your duty as an internal and external role model.
- You must train and guide staff members to understand the provisions of the Code of Ethics and Practice Guidelines and the importance of compliance.
- You must routinely examine your teams for ethical misconduct and proactively prevent unethical behavior that is likely to occur by identifying the causes, improving processes, and taking other measures.
- You must foster an organizational atmosphere that promotes and supports ethically correct behavior where staff members can speak up without worrying about adverse action.
- You must report to or consult the department in charge of ethical management immediately upon becoming aware of the fact that a staff member has violated the Code of Ethics.
- You have unlimited liability for any ethical misconduct you have engaged in, and supervisory liability for the ethical misconduct of a subordinate employee.

III. Code of Conduct

1. Compliance with basic ethics and relevant laws

We do not seek personal gain.

- We do not put work-related pressure, issue instructions, or solicit favors that conflict with company interests in order to seek personal gain or undue gain for another person.
- All company funds and assets must only be used for work-related purposes and cannot be used to promote personal interests in any manner.
- We respect the political rights and preferences of individuals while maintaining the political neutrality of the workplace. We do not use company funds, personnel, facilities, etc. for political purposes.

We protect company information and assets.

- We understand the importance of the company's confidential information and intellectual property and keep them well protected.
- We do not distort information or distribute false information.

We practice fair competition and trading.

- We establish fair and transparent trading procedures in accordance with international standards and national fair trade laws. To maintain a fair trading system, we comply with domestic and foreign anti-corruption laws and standards including the UN Convention Against Corruption, the FCPA, the Act on Combating Bribery of Foreign Public Officials in International Business Transactions, and the Improper Solicitation and Graft Act.
- We do not force business partners or suppliers to agree to unreasonable working conditions or engage in disadvantageous activities.

2. Developing a culture of trust and human respect

We foster a wholesome organizational culture.

- We pursue both personal growth and company success by achieving a work-life balance.
- Employees create an organizational atmosphere of mutual cooperation through open communication based on trust.

We provide equal opportunities.

- We provide equal employment opportunities to all individuals with the required skills and qualifications.
- We provide equal opportunities for skill development and self-improvement. Individuals are remunerated in an appropriate manner based on fair evaluations of their skills and achievements.
- We foster a wholesome organizational atmosphere that celebrates employees who create meaningful outcomes regardless of their regional, academic, or other background.

We protect and respect human rights.

- We support the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, the UN Global Compact, the OECD Guidelines for Multinational Enterprises, and other internationally recognized human rights standards. We endeavor to avoid infringing human rights in the process of conducting business activities.
- We respect each employee as an individual. We do not engage in acts that may defame an employee or undermine human dignity such as verbal or physical abuse, bullying, and intimidation.
- We ensure proper working conditions by maintaining reasonable working hours and ensuring that no work is performed involuntarily by emotional or physical force.
- We do not discriminate against individuals on the grounds of ethnicity, nationality, gender, age, academic background, religion, regional background, disability, marital status, or sexual identity.

CODE OF ETHICS

3. Realizing customer value

We commit to customer satisfaction.

- We listen to and respect customer voice.
- We welcome our customer's valid requests and thoughtful suggestions, and prioritize to incorporate them to our business activities.

We create customer value.

- We fulfill customer needs and expectations by providing the best products through technological advancement.
- We respect our customer's culture and customs.

We build customer trust.

- Customer safety and well-being are given utmost consideration in our business activities. Products or services that may pose a threat to safety and health are not offered.
- We protect customer information and provide customers with accurate and timely information.

4. Good faith towards investors

We fulfill our obligations to investors.

- We strive to increase corporate value and shareholder value at the same time by creating profit through transparent decision making and efficient business activities.
- We respect shareholder's fair suggestions and endeavor to build mutual trust.

We communicate transparently with investors.

- We provide key business information in a timely, fair, and faithful manner to facilitate investor decision making.
- Our financial information is calculated through suitable processes and controls based on accurate transaction figures. All financial documents are prepared in accordance with "Generally Accepted Accounting Principles."

5. Co-prosperity with suppliers

We build mutual trust with suppliers.

- We ensure fairness in our dealings with our suppliers through mutual respect and equal partnerships.
- Vendors are required to demonstrate a sense of responsibility before they are chosen as a supplier. We support our suppliers to maintain compliance with laws and regulations associated with workplace safety, employee human rights, and fair trade.

