beyond the best KUMHO PETROCHEMICAL

Kumho Petrochemical

Sustainability Report 2023

About this Report

Report Overview

Kumho Petrochemical publishes an annual sustainability report for the purpose of actively communicating and transparently disclosing to stakeholders sustainability-related information including environmental, social, and governance performance. This report covers Kumho Petrochemical's strategies, goals, and efforts for implementation and key results of such targets on sustainability management.

Reporting Principles

This report was written in accordance with GRI (Global Reporting Initiative) Standards 2021 and with extensive referencing of criteria issued by the ISSB (International Sustainability Standards Board), TCFD (Task Force on Climate-Related Financial Disclosure), SASB (Sustainability Accounting Standards Board), and ESRS (European Sustainability Reporting Standards). Regarding sustainability information, financial data was arranged in accordance with K-IFRS (Korean International Financial Reporting Standards). Quantitative financial data and non-financial data was organized according to the respective fiscal years of such data.

Report Period

This report covers Kumho Petrochemical's sustainability performance from January 1 through December 31, 2023. For quantitative information, it includes data for a three-year period (2021-2023) to enhance comparability. Key items of information that may significantly impact our stakeholders also include data from pre-2023 and the first half of 2024 on a partial basis.

Issued by	Kumho Petrochemical Co., Ltd.
Date issued	May 31, 2024
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Report Scope

This report details the sustainability performance of Kumho Petrochemical's headquarters, R&D Center, 10 business sites (Ulsan Synthetic Rubber Plant, Ulsan Synthetic Resins Plant, Yeosu Synthetic Rubber Plants 1 and 2, Yeosu Specialty Chemicals Plant, Yeosu Energy Plants 1 and 2, Asan CNT Plant, Yesan Building Materials Plant, Hwaseong Foam Plant), and consolidated subsidiaries including Kumho P&B Chemicals, Kumho Polychem, Kumho Resort, Kumho T&L, Kumho Trading, as well as key affiliate (Kumho Mitsui Chemicals). Data published from a period that differs from the period officially covered by this report has been indicated as such.

Reporting Scope by Consolidated Subsidiaries

Consolidated Subsidiary	Qualitative	Quantitative	
Kumho P&B Chemicals, Inc.	v	v	Economic & Governance, Environmental, Social
Kumho Polychem Co., Ltd.	v	v	Economic & Governance, Environmental, Social
Kumho T&L Co., Ltd.	v	v	Economic & Governance, Environmental, Social
Kumho Resort Co., Ltd.	v	v	Economic & Governance, Environmental, Social
Kumho Trading Co., Ltd.	v	v	Economic & Governance, Social
Korea Energy Power Plant Co., Ltd.	v		
KR Solar Co., Ltd.	v		
Gangwon School Solar Co., Ltd.	v		
K&H Specialty Gas Co., Ltd.	v		
Kumho Holdings (H.K.) Co., Ltd.			
Asiana Weihai Country Club & Resort Co., Ltd.			
Kumho Petrochemical Malaysia Sdn. Bhd.			
Kumho Petro Holdings, Ltd.			

Data Assurance

To ensure the credibility and quality of this report, Kumho Petrochemical received third-party verification from an outside institution, the results of which are listed on pages 133-134. The verified report was authorized by the ESG Committee.

Additional Information

This report and the ESG Data Pack are accessible for viewing on Kumho Petrochemical's website.

Contents

Kumho Petrochemical will, even amid adversity, innovate the value of experience as a "solution partner" of our stakeholders and make every effort to build relationships of trust. We will create a year of stability and growth with a bold attitude of a challenger.

CEO Message

2023 marked the official end of COVID-19 pandemic as a public health emergency. It was also a year of uncertainty, including fiscal austerity of key currency countries and a spike in geopolitical risks, and an even harsher international situation for the petrochemical community, such as delayed recovery of global demand and China's increased self-sufficiency. Nevertheless, Kumho Petrochemical solidified its market dominance by improving its market and product portfolios and consistently strived to reduce costs, resulting in (as of the year-end settlement for 2023) KRW 6.3225 trillion in revenue and KRW 359 billion in operating profits. It was a step down from our record-breaking performance of 2021 and 2022, but we decided that it was more important to minimize external risks and maintain a stable outcome level.

Kumho Petrochemical is making every effort to fortify our key business areas and secure a technology-based growth engine for the future. By the end of this year, we will complete the expansion of production facilities that can accommodate an additional 236,000 tons of NB-Latex and will continue to lead in R&D technologies for developing products such as biodegradable NB-Latex and NB-Latex made from bio-resources. We are also expanding the production volumes of our affiliates' key products: namely, 60,000 tons of epoxy products for Kumho P&B Chemicals, 70,000 tons of EPDM products for Kumho Polychem, and 200,000 tons of MDI products for Kumho Mitsui Chemicals. For our part, we obtained ISCC PLUS certification in February 2023 for our synthetic rubbers—butadiene rubber (BR) and solution polymerized styrene butadiene rubber (SSBR)—and are working on diversifying our eco-friendly product portfolio, such as through our MOU with Hankook Tire to develop a tire made with Eco-SSBR, an eco-friendly, high-performance synthetic rubber, and collaborate on relevant projects. In terms of specialty chemicals, we improved the sustainability of our products through the commercialization of HBPA goods based on independently-developed technologies. Furthermore, to help achieve carbon neutrality, we decided to implement a project on CCU (carbon capture and utilization), an important tool for achieving carbon neutrality, and founded K&H Special Gases in September with Hankook Special Gases for such implementation. We will complete the construction of a carbon dioxide collection/liquefaction plant by 2025 that is expected to collect and reuse approximately 69,000 tons of carbon dioxide per year, equivalent to planting 27,000 trees each year (as of calculations by Korea Forest Service).

It is based on these accomplishments that Kumho Petrochemical ranked first place among Korean companies in ROESG 2023, which simultaneously measures profitability and ESG outcomes, last November. Based on a survey of 77 listed Korean companies jointly conducted by Hankyung ESG and KB Securities, ROESG scores are based on both ROE, a profit-measuring index, and ESG assessment indicators. Moving forward, Kumho Petrochemical will do its utmost to continue making progress in both areas.

To our esteemed stakeholders;

The external business environment for 2024, as with this one, is expected to be challenging. In a situation in which it is virtually impossible to predict when global demand will recover, China's increasing self-sufficiency in petrochemicals is recently accompanied by the global supply network crisis—most notably, setbacks in maritime shipping at the Bab el-Mandeb Strait—and volatile oil prices.

International bodies such as the EU (Carbon Border Adjustment Mechanism) and the UN (A New UN Treaty to Address Plastic Pollution) are demanding an increasingly proactive response by the petrochemical industry on climate change. Even with such odds, Kumho Petrochemical will be concentrating on business activity with priority on fiscal stability, responding flexibly to drastic internal and external changes in environment, and, above all, growing in quantity and quality under the conviction that crisis is a synonym for opportunity.

In response, Kumho Petrochemical will be pursuing the following strategies.

Firstly, we will be laying the foundations for management sophistication based on an internalizing ESG principles.

The implementation by major countries of strict environmental regulations and the industry-wide trend toward accelerated decarbonization is making ESG management be regarded as a tangible aspect of a company's competitive edge as opposed to merely a declaration of intent. For our environment, society, and sustainable business activity, Kumho Petrochemical is adapting to the climate crisis by elevating responsiveness, alleviating risks, and improving resilience through concrete and proactive measures: namely, establishing goals for each of our business sites on greenhouse gas reduction and enhancing the effectiveness of/reducing use of energy—things that have a profound impact on the environment as well as socioeconomically—and reflecting such outcomes to the KPIs of upper-level management. We are also working on establishing a culture of safety/health management that puts people first, developing eco-friendly materials that satisfy customer needs, and identifying new markets.

Secondly, we will secure new growth engines and cultivate the capabilities required by them.

Kumho Petrochemical announced three areas of growth: electric vehicle solutions, eco-friendly/biotech, and high value-added specialty. As we consider various types of business opportunities, one fact is becoming crystal clear: that R&D is the foundation required to secure future technologies and strengthen our competitiveness in our core business areas. One such area is high added-value hydrogenated products, which are made with independently-developed technologies and a circular economic system that is based on recycled materials. To ensure the commercialization of our R&D efforts, we will be vigilant about market analysis and verifying economic feasibility. We face a protracted period of low economic growth but are undeterred by such circumstances due to our belief in the fact that there are always opportunities to be had for companies that are prepared for the future. We will be concentrating on developing business areas that we do best and increase our success rate in new industry commercialization through our core capabilities that have led us from day one.

Valued stakeholders,

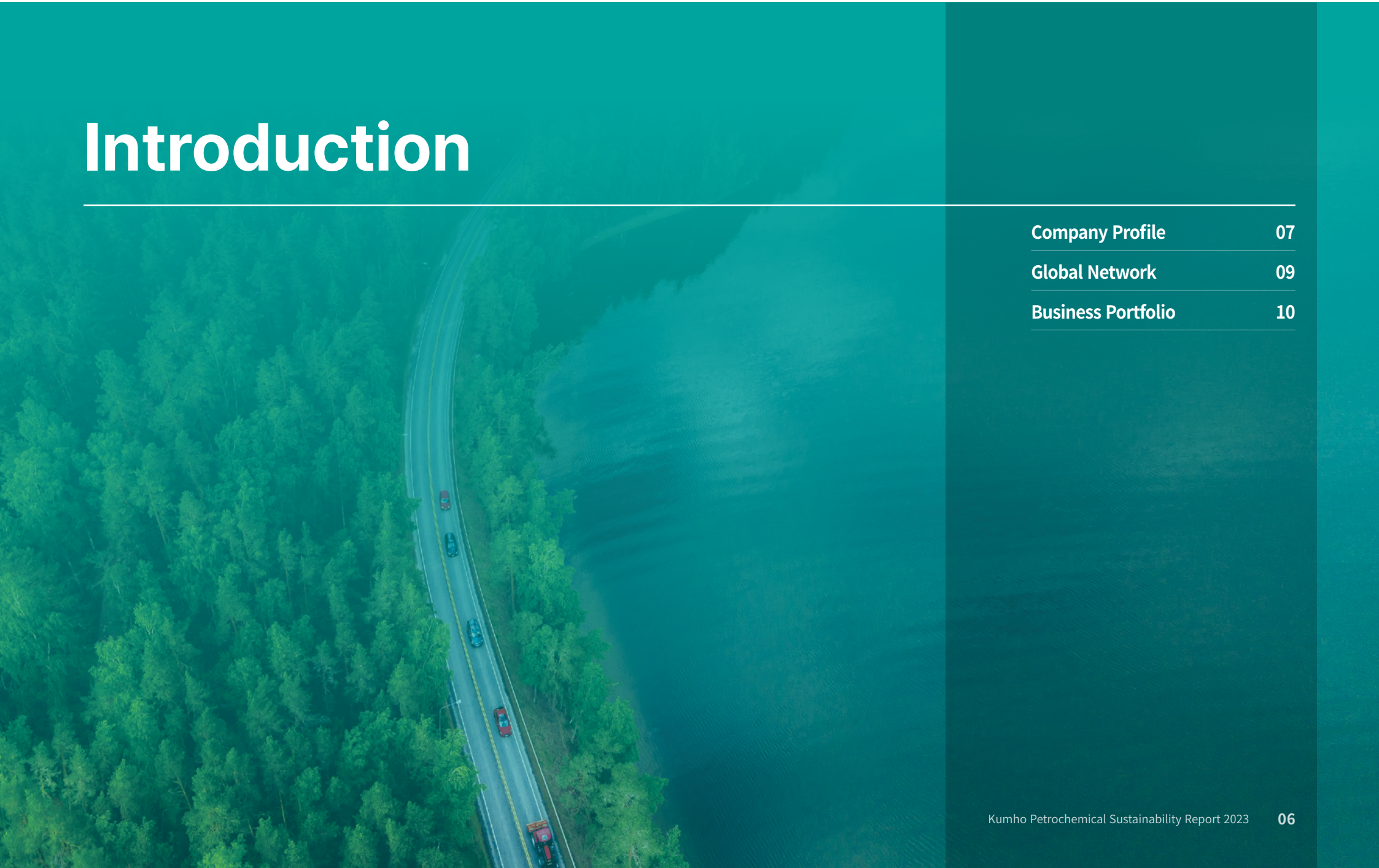
Regardless of circumstantial adversity, Kumho Petrochemical is committed to innovating our experiences as a "solution partner" for our stakeholders and building relationships of trust with them. I am confident that such efforts by our employees will come together into a solid foundation for growth. We are excited about making the upcoming year one full of stability and growth while never losing sight of our love of taking on challenges and, thereby, will do everything possible to enhance stakeholder value. I hope our stakeholders choose to put their faith in the experiences and capabilities of our employees and continue to support our activities.

May 2024

Jong Hoon Baek

President and CEO, Kumho Petrochemical

Introduction



Company Profile

Company Overview

Since its founding in 1970, Kumho Petrochemical has engaged in the synthetic resin, specialty chemical, nano carbon, energy, and building material businesses with synthetic rubber as our main business area. Having grown over the past five decades as a partner of Korea's industrial development, we stand at the forefront of material innovation, where we are rising as a global petrochemical giant that provides high-quality value for everyone.

Change as a Means of Reaching the Top

In order to compete in the global arena, we have devoted our fullest capacity to securing technological prowess and the largest possible manufacturing capabilities. We pooled all of our expertise in IT, energy, and logistics to provide to our customers petrochemical products that are rich in value. We never stop taking on challenges or transforming ourselves to achieve our goal of becoming a leader in the petrochemical industry.

Trust as the Foundation of Business

Since its founding, Kumho Petrochemical has maintained strong partnerships with the world's top tire manufacturers and automakers. Labor-management relations are based on a firm mutual trust, as evidenced by 36 strike-free years, and we are recognized by our customers for providing only products of the finest quality.

Environment First

Under our corporate philosophy, "environment overrides business," we have consistently stood at the front lines of environmental standard fortification based on our early adoption of international environmental management systems. We create a safe and health-conscious environment by developing technologies that prioritize both people and the environment.

General Status

Company Name	Kumho Petrochemical Co., Ltd.
CEO	Jong Hoon Baek
Headquarters Address	100, Cheonggyecheon-ro, Jung-gu, Seoul, Republic of Korea
Revenue in 2023	Consolidated: KRW 6.3 trillion Separate: KRW 4.2 trillion
Date of Establishment	December 28, 1970
Business Areas	Synthetic Rubbers, Synthetic Resins, Specialty Chemicals, CNT, Energy, Building Materials
World-Class Products (Consolidated Basis)	• INB-Latex • NdBR • SSBR • SBS • Phenolic Additives • SB-Latex • LBR • NB-Latex • NBR • K-5010L • K-13 • SBR • BR

Corporate Vision

Kumho Petrochemical strives to contribute to customers' success through fortified industry leadership and, by being a proponent of change, become an innovative leader that is skilled at finding new markets.
To achieve this goal, the entire Kumho Petrochemical family is pooling its abilities to spearhead growth under our vision, "Solution Partner: Creating Our Common Future with Value beyond Chemistry."

Vision

Solution Partner
Creating Our Common Future
With Value Beyond Chemistry

Mission

For our Customers	For our Shareholders	For our Employees	For Humanity & Environment
We create customer value with the best solutions and synergy.	We deliver shareholder value by selecting and focusing to maximize profits.	We work to create a virtuous cycle of growth where both the company and employees grow.	We will create green chemicals that coexist in harmony with people and nature.

Sustainable Mid- to Long-term Growth Strategy

Kumho Petrochemical designated three strategies for mid- to long-term growth to become a company that engages in such growth consistently: ESG management sophistication, strengthening the competitiveness of existing businesses, and development of new growth engines. All three strategies, by realizing our vision, "Solution Partner: Creating Our Common Future with Value beyond Chemistry," will comprise the foundation of our future.

Vision

Solution Partner: Creating Our Common Future with Value Beyond Chemistry

Company-Wide Goal

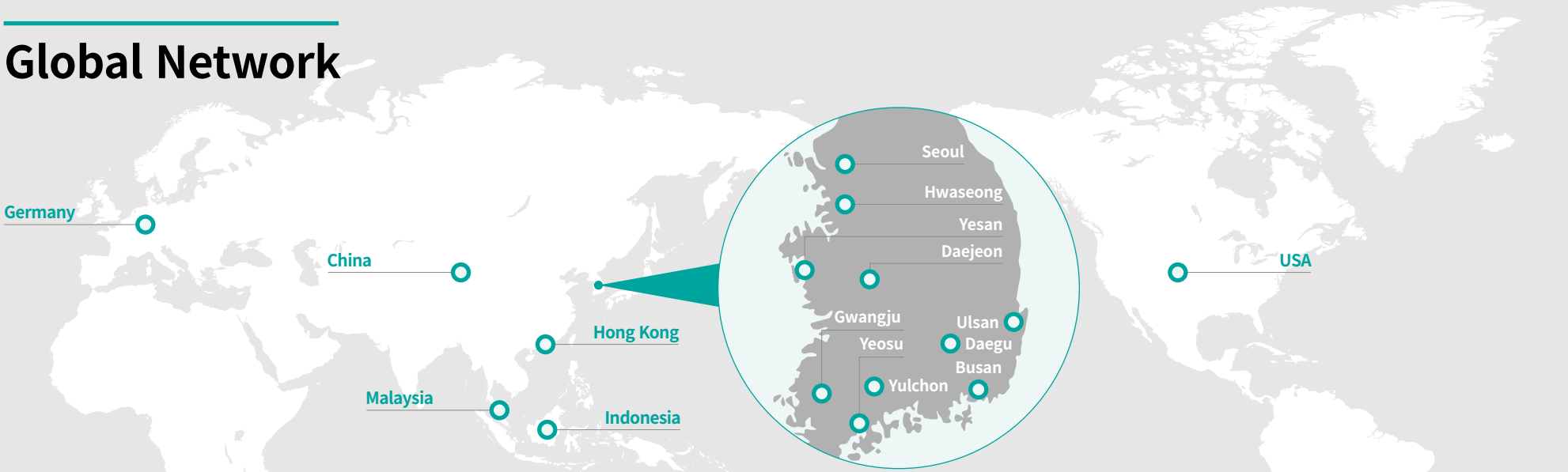
Transition to consistently-growing company
R.E.N.E.W: First Steps Toward Carbon Neutrality

Core Strategies

Sophisticating ESG Management	Enhancing Competitiveness of Existing Businesses	Developing New Growth Engines
• Achieve carbon reduction goals • Sophisticate supply chain management • Implement sustainable business practices • Upgrade ESG information systems	• Secure global top position in leading businesses • Focus on nurturing sustainable products • Sustain profitability of base businesses	• Eco-friendly automotive solutions • Bio-based and sustainable materials • High-added value specialty products

(as of Mar. 31, 2024)

Global Network



Business Sites and Offices in Korea

Seoul
- HQ

Hwaseong
- Hwaseong Foam Plant

Yesan
- Yesan Building Materials Plant

Daejeon
- R&D Center

Gwangju
- Gwangju Sales Office

Yeosu
- Yeosu Synthetic Rubber Plant 1
- Yeosu Synthetic Rubber Plant 2
- Yeosu Specialty Chemicals Plant
- Yeosu Energy Plant 1
- Yeosu Energy Plant 2

Yulchon
- Yulchon CNT Plant*

* The existing Asan CNT factory is relocated to Yulchon

Daegu
- Daegu Sales Office

Busan
- Busan Rubber Sales Office
- Busan Resins Sales Office

Ulsan
- Ulsan Synthetic Rubber Plant
- Ulsan Synthetic Resins Plant

Overseas Offices

USA
- San Diego Office
- Atlanta Office

China
- Guangzhou Office
- Qingdao Office

Germany
- Frankfurt Office

Overseas Corporations (including J/V)

Hong Kong
- Kumho Petro Holdings

China
- Shanghai Kumho Sunny Plastics Co., Ltd.
- Kumho Petrochemical Shanghai Co. Ltd.

Malaysia
- KUMHO PETROCHEMICAL MALAYSIA SDN. BHD.

Indonesia
- PT KUMHO PETROCHEMICAL INDONESIA

Business Portfolio

Kumho Petrochemical's business model is based on the production of synthetic rubbers, synthetic resins, and specialty chemicals with petrochemical-based raw materials that are used for the manufacturing of automobiles, gloves, and interior/exterior materials. We are also making strides in attaining global competitiveness and carving out new markets in carbon nanotubes, energy, and construction materials.

Upstream	Kumho Petrochemical	Downstream
Crude Oil → Naphtha Cracking Center	Synthetic Rubbers	Automobiles, gloves, shoes, etc.
	Synthetic Resins	Home appliances, automobiles, interior/exterior materials, etc.
	Specialty Chemicals	Rubber antioxidants, paint additives, etc.

Synthetic Rubbers

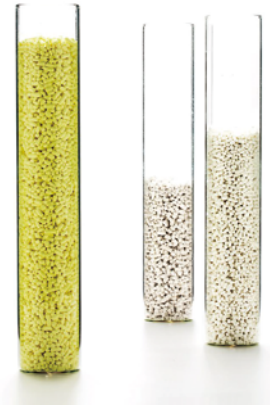
Kumho Petrochemical was the pioneer in synthetic rubber production in Korea, leveraging the robust growth of the national automobile and tire industries. Today, we boast the world's largest production capacities for versatile synthetic rubbers, including SBR (styrene butadiene rubber) and BR (butadiene rubber). Recently, we have begun to market larger quantities of high-functioning synthetic rubbers, such as SSBR (solution styrene butadiene rubber) and NdBR (neodymium-based butadiene rubber), which are optimized for the tire efficiency grade system. Engaging actively in downstream industries, we contribute significantly to sectors such as tires, shoes, auto parts, and medical-grade gloves. As holders of the largest production capabilities for NB-Latex—a material that is used primarily in latex gloves—we are expanding aggressively into new markets and applications, serving a diverse range of needs, from medical to industrial gloves.

Synthetic Resins

Kumho Petrochemical uses basic petrochemicals as the raw materials to manufacture synthetic resin, a key ingredient of plastics and polystyrene foam. Synthetic resin is used in the production of automobiles, home appliances, food containers, construction materials, and daily sundries. Today, customer needs are becoming increasingly diverse as a result of products becoming hybridized, cutting-edge, and higher in added value. To respond preemptively to market changes—namely, stricter safety standards and higher demand for eco-friendly products—the company is engaging in R&D and making investments to expand its eco-friendly product lines, including eco-friendly compound materials and next-generation plastics, alongside high-performance and added-value products.

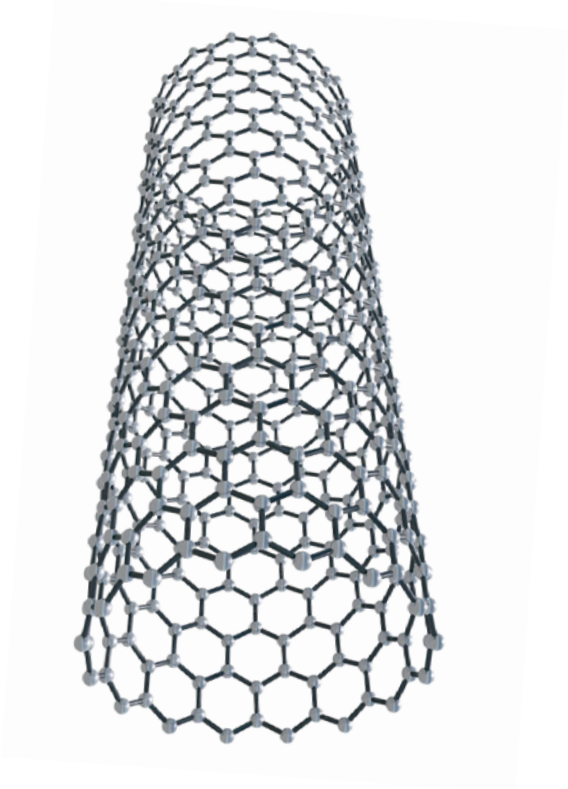
Specialty Chemicals

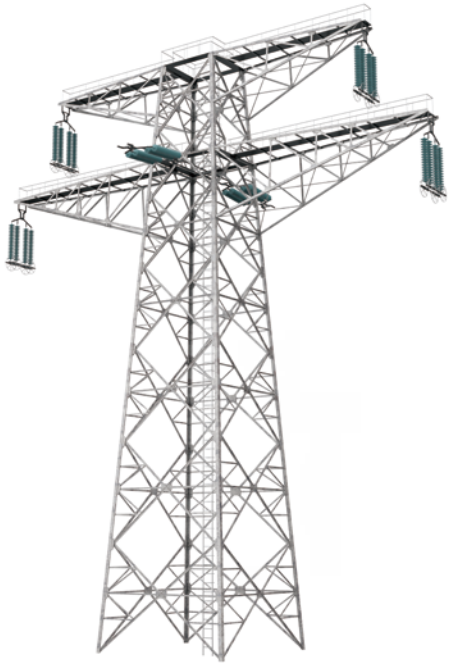
Kumho Petrochemical produces specialty chemical products such as antioxidants and paint additives that prevent oxidation and enhance the safety and durability of rubbers and synthetic resins. In specialty chemicals, we have an unrivaled supply network and production capabilities thanks to vertical systemization with our synthetic rubber business. In response to the consistent tightening of environmental regulations, we are working on the development of eco-friendly alternative materials. Today, Kumho Petrochemical is at the forefront of global technologies and products in the epoxy paint/adhesive sector for construction and ships. Kumho Petrochemical's ongoing R&D efforts are focused on high-added-value new materials and eco-friendly manufacturing process.



Carbon Nanotube

Kumho Petrochemical produces and supplies carbon nanotubes—a “dream” basic material with outstanding electrical, heat, and mechanical characteristics. We are consistently developing high-functioning applied products made with a combination of synthetic rubber and resin and carbon nanotube products that can be used in secondary batteries for the fast-growing EV market to, ultimately, accelerate our innovation of industrial materials and expand our businesses.





Energy

Kumho Petrochemical, as a community energy supplier, operates CHP (combined heat and power) plants, or energy-efficient power generation devices which simultaneously produce heat and electricity. Heat energy is supplied as fuel for industrial processes, while electricity is sold inside industrial complexes or through power exchanges for profit. We have two objectives for our energy business, a key area required for carbon emission reduction: in the short-term, reducing greenhouse gas emissions by co-firing biomasses, and, in the mid- to long-term, achieving carbon neutrality via fuel conversion.

Construction Materials

Kumho Petrochemical provides construction-related products through our building material brand, Hugreen. Our building material business applies a hazardous material reduction system to our production line and manufactures window materials that are low carbon-certified. Under the goal of making living spaces more habitable through innovative window systems, Kumho Petrochemical engages actively in R&D on eco-friendly products.

ESG Management System

Sustainability Milestone

2011
- Published first sustainability report

2020
- Established ESG management strategy for the sustainability system

2021
- Launched ESG Committee
- Established dedicated ESG team
- Declared ESG vision and focus areas
- Joined UN Global Compact (UNGC)
- Joined Korean Business Council for Sustainable Development (KBCSD)

2023
- Started CCU (carbon capture and utilization) plant construction and established a joint venture
- Established ESG investment principles
- Included in DJSI Korea and designated as a Yearbook Member
- Conducted LCA assessment and third-party verification on five product categories
- Signed MOU for the sale and purchase of Bio SM (Styrene Monomer)
- Established mid- to long-term plan for waste recycling

2011 → 2020~2022 → 2023~2024 → 2030~2050

2022
- Announced climate change response strategy (Carbon Neutral Growth Plan)
- Joined TCFD (Task Force on Climate-Related Financial Disclosures) Supporters
- Reorganized HSE(Health, Safety & Environment) Office to report directly to the CEO
- Obtained Gold Rating from EcoVadis
- Included in DJSI (Dow Jones Sustainability Index) Korea for the first time
- Obtained ZWTL (Zero Waste to Landfill) Gold Level Certification for Yeosu Energy Plant 2
- Declared intent to participate in K-EV 100 (Korean Zero Emission Vehicle Transition)
- Obtained ISCC Plus Certification for the first time (BR, SSBR)
- Established system to separate roles of CEO and Chair of the Board (independentdirectors to be given priority consideration for char appointment)

2024 (Accomplishments)
- Expanded range of products with ISCC Plus Certification (SBR, NBR, HSR, SB-Latex, NB-Latex, ABS, PS, SAN, BR, SSBR, SBS, Diamine (K-13), Copolymer (K-5010))
- Established plan for retiring Kumho Petrochemical's own stocks (goal: retiring 50% over three years)
- Retired 875,000 shares of Kumho Petrochemical's own stock
- Conducted first assessment of the Board of Directors

2024 (Plans)
- Establish mid- to long-term shareholder return policy
- Conduct LCA assessment and third-party verification on 11 more product categories (cumulative total: 16)
- Implement internal carbon pricing system

2030
- Plan to reduce carbon emissions by 29% compared to BAU
- Plan to attain 90% waste recycling rate
- Plan to attain 100% eco-friendly vehicles in use

2035
- Initiate first year of carbon-neutral growth

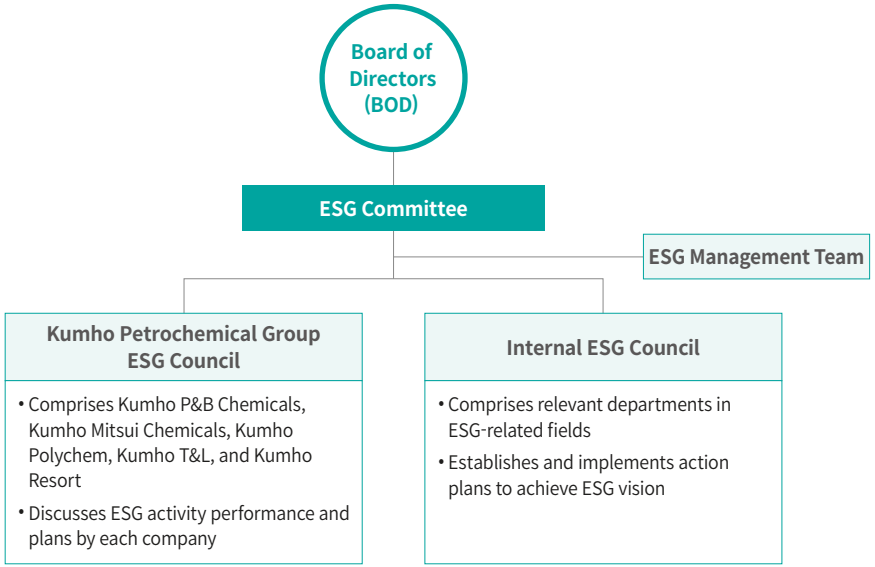
2050
- Attain carbon neutrality

ESG Management System

Governance

Responsibilities and Roles of the Board of Directors

- ESG-related issues are reviewed primarily by the Board of Directors (BOD) and the ESG Committee.
- The BOD approves plans on safety and health each year, and the ESG Committee is responsible for establishing ESG strategies and policies, as well as approving the review and management of ESG outcomes and tasks for improvement.
- An environmental policy expert chairs the ESG Committee, ensuring professionalism and independence with over two-thirds of the committee being comprised of independent directors.
- The ESG Committee holds at least two regular meetings per year, with additional temporary meetings convened as needed.



Agenda Items Reported to and/or Approved by the Board of Directors in 2023

Category	Date	Item	Approval Status
BOD	Mar. 8, 2023	Approval of safety and health plans for 2023	Approved
	Jun. 21, 2023	Approval of the establishment of a joint venture for carbon dioxide liquefaction business	Approved
	Dec. 18, 2023	Approval of the establishment of guidelines for the nomination of independent director candidates	Approved
ESG Committee	Mar. 8, 2023	Approval of material ESG issues selected for inclusion in Sustainability Report 2022	Approved
		Report on climate risk analysis for Kumho Petrochemical	Reported
		Report on workplace accident response and establishment of emergency plan	Reported
		Report on ISCC certification results	Reported
		Report on additions and changes to key disclosed indicators	Reported
		Report on assessment grade status and assessment schedule of ESG assessment organizations	Reported
	Jun. 21, 2023	Approval of the publication of Sustainability Report 2022	Approved
		Approval of enactments/revisions on ESG Policies and Guidelines	Approved
		Report on the completion of ESG data system	Reported
		Report on ESG trends and issues	Reported
	Dec. 4, 2023	Report on ESG management performance for 2023 and plans for 2024	Reported
		Report on the plan for operation of ESG Committee in 2024	Reported
		Report on the preparation status of Sustainability Report 2023	Reported
		Report on key ESG issues	Reported
		Report on the status of ESG data system operations	Reported

Dedicated Executive and ESG Team

- To enhance the effectiveness of ESG management, the ESG Management Team is organized under the supervision of an executive in the Business Strategy Division.
- The ESG Management Team is tasked with establishing company-wide ESG strategies and goals, managing the implementation of detailed activities, facilitating ESG communication, supporting the activities of the ESG Committee, providing ESG education, and operating both the internal ESG council and the Kumho Petrochemical Group ESG council.

Kumho Petrochemical Group ESG Council

- The Kumho Petrochemical Group ESG Council comprises key affiliates, including Kumho P&B Chemicals, Kumho Mitsui Chemicals, Kumho Polychem, Kumho T&L, and Kumho Resort.
- The council facilitates the sharing of each affiliate's ESG management status and reviews collective strategies and directions to achieve the group's ESG vision.
- In 2023, the council convened four times, discussing topics of: ESG trends, ESG issue seminar, ESG performance and plans for each affiliate, and operational plans for 2024.

Internal ESG Council

- Led by the ESG Management Team, the internal ESG council comprises departments related to environmental, social, and governance matters.
- The council is responsible for establishing action plans to achieve the company's ESG vision and discussing the tasks and activities necessary for their implementation.

2023 Key Discussion Agenda

Category	Agenda Items
Environmental	Carbon reduction target management, CCU technology investment and new projects, waste reduction and recycling target setting, LCA implementation, ISCC Plus certification acquisition and promotion, circular economy implementation
Social	Supply chain ESG assessment and due diligence, organizational culture improvement, women leadership program development
Governance	Integrated compliance management, sustainability information disclosure, governance sophistication

CASE STUDY

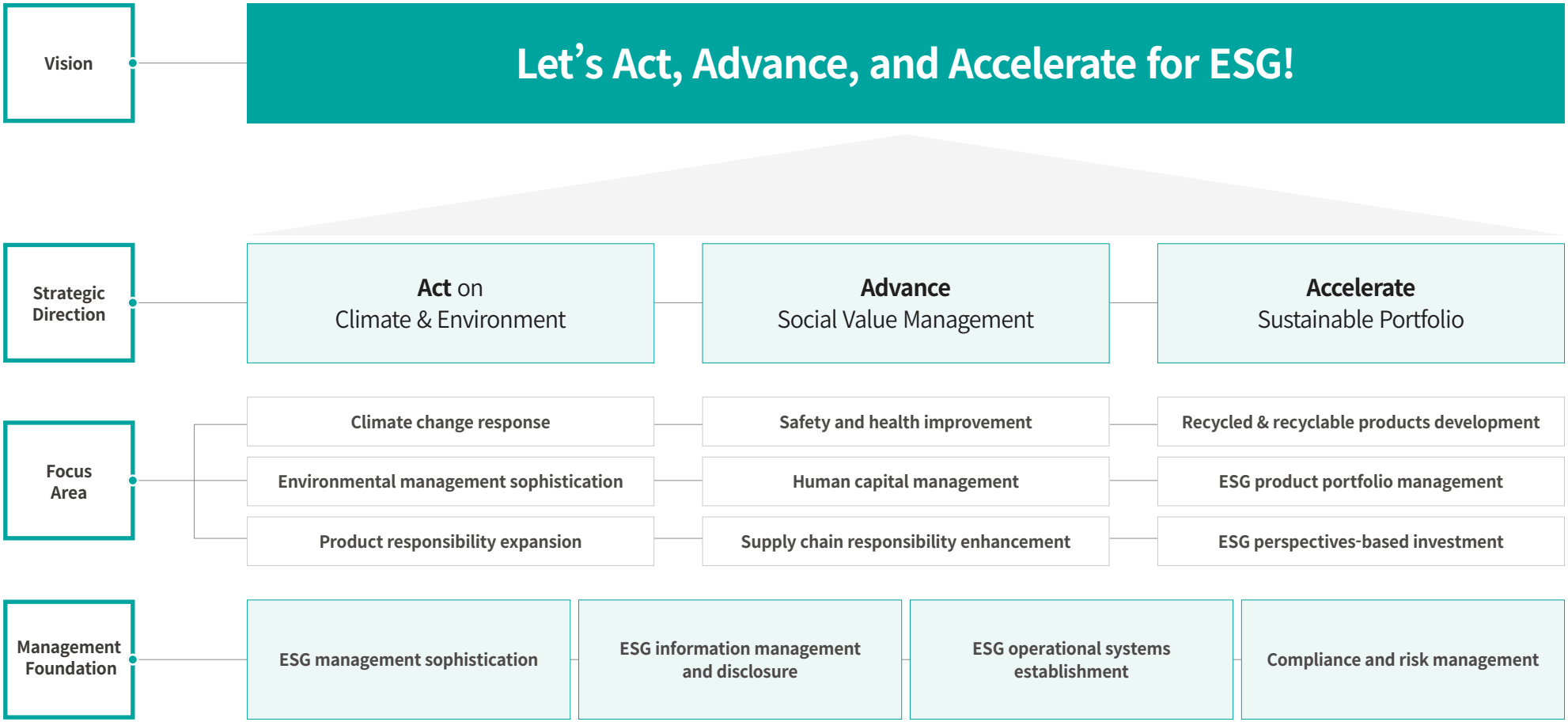
ESG Committee Workshop

- An ESG Committee workshop was held in January 2024 to conduct a preliminary review for the ESG materiality assessment and discuss the shortlisting of ESG issues.
- The committee members evaluated the validity of the process that narrowed down 110 long-listed issues to 20 short-listed issues, and assessed the adequacy and representativeness of the resulting list.
- As a result of the workshop, a total of 20 short-listed issues were confirmed with four modifications, one deletion, and one addition.
- The workshop also featured a seminar on the latest ESG issues and trends.

Strategy

ESG Vision & Strategy Framework

- In 2021, an ESG vision and strategic framework was established to fully implement ESG management.
- The core of our ESG vision is based on the "Let's AAA for ESG!" strategy, focusing on three main strategic directions: Act, Advance, and Accelerate.
- These strategic directions are supported by nine key focus areas, with specific initiatives for each area.



Key Initiatives and Implementation Plans by Focus Area

Strategic Direction	Focus Areas	Key Initiatives	Key Achievements in 2023 and 2024	Future Plans
Act on Climate and Environment Sophisticate management processes to respond to climate change	**Climate change Response**	Reducing greenhouse gas emissions and expanding the application of eco-friendly energy sources	• Achieved 2023 greenhouse gas emissions targets (Scope 1, 2) • Converted three corporate vehicles to zero-emission vehicles • Incorporated greenhouse gas emission targets into executive KPIs and compensation • Started CCU facility construction • Conducted Scope 3 emission calculations and completed third-party verification for Category 15 (investments)	• Continue efforts to achieve greenhouse gas emission targets • Complete and operate CCU facilities by 2025 • Analyze climate change transition risk scenarios
	Environmental management sophistication	Managing waste, water resources, air and water pollutants, and soil contamination to reduce environmental impacts and protect biodiversity	• Established biodiversity vision and goals • Achieved a 98.6% recycling rate at Yeosu Energy Plant 2 and obtained Gold Level ZWTL certification • Established mid- to long-term goals for the company-wide waste recycling rate (90% by 2030) • Obtained Green Company Designation for Ulsan Synthetic Resin Plant • Established biodiversity vision and goals	• Implement plans to expand company-wide waste recycling rates • Identify and implement biodiversity conservation activities
	Product responsibility expansion	Developing and producing responsible products and solutions considering social and environmental impacts	• Established LCA systems and completed LCAs for five key product categories • Obtained additional ISCC PLUS certification	• Perform LCAs for 11 additional product categories
Advance Social Value Management Prioritize social value management in corporate operations	**Safety and health improvement**	Implementing proactive safety and health management for employees and suppliers	• Redefined company-wide disaster management indicators (from zero-accident days to TRIR) • Introduced safety, environment, and health (SEH) system • Strengthened safety and health evaluation system for subcontractors	• Conduct enhanced safety and health assessments for contractors
	Human capital management	Managing human rights and organizational culture, and securing and retain talented personnel	• Conducted human rights impact assessments at headquarters and Ulsan Synthetic Rubber Plant • Implemented Kumho-CARE to significantly improve maternity, paternity, and childcare policies • Introduced mental health promotion program (EAP)	• Expand human rights impact assessment to additional business sites • Continue Kumho-CARE initiatives
	Supply chain responsibility enhancement	Managing ESG risks on the supply chain and supporting ESG management activities	• Expanded ESG self-assessment for key supply chains • Conducted ESG due diligence for key onsite contractors	• Strengthen ESG risk assessment for contractors (self-assessment and third-party assessment) • Utilize electronic procurement system for ESG self-assessment and evaluation • Conduct ESG training for contractor staff
Accelerate Sustainable Portfolio Discover and commercialize ESG-related businesses to expand sustainability management	**Recycled & recyclable products development**	Expanding the development and production of recycled, recyclable, biodegradable, and biotech materials	• Continued development of bio-based products (e.g., NB-Latex, SSBR) • Progressed with the development of recycled EPS production technology • Signed MOUs for securing bio-based raw materials	• Continue developing bio-based products • Continue developing recycled EPS production technology
	ESG product portfolio management	Establishing criteria for eco-friendly products and expanding their sales	• Monitored research projects based on the ESG product classification system	• Monitor research projects based on ESG product classification system
	ESG perspectives-based investment	Incorporating ESG elements into investment evaluation criteria and executing mid- to long-term investments	• Established ESG investment principles and operational guidelines • Reviewed new investments (e.g., CCU, facility expansion) based on ESG investment principles	• Continue reviewing new investments based on ESG investment principles • Explore the introduction of an internal carbon pricing system

Risk Management

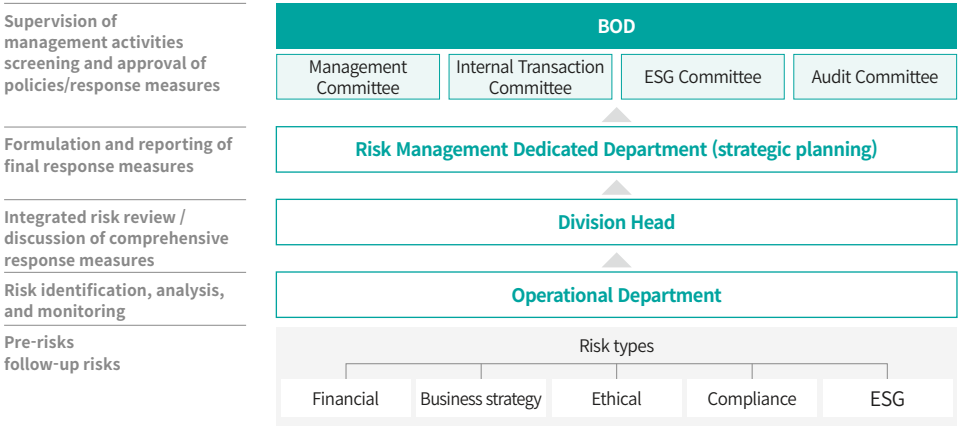
Risk Management System

- Risks are identified and managed in relation to each department's tasks based on their expertise, implementing both proactive and reactive risk management.
- The dedicated risk management department reviews identified risks and establishes response strategies, which are then reported to the Board of Directors (BOD).
- Depending on the nature of the risk, it is reviewed and managed by the BOD or specialized committees such as the Management Committee, Internal Transactions Committee, ESG Committee, or Audit Committee.

Integrated Risk Management

- Both financial and non-financial risks are managed together, categorized into financial, management strategy, ethical, compliance, and ESG risks.
- Domestic and international business environments, supply chains, policies and regulations, and stakeholder demands are monitored to identify risks, and proactive responses to potential risks are made.
- Identified risks are re-categorized based on their importance, and response strategies and areas for improvement are reviewed.
- Education for employees is conducted to raise awareness of the importance of risk management.