We pursue co-prosperity with suppliers.

- We seek mutual gains by sharing our outcomes with our suppliers.
- We support our suppliers to provide high quality products and services through effective communication and mutual cooperation.
- We aim to develop partnerships with our suppliers by providing fair opportunities and ensuring equitable terms of trade.

6. Social and environmental responsibility

We contribute to the development of the nation and society.

- We strive to create and maintain stable jobs and to fulfill tax obligations.
- We actively participate in volunteering, disaster relief, and other activities to serve the community. We contribute to the sound development of society through our pro bono involvement in such fields as culture, arts, sports, and academia.
- We endeavor to build community trust in our company by providing support to improve the quality of life of local residents and strengthen the joys of life.

We commit to environmental protection and ecosystem conservation.

- We are deeply aware of the importance of environmental issues. We comply with domestic and foreign environment-related laws and strive to improve the environmental impact at all stages of the product life cycle including development, production, and use.
- We do our best to minimize pollutant emissions by introducing environmentally friendly production processes and by adopting the best available technologies to prevent environmental pollution.
- We endeavor to restore natural ecosystems and conserve biodiversity by making efficient use of natural resources and byproducts.

Addendum

① Specific standards for implementation and the necessary details may be separately prescribed in the Code of Ethics Practice Guidelines.
② This Code of Ethics was amended and takes effect as of July 8, 2024.
③ Matters not specified in the Code of Ethics and differences of opinion in interpretation shall be interpreted and determined by the department in charge of ethical management.
④ The department in charge of ethical management may amend the Code of Ethics when necessary, and matters deemed important by the head of the department in charge of ethical management shall be amended with approval from the CEO.
⑤ The Code of Ethics forms the basis for ethical management practices and takes precedence over other Company regulations.

CODE OF ETHICS PRACTICE GUIDELINES

Chapter 1. General Provisions

Article 1 (Purpose)

The purpose of these Practice Guidelines is to provide a frame of reference for making decisions and taking action in ethical dilemma situations that may arise during the course of work so that POSCO Holdings employees understand and apply the Code of Ethics correctly.

Article 2 (Scope)

These Guidelines apply to the Company and all employees.

Article 3 (Principle of Application)

Employees shall make decisions and take action based on the Code of Ethics and these Practice Guidelines when faced with an ethical dilemma situation in relation to work.

However, if a frame of reference is not clearly prescribed herein, employees shall make decisions and take action according to the following decision-making principles. Employees who are not confident in their judgment shall consult the leader of the organization or the department in charge of ethical management[1] and act accordingly.

<Decision-making Principles>

- Lawfulness: Is my action likely to be interpreted as a violation of the law, rules, regulations or company Codes?
- Transparency: Can I disclose my decision-making process and the relevant details?
- Rationality: Am I making the best possible choice for the company and individuals?

1) In accordance with guidelines on roles and responsibilities

Chapter 2. The Code of Ethics in Practice

1. Restrictions on the provision and acceptance of valuables

- "Valuables" means money (cash, gift certificates, vouchers, etc.), goods, and other articles that may bring about financial gain.
- Valuables shall not be provided to or solicited or accepted from stakeholders[2] for any reason. However, exceptions shall be made in the following circumstances:
  - Marketing or promotional gifts valued at or less than KRW 50,000 or up to KRW 150,000 for agricultural, marine, and processed goods (including ornamental plants)
  - Memorabilia bearing the company logo of a stakeholder and memorabilia routinely offered to attendees at stakeholder-organized events, not exceeding KRW 50,000
- Employees shall not solicit or accept gifts from foreign entities during international business trips.
- Valuables that are unanticipated and accepted due to unavoidable circumstances shall be returned, or if this is impracticable, report to the department in charge of ethical management.
- Employees who earn income (e.g., lecture fees) from external speaking opportunities using his/her work-related knowledge or position at POSCO Holdings shall donate 50% of the earnings.

2. Principles and restrictions concerning hospitality

- "Hospitality" means various activities that facilitate business-related gatherings and interactions, such as meals, social drinks, golf, performances, and entertainment.
- Hospitality in excess of KRW 100,000 per person shall not be offered to or accepted from stakeholders. If it is necessary to offer or accept hospitality in excess of KRW 100,000 per person in relation to work, prior approval shall be obtained from the head of the department. Hospitality in excess of KRW 100,000 per person that has been offered or accepted due to unavoidable circumstances shall be reported to the department in charge of ethical management.
- Food worth up to KRW 30,000 per person may be provided to public officials, journalists, teachers, and other persons subject to the Improper Solicitation and Graft Act to facilitate work execution or for social, ceremonial, or other legitimate purposes.
- Hospitality at an entertainment and drinks venue that offers services of a sexual nature is prohibited regardless of cost.