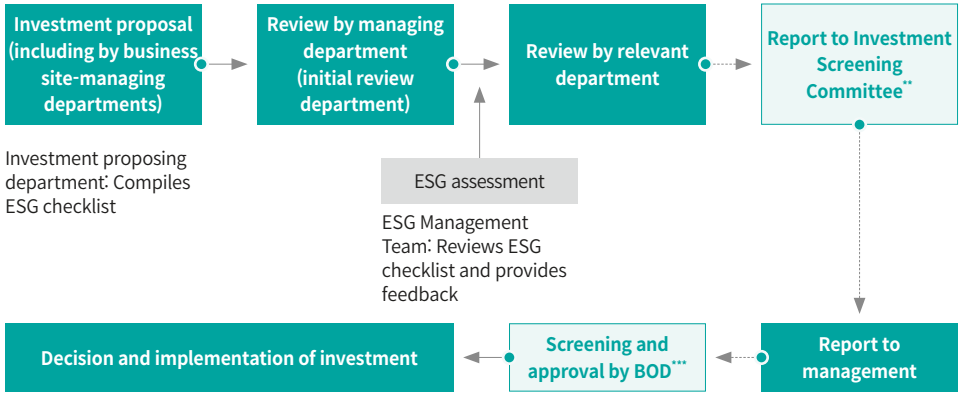
Integrated Risk Management System



Incorporation of ESG Principles in Investment Decision-Making

- ESG investment criteria and principles have been adopted to realize social and environmental values and promote sustainable management.
- A process has been established to verify whether investment proposals or reviews meet the company's ESG investment criteria and principles.
- The department making the proposal draws up an ESG checklist in accordance with internal investment criteria. During the review of the proposal, the principal department incorporates the ESG Management Team's assessment.
- For the company's strategic and operational investments, ESG checklists are compiled and assessed according to criteria based on the investment area, such as CCU and facility expansion.

Investment Screening Process & ESG Assessment*



* The procedure may be altered depending on the importance of the investment item, such as environment and safety.
** The decision on whether to hold a meeting of the Investment Screening Committee is based on the scale or type of investment.
*** Items that are required to be disclosed or have a significant impact on the company's financial situation must be approved by the BOD.

ESG Investment Policy

Metrics and Targets

ESG Management Metrics and Targets

- ESG management metrics and targets are established to concretely implement ESG management.
- Relevant departments monitor performance against goals and conduct checks on any areas found to be inadequate.

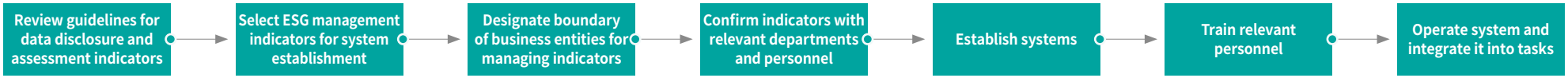
Key ESG Goals

Category	Management Indicator	Goal
Environment	Reduction in greenhouse gas emissions	2030: 29% reduction from BAU 2050: Achieve carbon neutrality
	Ratio of eco-friendly vehicles (corporate vehicles)	2025: Reach a 30% transition rate 2030: Reach a 100% transition rate
	Waste recycling rate	2030: Achieve a 90% company-wide waste recycling rate
Society	Workplace safety management	Zero workplace accidents
	Human rights impact assessment	2025: Conduct human rights impact assessments on all business sites not previously assessed
Governance	Ratio of independent directors on the board	Maintain over 60% of independent directors

ESG Data Management System

- The ESG data management system, established for the systematic management of ESG information, ensures the accuracy, credibility, and timeliness of ESG data.
- Data that is significant in terms of indicator fluctuation is collected and monitored on a quarterly basis.
- Data accuracy is improved and the work burden minimized by linking the ESG data management system to internal systems.
- In 2024, the ESG data management system will be expanded to include all affiliates of the Kumho Petrochemical Group to fortify group-wide ESG data disclosure capabilities.

Process of Establishing an ESG Data Management System



Internal Communication

ESG Training for Employees

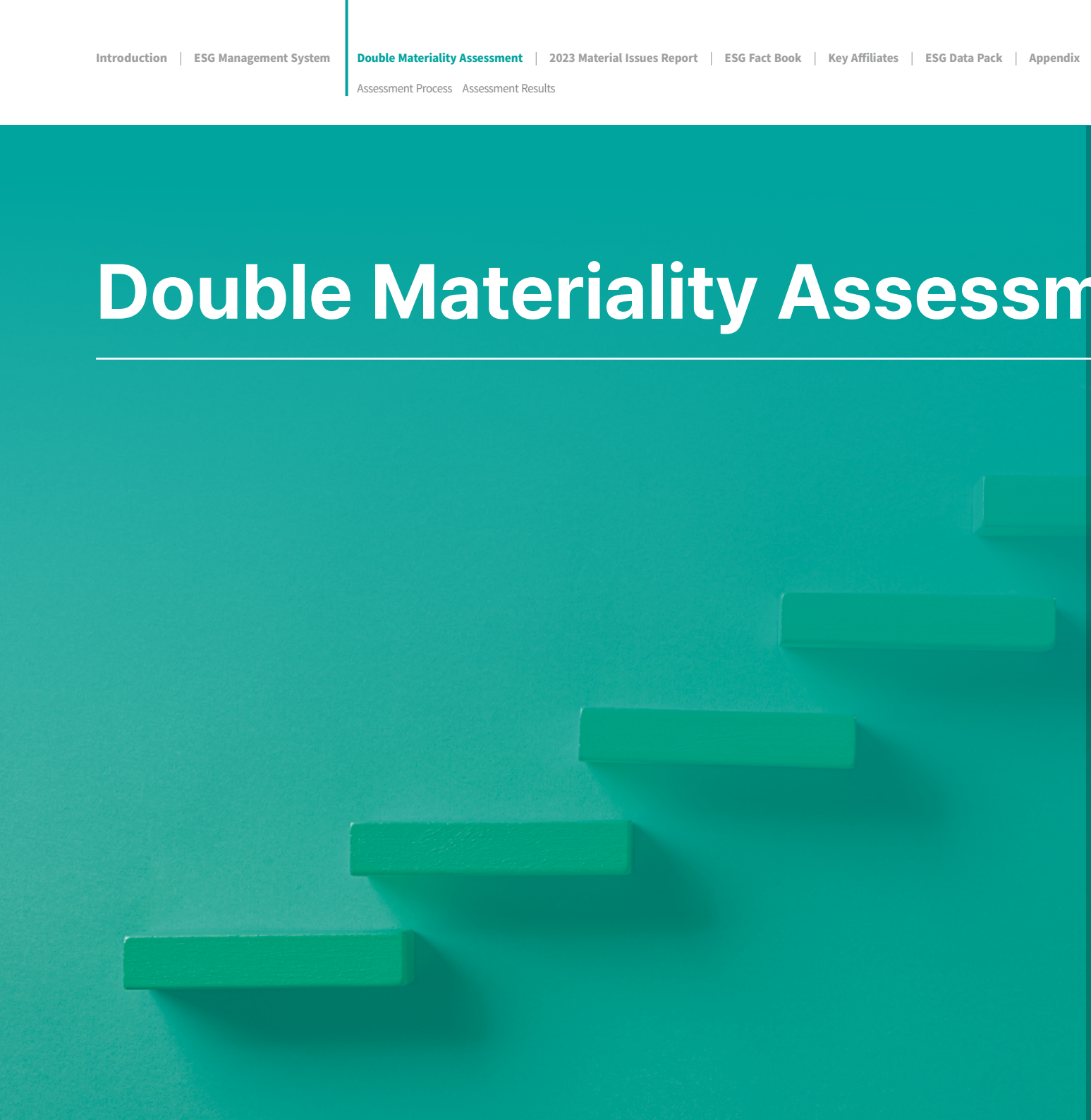
- Employee training is conducted on both a regular and irregular basis to internalize ESG management.

Quarter	Content of Education	Conducted by
1	ESG vision education for new hires	ESG Management Team
	Recent ESG trends, how to use ESG data management system	ESG Management Team
2	Special lecture on climate change risk management and biodiversity	Outside expert
	ESG vision education for experienced new hires	ESG Management Team
3	ESG education for sales staff	ESG Management Team
	Special Lecture on the internal carbon pricing system	Outside expert
	Special lecture on supply chain ESG management for procurement and related departments	Outside expert
4	Education on amendments/revisions to eco-friendly guidelines	ESG Management Team

Publication of ESG Insight Report

- ESG Story, an insight report on ESG-related themes, is created and posted monthly on the company's intranet.
- As part of basic education activities aimed at enhancing employees' knowledge and strengthening their capacity to respond to stakeholder concerns, content on ESG-related topics such as terminology, regulations, risks, and current issues is created. To increase employee engagement, quiz events and other participatory activities are organized.
- To share the latest ESG trends and developments within the industry with employees, the ESG News Clipping is posted monthly on the company's intranet.

Double Materiality Assessment



Assessment Process

- A double materiality assessment is conducted based on GRI (Global Reporting Initiative) Standards 2021 and the EU's ESRS (European Sustainability Reporting Standards).
- By comprehensively analyzing the impact of issues compiled through the double materiality assessment on corporate value (outside-in) and on society and the environment (inside-out), material ESG issues requiring focused management are identified, along with their impact, potential risks, and opportunities.
- The ESG Committee, as the highest decision-making body for ESG management, actively engages in the process of designating material issues.
  - The ESG Committee Workshop (January 2024) was held to gather committee members' feedback on the short-list of issues ahead of the double materiality assessment. The committee reviewed the assessment process and provided feedback on the short-list (4 issues were revised, 1 issue was deleted, 1 issue was added).
  - At the regular ESG Committee Meeting (April 2024), five material issues derived from the double materiality assessment were put to a vote and approved by the ESG Committee.

Procedure for Selecting Material Issues

Step 01. Develop ESG issue pool (110 issues)

- **Analyze internal and external environment:** ESG issues relevant to the industry and peers, media exposure, ESG disclosure and assessment criteria

▸ **Develop a pool of 110 ESG issues**

- **Identify stakeholders:** Employees, customers, ESG experts, supply chain, investors, public organizations, non-profit organizations, associations, academic societies

Step 02. Finalize issue shortlist (20 issues)

- Select important issues for the shortlist from a pool of 110 ESG issues based on internal and external environment analysis results
- Hold an ESG Committee workshop to report on the double materiality assessment process and the selection process of the shortlist, and gather committee feedback on the 20 shortlisted issues

▸ **Finalize shortlist (20 issues)**

ESG Committee Workshop

Step 03. Identify risks/ opportunities and impact of each issue

- Identify risks and opportunities for each of the 20 issues, as well as the impact they have on Kumho Petrochemical, society, and the environment
- Based on the levels of expertise and understanding of internal and external stakeholders, classify stakeholder groups per issue and conduct surveys

Step 04. Conduct double materiality assessment

- **Impact materiality assessment:** Evaluate scale, scope, likelihood, and remediability of the positive/ negative impact of ESG issues on society and the environment from short-term, mid-term, and long-term perspectives
- **Financial materiality assessment:** Evaluate scale and likelihood of the financial risks and opportunities that may arise due to ESG issues from short-term, mid-term, and long-term perspectives

Step 05. Designate material issues and obtain approval from ESG Committee

- Designate five material issues with high impact as determined by the assessment
- Obtain final approval on designated issues from the BOD (ESG Committee)
- Incorporate the five material issues into the ESG strategy and disclose information on governance, strategies, risk management, goals, and indicators in the Sustainability Report

▸ **Designation of five material issues**

Assessment Results

Impact Analysis Results per ESG Issue

	Rank	Indicator	Combined Impact (Double Materiality)	Social and Environmental Impact		Financial Impact		Page No.
				Positive	Negative	Opportunity	Risk	
	1	★ Implementation of greenhouse gas reduction strategy	●					p. 32~34
New	2	★ Diversification of sustainable business portfolio	●					p. 35~41
New	3	★ Establishment of circular economy system	●					p. 35~37, 59
	4	★ Management of safety and health risks	●					p. 42~51
	5	★ Improvement of energy efficiency and reduction of energy consumption	●					p. 32~34, 57
	6	Management of air pollutant emissions	◑					p. 57~58
	7	Management of product quality and customer satisfaction	◑					p. 79~80
	8	Management of product safety and hazards	◑					p. 60~61
	9	Enhancement of human rights management	◑					p. 77~78
	10	Management of sustainability in supply chains	◑					p. 71~74
	11	Management of water resources	◑					p. 56
	12	Enhancement of BOD's independence, diversity, and expertise	◑					p. 85~88
	13	Expansion of waste reduction and recycling	◑					p. 59
	14	Conservation and restoration of biodiversity	◑					p. 62~64
	15	Sophistication of framework for sustainable decision-making	◑					p. 14~15, 18
	16	Response to government policies and regulations	◑					p. 18~19, 44~45, 55, 60, 95
	17	Adherence to ethical business practices	◑					p. 90~94
	18	Establishment of ESG performance management system	○					p. 23~24, 26, 42
	19	Management of human capital and improvement of welfare benefits	○					p. 66~70
	20	Sophistication of data security system	○					p. 81~83

* Materiality : ● High ◑ Medium ○ Low

Positive/opportunity: The expected magnitude of the impact if the issue is effectively managed.

Negative/risk: The expected magnitude of the impact if the issue is not effectively managed.

New Newly included ★ Top 5 material issues

Impact Assessment Results of Five Material Issues

Material Issue		Impact of Material Issue on Corporate Value (Outside-in)					
		Risks and Opportunities	Business Relevance	Scope of Impact	Response Strategy	Relevant Target(s)	Alignment with Executive KPIs
1	Implementation of greenhouse gas reduction strategy	**Risk:** Increased investment and operational costs for greenhouse gas reduction **Opportunity:** Revenue from the development of low-carbon products and expansion of market demand	As petrochemicals is an industry that produces significant quantities of greenhouse gases, stricter domestic and international regulations on greenhouse gas emissions and increased decarbonization demands from external stakeholders, including investors and customers, have a direct and indirect impact on business activities and financial performance	Cost, Revenue	Achieve carbon neutrality by 2050	Achieve mid- to long-term reduction in greenhouse gas emissions (Scopes 1 and 2): 29% lower than BAU by 2030, reaching carbon neutrality by 2050	Incorporate greenhouse gas emissions in the PM of the CEO, executives in business strategy, executives in technology and energy business, executives in procurement, head of HSE (health, safety & environment) office, and plant managers at each business site
2	Diversification of sustainable business portfolio	**Risk:** Increased costs and market uncertainty due to investments in technology and business development **Opportunity:** Revenue from new technologies and businesses	There is a consistent demand for developing sustainable businesses and technologies to respond to changes in global demand and supply	Cost, Revenue, Risk	Implement strategies for developing new growth engines: Bio and sustainable materials, eco-friendly car solutions, high added-value and specialty products	-	Incorporate items related to the promotion of new technologies and new businesses in the PM of the head of R&D center, executives in business strategy, and executives in technology and energy business
3	Establishment of circular economy system	**Risk:** Increased investment and operational costs for establishing a circular economy **Opportunity:** Reduced raw material procurement costs and waste processing costs, and increased revenue from the sale of products made with recycled materials	Circular economy establishment is a critical issue in the petrochemical industry due to stricter regulations and policies	Cost, Revenue	Establish mid- to long-term goals for waste recycling Include "bio and sustainable material" as one of three key strategies for developing new growth engines	Reach waste recycling rate of 90% by 2030	-
4	Management of safety and health risks	**Risk:** Loss of labor capacity due to workplace accidents, production disruptions, and deteriorated labor relations	With increasing societal interest in safety and health, and heightened legal risks associated with serious accidents, repeated occurrences of such incidents and inadequate response to them can lead to not only damage to corporate reputation but also financial risks	Risk	Establish three safety and health goals to achieve the vision "A healthy company that pursues the happiness of the group by prioritizing safety"	Achieve three safety and health goals: Zero serious accidents, the establishment of safety and health infrastructure, and the fostering of a culture of self-directed safety and health management	Incorporate safety and health-related items in the PM of the head of HSE (health, safety & environment) office, plant managers and production directors at each business site, and the head of R&D center
5	Improvement of energy efficiency and reduction of energy consumption	**Risk:** Increased investment costs for energy-efficient equipment, increased costs due to rising renewable energy prices, and risk of instability in energy supply **Opportunity:** Increased production efficiency and reduced operational costs due to improved energy efficiency	Energy consumption directly impacts financial performance, including costs, and reducing energy consumption is essential for achieving carbon neutrality by 2050	Cost, Risk	Achieve carbon neutrality by 2050	Review potential transition of the fuel for aged bituminous coal boilers at Yeosu Energy Plant	-

Material Issue		Impact of Material Issues on Society and the Environment (Inside-out)			
		Cause of Impact	Affected External Stakeholders	Impact on External Stakeholders	Performance Indicator(s)
1	Implementation of greenhouse gas reduction strategy	Operations, Supply chain, Products	Society, environment	**Positive:** Contributes to the achievement of national carbon neutrality goals and the advancement towards a sustainable society through the reduction of greenhouse gas emissions **Negative:** Exacerbates climate change due to emissions throughout the entire value chain if greenhouse gases are not reduced, causing a negative impact	Scope 1 & Scope 2 emissions
2	Diversification of sustainable business portfolio	Products	Society, environment, customers	**Positive:** Contributes to reducing the environmental impact for client companies and end users through the development of sustainable products, as well as to job creation through business expansion and growth	Revenue from related businesses
3	Establishment of circular economy system	Operations, Products	Environment, customers	**Positive:** Contributes to the reduction of environmental impact by client companies and end users through maximized efficiency of resource use and the development of sustainable products	Amount of recycled waste
4	Management of safety and health risks	Operations, Supply chain	Society, contractors	**Negative:** Leads to diverse social impacts, including decreased productivity, increased social security costs, and reduced labor capacity due to serious accidents	TRIR
5	Improvement of energy efficiency and reduction of energy consumption	Operations, Supply chain	Environment, customers	**Positive:** Contributes to the reduction of environmental impact and increased eco-friendliness during the product use stage through decreased energy consumption **Negative:** Exacerbates climate change due to high greenhouse gas emissions if energy efficiency is not improved and consumption is not reduced, causing a negative impact	Energy consumption

2023 Material Issues Report

Climate Change Response

Governance

Responsibility of the BOD

- The BOD and ESG Committee oversee a wide range of environmental issues, including climate change, and are responsible for the approval and review of related agenda items.
- The ESG Committee is composed of directors with expertise in climate change, environment, finance, and risk management, and is chaired by an expert in environmental policy.

Items Reviewed and Approved by the BOD in 2023

Category	Date	Item	Approval Status
BOD	Jun. 21, 2023	Approval of the establishment of a joint venture for carbon dioxide liquefaction	Approval
ESG Committee	March 8, 2023	Report on the analysis of Kumho Petrochemical's climate risks	Reported
		Report on the outcomes of ISCC certification	Reported

Dedicated Executive and Teams

- Climate change response tasks are managed by the ESG Management Team, under the supervision of an executive in the Business Strategy Division who reports directly to the CEO, and the Environment Management Team, under the HSE (Health, Safety & Environment) Office.
  - Environment Management Team: Conducts tangible corporate climate change response efforts, including company-wide climate change workshops, monitoring greenhouse gas reduction activities at business sites, and establishing and monitoring progress towards carbon neutrality goals.
  - Production Technology Team (per business site): Implements greenhouse gas reduction activities based on Kumho Petrochemical's climate change strategy.
  - ESG Management Team: Analyzes climate change risks and scenarios, and operates the climate and environmental subcommittee.
- Company-wide climate/environment-related subcommittees are also operated, including the Environment Management Team, ESG Management Team, Technology Planning Team, Business Development Team, and any other teams organized for ad hoc activities.

Aligning Climate Change Response Performance with Executive Compensation

- To enhance accountability for climate change and achieve greenhouse gas emission reduction goals, greenhouse gas emission targets are included in the performance measures (PM) for C-level executives, including the CEO, executives in Business Strategy, Technology & Energy Business, Procurement, the head of the HSE (Health, Safety & Environment) Office, and plant managers at each business site.
- The PM outcomes for these executives are aligned with their compensation.

Strategy

Transition Risks and Opportunities

- Climate change risks and opportunities are analyzed to understand their impact on the businesses.
- A transition risk and opportunity pool is prepared based on TCFD's risk and opportunity categorization system, by verifying industry trends and stakeholder demands.
- Risks and opportunities are identified, and their potential financial impact and probability are analyzed through interviews and assessments with related departments.

Transition Risks

Area	Factor	Potential Financial Impact	Materiality*	Estimated Duration
				Shor-term / Medium-term / Long-term
Policy & Legal	Strengthened carbon emission regulations and reduced emission allowances due to 2030 national greenhouse gas reduction targets	Increased operating costs due to rising carbon credit purchase prices	●	Medium-term / Long-term
	Strengthened carbon regulations in the supply chain, leading to increased carbon reduction/carbon footprint demands from customers	Increased costs related to carbon reduction processes and equipment, and carbon measurement burdens	●	Medium-term
	Ban on sale of internal combustion engine vehicles	Increased costs for developing products for electric vehicles or market share decline due to failure in development, leading to decreased sales and profits	●	Medium-term
	Strengthened legal sanctions and climate change exacerbation due to failure or increase in emissions reduction	Fines or penalties due to failure to attract investment and legal sanctions	◑	Medium-term
	Need to enhance reliability and transparency of information due to expanded obligations to disclose greenhouse gas emissions information	Potential legal risks due to issues with data reliability and transparency	○	Medium-term
Technology	Increased investments and customer demands for the development and adoption of eco-friendly product management technologies	Increased costs related to low-carbon processes and equipment, transition to renewable energy, and failure to attract investment	●	Medium-term / Long-term
	Changes required in production processes, inventory management, etc., when adopting eco-friendly technologies	Costs incurred due to changes in operating processes and occurrence of stranded assets	●	Medium-term / Long-term
Market	Increased customer demands for the development of eco-friendly products	Decreased sales due to reduced demand for carbon-intensive products and increased risks in procuring eco-friendly and recycled raw materials	●	Medium-term
	Increased customer demands for eco-friendly certifications	Increased costs for eco-friendly product certifications and potential risk of greenwashing	◑	Medium-term
	Uncertainty in demand for eco-friendly products	Weakened stability of eco-friendly product business	◑	Medium-term
Reputation	Increased investor demands for coal divestment	Withdrawal of investor funds due to failure to meet investor demands and decreased corporate credibility	●	Medium-term / Long-term
	Decline in reputation due to failure to achieve or withdrawal from 2050 carbon neutrality goals	Negative public opinion and decreased sales due to failure to address climate change	◑	Medium-term
	Decline in reputation due to poor climate/environmental performance and external evaluation ratings (e.g., CDP)	Potential financial risks due to decreased credibility among key stakeholders, such as investors and customers	◑	Medium-term
	Spread of shareholder activism and NGO activities causing reputational damage	Costs arising from lawsuits by NGOs, local communities, and other stakeholders due to issues like greenwashing	○	Medium-term

* The relative importance of each risk factor is classified as ● High, ◑ Medium, ○ Low, considering the degree of financial impact, probability of occurrence, and resilience.