3. Principles and restrictions concerning convenience

- "Convenience" means benefits such as transportation, accommodation facilities, sightseeing, event support, etc. provided by or to a stakeholder.
- The provision or acceptance of transportation, accommodation facilities, or other convenience beyond a generally acceptable level[3] is prohibited. However, this shall not include conveniences routinely provided to all attendees at an event, etc.
- A convenience in excess of the permitted range that has been offered or accepted due to unavoidable circumstances shall be reported to the department in charge of ethical management.

2) Stakeholder: Employees or clients, suppliers, enterprises, business partners, domestic or foreign public institutions, and international organizations (including affiliated employees) that may directly or indirectly affect or be affected by rights and interests in relation to one's duties

3) "Generally acceptable level" means a level that satisfies the following requirements:
① The benefit is at an acceptable level based on reasonable common sense and social norms, is justifiable when disclosed, in no way affects the fair handling of affairs, and does not pose a burden on either party.
② The benefit is appropriate not only in terms of cost but also with respect to the location, purpose, method, count, frequency, timing, recipient, content, and social ethics and conventions (customs).
③ There is no reciprocity regardless of amount.
④ The benefit complies with the Improper Solicitation and Graft Act and other relevant domestic and foreign laws. In the event of a conflict in the interpretation of laws, the higher-order law shall take precedence.
⑤ The generally acceptable level may vary depending on factors such as the exact circumstances, nature of the work, and job position.

CODE OF ETHICS PRACTICE GUIDELINES

4. Principles and restrictions concerning congratulatory and condolence money

- Employees shall not notify stakeholders of their own family events or those of their colleagues. Informing a stakeholder through a third party shall be construed as a notification made by the employee concerned.
- However, employees may inform each other of their family events. Use of the Company's congratulations and condolences channel is advised. For the purpose of family event announcements, the scope of relatives shall be limited to immediate family members, namely the parents (or grandparents if the parents are already deceased) and children of employees and their spouses. Congratulations and condolence money between employees shall be at a generally acceptable level.
- The maximum limit for congratulations or condolence money paid to an external stakeholder shall be KRW 100,000, including floral wreaths or arrangements. However, congratulations or condolence money paid to a person subject to the Improper Solicitation and Graft Act shall not exceed KRW 50,000, excluding floral wreaths or arrangements.
- Congratulations and condolence money from external stakeholders shall not be accepted under any circumstance. Congratulations or condolence money that has been accepted due to unavoidable circumstances shall be returned or donated to the department in charge of ethical management.
- Employees shall submit the relevant information, such as proof of return of congratulations or condolence money accepted from a stakeholder, when requested by the department in charge of ethical management.
- Condolence flowers from stakeholders shall not be accepted, and those that are accepted due to unavoidable circumstances shall not be displayed.

5. Restrictions concerning solicitations and recommendations

- Employees shall not make solicitations or recommendations through an internal acquaintance or an external party regarding the following. If an employee has received a solicitation or recommendation, he/she shall register it in the "Clean POSCO System."
  - Requests for preferential treatment regarding various contracts, such as equipment/materials purchases
  - Requests for favorable and preferential treatment regarding personnel decisions such as hiring, promotions, rewards and punishments, and transfer of positions
  - Requests for excessive convenience, preferential treatment, etc. outside of usual procedures
  - Requests to neglect management and supervision tasks such as inspections and tests
- Employees shall not unlawfully solicit favors directly or through a third party in relation to duties subject to the Improper Solicitation and Graft Act.

6. Restrictions concerning monetary transactions

- Employees shall not engage in cash loans, loan guarantees, name lending, or other monetary transactions with stakeholders.
- An employee who has engaged in a monetary transaction with a stakeholder due to a personal connection shall report it to the department in charge of ethical management.

7. Restrictions concerning event sponsorship

- Sponsorships from stakeholders shall not be accepted for events funded by the Company, such as department events or club activities.
- The acceptance of vehicles, venues, services, or other conveniences required for an event shall be construed as acceptance of sponsorships.
- A sponsorship that has been accepted due to unavoidable circumstances shall be reported to the department in charge of ethical management.