Opportunities

Area	Factor	Potential Financial Impact	Materiality*	Estimated Duration
				Shor-term / Medium-term / Long-term
Resource Efficiency	Reduced raw material usage through recycling and development of new products utilizing by-products	Cost improvement from reduced raw material usage, procurement efficiency, and revenue from by-product sales	◑	Medium-term
	Enhanced supply stability through raw material substitution or supply channel diversification	Cost savings through efficiency improvements in manufacturing, distribution, and logistics	◑	Shor-term
	Reduced water intake and wastewater generation through optimized manufacturing processes and water recycling	Cost savings from increased efficiency in water usage	○	Shor-term
Energy Resources	Maximizing energy efficiency through the use of low-carbon and renewable energy	Cost savings from reduced carbon credit expenses and revenue from surplus credit sales	◑	Medium-term
	Improved operational efficiency through the transition to energy-saving processes	Cost savings from energy savings	◑	Medium-term
Products & Services	Increased demand for medical products due to the rise in heat-related illnesses and infections caused by climate change	Increased demand for medical synthetic rubber products	◑	Shor-term
	Introduction of policies to promote the purchase of low-carbon products	Formation of new markets related to low-carbon products through mandatory purchases and subsidies	◑	Shor-term
	Introduction of policies to promote the transition to carbon neutrality and low-carbon products	Expanded incentives and subsidies for low-carbon and energy-related policies and technologies	◑	Shor-term
	Increased customer demand for low-carbon and eco-friendly products and services	Increased sales related to eco-friendly products and services	◑	Medium-term
Market	Advancements in technologies related to carbon neutrality and low-carbon product transition	Reduced investment costs due to falling prices of eco-friendly energy and raw materials	◑	Medium-term
	Formation of new markets through the transition to an eco-friendly portfolio	Creation of new revenue through the diversification of product portfolio and expansion into new markets	●	Medium-term

* The relative importance of each risk factor is classified as ● High, ◑ Medium, ○ Low, considering the degree of financial impact, probability of occurrence, and resilience.

Physical Risk Assessment

- Scenario analysis is conducted to predict the occurrence probability of disasters caused by climate change and analyze the financial impact of such disasters.
- Jupiter Intelligence* is used to perform analysis based on SSP scenarios.

Procedure for Assessing Physical Risk

Designation of business sites and disaster types
- 12 business sites in Korea, including Headquarters and Central R&BD Center, are designated for analysis.
- Analysis is conducted on 8 disaster types: Flooding, typhoon, heavy rain, extreme heat, hail/ thunderstorm, drought, forest fire, and extreme cold.

→

Selection of SSP scenarios
- Three SSPs (SSP1-2.6, SSP2-4.5, SSP5-8.5) used in the IPCC's Sixth Assessment Report are selected.

→

Application and assessment of SSPs
- Occurrence probability: Future simulations using Jupiter Intelligence are conducted, measuring the occurrence probability of eight disasters per business site in five-year increments until 2100.
- Financial impact assessment: Financial impact of high-probability disasters is measured per SSP, considering direct damages to business sites and indirect damages due to operational suspension during the recovery period.

* Jupiter Intelligence: Tool that quantitatively analyzes the risk of disaster occurrences (e.g., flooding, typhoon, extreme heat) based on future weather prediction models related to climate change.

Analyzed Business Sites

Location	Business Site
Seoul	Headquarters
Daejeon	Central R&BD Center
Ulsan	Ulsan Synthetic Rubber Plant
	Ulsan Synthetic Resins Plant
Yeosu	Yeosu Synthetic Rubber Plant 1
	Yeosu Synthetic Rubber Plant 2
	Yeosu Specialty Chemicals Plant
	Yeosu Energy Plant 1
	Yeosu Energy Plant 2
Other	Asan CNT Plant
	Yesan Building Materials Plant
	Hwaseong Foam Plant

Analyzed Disasters

Disaster	Metric
Flooding	Maximum flood depth and inundation area possible in cycles of 10, 20, 50, 100, 200, and 500 years
Typhoon	Maximum wind speeds possible in cycles of 10, 20, 50, 100, 200, and 500 years
Heavy rain	Maximum daily rainfall possible in cycles of 10, 20, 50, 100, 200, and 500 years
Extreme heat	Number of days per year with daily average temperature exceeding 35°C~38°C
Hail & thunderstorm	Number of days per year when hailstones of 2-5cm in diameter or severe thunderstorms can occur
Drought	Water stress index of the affected region
Forest fire	Number of forest fires per month within a 1 km^2 area
Extreme cold	Number of days per year with a daily average temperature below 0°C

Applied SSPs

Scenario	Description
SSP1-2.6	• Low carbon scenario where the increase in Earth's average temperature is limited to within 2°C. • Assumes compliance with the Paris Agreement requirements.
SSP2-4.5	• Scenario where the increase in Earth's average temperature is within 2-3°C. • Assumes current levels of greenhouse gas emissions will continue until 2050.
SSP5-8.5	• High carbon scenario where Earth's average temperature increases by at least 4°C. • Assumes continuation of current greenhouse gas emission trends.

Physical Risk Probability Assessment

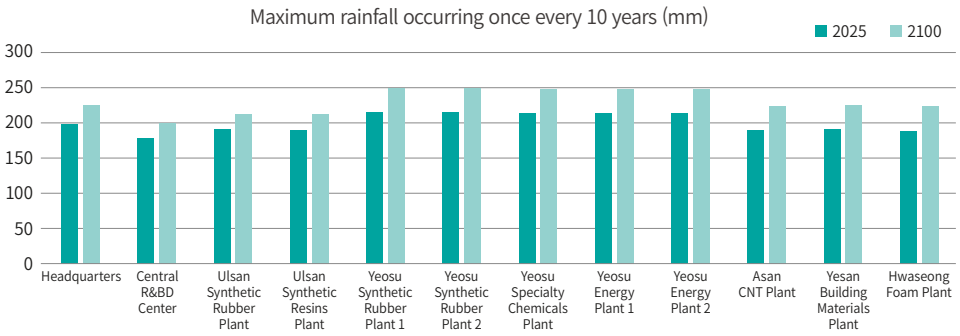
Extent of risk exposure and change per business site

- An assessment was conducted on the current level of disaster risk per business site and how these levels change when SSP scenarios are applied.
- Under the high carbon scenario (SSP5-8.5), all business sites are exposed to physical risk, with the probability of occurrence increasing over time.
- The Yeosu Synthetic Rubber Plant 2 shows the highest current risk level and rate of risk change.

Extent of risk exposure and change per disaster type

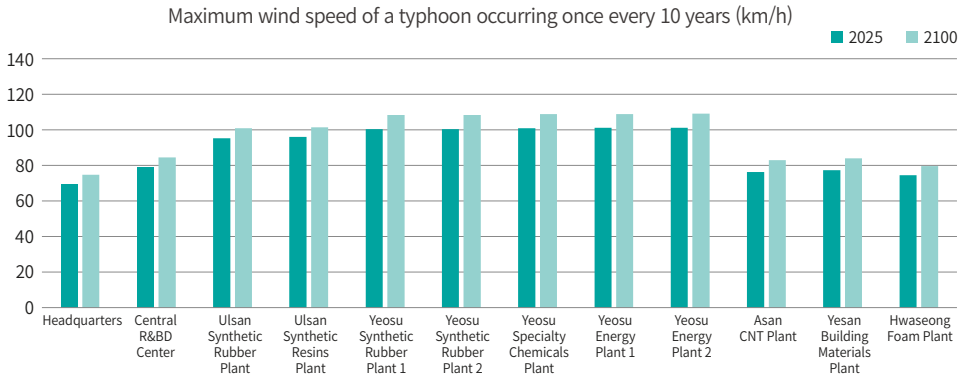
- The rate of change was analyzed by comparing data for 2025 with projected data for 2100 to measure the extent of risk change and current risk exposure per disaster type.
- The analysis was based on the application of SSP1-2.6, SSP2-4.5, and SSP5-8.5. This report disclosing the analytical outcomes of SSP5-8.5, the most conservative of the scenarios.
- The results indicated significant impacts from heavy rain, typhoons, extreme heat, and flooding.

Results of Risk Probability Assessment: Heavy Rain



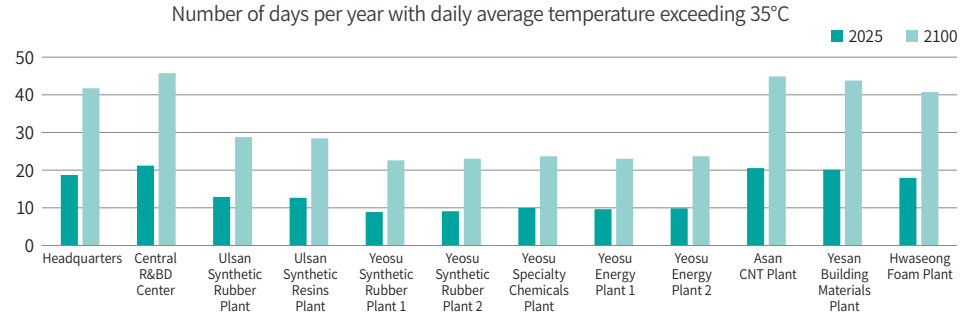
- Metric: Maximum rainfall occurring once every 10 years (mm)
- All 12 business sites are exposed to the risk of heavy rain, with such probability expected to increase slightly over time.
- The largest extent of risk exposure was observed at Yeosu Synthetic Rubber Plant 2.
- The business site with the highest risk change rate was Headquarters (18.5%), while the site with the smallest change rate was Ulsan Synthetic Rubber Plant (11.6%).

Results of Risk Probability Assessment: Typhoon



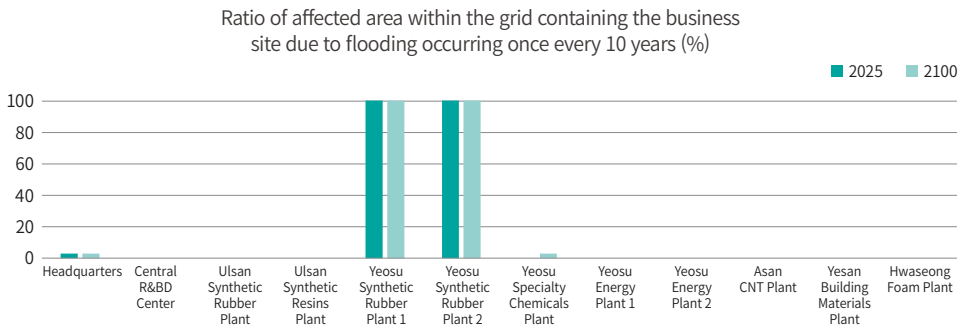
- Metric: Maximum wind speed of a typhoon occurring once every 10 years (km/h)
- All 12 business sites are exposed to the risk of typhoon, with such probability expected to increase slightly over time.
- The largest extent of risk exposure was observed at Yeosu Energy Plant 2.
- The business site with the highest risk change rate was the Asan CNT Plant (8.9%), while the site with the smallest change rate was the Central R&BD Center (7.4%).

Results of Risk Probability Assessment: Extreme Heat



- Metric: Number of days per year with a daily average temperature exceeding 35°C
- All 12 business sites are exposed to the risk of extreme heat, with such probability expected to increase significantly over time.
- The largest extent of risk exposure was observed at the Central R&BD Center.
- The business site with the highest risk change rate was the Yeosu Synthetic Rubber Plant 1 (154.7%), while the site with the smallest change rate was the Central R&BD Center (115.5%).

Results of Risk Probability Assessment: Flooding

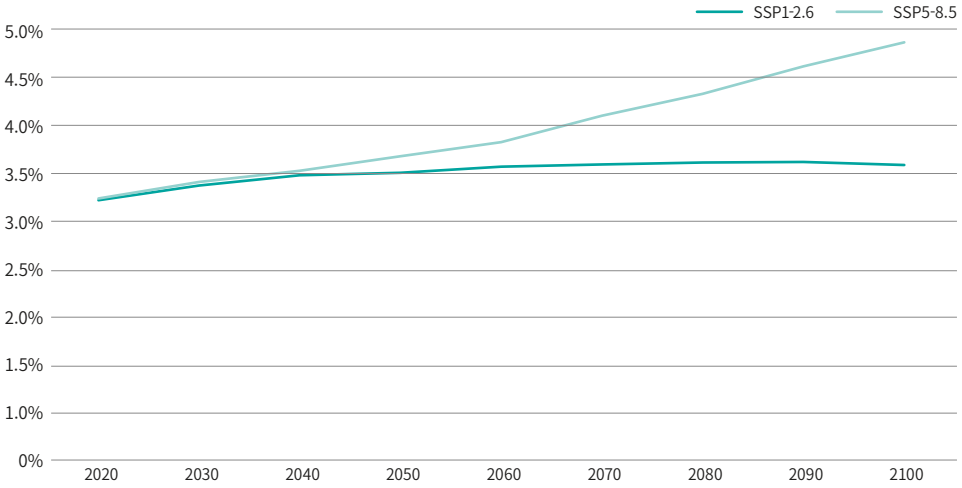


- Metric: Ratio of affected area within the grid containing the business site due to flooding occurring once every 10 years (%)
- Among the 12 business sites, Headquarters, Yeosu Synthetic Rubber Plant 1, and Yeosu Synthetic Rubber Plant 2 were found to be exposed to the risk of flooding.
- The Yeosu Synthetic Rubber Plant 1 and Yeosu Synthetic Rubber Plant 2 are at a high risk of flooding, while the impact on Headquarters is minimal.
- Over time, the Yeosu Specialty Chemicals Plant is also expected to be affected, but to a minimal extent.

Financial Impact Assessment of Physical Risks

- To effectively respond to climate change and prevent potential losses and damages caused by it, the financial impacts of three major disaster types, including flooding, typhoon, and extreme heat, that are expected to significantly affect the company were measured.
- Three SSP scenarios (SSP1-2.6, SSP2-4.5, SSP5-8.5) were applied.
- For flooding and typhoon, both direct damages, such as physical damage to facilities, and indirect damages, including revenue loss due to suspension of business site operations, were measured.
- For extreme heat, financial damage was calculated based on revenue losses caused by reduced labor productivity of employees.

Ratio of Damage Loss to Total Business Site Value

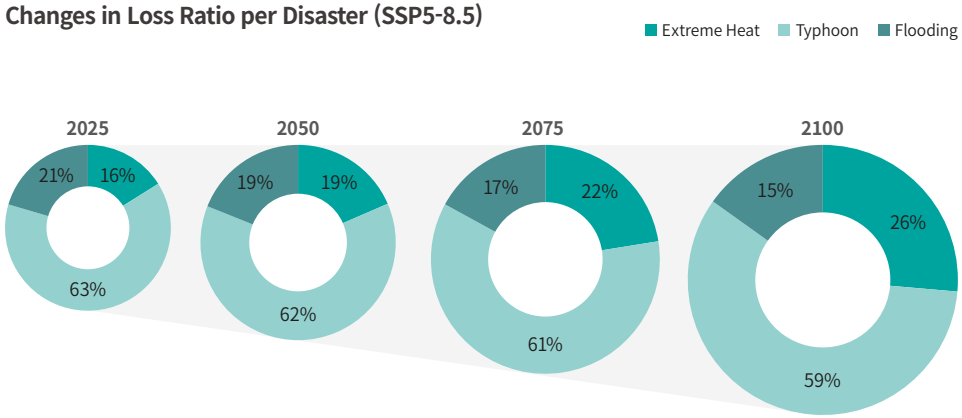


- Under the high carbon scenario (SSP5-8.5), the ratio of financial losses due to physical risks to the total value of all business sites increased from 3.3% in 2020 to 4.8% (projected) in 2100.
- Under the low carbon scenario (SSP1-2.6), the loss ratio was limited to an increase from 3.3% in 2020 to 3.6% (projected) in 2100.

Securing of Strategic Resilience

- The resilience of Kumho Petrochemical's climate change response strategies was assessed through an analysis of physical risk scenarios.
- Based on predictions that financial loss due to climate change will not significantly increase until 2050, the impact of climate change will be minimized by achieving carbon neutrality goals by 2050. Analytical results regarding the financial impact on business site value will be considered in the formulation of long-term management plans and strategies to enhance resilience to climate change.
- The results of the physical risk analysis were shared with all business sites and will be incorporated into facility management to prevent climate change-induced losses, with changes in disaster-related risk levels continuously monitored to ensure response readiness and necessary facility renovations carried out.

Changes in Loss Ratio per Disaster (SSP5-8.5)



- Among the three major disaster types, the loss ratio due to typhoons was the highest. Under the SSP5-8.5 scenario, by 2100, losses caused by typhoons are projected to account for approximately 59% of total losses.
- Conversely, the loss ratio due to extreme heat is projected to increase significantly from 16% in 2025 to 26% in 2100, showing the largest change in loss ratio among the three disaster types.

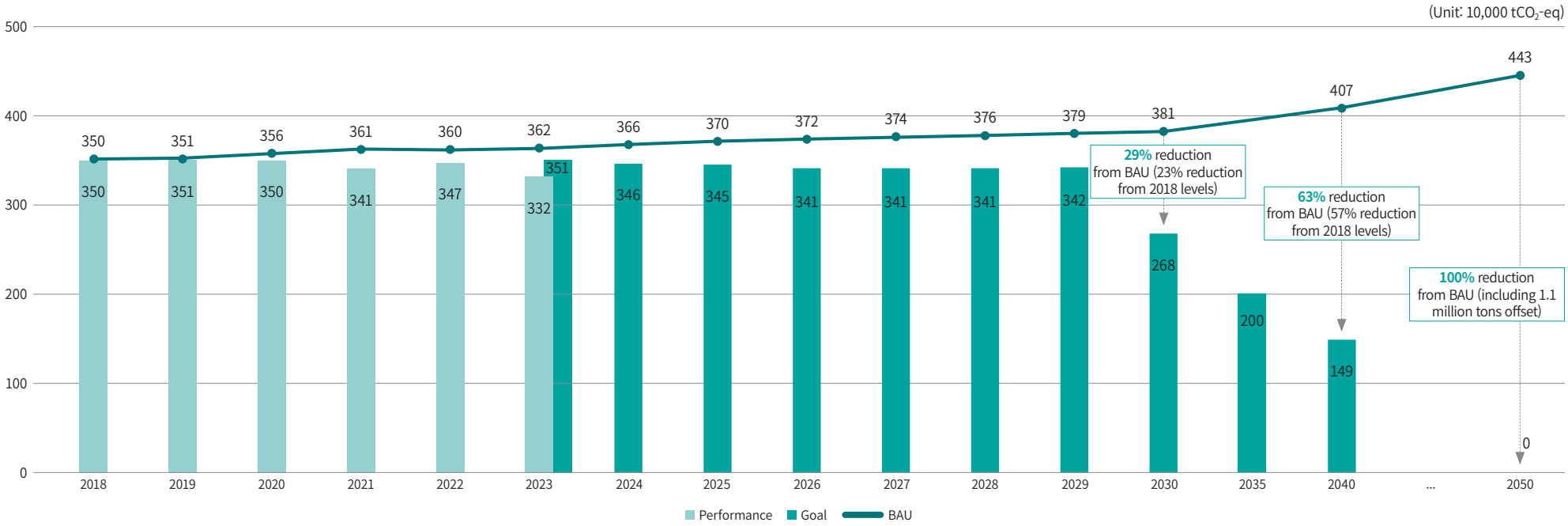
Climate Change Response Strategy

- Five key strategies for climate change response and their detailed action plans have been established and implemented.
- In 2022, a detailed roadmap was established to reduce greenhouse gas emissions (Scopes 1 and 2) by 2030, and each business site is engaging in activities to meet their assigned reduction targets.

Climate Change Response Strategies & Activities

Accelerating reductions through transition to clean energy	Transitioning to eco-friendly products	Shifting to bio-based materials	Expanding recycling	Digitizing carbon asset management
• Produce and sell renewable energy • Consider changing the fuel type used in energy businesses	• Expand the recycled styrene monomer (RSM) business • Develop solutions for electric vehicles • Increase the range of eco-certified products (Environmental Product Declaration, ISCC Plus, etc.) • Advance carbon capture and utilization (CCU) projects	• Develop NB-Latex using bio-based raw materials • Develop SSBR using bio-based monomers • Create automotive seat systems incorporating bio-based materials • Establish MOUs to secure bio-based raw materials	• Set and pursue goals to increase waste recycling rates by 2030 • Retrieve and reuse packaging materials • Achieve Zero Waste to Landfill (ZWTL) certification for business sites • Explore manufacturing RSM through the pyrolysis of waste polystyrene	• Establish a comprehensive ESG data management system • Measure Scope 3 emissions • Conduct product life cycle assessments (LCAs) and build a robust data pool

2050 Carbon Neutrality Scenario (Scopes 1 & 2)



Efforts to Reduce Greenhouse Gas Emissions

- In 2023, Kumho Petrochemical produced 3.32 million tons of greenhouse gas emissions, achieving 95% of the target amount (3.51 million tons), thereby exceeding its goal.

Procedural Improvements

- The alignment of greenhouse gas emission targets with the PM of executives at each business site has strengthened their responsibility and execution capabilities in emission reduction.
- Energy-saving activities have included replacing aged equipment, installing waste heat recovery systems, and introducing high-efficiency equipment. while also reviewing the rationalization of process operations by transitioning from high-pressure to low-pressure steam following a steam usage review.

Transition to Zero-Emission Vehicles (ZEV)

- In 2022, Kumho Petrochemical joined K-EV100, committing to convert all owned and leased vehicles to zero-emission vehicles by 2030.
- By converting three corporate vehicles to ZEVs in 2023, it has achieved a ZEV ownership ratio of 7% and aims to increase this to 30% by 2025.

Production of Renewable Energy

- At Yeosu Energy Plant, biomass has been used to generate renewable energy, which is partially integrated into the cogeneration processes.
- Efforts are on going to secure additional wood pellets and wood chips to enhance the biomass co-firing rate.

Sophistication of Greenhouse Gas Emission Calculation Methods

- Plans are underway to expand the list of categories verified for Scope 3 emissions to improve calculation credibility. Three categories will be added in 2024.
- In 2023, LCAs for the five main product categories were completed, and verification documents were issued. For 2024, LCAs for 11 additional product categories are planned.
- Additionally, a limited verification was conducted for the “15. Investment” category within Scope 3 emissions.

Risk Management

- Kumho Petrochemical recognizes climate change risks as critical and integrates them into its company-wide risk management processes.
- The management of climate change risks involves four steps, which are monitoring, identification, assessment, and mitigation.

Process for Climate Change Risk Management

Risk monitoring

- Analyzing domestic and international greenhouse gas regulations and policy trends related to climate change (Led by the Environment Management Team).
- Analyzing company-wide emission trends and climate change issues specific to the regions where business sites are located.
- Proposing agenda items to the Internal ESG Council and climate and environment subcommittee to initiate risk identification procedures for key issues.

Risk identification

- Developing a pool of climate change risk factors that may affect the company by analyzing the climate risk categorization system recommended by the TCFD guidelines, the status of peer companies, industry trends, and global climate disclosure regulations.
- Identifying risk factors closely related to the company through interviews or surveys with the relevant departments.

Risk assessment

- Defining major climate change risks based on their high probability of occurrence and significant impact on the business.
- Conducting regular materiality assessments to maintain an updated list of major risks.
- Analyzing potential future impacts through scenario analysis and tracking the progression of changes caused by these impacts.

Risk management & mitigation

- Managing and overseeing major climate change risks by the BOD and the ESG Committee.
- Reporting specific risks deemed highly probable to upper-level management by the responsible department and presenting significant risks as voting items to the ESG Committee.
- Formulating and implementing improvement plans at each business site to address climate change risks.

Metrics and Targets

Metrics

- Greenhouse gas emission amounts and energy use have been managed to monitor the performance of climate change response activities.

Greenhouse Gas Emissions

Category		Unit	2021	2022	2023
Scope 1, Scope 2*	Total*	tCO_2-eq	3,409,409	3,473,210	3,322,947
	Scope 1	tCO_2-eq	3,036,989	3,128,818	3,009,402
	Scope 2	tCO_2-eq	372,428	344,400	313,545
	Intensity (separate basis)	tCO_2-eq/ KRW 1 bil.	620	683	792
Scope 3		tCO_2-eq	5,236,713	5,779,332	5,271,699

* Emissions based on Emission Certification Notification (2023)

Energy Consumption

Category	Unit	2021	2022	2023
Energy consumption	TJ	42,727	42,338	40,767
Intensity (separate basis)	TJ/KRW 1 bil.	7.8	8.3	9.7

Targets

- To achieve carbon neutrality by 2050, phased targets and a detailed reduction roadmap were established, with specific targets set for 2030.

2030
29% reduction from BAU (Scopes 1 and 2)

2035
Commencement of carbon-neutral growth (Scopes 1, 2, and 3)

2050
Achievement of carbon neutrality (Scopes 1 and 2)

CASE STUDY

LCA System Establishment Plan

- In response to the growing demand for measuring and disclosing the carbon footprint of products, driven by the introduction of the EU's Carbon Border Adjustment Mechanism (CBAM), mandatory climate data disclosures, and increasing client demands for product carbon information, Kumho Petrochemical has developed a plan to establish a Life cycle assessment (LCA) system.
- In 2023, LCA measurements were completed for five product categories. By 2025, LCA will be conducted for 25 product categories, including third-party verification.
- Starting from 2026, the second phase of the LCA plan will focus on conducting LCA measurements at the product grade level.

Category	2023	2024	2025
Target products	ABS, ABS Powder, HIPS, SAN, NB-Latex	HBR, LBR, SBS, etc.	SBR, NBR, EPS, etc.
No. of product categories	5 (completed)	11	9

Calculation and Verification of Scope 3 Emissions

- Kumho Petrochemical is expanding the scope of greenhouse gas management to include Scope 3 emissions and enhancing the reliability of the data by recalculating Scope 3 emission amounts.
- The emission calculation logic, which adheres to the WBCSD Chemical Sector and the GHG Protocol, utilizes ERP-based activity data and emission factors from the national LCI database.
- A limited third-party verification has been completed for the category of "15. Investment."

Sustainable Businesses Implementation

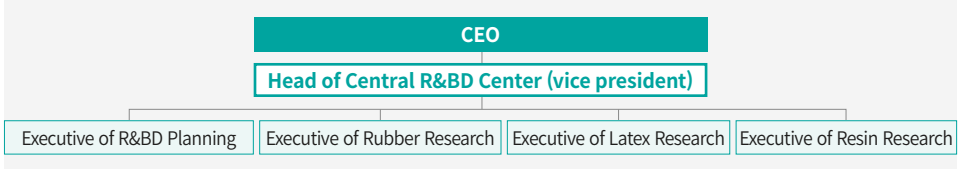
Governance

Discovery and Investment in New Business Areas

- The Business Strategy Division serves as the control tower for developing and executing strategies for new growth engines.
- The Business Development Team is tasked with establishing and planning new business foundations both domestically and internationally. The Strategic Planning Team oversees the development, review, and execution of strategic investment plans.
- The ESG Management Team evaluates the feasibility of proposed new businesses based on ESG investment principles.
- The Investment Administration Team reviews the feasibility of new business investment proposals that are subject to investment deliberation.

R&D Organizational Structure

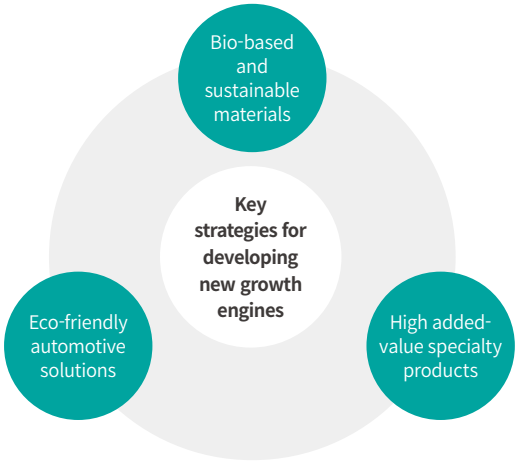
- The Central R&BD Center leads the planning, execution of research projects, development of new products, and quality improvement initiatives for the sustainability of Kumho Petrochemical's businesses.



Strategy

Development of New Growth Engines

- The development of new growth engines has been adopted as a mid- to long-term growth strategy to ensure Kumho Petrochemicals' sustainable growth.



Risk Management

ESG Categorization System for Research Projects

- An independent ESG product categorization system was developed to strengthen the development of sustainable products and provide clear research direction.
- Diagnostic criteria were prepared to evaluate ESG factors based on domestic and international ESG guidelines, encompassing three areas, nine categories, and 27 diagnostic items.
- These diagnostic criteria serve as criteria for evaluating the sustainability of ongoing or future research projects, and the results of these diagnostics are utilized to determine the research direction and the composition of the product portfolio.

ESG Factor Diagnostic Criteria

Area	Category	Diagnostic Criteria
Environmental	Air	• Reuse of air pollutants • Reduction of air pollutants • Capture of air pollutants
	Bio	• Utilization of bio-based raw materials
	Degradation	• Development of polymer degradation technologies • Development of biodegradable products
	Pollution	• Reduction of waste (byproducts) • Mitigation of toxic substances
	Energy saving	• Reduction of manufacturing energy consumption by client companies • Enhancement of production yield rate • Decrease in overall energy consumption • Development of renewable energy production technologies • Improvement of product insulation properties • Enhancement of product fuel efficiency
	Material	• Production of byproduct hydrogen • Development of alternatives to hazardous substances • Replacement of hazardous raw materials • Utilization of renewable raw materials • Development of fuels supporting renewable energy ecosystems • Enhancement of product abrasion resistance • Development of eco-friendly energy ecosystem fuels
	Waste	• Reduction of industrial water usage • Decrease in wastewater production
Social	Social	• Establishment of responsible supply chain system • Improvement in flame resistance • Collaborative projects with SMEs for mutual growth
Governance	Governance	• Development of strategic products for new growth industries

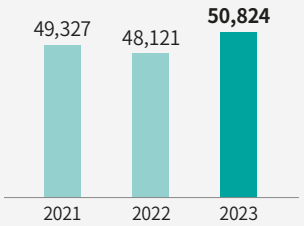
Metrics and Targets

R&D Investment

R&D Investment*

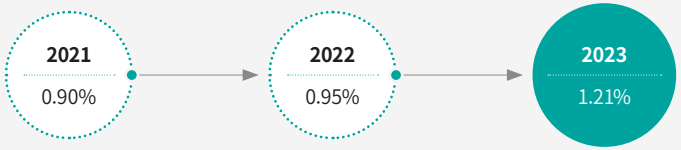
(Separate basis, Kumho Petrochemical)

(Unit : KRW 1 mil.)



* Figures are current R&D expenses. (excl. development expenses capitalized as intangible assets)

Ratio to Sales



Sustainable Products and Technologies

Bio-Based and Sustainable Materials

R&D on NB-Latex

- NB-Latex is used to produce latex gloves for medical, industrial, laboratory, and kitchen applications. Kumho Petrochemical's latex, manufactured via continuous polymerization, is recognized for its high productivity, uniform quality, and superior strength.
- With the plant expansion in 2024, Kumho Petrochemical has an annual production capacity of 710,000 tons of NB-Latex.
- R&D efforts are on going to develop various products aimed at reducing environmental impact.

NB-Latex	NB-Latex for energy-efficient manufacturing	• Maintaining physical properties even with a 10% reduction in crosslink temperature • Scheduled for prototype release in 2025
	NB-Latex with bio-based raw materials	• Researching technology to enable bio-based raw materials to constitute at least 10% of total materials • Conducting scale-up research based on foundational studies in 2024

R&D on SSBR

- SSBR, superior to traditional synthetic rubber in terms of silica affinity, reduces tire wear and enhances fuel efficiency.
- Kumho Petrochemical has secured a production capacity of 123,000 tons per year.

SSBR	SSBR with RSM*	• Completed pilot testing in 2023 and currently developing initial plant-scale products • Completed LCA, demonstrating improved greenhouse gas reduction compared to traditional SSBR
	SSBR with bio-based feedstock	• Obtained ISCC Plus SD certification • Completed customers' quality approval and product supply
	SSBR with bio monomer	• Utilizes bio monomers derived from sugarcane • Optimized physical properties in 2023 • Performing pilot testing and obtaining customers' quality approval soon

* RSM: Recycled styrene monomer

RSM Manufacture

- Kumho Petrochemical is currently reviewing pans for manufacturing RSM through the pyrolysis of waste polystyrene.
- This chemical recycling method addresses the limitations of physical recycling by enhancing universality and cost-effectiveness.
- Sample testing and quality assessment with potential customers are scheduled for 2024.

WMB Process Development

- Research on transitioning the mixing process for rubber, which is used in the manufacture of tires and shoes, from DMB (dry master batch) to WMB (wet master batch) has been completed.
- With the completion of the pilot plant in 2023, samples have been provided to major tire and shoe manufacturers in Korea and overseas, with customer quality evaluations currently underway.
- By the first half of 2024, a Korean tire company plans to manufacture tires using rubber produced through the WMB process and conduct real-vehicle testing with these tires.

Advantages of WMB Process Compared to DMB Process

Reduces energy usage by 20% → Eliminates ethanol and dust emissions → Increases mixing efficiency by 200%

Recycled EPS

- Kumho Petrochemical is developing a production technology for recycled EPS (expandable polystyrene) using GPP (general purpose polystyrene) made from waste polystyrene.
- EPS is a foam resin impregnated with a foaming agent, used in applications such as construction and packaging.
- The recycled EPS technology has currently achieved a recycling rate of 50%.
- In 2023, credibility and mass production evaluations for using recycled EPS as packaging materials for home appliances manufactured in Korea by a home appliance company were completed. Evaluations are also underway to determine its suitability for packaging appliances produced in the Americas.

Development of Car Seat Systems with High-Content Bio-Based Materials

- Rising demand for eco-friendly vehicles is driving the increased application of bio-based materials in car interiors, such as seat covers, headliners, and carpets.
- A polyol for car seat cushions, containing 20% bio-based materials, has been developed and has successfully undergone pilot evaluation and received quality approval from client companies.
- Currently, a polyol for car seat backs, also containing 20% bio-based materials, is in development.

CPP with Peroxide-Based Liquid Initiator

- CPP (copolymer polyol), a polyol used to harden urethane foam, has been developed by Kumho Petrochemical using a peroxide-based liquid initiator that does not produce any hazardous substances, in response to safety concerns caused by traditional hazardous substances.
- A pilot evaluation was conducted by applying the liquid initiator to all product categories, including universal CPP products, and the technology is now fully prepared for commercial application.

Eco-Friendly Automotive Solutions

Carbon Nanotubes for Conductive Material in Secondary Batteries

- Kumho Petrochemical develops and manufactures carbon nanotubes (CNT) for use as conductive materials in secondary batteries. In 2023, the company developed few-walled carbon nanotubes (FWCNT), which offer superior physical properties compared to multi-walled carbon nanotubes (MWCNT). These FWCNTs are currently undergoing evaluations by secondary battery manufacturers.
- To meet the growing demand in the secondary battery market, production facilities were transferred and expanded from the Asan CNT Plant to the larger Yulchon CNT Plant, with the transfer completed in January 2024. The Yulchon plant aims to achieve an annual production capacity of 360 tons by December 2024.
- As of March 2024, the Yulchon plant has an annual production capacity of 240 tons following the installation of a new production line. Approval for the suitability of FWCNT products as components in secondary batteries is currently underway, with the goal of completing this by the first half of 2024 and commencing commercial sales in the fourth quarter.
- Scale-up research is ongoing to enhance CNT production efficiency and cost competitiveness, with the objective of starting mass production in the second half of 2025.

Binders for Secondary Batteries

- Kumho Petrochemical is developing binders, which are additives that help active materials and conductive materials adhere to the electrode current collector, specifically for lithium-ion batteries (LIB) and all-solid-state batteries.
- To commercialize these binders, pilot production is being conducted with several client companies, and independently-developed mass production technology has been completed, with the installation of the necessary manufacturing equipment in progress.
- Additionally, participation in a national project for the development of aqueous secondary batteries for ESS (energy storage system) equipment is ongoing, providing CNT and binders for the project.

High-Performance Engineering Plastic (EP) Materials

- Kumho Petrochemical is developing high-performance, lightweight EP materials that can be used for both interior and exterior components of electric vehicles.
- Addressing the shortcomings of conventional plastics, EP materials offer advantages such as being lighter than metal, exhibiting excellent strength and elasticity, high heat resistance, and superior mechanical properties. These materials are also easily processed, resistant to rust, and fire-resistant, making them ideal substitutes for metal in automotive and precision machinery parts.
- Ongoing research and development efforts are focusing on applying EP materials to various electric vehicle components, including anti-squeak materials for interiors, wire protectors for electronic parts, and battery module housings.

Tire Materials

- A new tire abrasion regulation is expected to be established in the Euro 7 standards. Additionally, the issue of increased tire wear due to the weight of secondary batteries necessitates innovation in tire materials.
- In response, Kumho Petrochemical has developed 5110X, a specialized product for electric vehicles. This product was created using continuous SSBR manufacturing, which enables ultra-high molecular weight, and modification technologies that ensure high affinity with Kumho Petrochemical's proprietary fillers (silica and carbon black).
- Having completed pilot testing in December 2023, 5110X is currently being evaluated by client companies.

High Added-Value Specialty Products

Liquid BR (Butadiene Rubber)

- To lead the high-value tire materials market, Kumho Petrochemical is developing functional liquid BR for tire applications.
- Liquid BR enhances wear resistance and fuel efficiency when used as a processing aid alternative to petroleum-based oils in tire manufacturing. It is particularly suitable for electric vehicle tires, which require high wear resistance and low fuel consumption.
- As of May 2024, the company has developed synthesis methods and processes for both modified and unmodified liquid BR, completed pilot testing. Produced materials are currently being evaluated for tire manufacturing by leading tire companies in Korea and abroad.

SSBR for Racing Tires

- Kumho Petrochemical is developing specialized SSBR suitable for racing tires, which require excellent surface adhesion, grip, and durability.
- In 2023, the company developed a manufacturing technology for ultra-high molecular weight SSBR and promoted the commercialization of high-value SSBR for racing tires. The superior physical properties of this SSBR were confirmed at the 2023 Superrace Championship, a comprehensive car racing competition in South Korea.
- Ongoing efforts are focused on developing high-value, customer-tailored products suitable for racing conditions in Korea and abroad.

High-Value Hydrogenated Product Line HBPA

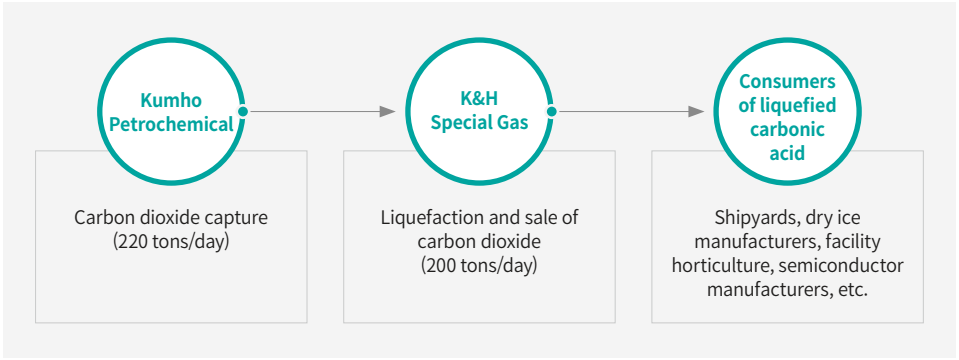
- HBPA (hydrogenated bisphenol A) is a high added-value hydrogenated product developed by using BPA (bisphenol A), which is manufactured by Kumho P&B Chemicals. HBPA is expected to create synergies within Kumho Petrochemical Group.
- HBPA can be applied in various ways, including as a low-yellowing PC material, to enhance heat resistance in HPBA-Epoxy Resin, and as an eco-friendly BPA-free alternative.
- In 2023, Kumho Petrochemical commenced commercial production with the completion of a 5,000-ton commercial production facility for HBPA.

Carbon Capture and Utilization (CCU)

- A CCU facility is being constructed to selectively capture carbon dioxide from greenhouse gases emitted by the combined heat and power plant within the Yeosu National Industrial Complex.
- As of March 2024, with detailed design in its final stages and civil engineering work underway, the facility is expected to be completed and operational by the first half of 2025.
- In 2023, Kumho Petrochemical established K&H Special Gas, a joint venture with Hankook Special Gases, to manufacture and sell liquefied carbonic acid, with an annual production capacity of 69,000 tons.

CCU Facility Groundbreaking Ceremony

Business Model



Production and Supply of Renewable Energy

• Recognizing the growing demand for renewable energy, Kumho Petrochemical views this sector as a key growth driver, producing and supplying energy through solar and wind power generation.

Renewable Energy Affiliates

(Unit : KRW 1 mil.)

Power Plant	Location	Capacity (as of Dec. 2023)	Revenue		
			2021	2022	2023
Korea Energy Power Plant Co., Ltd.	78, Gongdan 1-ro, Sanam-myeon, Sacheon-si, Gyeongsangnam-do	11.51MW	3,817	5,048	4,511
KR Solar Co., Ltd.	101-3, Jangsu-dong, Gwangsan-gu, Gwangju	2.42MW	657	896	768
Gangwon School Solar Co., Ltd.	9, 188-gil, Seongdeokponam-ro, Gangneung-si, Gangwon-do	21.6MW	6,689	9,542	8,506
Yeonggwang Baeksu Wind Power Co., Ltd.*	479-60, Baesu-ro, Baeksu-eup, Yeonggwang-gun, Jeollanam-do	40MW	8,426	14,150	13,138

* Kumho Petrochemical holds a 51% stake and it is not included in the consolidated subsidiaries.

Yeonggwang Baeksu Wind Farm

Korea Energy Solar Power Plant

Partnership for Bio-based Raw Material Procurement

• Kumho Petrochemical is promoting partnerships for the procurement of bio-based raw materials and market entry.

Status of MOU Agreements

Title	Participating Companies	Details	Year of Agreement
Partnership for renewable and circular business, including Bio SM sales and purchase	• Kumho Petrochemical • Idemitsu Kosan • Sumitomo	• Establishing mutual cooperation for renewable polymers and chemical products • Continuing discussions on mutual benefits and priorities for the sale and purchase of Bio SM in Korea • Expanding the Bio SM business to a scale of 3,000 to 5,000 tons by 2024	2023
Establishing a Sustainable Bio-based raw material supply chain	• Kumho Petrochemical • SK geo centric • Tongsuh Petrochemical	• Building a cooperative relationship to secure a supply chain for bio monomers • Promoting the conversion of AN (acrylonitrile) and BD (butadiene) to bio monomers • Formation of long-term collaborative relations for the sustainable growth of the petrochemical industry	2024

MOU Signing Ceremony to Establish a Bio-based Raw Material Supply Chain

Environmentally certified Building Materials

- Kumho Petrochemical's building material brand, Hugreen, provides windows and insulating materials that have received Korean environmental certifications.
- Each Hugreen window product is labeled with an energy consumption efficiency grade. These windows also hold the Environmental Product Declaration (EPD) certification as low-carbon products, based on criteria outlined by the Low Carbon Product Standards, verifying that they have been manufactured with reduced greenhouse gas emissions.
- The insulating materials have received Korea Eco-Label and Environmental Product Declaration (EPD) certifications from the Korea Environmental Industry & Technology Institute. These certifications recognize the materials for their enhanced resource circulation, energy savings, reduced environmental pollution, and minimized emissions of hazardous substances.