8. Principles concerning the use and protection of Company assets

- The Company's budget resources, such as meeting expenses and operating expenses, shall be used as intended by the budget and in accordance with legal requirements, and shall not be used for personal purposes.
- As a general rule, business expenses shall be paid with a Company card.
- In addition to the budget, all tangible and intangible assets, including Company supplies and facilities, shall be used for work-related purposes only. Ongoing efforts shall be made to protect assets by periodically reviewing asset classification and protection measures.
- Employee information (telephone numbers, email addresses, etc.) is also considered Company assets and shall not be used for personal purposes.

9. Principles concerning information protection

- Important or confidential Company information shall be strictly protected and controlled.
- Important information shall be relayed to the intended recipient immediately upon recognition.
- The falsification, concealment, or distortion of work-related information or the reporting or distribution of incorrect information shall be regarded as fabrication of information.
- Employees shall manage internal Company information acquired during the course of work according to the security level, and shall not use the information for personal purposes.

10. Fair trade regulations and building mutual trust with suppliers

- Employees shall comply with international standards and national laws and regulations concerning fair trade to ensure fair competition in domestic and international markets and refrain from engaging in unfair trade practices such as colluding with competitors regarding production, prices, bidding and market segmentation.
- Employees shall fulfill their social responsibility by refraining from using a position of power against a client or supplier to make demands or unlawful requests.
- Employees shall respect the rights and property of others, including intellectual property rights, and shall not infringe upon them to create business or generate profit.
- The information acquired from a supplier shall be strictly protected as stipulated in relevant laws and regulations and contract terms.
- Employees shall support suppliers to comply with laws and regulations concerning fair trade and ESG.

CODE OF ETHICS PRACTICE GUIDELINES

11. Principles concerning the prevention of conflicts of interest

- "Conflict of interest" means a situation where a personal relationship with an employee of a supplier has an improper influence on an employee's work performance.
- Employees shall not engage in unfair trade practices such as signing unlawful private contracts, making high-price purchases, tunneling work, or leaking trade information to give preferential treatment to a certain individual or corporation.
- Employees shall prevent conflicts of interest by strictly denying improper requests from a supplier's employee with whom there is a personal connection, including former employees.
- Employees shall not make unofficial contact with a supplier's employee with whom there is a personal connection, and shall report any unintentional contact to the head of the department or the department in charge of ethical management.
- Employees shall not attend gatherings of former employees without the Company's approval.
- Where an employee has a personal connection to a supplier's employee, he/she shall consult the head of the department or ethics officer and adjust his/her duties, etc. accordingly.
- When the head of the department recognizes a work-related conflict of interest involving himself/herself or a staff member, he/she shall adjust the relevant duties or otherwise take action to avoid the conflict of interest. If it is impracticable to avoid the conflict of interest due to the nature of the work, he/she shall consult the department in charge of ethical management.
- Retired employees shall also prevent conflicts of interest with POSCO Holdings and its business entities.

12. Developing an organizational culture of human respect

- Employees shall not engage in verbal, physical, or visual behavior that may offend others, such as the use of profanities, verbal abuse, physical abuse, or sexual harassment that violates the human rights of an individual.
- Violations of human respect may be subject to disciplinary action in accordance with the relevant regulations.
- Employees shall respect each other's privacy and shall not slander or undermine others or disclose personal information.
- Employees shall comply with national labor laws and international standards, including working conditions for minors and minimum working age requirements.
- Safety rules shall be strictly observed, and any risks identified shall be addressed appropriately

Chapter 3. Reporting Unethical Conduct and Rewards and Sanctions

1. Reporting obligations and confidentiality

- Employees who recognize the fact that he/she or someone else has violated the Code of Ethics or these Guidelines shall actively protect the Company and employees from unethical practices by reporting to or consulting the head of the department or the department in charge of ethical management as quickly and conveniently as possible. However, violations of human respect shall be reported to the department in charge of ethical management without delay.
- Executives and department heads shall report to and consult the department in charge of ethical management immediately upon being informed of a violation of the Code of Ethics by a staff member, and shall not downplay or conceal the incident.
- The department in charge of ethical management may conduct a fact check of the reported incident if necessary, and the employees concerned shall actively cooperate.
- Employees shall not take adverse action against, or disclose the identity of, an informant or whistleblower.
- Where it is likely that an informant or whistleblower may be subject to adverse action in terms of employment, a change of position or other personnel measures shall be taken if so desired by the informant.
- If an employee becomes aware of the fact that an incident has been reported, either by chance or during the course of work, he/she shall keep it confidential or face disciplinary action.