Category	Environmental Certification	Certification Body
Windows	Energy Efficiency Grade	Korea Energy Agency
Window profiles	Environmental Product Declaration (EPD) (Low-Carbon Product)	Korea Environmental Industry & Technology Institute
Insulating materials	Korea Eco-Label, Environmental Product Declaration (EPD)	Korea Environmental Industry & Technology Institute


환경성적표지 인증서

Window Profile EPD (Low-Carbon Product) Certification

Safe Workplaces

Governance

Responsibilities of the BOD

- Each year, the annual plan on health and safety matters is presented to the BOD as a resolution item.
- In the event of a major safety accident, the details are reported to the ESG Committee.

Agenda Items Reported to and/or Approved by the Board of Directors in 2023

Category	Date	Item	Approval Status
BOD	Mar. 8, 2023	Health & safety plan for 2023	Approved
ESG Committee	Mar. 8, 2023	Report on workplace accident response and establishment of emergency plan	Reported

Dedicated Executive and Teams

- Under the leadership of the Head of the HSE (Health, Safety & Environment) Office, compliance with relevant laws, management of implementation, establishment of goals and roadmaps, and inspections of safety and health tasks across all business sites are conducted to ensure uniformity.
- Dedicated Teams
  - Headquarters: The Safety & Health Team within the HSE (Health, Safety & Environment) Office, which reports directly to the CEO, is responsible for overseeing all safety and health-related tasks, acting as the control tower.
  - Business sites and research center: Safety and Environment departments reporting directly to the plant managers or research center directors are in charge of safety and health tasks at each business site.

Industrial Health & Safety Committee (IHC)

- The Industrial Health & Safety Committee (IHC) is operated with equal numbers of labor and management members at each business site to prevent industrial accidents.
- The IHC reviews and votes on resolution items related to the Occupational Safety and Health Act, and discusses performance and plans on key health and safety issues, as well as the outcomes of proposed suggestions.

Industrial Health & Safety Committee Composition

(For business sites with 50 or more regular employees)

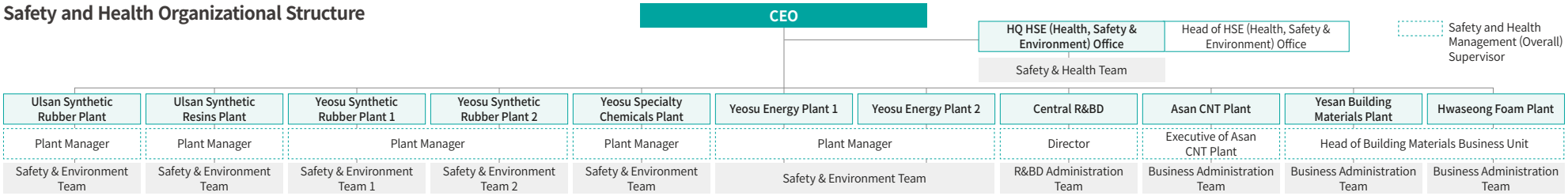
Business Site	Ulsan Synthetic Rubber Plant	Ulsan Synthetic Resins Plant	Yeosu Synthetic Rubber Plant	Yeosu Energy Plant	Central R&BD Center
Number of Members (Labor/Management)	10/10	8/8	10/10	9/9	8/8*

*The above data is as of 2023. The number of IHC members in the Central R&BD is 7/7 (labor/management) in 2024.

Safety & Health KPIs

- Twice a year, safety and health-related performance evaluations are conducted for those responsible for safety and health management (plant managers, research center directors) and supervisors (executives, team leaders, researchers, team members).
- The results of these evaluations are incorporated into the KPIs of executives and team PMs, as well as those of the supervisors.
- PMs are evaluated based on detailed indicators (e.g. performance of duties to ensure safety and health). In the event of a serious industrial accident, including those involving subcontractors, the lowest grade is assigned.

Safety and Health Organizational Structure



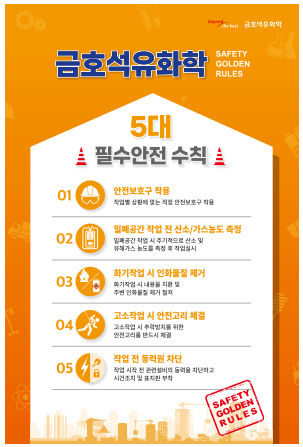
Strategy

Vision and Goals

Vision	A healthy company that prioritizes safety to pursue the happiness of the community.		
Goals	Achieving zero serious accidents	Establishing a safety and health infrastructure	Fostering a self-driven safety and health management culture
Strategic Initiatives	Strengthen health and safety inspections and monitoring Develop health and safety leadership skills for managers Enhance the management of on-site contractors	Optimize health and safety work systems Establish an independent inspection system Reestablish accident and emergency response systems	Enhance employees' health and safety management capabilities Establish a communication system and revitalize campaigns related to safety and health

Safety Golden Rules

- In 2023, the "Safety Golden Rules" were established to promote a safety culture within the company, enhance employees' safety awareness, and prevent industrial accidents.
- The rules were determined through the following process: analyzing causes of past accidents, collecting feedback from employees, analyzing the Ministry of Employment and Labor's safety guidelines, and evaluating factors contributing to serious accidents. This led to an initial list of candidates, which was then finalized through a company-wide survey.
- The Safety Golden Rules apply to all employees and contractors at all business sites.
- If an accident occurs due to non-compliance with these safety rules, penalties will be imposed on the responsible personnel, and they will be excluded from all health and safety-related awards.



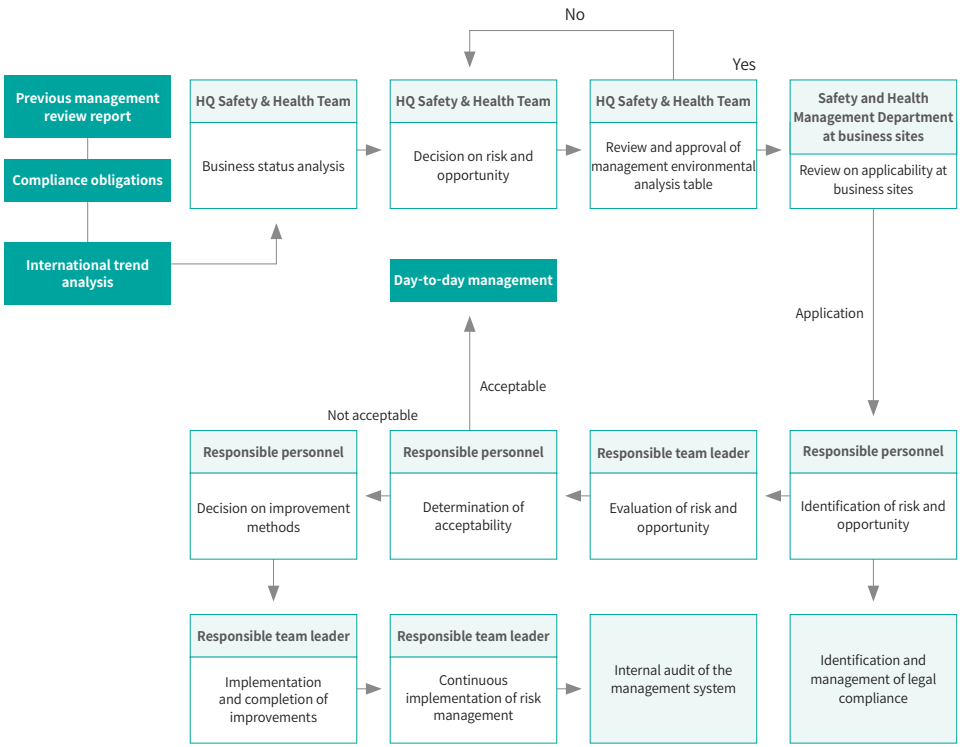
Kumho Petrochemical
Safety Golden Rules

Risk Management

ISO 45001-based Risk Management

- Kumho Petrochemical operates an ISO 45001-based occupational safety and health management system to effectively identify and manage risks across all its business sites, including headquarters, plants, and research centers.
- Identified risk factors include ensuring compliance with the Serious Accidents Punishment Act, safeguarding the safety of subcontractor employees, and enhancing their working conditions.

Safety and Health Risk Identification Process



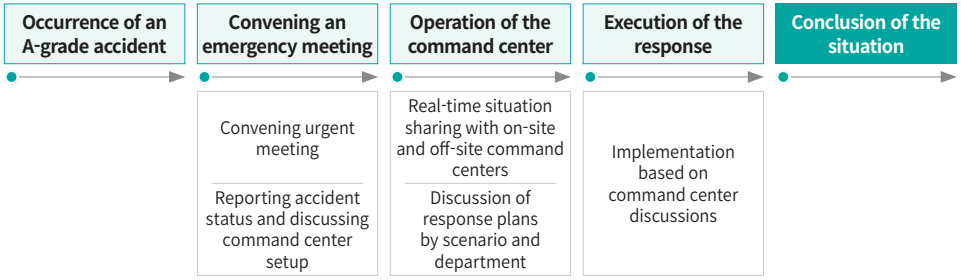
Monitoring of Health and Safety Regualtions

- The enactment and revisions of health and safety regulations related to the management activities, products, and services of all business sites are monitored.
- Important information is shared through company-wide announcements and, if necessary, incorporated into internal regulations or implemented through the establishment of strategies and regulatory compliance measures.
- Weekly updates on health and safety regulations are posted on the internal bulletin board, and other safety issues, policies, and guidelines are shared as needed.
- The SEH (safety, environment, health) system is used to share the results of regulatory monitoring and analyses of legal impacts

Emergency Response Process

- In the event of a serious accident or emergency at any business site, Kumho Petrochemical activates the company-wide emergency response system, the emergency plan (E-Plan).
- The E-Plan is activated for A-grade accidents, and if the incident overlaps with other categories, the highest grade classification is applied.
- The E-Plan serves as guidelines for the timing and method of convening an emergency meeting, the roles of the command center, and the procedures to be followed in various scenarios.
- In the event of a serious accident, it is reported to the CEO and the ESG Committee.

E-Plan Activation Procedure



Safety and Health Compliance Inspection

- To fulfill the safety and health responsibilities of management as mandated by the Serious Accidents Punishment Act, inspections are conducted across all business sites twice per year.
- Inspection teams consist of internal inspection bodies and, if necessary, external professional organizations.
- Based on inspection results, areas for improvement are identified, improvement plans are developed, and best practices are shared across business sites.
- Since 2023, the execution of safety and health duties has been incorporated into the PM and KPI of safety and health managers and supervisors.

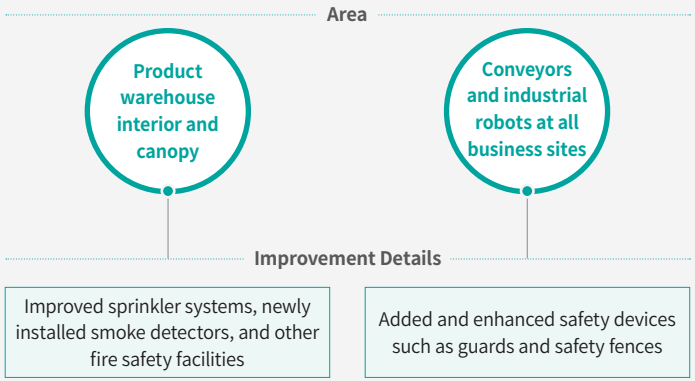
2023 Best Practices by Business Site

Inspection Item	Business Site	Best Practice
Evaluation of safety and health management duties by managers and supervisors	Ulsan Synthetic Rubber Plant	Conducted self-inspection activities such as the “Three No Movement” and Safety & Environment Team inspections
Compliance with safety and health-related laws	Yeosu Energy Plant	Identified and horizontally deployed improvement items across all processes through self-inspections
Identification and improvement of hazardous/ risk factors	Yeosu Synthetic Rubber Plants 1 & 2	Conducted and sophisticated risk assessments for all operations
Listening to employee opinions	Yeosu Synthetic Rubber Plants 1 & 2	Gathered and rewarded suggestions related to safety and environmental improvements from all employees
Compliance with emergency action manual	Central R&BD Center	Conducted fire response training through an external agency (Daejeon 119 Citizen Training Center)
Evaluation of subcontractor safety and health	Ulsan Synthetic Resins Plant	Managed the appropriate accounting and use of subcontractor safety and health management expenses
Compliance with safety and health training obligations	Yeosu Specialty Chemicals Plant	Conducted specialized training to enhance employee safety and health competencies by inviting experts in various fields

Safety and Health Risk Assessment

- Process hazard assessments and task risk assessments are conducted to preemptively identify potential serious industrial accidents, serious incidents, and near-misses.
- Ad-hoc risk assessments, considering accident cases from other companies and sites, are also conducted.
- Appropriate techniques are applied based on process characteristics to identify and mitigate hazardous factors at each business site.
- Managers provide training to team members on the results of these risk assessments.
- In 2023, company-wide risk assessment training was implemented to enhance the capabilities of risk assessment practitioners.
- The Yeosu Rubber Plant advanced its task risk assessment activities by identifying key risk factors for all operations, establishing safe work procedures, and creating essential Golden Rules for preventing serious accidents, in 2023.

2023 Risk Mitigation Examples



Fire Accident Prevention

- Emergency drills are conducted to prepare for fire risks, and fire prevention activities are implemented at each business site.
- The E-Plan is activated during incidents to minimize damage and establish measures to prevent recurrence.

2023 Major Fire Prevention Activities

Business Site	Activity Details
Ulsan Synthetic Rubber Plant	• Installed photoelectric type separated fire detectors and flame detection CCTV in the product warehouse • Replaced wet-type fire extinguishing systems with ready-to-use automatic systems
Ulsan Synthetic Resins Plant	• Installed photoelectric type separated fire detectors and flame detection CCTV in the product warehouse
Yeosu Synthetic Rubber Plant 1	• Deployed portable fire monitors to enhance response capability in hard-to-access fire scenes and replaced flame detectors
Yeosu Synthetic Rubber Plant 2	• Applied fire-resistant coating to cables in the motor control center (MCC) and server room (rack room)
Yeosu Specialty Chemicals Plant	• Upgraded fire alarm panels to refurbish outdated fire equipment
Yeosu Energy Plant	• Introduced custom firefighting equipment and installed facilities for coal fire adaptability and additional fire detectors

Operation of Integrated Safety and Environment Control Centers

- To enhance safety management, Integrated Safety and Environment Control Centers are operated at each business site (Ulsan Synthetic Rubber Plant, Ulsan Synthetic Resins Plant, Yeosu Synthetic Rubber Plant 1, Yeosu Synthetic Rubber Plant 2).
- Integrated Safety and Environment Control Centers are staffed with dedicated personnel focused on monitoring safety and environmental conditions at the business sites.
- A 24/7 monitoring system is operated to reinforce process stability.
- These centers lead emergency responses by quickly reporting and disseminating information during emergencies.
- Hazardous factors are continuously identified and addressed to prevent serious accidents.

Prevention of Work-related Disease

- Regular assessments of musculoskeletal burdens and job stress are conducted to prevent work-related diseases.

Exercise of Stop Works Authority (SWA)

- Stop work authority (SWA) allows workers to suspend work and/or take other necessary measures in the event of an accident or if there is a high probability of one occurring. Kumho Petrochemical guarantees the SWA of all employees, including those of subcontractors.
- Employees who exercise SWA will not face any HR-related disadvantages, and this right is included in the business site standards.
- Education and promotion regarding SWA are provided to employees, including those of subcontractors, at each business site.
- In 2023, Yeosu Synthetic Rubber Plant 1 developed the SinK (safety in KKPC group) application to enhance the exercise and implementation of SWA (stop work authority). Moving forward, these activities will be expanded to other business sites.

SinK (SWA Application)

Metrics and Targets

Safety and Health Targets

- Kumho Petrochemical is continuously pursuing activities to achieve its three main safety and health goals: Achieving Zero Serious Accidents, Establishing a Safety and Health Infrastructure, and Fostering a Self-driven Safety and Health Management Culture.

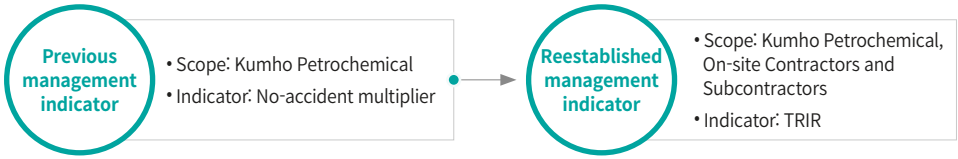
Goal	Activity	2023 Performance
Achieving zero serious accidents	Inspection of management responsibility for safety and health duties	Completed (once per half-year, twice in 2023)
	Enhanced evaluation of qualified contractors to prevent accidents during outsourced work	System established (formal implementation in 2024)
Establishing a safety and health infrastructure	SEH (safety, environment, and health) system	Initial launch completed (final launch in 2024)
	Integrated safety and environment command centers	Established at Ulsan Synthetic Resin Plant, Yeosu Synthetic Rubber Plants 1 & 2 (Ulsan Rubber Plants: established in 2021)
	Emergency plan (E-Plan)	Completed
Fostering a self-driven safety and health management culture	Safety and health training by job level and role (e.g., safety and health awareness education by job level, risk assessment personnel training)	Completed
	Safety and health campaigns during major maintenance periods	Completed

Establishment of SEH (Safety, Environment, and Health) System

- In 2023, Kumho Petrochemical and its affiliates (Kumho P&B Chemicals, Kumho Mitsui Chemicals, and Kumho Polychem) established the SEH system to enhance safety, environment, and health management.
- The SEH system contributes to data digitization and management efficiency across the company, significantly enhancing overall work processes.
- The initial launch for Kumho Petrochemical was completed in 2023, with formal implementation scheduled to begin in 2024.

Reestablishment of Company-wide Disaster Management Indicators

- To expand the scope of disaster management, Kumho Petrochemical has reestablished its company-wide disaster management indicators, and such new indicators are set to be implemented starting in 2024.
- The previous indicator of “No-Accident Multiplier” within the company has been replaced with the “Total Recordable Incident Rate (TRIR),” which includes incidents occurring within the company as well as those involving on-site contractors and subcontractors.



TRIR (Total recordable incident rate)

$$\frac{\text{Number of recordable incidents (RI)}}{\text{Total hours worked}} \times 200{,}000$$

Enhancement of Safety and Health Capacity

Safety Enhancement Activities at Plants

• Kumho Petrochemical is implementing safety enhancement activities at each business site to prevent plant safety accidents and work-related illnesses.

Business Site	Activity	Effect
Ulsan Synthetic Rubber Plant	• Installing vacuum carriers for heavy material transport	• Preventing musculoskeletal disorders among workers handling heavy materials
Ulsan Synthetic Resins Plant	• Introducing heavy equipment approach warning systems • Introducing additional mobile CCTV installation	• Preventing heavy equipment accidents • Improves disaster monitoring system
Yeosu Synthetic Rubber Plant 1	• Introducing smart safety devices for forklifts • Installing mobile booths to prevent heat illnesses	• Preventing forklift accidents • Improving summertime working conditions
Yeosu Synthetic Rubber Plant 2	• Introducing smart safety devices for forklifts • Establishing continuous monitoring systems for confined space entry	• Preventing forklift accidents • Preventing asphyxiation-related accidents
Yeosu Specialty Chemicals Plant	• Introducing smart safety management system • Installing beacon systems to forklifts and hazardous areas	• Enabling risk assessments via smartphones and PCs • Preventing worker collision risks
Yeosu Energy Plant	• Installing flammable gas detectors and alarms • Installing anti-static rods in dust-prone areas • Remodeling health management offices	• Preventing fire and explosion accidents due to LPG gas • Preventing fire and explosion accidents due to static electricity • Enhancing health consultations for workers

Training on Safety and Health Capacity Building

• Kumho Petrochemical provides training based on job rank and specific roles to foster safety and health awareness among employees.

Category		Key Training Content for 2023	
Company-wide training	Rank-specific training	Executives	Safety leadership lectures
		Assistant managers (3rd year), managers (4th year), deputy managers (4th year)	Safety and health awareness training
		New employees (new hires and experienced hires)	Basic safety and health system training
	Role-specific training	Accident investigators	Accident investigation specialist training
		Risk assessment practitioners	Risk assessment practitioner training
		ISO 14001 & ISO 45001 internal auditors	Integrated internal auditor training
Site-specific training	Headquarters	First aid and CPR training for dedicated personnel	
	Ulsan Synthetic Rubber Plant	Training on the use of protective equipment and safety devices, risk assessment overview and practice, safety training for new engineers and technicians	
	Ulsan Synthetic Resins Plant	Specialized training on explosion safety management, core safety management practices, safety training for new engineers and technicians	
	Yeosu Synthetic Rubber Plant 1	Monthly safety and health regular training, semi-annual performance measurement and awards for excellent departments, first aid and CPR training for dedicated personnel	
	Yeosu Synthetic Rubber Plant 2	Level-up training on task risk assessment (including subcontractor employees)	
	Yeosu Specialty Chemicals Plant	Participation in training programs at the Yeosu Safety Experience Education Center (including subcontractor employees)	
	Yeosu Energy Plant	First aid and CPR training for dedicated personnel	

Regular Training and Effectiveness Assessment in Safety, Environment, and Health (SEH)

• Monthly training sessions are conducted on safety, environment, and health (SEH) topics, with effectiveness assessed at least once a year.

• Improvement plans are developed based on the results of the effectiveness assessments, and high-performing departments receive awards.

• Participation and understanding are enhanced through activities like quiz events held immediately after the training sessions.

Activation of Communication

Integrated Safety and Environment Meetings and Exchanges

- Kumho Petrochemical conducts integrated safety and environment meetings and exchanges, attended by the CEO and all company safety and environment personnel.
- These meetings serve to communicate the CEO's commitment to fostering a culture of safety and to strengthen company-wide cooperation on safety and environmental matters.
- In 2023, a special lecture was given on the status and application examples of smart health and safety technologies.

The 25th Integrated Safety and Environment Meeting and Exchange

Safety and Health Workshop

- Workshops on safety and health are held to share the direction of safety and health tasks among all employees responsible for SEH.

2023 Safety and Health Workshop

First half

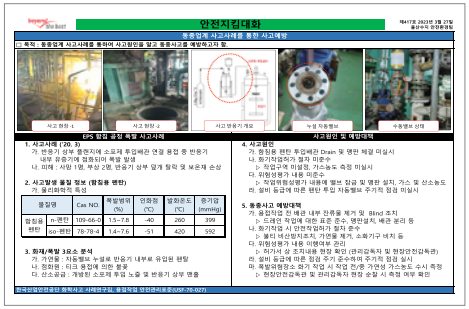
- How to enhance credibility of risk assessment
- Amendments to the accident investigation process
- Safety pledge rally for serious accident prevention

Second half

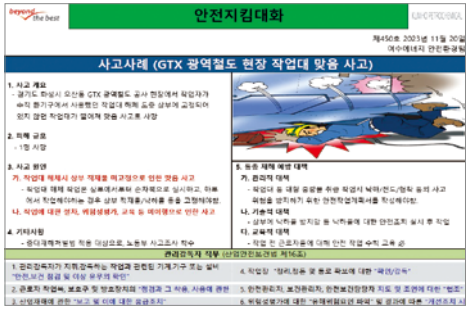
- How to strengthen safety management practices for contractors and subcontractors
- Revisions to disaster management indicators
- Plans for ensuring compliance with safety and health obligations in the second half of the year

Sharing of Safety and Health Issues

- Safety and health incident cases and best practices from business sites are posted on the groupware (WinK) bulletin board and shared company-wide.
- The Safety & Health Team prepares monthly postings on safety and health issues, which are shared to employees at the headquarters and each business site. (Safety Talks are conducted before the start of weekly business meetings across the entire company.)
- In 2023, information and data was shared on safety rules for major maintenance periods, safety measures for electrical and robotic equipment, typhoon safety preparations, fire prevention rules, and heatstroke prevention measures.
- The results of Safety Talks conducted at each business site are posted to the groupware (WinK) bulletin board for company-wide sharing.



Safety Talks, Issue No. 417 (March 27, 2023)



Safety Talks, Issue No. 450 (November 20, 2023)

Outstanding Safety Employee Awards

- In 2023, exemplary supervisors were awarded to encourage and promote the commitment to safety and health activities and their effective execution.
- Outstanding safety employees were selected based on evaluations in four categories—achievements, capabilities, attitude, and job performance—and received monetary rewards and additional promotion points.

Management of Safety Risks for Contractors

Strategies for Managing Contractor Safety Risks

- Headquarters' Safety & Health Team established "Enhancing Contractor Safety Management" as a key objective. This involves identifying safety risks at contractor sites, deriving and implementing improvement tasks and plans.
- Best practices from contractors are shared with other contractors with their consent to standardize and elevate safety management capabilities across the supply chain.

Safety and Health Evaluation of Subcontractors

- Regular evaluations are conducted to manage the safety and health of on-site subcontractors, with rewards given based on evaluation results.
- In 2023, the safety and health evaluation system for subcontractors was enhanced to strengthen safety management during subcontracted work. Starting from 2024, evaluations will be conducted using the SEH system.
- Evaluations are based on 12 items suggested by the Ministry of Employment and Labor in its Subcontract Business Safety and Health Management Manual.
- Evaluations are conducted at the pre-contract stage, with contracts only proceeding for companies that pass the evaluation.
- Reevaluations are conducted for companies whose evaluation validity period has expired.

Subcontractor Safety and Health Evaluation Items

Category	Evaluation Items
Safety and health management system	General principles, planning, structure, and responsibility
Execution level	Risk assessment, safety inspections, compliance verification, training and records, safe work permits
Operational management	Signaling and communication systems, hazardous materials and equipment, emergency measures
Accident level	Status of industrial accidents

Support for Contractor Safety and Health Management Standards

- To ensure that on-site contractors can comply with the Serious Accidents Punishment Act, support is provided in preparing essential safety and health management standards.
- Supported standards include risk assessment, employee feedback, safety and health training, and management of safety equipment and personal protective gear.

Safety and Health Council with Contractors

- As part of industrial accident prevention activities, the safety and health manager holds monthly safety and health council meetings with contractors.
- Joint inspections are conducted to assess risks within the business site and the council supports contractors in implementing improvement actions.

Outstanding Safety Management Contractor Awards

- Each business site selects and rewards outstanding safety management contractors once a year.

Meetings with Contractor Representatives

- The safety and health supervisor at each business site conducts meetings with representatives from key contractors.
- These meetings aim to secure the safety of the business site by listening to contractors' opinions and urging continuous improvement in safety management, accident prevention, and adherence to essential safety rules in the workplace.

Outstanding Safety Management Contractor Awards


Meetings with Contractors

Participation in Safety and Health Cooperation Programs Between Large Enterprises and SMEs

- In 2023, Kumho Petrochemical participated in the Ministry of Employment and Labor's Safety and Health Cooperation Programs Between Large Enterprises and SMEs, engaging in activities aimed at enhancing the safety and health management levels of contractors.
- The Ulsan Synthetic Rubber Plant, Ulsan Synthetic Resins Plant, Yeosu Synthetic Rubber Plant 1, and Yeosu Synthetic Rubber Plant 2 participated in this program, providing consulting services to improve the safety and health capabilities of contractors.
- Notably, the Ulsan Synthetic Rubber Plant and Ulsan Synthetic Resins Plant were recognized as exemplary sites by the Ministry of Employment and Labor.

Achievements in Contractor Safety and Health Consulting

Ulsan Synthetic Rubber Plant	Ulsan Synthetic Resins Plant	Yeosu Synthetic Rubber Plants 1 & 2
• Transferring and enhancing the execution of risk assessment techniques • Diagnosing and improving seven key items in the safety and health management system	• Transferring and enhancing the execution of risk assessment techniques • Focusing on discovering and improving three major accident types and eight major risk factors • Diagnosing and improving seven key items in the safety and health management system	• Providing level-up consulting for task risk assessment
Number of Consulting Target		
12	9	21 (all onsite contractors)

Operation of Safety and Health Grievance Channels

- Monthly safety and health council meetings are held to address safety and health grievances and gather feedback from contractors.
- Various channels, including anonymous suggestion boxes, KakaoTalk, BAND channels, and regular meetings, are utilized for collecting grievances and feedback.
- Notable examples of grievance handling include the sharing of risk assessment standards and improvements to the workplace environment.

ESG Fact Book

ENVIRONMENTAL

Corporate activities have diverse impacts on the environment, for which companies must bear responsibility.
Unchecked industrial activities by companies can lead to significant environmental damage, ultimately threatening the foundation of our lives.
Kumho Petrochemical actively engages in environmental management activities based on its sense of corporate responsibility toward the environment, evident in its goal of achieving carbon-neutral growth and the development of a roadmap to accomplish this target. Efforts are being made to minimize the environmental impact of corporate activities by reducing various pollutants and waste generated during production processes.

Environmental Management

Vision and Goals

Vision	A company that practices eco-friendly management and builds a shared future as a partner to humanity and the environment.		
Goals	Minimizing environmental impacts	Sophisticating environmental management	Carbon net zero by 2050
Strategic Initiatives	Reduce emissions of environmental pollutants	Enhance the implementation of environmental management systems	Reduce greenhouse gas emissions (transition to clean energy, improvement of energy efficiency)
	Expand zero waste to landfill certifications	Strengthen environmental compliance	Shift to eco-friendly raw materials and products
	Strengthen chemical management	Utilize digital transformation technologies	Enhance carbon asset management and communication

Environmental Management System

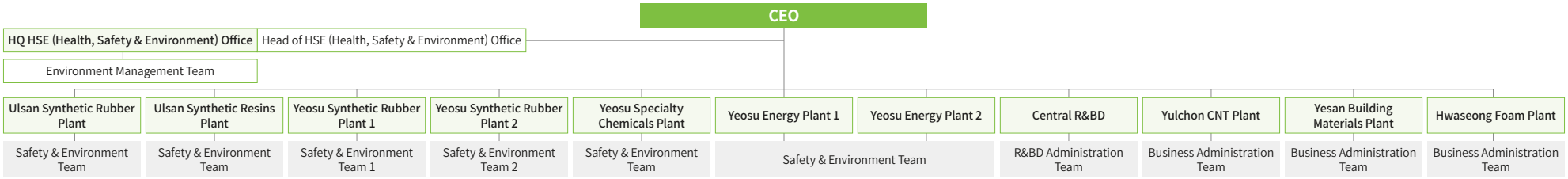
Dedicated Executive and Teams

- Environmental management initiatives are led by the Environment Management Team within the HSE (Health, Safety & Environment) Office, which reports directly to the CEO.
- The Environment Management Team serves as the central control unit for all environment-related activities across the company. It is tasked with monitoring environmental regulations and policies, responding to climate change, and reducing pollutants and waste.
- Each business site has a dedicated team for the comprehensive management of its environmental activities.
- In the event of an environmental issue, the executive from the HSE (Health, Safety & Environment) Office reports directly to the CEO. And the ESG Committee reviews the situation and approves on the necessary actions to be taken.
- In 2024, the ESG Committee approved the revision of the ESG Policy & Guidelines, which encompasses policies on environmental management, biodiversity conservation, and forest destruction prevention.

Environmental Control System

- Based on ISO 14001, environmental factors are systematically identified, evaluated, managed, and improved to efficiently control related risks.
- A total of eight business sites, including the headquarters, have obtained certification, with the goal of maintaining this certification rate.

Environmental Management Organizational Structure



Regulatory Monitoring

- Regulatory monitoring is conducted to enhance the understanding of environmental laws, including those related to water resources, and to identify and respond to risks resulting from legal amendments.
- A weekly email service is provided to update key law amendments and revisions. Additionally, a monthly report on safety and environmental matters, including examples of legal reviews and domestic and international trends, is shared.

Training for Environmental Practitioners

- In 2023, training was provided for 13 new and transferred employees responsible for environmental tasks to enhance their capabilities in responding to environmental regulations.
- The training included a practical overview of the Clean Air Conservation Act and Water Environment Conservation Act, along with key environmental issues of 2023.
- For 2024, training will focus on the integrated environmental management system, with tailored training programs designed for environmental practitioners based on their ranks.

Compliance Inspections

- Annual compliance inspections are conducted across all business sites to ensure adherence to environmental regulations.
- The inspections are led by the headquarters' Environment Management Team in collaboration with external professional organizations.
- In 2023, environmental compliance monitoring was conducted alongside evaluations to assess the implementation of follow-up measures from the 2022 compliance inspections.

2023 Inspection Details by Business Site

Business Site	Details
Ulsan Plants, Yeosu Plants	• Preliminary inspection of overall environmental management in preparation for the 2024 regular inspection under the Integrated Environmental Act
Yesan Building Materials Plant, Hwaseong Foam Plant, Asan CNT Plant	• Follow-up on compliance measures from 2022 • Inspection to identify areas for improvement in environmental facilities
Central R&BD Center	• Follow-up on compliance measures from 2022 • Assessment and remediation of deficiencies under the Chemicals Control Act

Green Product Campaign

- Data accumulation on green product usage began in 2022 with "Adopt Green Products," an internal campaign. Plans are underway to expand products scope.
- Office supplies that have received reputable certifications, such as ecological marks, are defined as "green products." Purchase records for such products are collected and managed annually.

Green Product (Office Supplies) Criteria and Purchase Records

Office Supplies	Certification
Printer	Environmental Mark
Monitor	
Laptop computer	
Multifunction printer	
Scheduler	
Printing paper	FSC (Forest Stewardship Council), PEFC (Programme for the Endorsement of Forest Certification)

Category	2022	2023
Product purchases	KRW 319,735,000	KRW 471,138,000
Usage ratio*	79%	73%

* The ratio of green product purchases to the total purchase amount of target office supplies (printer, monitor, laptop computer, multifunction printer, scheduler, printing paper) as part of the "Adopt Green Products" campaign.

Paperless Office

- Efforts are being made at the headquarters to establish a culture of paperless offices by reducing the use of printer paper.
- In 2022, tablet PCs were distributed to employees to minimize the printing of reports and meeting materials, and in 2023, electronic blackboards and smart TVs were installed in conference rooms.
- Quarterly monitoring of paper usage by each division is conducted to regularly assess the progress in establishing a paperless office culture.

Designation as a Green Company

- In 2021, the Ulsan Synthetic Resins Plant was designated as a Green Company by the Ministry of Environment.
- This prestigious designation is granted to companies that demonstrate a commitment to green management, driven by the CEO's engagement and the active participation of all employees. It encompasses efforts such as the proper treatment of pollutants, proactive environmental management, and ongoing environmental improvements.

Water Resources Management

Water Usage Optimization and Reduction

- For optimizing water use and reducing costs, Kumho Petrochemical actively monitors water consumption across all operations and implements strategies to conserve water.
- The Ulsan Synthetic Rubber Plant has installed new equipment to decrease the use of filter box makeup water and has improved demister systems to reduce water loss. Additional initiatives, such as pump sealing and maintaining a water supply to prevent pipe freezing, are also being developed.
- The Yeosu Synthetic Rubber Plants are enhancing water spray points within the plant as part of their water conservation efforts.
- The Hwaseong Foam Plant and Yesan Building Materials Plant have implemented a process that continuously circulates abstracted subterranean water, allowing for its complete reuse.

Water Resource Risks Monitoring

- To ensure the stability of the water supply, the World Resource Institute's (WRI) Aqueduct tool is utilized to monitor the exposure of business sites to water risks.
- Based on the results of such monitoring, communication and/or collaborations are undertaken with governmental organizations when necessary.
- In 2023, the CEO of Kumho Petrochemical attended the KBCSD (Korea Business Council for Sustainable Development) CEO Policy Round Table, which was hosted by the Minister of Environment. During this meeting, the CEO conveyed recommendations regarding the water supply for the Yeosu National Industrial Complex to the Ministry of Environment.

Water Stress Analysis per Business Site (Using WRI Aqueduct Tool)

Business Site	Water Stress	
	Current 2023	Future 2030, BAU
Headquarters	Medium-high	Medium-high
Central R&BD Center	High	High
Ulsan Synthetic Rubber Plant	Medium-high	Medium-high
Ulsan Synthetic Resins Plant	Medium-high	Medium-high
Yeosu Synthetic Rubber Plant 1	High	High
Yeosu Synthetic Rubber Plant 2	High	High
Yeosu Specialty Chemicals Plant	High	High
Yeosu Energy Plant	High	High
Yesan Building Materials Plant	Medium-high	Medium-high
Hwaseong Foam Plant	Medium-high	Medium-high
Asan CNT Plant	Medium-high	Medium-high

Energy Management

Energy Usage Optimization and Reduction

- As part of the carbon neutrality strategy, the fuel switching of aged bituminous coal boilers at Yeosu Energy Plant is under serious consideration. Plans are being made for a transition by 2030, taking into account the availability of alternative fuels and the stability of the collective energy operations, such as steam supply.
- Other business sites are initiating new activities to reduce fuel consumption.

2023 Energy Usage Reduction Activities

Business Site	Activity
Ulsan Synthetic Rubber Plant	• Reduced steam usage by recovering condensate from steam traps and changing heat sources, and by replacing flare stack tips • Reduced electricity consumption by replacing aged air compressors • Continue to optimize processes to further reduce steam usage
Ulsan Synthetic Resins Plant	• Reduced dryer purge air consumption and heating electricity usage by adding new phase change material (PCM) air dryers after diagnosing the air compressor dryer system • Conducted waste heat diagnostics within processes and established a waste heat recovery system in the RTO • Investigated all high-pressure steam users in the plant and considered switching from high-pressure to low-pressure steam
Yeosu Synthetic Rubber Plant	• Reduced fuel consumption in the RTO by improving blower pulleys in the product process • Increased production of R-BD products and prevented H.C. loss by utilizing idle refining equipment for re-refining the heavy ends (heavy oil) of the pre-treatment process after BD process downtime
Yeosu Energy Plant	• Reduced electricity usage by installing boiler turbo blowers • Reduced electricity usage by operating pumps in conjunction with a distributed control system • Improved differential pressure and reduced fan power consumption through boiler pack filter modification work

Renewable Energy Generation and Utilization

- Biomass is utilized to generate renewable energy. Based on the issuance of Renewable Energy Certificates (RECs), this energy is sold externally and used in internal production processes.
- Ongoing efforts are made to enhance the biomass co-firing ratio by securing additional supplies of wood pellets and wood chips.

Air Pollutants Management

Air Pollutant Emission Control

- In accordance with the Special Act on the Improvement of Air Quality in Air Control Zones, Kumho Petrochemical requires each business site to establish emission goals based on their allotted air pollutant quotas and continuously manages performance.
- In addition, internal standards stricter than the legally permitted limits have been established to reduce air pollutant emissions.
- Emissions are monitored in real-time at each business site using the tele-monitoring system (TMS), with headquarters compiling monthly results and requiring corrective actions and improvements where necessary.

Air Pollutant Emission Targets (Quotas)*

(Unit: ton)

Type	2021	2022	2023	2024
NOx	1,064.5	1,004.5	944.9	884.6
SOx	673.3	653.7	634.2	614.7
Dust	72.6	70.9	69.3	67.7

* Sum of business site emissions according to the amount permitted by the Special Act on the Improvement of Air Quality in Air Control Zones

Air Pollutant Emissions Reduction

- Following the results of environmental compliance inspections, business sites regularly inspect their air pollution control equipment and continuously invest in improvements to address deficiencies and enhance emission reduction efforts.

2023 Air Pollutant Emissions Reduction Activities

Business Site	Activity
Ulsan Synthetic Rubber Plant	• Installed flame arresters and breather valves on hazardous material storage tanks to prevent VOC leaks
Ulsan Synthetic Resins Plant	• Added one RTO and one VCU to the newly constructed NB-Latex plant and existing processes to ensure stable treatment of VOC gases
Yeosu Synthetic Rubber Plant 1	• Installed a system to enhance the recovery efficiency of off-gas • Changed the seal type of stripper agitators to prevent fugitive THC emissions • Planned installation of a new dust filtration facility (2024) • Improved combustion efficiency by changing the burner type of the VCU
Yeosu Synthetic Rubber Plant 2	• Changed the valve type of the breather on hazardous material storage tanks to prevent VOC leaks • Changed the seal type of blend tanks to prevent hydrocarbon leaks
Yeosu Specialty Chemicals Plant	• Installed bag filters, cyclone dust collectors, and scrubbers in the new HBPA plant
Yeosu Energy Plant	• Installed an absorption tower to reduce dust and ammonia emissions from the urea production process

Water Pollution Management

Water Pollutant Discharge Control

- Each business site of Kumho Petrochemical manages water pollutant discharges based on standards that are significantly stricter than the legal limits and treatment guidelines.
- In the event of abnormal wastewater discharges, the Safety & Environment Team at each site identifies the cause and requests the relevant departments to implement corrective measures.
- Each business site conducts water pollutant management activities, including the maintenance and repair of wastewater discharge and treatment facilities, as well as commissioning tests and analyses related to wastewater.

Water Pollutant Discharges Reduction

- Each business site conducts water quality inspections for various types of wastewater, including domestic sewage, industrial wastewater, influent wastewater, effluent wastewater, and abnormal wastewater.
- Wastewater generated at each site is treated physically, biologically, and chemically at the site's own treatment facilities before being discharged through nearby wastewater treatment plants.

2023 Water Pollutant Discharges Reduction Activities

Business Site	Activity
Ulsan Synthetic Rubber Plant	• Expanded the sedimentation basin at the wastewater treatment facility
Yeosu Synthetic Rubber Plant 1	• Improved fluoride wastewater treatment facilities by changing chemicals, installing new chemical injection systems, and replacing sludge dewatering machines
Yeosu Specialty Chemicals Plant	• Expanded the aeration tank and collection tank at the wastewater treatment facility and constructed a two-stage anoxic tank and two-stage nitrification tank
Yeosu Energy Plant	• Established monitoring equipment for pollutants in general drainage channels

Waste Management

Waste Recycling Enhancement

- In 2023, Kumho Petrochemical established mid- to long-term goals to reduce landfill waste and enhance company-wide recycling efforts.
- A company-wide survey on the recycling status at each business site has been conducted to achieve these goals. Each site has developed plans to enhance waste recycling, with future efforts focused on verifying detailed implementation plans and regularly monitoring progress.
- Internal investigations revealed that Yeosu Synthetic Rubber Plant 1 and Yeosu Synthetic Rubber Plant 2 have low recycling rates for three major waste types (waste synthetic rubber, waste synthetic resin, and wastewater treatment sludge). Yeosu Specialty Chemicals Plant also had lower recycling rates compared to the company average. To this end, efforts will be made to improve recycling rates by enhancing existing recycling processes and identifying new recycling contractors.
- In 2023, Yeosu Energy Plant 2 achieved a recycling rate of 98.6% by recycling combustion residues from power plant boilers into cement raw materials, earning the Zero Waste to Landfill (ZWTL) Gold certification.

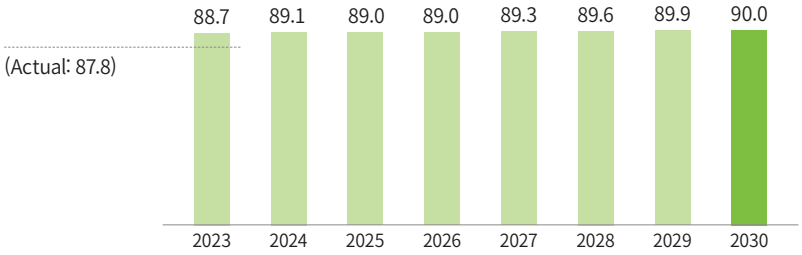
Strategies and Implementation Plans for Enhancing Waste Recycling Rates

Achieve 90% waste recycling by 2030
(recycling rate: 88% → 90%, reduce landfill and incinerated waste by 10%)

- **Enhance recycling of waste synthetic rubber**
- **Enhance recycling of wastewater sludge**
- **Enhance recycling of Waste synthetic resin**

Mid- to Long-Term Goals for Waste Recycling Rates

(Unit : %)



Waste Reduction

- Kumho Petrochemical requires each business site to regularly monitor waste generation in alignment with mid- to long-term goals for reducing waste and expanding recycling. These results are to be reported to the responsible executives.
- Each business site develops specific plans to enhance recycling efforts and minimize waste while conducting environmental assessments of outsourced waste treatment companies.