2. Rewards and sanctions (disciplinary action)

- The Company may award part of the clawback resulting from an ethical misconduct investigation to the informant as compensation in accordance with the relevant regulations.
- The compensation criteria shall be in accordance with the guidelines on compensation and indemnity for informants of ethical misconduct and other relevant regulations.
- The Company shall firmly reprimand employees who violate the Code of Ethics and Practice Guidelines in accordance with the relevant regulations.
- The Company may restrict Company access and business to employees who have been dismissed after violating the Code of Ethics.

3. Reporting of violations and protection of informants

- Employees who become aware of a violation of the Code of Ethics or these Practice Guidelines shall actively protect the Company and employees from the violation by reporting it to the head of the organization or department or the department in charge of ethical management for timely resolution.

Addendum

1. Addendum (established on July 8, 2024): (Effective Date) These Guidelines shall enter into force as of July 8, 2024.
2. Matters not specified in the Code of Ethics Practice Guidelines or controversy over the interpretation of the Guidelines shall be interpreted and determined by the department in charge of ethical management.
3. In order to report, deliberate, and decide important ethics related issues, Company can establish and operate Ethics Committee with separate operation standards.
4. The department in charge of ethical management may amend the Code of Ethics when necessary.

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GRI 2: General Disclosures			
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	2-3	Reporting period, frequency and contact point	p.2
	2-4	Restatements of information	Not applicable
	2-5	External assurance	p.214
Activities and workers	2-6	Activities, value chain and other business relationships	p.6-17
	2-7	Employees	p.179-181
	2-8	Workers who are not employees	p.179-181
Governance	2-9	Governance structure and composition	p.125-129
	2-10	Nomination and selection of the highest governance body	p.128-129
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	2-16	Communication of critical concerns	p.131
	2-17	Collective knowledge of the highest governance body	p.129
	2-18	Evaluating the highest governance body's performance	p.130
	2-19	Remuneration policies	p.130
	2-20	Process for determining remuneration	p.130
	2-21	Annual total compensation ratio	p.173
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	2-23	Policy commitments	p.183~208
	2-24	Embedding policy commitments	Board of Directors Organizational Regulations
	2-25	Processes to remediate negative impacts	p.18-19, p.47-49, p.70-72, p.88-89, p.101-102
	2-26	Mechanisms for seeking advice and raising concerns	p.102, p.105, p.120
	2-27	Compliance with laws and regulations	p.165, p.172
	2-28	Membership associations	p.142

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	3-2	List of material topics	p.28
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GRI 207: Tax			
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	304-3	Habitats protected or restored	p.66-72
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	305-4	GHG emissions intensity	p.159-160, p.175
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	305-6	Emissions of ozone-depleting substances (ODS)	Ozone-depleting substances are not mainly emitted from or used in key production processes of POSCO Group, and therefore not calculated.
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	p.165, p.178
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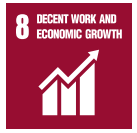
GRI Standards Index

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	406-1	Incidents of discrimination and corrective actions taken	p.172
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	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	p.144-150

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	413-2	Operations with significant actual and potential negative impacts on local communities	p.102, p.146-149, p.151-153
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	414-1	New suppliers that were screened using social criteria	p.92-93, p.95-96
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UN SDGs

POSCO Holdings' business operations align with the UN Sustainable Development Goals (SDGs) in advancing sustainability management, in an effort to do our part in achieving sustainability across the globe.

UN SDGs	Our Activity	Page
	• Provide health checkups for employees and their families, along with psychological counseling • Support work-life balance through sick leave, maternity leave, parental leave, and working from home for childcare • Promote the health of supplier employees through the newly-established occupational health committee and provide rest areas for workers	86~87 110 86
	• Strengthen essential employee training for safety, human rights, ethics, and information security and improve training programs • Provide leadership development programs and digital transformation training on AI and other emerging technologies • Operate the POSCO TJ Foundation for education to help nurture future talent in local communities and across Asia	107 109 113
	• Stipulate ban on gender-based discrimination in our human rights policy and diversity, equity and inclusion policy • Provide separate programs and set goals to develop female leaders • Set the equal pay for equal work principle and operate a fair assessment system	189, 192 104 109
	• Announce our environmental and energy management guidelines spanning the increased use of clean energy and the adoption of low-carbon technology • Disclose our progress made in implementing strategies and acquiring business licenses to produce and develop clean hydrogen and renewable energy • Improve power generation efficiency to reduce energy consumption and announce energy saving goals	58 59~61 62
	• Incorporate the impact of a just transition on jobs in analyzing climate change scenarios • Provide quality jobs and ensure employment security for people with disabilities, indigenous peoples, and local communities where our overseas operations are based • Support and nurture emerging technology and venture industries to help create quality social jobs	50 104 13, 19
	• Build safe and sustainable urban infrastructure and eco-friendly production facilities • Pursue community-centered CSR activities and build win-win partnerships through employee volunteering • Define our Group-wide vision, core businesses, and business areas that align with a sustainable society	16 113~114 6

UN SDGs	Our Activity	Page
	• Use slag, a steel byproduct, as agricultural fertilizers to recycle byproducts and help reduce GHG emissions • Employ AI technology and robotics for high-risk work to create a safe and sustainable workplace • Promote sustainable production and consumption by certifying our products to low-carbon, recycling, and resource circularity standards	21 22 116
	• Develop low-carbon bridge steelmaking technology to implement electric arc furnace and HyREX investment plans • Respond to climate change through analyzing physical risks and developing strategies for disaster management and climate adaptation • Develop transition risk response strategies through the analysis of policy/legal risk, market risk, and reputational risk	38 47~49 55~57
	• Preserve marine ecosystems by analyzing biodiversity risks in the vicinity of our coastal steelworks and developing improvement plans • Contribute to preserving the nation's marine ecosystem by developing Triton reef and implementing relevant projects	67~69 66
	• Develop measures to protect animals and plants living in alpine areas near the salt lake in Argentina and perform regular monitoring • Designate protection areas within the palm plantation estates of PT.BIA in Indonesia and develop and implement ecological restoration plans	70~72 151~155
	• Join the UN Global Compact – POSCO Holdings and key operating companies (POSCO, POSCO INTERNATIONAL, POSCO E&C) and engage in its activities • Publish TCFD reports through our endorsement for the TCFD and join the TNFD Forum to promote cooperation	100 35~57, 66

UNGC COMMITMENT

UNGC		Our Activity	Page
Human Rights	**Principle 1** Businesses should support and respect the protection of internationally proclaimed human rights; and, **Principle 2** make sure that they are not complicit in human rights abuses.	• Our human rights policy stipulates that we abide by the UN Guiding Principles on Business and Human Rights, the UN Global Compact, the Universal Declaration of Human Rights, the OECD Guidelines for Multinational Enterprises, and other international standards on human rights while advancing human rights management by respecting the labor principles ratified by countries around the world.	189
Labour	**Principle 3** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	• Our human rights management policy specifies that we guarantee the freedom of association and collective bargaining, and we ensure that none of our employees suffer any disadvantage for their joining labor unions or participating in their activities. We do not refuse our labor union's request for collective bargaining, and honor and faithfully implement the results of collective bargaining.	103, 189
	Principle 4 the elimination of all forms of forced and compulsory labour;	• Our human rights management policy and supply chain policy stipulate that we do not tolerate any form of compulsory labor, including child labor.	189, 194
	Principle 5 the effective abolition of child labour; and,	• We ensure all new investments are reviewed against our ESG checklist, and this 10-item checklist covers child labor/compulsory labor.	19
	Principle 6 the elimination of discrimination in respect of employment and occupation.	• We provide mandatory training to all employees to prevent workplace bullying and discrimination among others, and stipulate the principle of non-discrimination in our human rights management policy and HR guidelines. We strive to increase employment of women, people with disabilities, and indigenous peoples, and operate official grievance mechanisms.	99~102, 192
Environment	**Principle 7** Businesses should support a precautionary approach to environmental challenges;	• We establish our environmental policy and biodiversity policy, and mandate environmental impact assessment in al new business undertakings. In so doing, we ensure the social and environmental impact of our business operations is minimized.	19, 184~186
	Principle 8 undertake initiatives to promote greater environmental responsibility; and,	• We engage in a wide array of activities to minimize environmental impact that stems from our business operations and ensure restoration and recovery if such impact does occur. For our operations in Argentina and palm plantation in Indonesia noted for their sizable environmental impact, we transparently manage and communicate our proactive investments and the progress made for environmental improvement.	70~72, 151~155
	Principle 9 encourage the development and diffusion of environmentally friendly technologies.	• We expand investments in various ways to develop HyREX technology for low-carbon steelmaking as well as hydrogen and other green energy sources. We also strive to manage and reduce the carbon footprint of our key products.	38, 42, 60~62
Anti-Corruption	**Principle 10** Businesses should work against corruption in all its forms, including extortion and bribery.	• We officially ban all forms of bribery and unjustified gains, and conduct training and monitoring for all employees to this end. We also operate our Compliance Program to promote fair trade practices, and develop manuals for robust compliance management at overseas operations to take a more stringent preventive approach.	122~124, 199~200

Independent Assurance Report on the Identified Sustainability Information in POSCO HOLDINGS INC's Sustainability Report (English Translation of a Report Originally Issued in Korean)

To the management of POSCO HOLDINGS INC.

We have undertaken a limited assurance engagement in respect of the selected sustainability information (the 'Identified Sustainability Information') in the POSCO HOLDINGS INC's Sustainability Report for the year ended 31 December 2023 ('Sustainability Report' or the Report) listed below.

Identified Sustainability Information

The Identified Sustainability Information included in the POSCO HOLDINGS INC's Report for the year ended 31 December 2023 is summarized below:

- 'Global Reporting Initiative (GRI) Standards Index' stated on pages 209~211
- 'ESG DATA' within the 'ESG Factbook' heading on pages 159~182

Our assurance was with respect to the year ended 31 December 2023 information only and we have not performed any procedures with respect to earlier periods or any other elements included in the Report and, therefore, do not express any conclusion thereon.

Criteria

The criteria used by POSCO HOLDINGS INC to prepare the Identified Sustainability Information are 'GRI Standards'.

POSCO HOLDINGS INC's Responsibility for the Identified Sustainability Information

POSCO HOLDINGS INC is responsible for the preparation of the Identified Sustainability Information in accordance with the Criteria. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of Identified Sustainability Information that is free from material misstatement, whether due to fraud or error.

Inherent Limitations

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

Our Independence and Quality Control

We have complied with the ethical requirements of the Republic of Korea, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our firm applies International Standards on Quality Management 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Identified Sustainability Information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised), Assurance Engagements other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standards Board. These standards require that we plan and perform this engagement to obtain limited assurance about whether the Identified Sustainability Information is free from material misstatement.

A limited assurance engagement involves assessing the suitability in the circumstances of POSCO HOLDINGS INC's use of the Criteria as the basis for the preparation of the Identified Sustainability Information, assessing the risks of material misstatement of the Identified Sustainability Information whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the Identified Sustainability Information. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, review of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above we:

- Interview with the personnel responsible for internal reporting and data collection regarding POSCO HOLDINGS INC's Identified Sustainability Information to understand their approaches to manage material issues
- Understand the systems and processes in place for managing and reporting the Identified Sustainability Informatio
- Review documents relevant to the risk assessment process, sustainability-related policies and standards, materiality assessment, engagement activities of the stakeholders and others
- Perform inquiries and analytical reviews on the Identified Sustainability Information

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether POSCO HOLDINGS INC's Identified Sustainability Information has been prepared, in all material respects, in accordance with the Criteria.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that POSCO HOLDINGS INC's Identified Sustainability Information the year ended 31 December 2023 is not prepared, in all material respects, in accordance with the Criteria.

Restricted Use

This Report is prepared solely for the management of POSCO HOLDINGS INC to assist in obtaining understanding of POSCO HOLDINGS INC's sustainable management performance and activities. Accordingly, we accept no liability or responsibility to any third party, other than POSCO HOLDINGS INC and its management, who gains access to this report.

Seoul, Korea

Hoonsoo Yoon, Chief Executive Officer

Samil PricewaterhouseCoopers

27 June 2024

This report is effective as of 27 June, 2024, the report date. Certain subsequent events or circumstances, which may occur between the report date and the time of reading this report, could have a material impact on the Report on the Identified Sustainability Information. Accordingly, the readers of the report should understand that there is a possibility that the above report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.


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HOLDINGS