2023 Waste Reduction Activities per Business Site

Business Site	Activity
Ulsan Synthetic Rubber Plant	• Collection and recycling of TOTE for domestic use • Recycling of waste synthetic rubber and resin
Ulsan Synthetic Resins Plant	• Recycling of latex waste as ABS raw material • Recycling of wooden pallets used for receiving auxiliary materials
Yeosu Synthetic Rubber Plant 1	• Enhanced recycling of waste synthetic rubber and waste synthetic resin
Yeosu Synthetic Rubber Plant 2	
Yeosu Energy Plant	• Recycling of combustion residues from the power plant boilers as raw material for cement • Process improvements to recycle combustion residues from boilers, thereby reducing raw material use and waste generation
Yeosu Specialty Chemicals Plant	• Classification of recyclable waste groups based on waste components • Discovery of additional waste recycling companies

Soil Contamination Management

Soil Contaminant Leaks Control

- Based on the environmental management policy and business site standards, soil contamination within the business site is managed.
- In addition, regular inspections are carried out at each site, focusing on areas at risk of soil contaminant leaks and facilities that require stringent soil contamination control.

2023 Soil Contamination Management Activities

Business Site	Activity
Ulsan Synthetic Rubber Plant	• Conducted legally-mandated soil contamination analysis
Yeosu Synthetic Rubber Plant 1	• Completed soil restoration work to meet Region 3 standards under the Soil Environment Conservation Act using multi-phase extraction and chemical oxidation methods
Yeosu Synthetic Rubber Plant 2	• Conducted initial soil contamination inspection for new facilities following SSBR production expansion and received compliance certification
Yeosu Specialty Chemicals Plant	• Revised soil contamination management standards • Conducted legally-mandated soil contamination analysis
Yeosu Energy Plant	• Reduced inspection interval for facilities requiring soil contamination control from two years to one year

Hazardous Chemicals Management

Hazardous Chemical Substances Control

- Kumho Petrochemical rigorously manages the entire process of chemical use, from purchase to sale, through well-defined procedures.
- Hazardous chemicals are controlled especially strictly according to safety standards for transportation and handling, as well as criteria for managing dangerous substances.
- Responsible personnel are designated for managing risks related to hazardous chemicals, and guidelines are distributed to raise awareness and ensure preemptive responses. Additionally, it is mandatory for relevant personnel to prepare work plans.
- In 2023, a comprehensive SEH system was established to oversee the management of hazardous chemicals across the company.

Compliance with Hazardous Chemical Regulations

- The management of hazardous chemicals, including permits, registration, evaluation, and control processes, is conducted in accordance with the Act on Registration and Evaluation of Chemical Substances and the Chemical Substances Control Act.
- Regular monitoring of legal amendments is carried out, and necessary actions are taken if new hazardous substances are added.
- The SEH system is used to review the availability of purchasing each chemical in compliance with relevant laws.
- Processes are in place to ensure adherence to the material safety data sheet (MSDS) system as required by the Occupational Safety and Health Act.
- Chemicals are registered and managed according to the EU's REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulations, and safety data sheets (SDS) are prepared and provided to customers.
- Each business site issues reports on RoHS (restriction of hazardous substances) compliance and SVHC (substance of very high concern) Candidate List verification for each product.

Issuance of RoHS Certificates and SVHC Verification Reports

Business Site	Issuance Rate of RoHS Certificates and SVHC Verification Reports	Products
Ulsan Synthetic Rubber Plant	100%	SBR, NB-Latex, etc.
Ulsan Synthetic Resins Plant	100%	ABS, PS, etc.
Yeosu Synthetic Rubber Plants 1 & 2	100%	HBR, SSBR, etc.
Yeosu Specialty Chemicals Plant	100%	Antioxidants, etc.

Hazardous Chemical Classification System

- Kumho Petrochemical applies a classification and labeling system based on the GHS (Globally Harmonized System of Classification & Labeling of Chemicals) for hazardous chemicals.
- Additionally, each business site has implemented an in-house classification* and labeling system, which includes regional categorization** criteria.

*Examples: Regulation on the Classification, Labelling, and Packaging of Substances and Mixtures (CLP)
**Examples: TSCA (Toxic Substances Control Act; USA), IECSC (Inventory of Existing Chemical Substances Produced or Imported in China; China)

Hazardous Chemical Accident Prevention

- Preventive measures are applied using criteria stricter than those stipulated by law to prevent hazardous chemical accidents.
- An emergency response process is in place to minimize damage from potential hazardous chemical leaks.
- Business sites that are prone to or have experienced accidents prepare chemical accident prevention plans to ensure thorough preparedness.
- Training for personnel handling hazardous chemicals includes the mandatory use of protective gear such as full-face gas masks, protective clothing, gloves, and boots.

2023 Hazardous Chemical Accident Prevention Activities

Business Site	Activity
Ulsan Synthetic Rubber Plant	• Conducted safety training for drivers and secured safety pledge agreements • Prepared and posted MSDS summaries on-site
All Yeosu Plants	• Expanded contractor reporting scope to processes not handling hazardous chemicals
Yeosu Synthetic Rubber Plant 2	• Conducted checklist inspections and secured safety pledge agreements for drivers
Yeosu Specialty Chemicals Plant	• Developed chemical accident response manual and distributed reporting pocket cards • Conducted performance evaluations for Kumho Petrochemical and contractor staff • Mandated submission of hazardous chemical training certificates for plant entry
Yeosu Energy Plant	• Installed new trenches to prevent possible leaks during hazardous chemical transportation

Chemical Safety Management Council

- Kumho Petrochemical operates the Chemical Safety Management Council to mitigate safety risks associated with hazardous chemicals and share best practices for chemical management.
- Annual inspections of the storage, transportation, and management of chemical substances are conducted and trainings on management methods and technologies to employees of contractors.
- Furthermore, local environmental technician associations are set up to facilitate information exchange and support with disaster prevention equipment among nearby business sites during emergencies. Through an online community platform (Naver Band), the public-private joint response team collaborates with Regional Environment Offices to handle chemical accidents. when necessary with Regional Environment Offices.

Biodiversity

Vision and Goals

Vision	Let's Balance and Boost for Biodiversity! (Let's BBB)		
Goal	Achieve balance between biodiversity conservation and business operations		
	Short-term (2024-2025)	Mid-term (2026-2027)	Long-term (2028-2030)
	Preparation for biodiversity conservation	Implementation of biodiversity conservation activities	Establishment of a nature-positive foundation
Action Plans	Promoting ecosystem conservation and restoration Protecting and restoring endangered species Conducting ecological surveys around business sites	Developing and publishing TNFD strategy framework Expanding eco-friendly product purchases and reducing plastic waste	Publishing biodiversity reports Creating a circular economy system Establishing and applying nature-based solutions principles Participating in biodiversity initiatives

- Kumho Petrochemical has established the 2030 Biodiversity Vision and Goals to balance business activities with biodiversity and ecosystem conservation.
- These goals are aligned with the Kunming-Montreal Global Biodiversity Framework (GBF), the 5th National Biodiversity Strategy based on GBF, and the Task-force on Nature-related Financial Disclosure (TNFD).

Policy

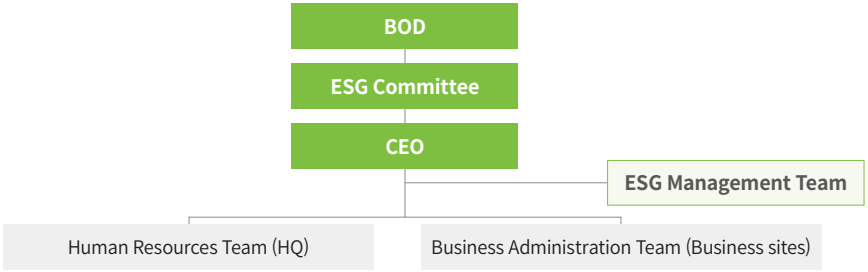
- Kumho Petrochemical has established a comprehensive Biodiversity Policy to minimize the negative impact of business activities on biodiversity and ecosystems and to ensure sustainable use of resources.

Biodiversity Conservation Policy	• Preventing, minimizing, and mitigating risks • Setting goals to achieve No Net Loss of biodiversity • Contributing to a Net Positive Impact in the long term
Forest Destruction Prevention Policy	• Minimizing and mitigating deforestation across all business operations • Promoting various forest protection activities • Contributing to achieving Net Deforestation Zero

Biodiversity Conservation Policy

Organizational Structure

- The Board of Directors (BOD) and ESG Committee review and approve key plans and risk management related to biodiversity activities.
- The ESG Management Team is responsible for establishing strategies, goals, and policies related to biodiversity, and collaborates with implementation departments to support these efforts.
- Headquarters' Human Resources Team and Business Administration Team at each business site develop and implement biodiversity activity plans.



Risk Identification

- Kumho Petrochemical identifies biodiversity risks around the business sites by applying the LEAP approach suggested by the TNFD framework to recognize and specify local species.
- Key natural heritages, national parks, and protected areas near the business sites are identified using WWF's Biodiversity Risk Filter* to detect potential risks.
- Biodiversity risks are categorized into physical and reputational risks, and then analyzed for each business site to determine risk levels

* Refer to the WWF Biodiversity Risk Filter (https://riskfilter.org/biodiversity/home) for more information.

WWF Biodiversity Risk Identification Criteria

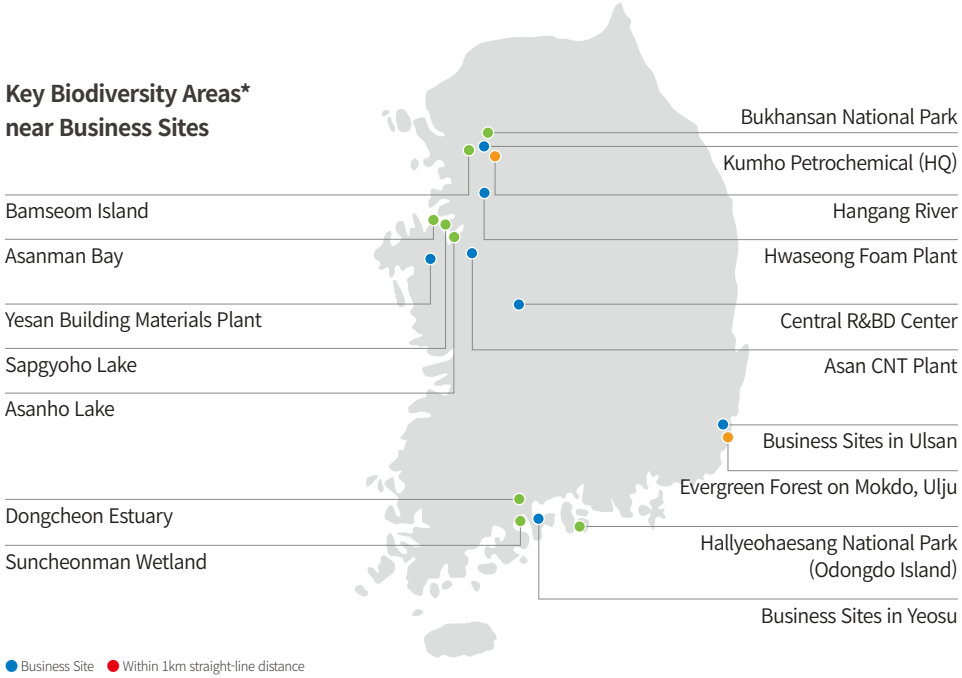
Physical risks	Biological resources	Freshwater resources, forests (timber), wildlife, marine life
	Ecosystems	Soil conditions, water conditions, air conditions, ecosystem conditions, surrounding farmland conditions
	Biodiversity pressures	Changes in land/freshwater/marine use, forest resource loss, invasive/foreign species, soil/water pollution (fertilizers, nitrogen, pesticides)
Reputational risks	Local environmental factors	Proximity to protected/conservation areas, key biodiversity areas, other significant areas, ecosystem conditions, range rarity (based on species endemism)
	Socioeconomic factors	Food/water scarcity, air quality, labor/human rights, financial inequality
	Other reputational factors	Media scrutiny, political context (freedom index), Ramsar sites, World Natural and Cultural Heritage, national-level biodiversity risk preparedness

Biodiversity Risk Identification Results per Business Site Location

Risk level: 1 (Low) - 5 (high)

Area		Seoul	Daejeon	Yeosu	Ulsan	Hwaseong	Yesan	Asan
Physical risks	Biological resources	4.5	2.5	3.5	3	4.5	3	3.5
	Ecosystems	4	4	2.5	2.5	4	4	4
	Biodiversity pressures	2.5	4	1.5	3	1.5	4	4
Reputational risks	Local environmental factors	2.5	2.5	4	4	2.5	2.5	2.5
	Socioeconomic factors	3.5	3.5	3	3.5	3.5	3.5	3
	Other reputational factors	2.5	2.5	4.5	4.5	4.5	2.5	2.5

Key Biodiversity Areas* near Business Sites



Key Biodiversity Areas (https://www.keybiodiversityareas.org)

Key Biodiversity Areas		Classification	Nearby Business Sites
Hangang River	●	KBA BiodiversityArea	Headquarters
Bamseom Island	●	RamsarWetland	
Bukhansan National Park	●	NationalPark	
Asanman Bay	●	KBA BiodiversityArea	Asan CNT Plant, Yesan Building Materials Plant
Sapgyoho Lake	●	KBA BiodiversityArea	
Asanho Lake	●	KBA BiodiversityArea	
Suncheonman Wetland	●	UNESCO Natural Heritage Ramsar Wetland KBA Biodiversity Area	Yeosu Synthetic Rubber Plant 1, Yeosu Synthetic Rubber Plant 2, Yeosu Specialty Chemicals Plant, Yeosu Energy Plant
Dongcheon Estuary, Suncheon	●	Ramsar Wetland	
Hallyeohaesang National Park (Odongdo Island)	●	National Park	
Evergreen Forest on Mokdo Island, Ulju	●	Natural Monument (No. 65)	Ulsan Synthetic Rubber Plant, Ulsan Synthetic Resins Plant

2023 Biodiversity Conservation Activities

Area	Activity
HQ	• Cheonggyecheon Stream cleanup and invasive species removal - Conducted twice annually, focusing on cleaning and removing invasive species
Ulsan	• One company, one stream cleaning activities - Cleaned designated sections of Yeocheon Stream and Mugeo Stream
	• Cleanup of streams and green areas near the petrochemical complex - Conducted monthly cleaning activities around streams and green spaces near business sites
	• Adopt-a-Beach program - Adopted a beach near Solgae Park
Yeosu	• Adopt-a-Beach program - Adopted and cleaned a 1.7 km stretch of Seonso Beach
Yesan	• Stream cleaning activities - Conducted annual cleaning activities around streams and green spaces near business sites

CASE STUDY

Cheonggyecheon Invasive Plant Removal Activities

Overview	Regional cleaning activities are conducted to protect local biodiversity and raise awareness of climate change and sustainable management among employees
Activities	Removal of invasive plant species and creation of air-purifying plant pots at the Cheonggyecheon Ecological School
Achievements	• Removed invasive plants like Ambrosia artemisiifolia and Humulus japonicus (2 sessions, 45 participants) • Generated approximately KRW 866,000 in social value (SV)* through the invasive plant removal project • Completed lectures on invasive plants and air-purifying plants • Created terrariums (plant pots) using air-purifying plants

* Calculation: 2023 public job hourly wage × activity hours × number of participants


CASE STUDY

Adopt-a-Beach Cleanup Activities by Business Sites in Yeosu

Overview	As part of biodiversity conservation and restoration efforts, a nearby beach was adopted for regular environmental cleanup and community campaign activities
Activities	Designation of a 1.7 km stretch of Yeosu Ssangbong-dong coastline (Seonso Heritage Site ↔ Seonso Bridge) as an adopted beach and environmental cleanup activities
Achievements	• Collected, sorted, recorded, and weighed marine debris (46 participants; 124.98 kg of waste collected) • Created social value (SV)* worth approximately KRW 1,143,000 through waste collection • Completed safety education on marine environment, biodiversity, and activity safety

* Calculation: 2023 public job hourly wage × activity hours × number of participants + domestic waste disposal unit cost × amount of waste collected

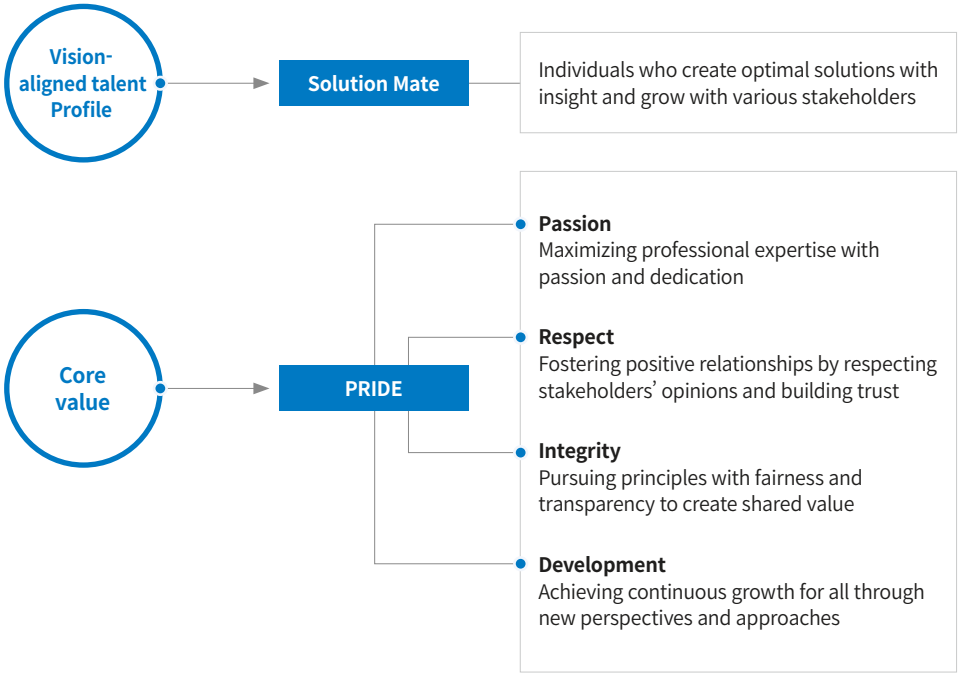



SOCIAL

The vision “Solution Partner: Creating Our Common Future with Value beyond Chemistry” can only be achieved through mutual cooperation with Kumho Petrochemical employees and all stakeholders. Kumho Petrochemical aims to foster sustainable growth for the company and society through proactive communication with various stakeholders.
First and foremost, we are improving the work environment to enhance employee capabilities and satisfaction while prioritizing the protection of stakeholders’ human rights and ensuring safe working conditions for both our and contractor workers. Moreover, we strive to positively influence customers, various contractors in supply chains, and local communities to promote shared growth.

Employees

Talent Profile at Kumho Petrochemical Group



Talent Acquisition at Kumho Petrochemical Group

Human Rights Protection and Diversity

- Kumho Petrochemical prioritizes the protection of applicants' human rights throughout the recruitment process, selecting talent with consideration for diversity among employees.
- Equal employment opportunities are provided regardless of gender, religion, or age, through blind hiring focused on applicants' potential and job skills.
- Extra points are given to socially vulnerable groups and veterans, with separate recruitment procedures for these candidates.
- Unsuccessful applicants receive a letter of encouragement to support their continuous efforts.
- Recruitment interviewers are trained on human rights protection and diversity.
- To protect personal information, a Recruitment Document Return System is implemented, allowing applicants the option to request the return of their application documents as a means of safeguarding their personal data.

Talent Acquisition Strategy

- Kumho Petrochemical conducts a survey at least once per year to determine departmental staffing needs, which informs the recruitment process.
- Research and development professionals, including industry-academia scholarship recipients, are proactively hired to achieve the company's vision and strategic goals.
- Scholarship recipients are provided funds for tuition and living expenses and a wealth of capability-building opportunities (e.g. participation in an overseas training program or conference, 1:1 mentoring). In 2023, scholarship recipients conducting relevant research were hired and immediately assigned to on-site tasks.
- To diversify recruitment channels, a continuous talent pool registration system was introduced in 2023. Additionally, a recruitment information session was held for ROKAF interpretation officers, leading to successful hires in 2023.

Outstanding Local Talent Hiring Company

- Kumho Petrochemical was recognized as an outstanding company by Jeollanam-do Office's Regional Talent Employment Target Management System. This recognition came as a result of hiring 28 graduates from high schools and universities located in Jeollanam-do, thereby contributing signifcantly to local employment creation.

Performance Evaluation and Compensation

- Kumho Petrochemical's performance evaluation system comprises both achievement and competency assessments. The results of these evaluations are used to determine promotions and salary increases.
- Achievement evaluations are conducted twice a year, including a mid-term review, and involve continuous meetings between team leaders and members. In addition, an upward evaluation system is in place, allowing team members to evaluate their leaders, with scores kept confidential to ensure objectivity.
- Evaluation and compensation systems are continuously improved through satisfaction surveys and feedback on career development from employees.
- In 2023, significant changes were made to the criteria for peer and upward evaluations, and these results are now considered when team leaders evaluate their members and executives evaluate team leaders.
- The competency evaluation process has also been enhanced to allow employees to draft their assessments based on the STAR (situation & task, action, results) method.

Performance Evaluation Process

Goal setting

- Evaluatee (team member): Establish objectives and criteria for achievement and competency evaluations (MBO)
- Evaluator (team leader): Approves the objectives and criteria set by the evaluatee

Midpoint review

- Evaluatee (team member): Completes a midpoint review for the achievement evaluation
- Evaluator (team leader): Provides feedback on the mid-term review

Self-evaluation / peer evaluation

- Self-evaluation: Conducts self-evaluations for the performance of the year
- Peer evaluation: Conducts peer evaluations anonymously for general office staff by all team members, ensuring the confidentiality of evaluation results

Supervisor evaluation

- Supervisor evaluation: Determines performance ratings through evaluations by supervisors including team leaders, department heads, and division heads

Notification of results / feedback

- Notifies individuals of their performance evaluation results
- Conducts satisfaction surveys regarding the performance evaluation
- Submits an appeal if there are objections to the evaluation results

Evaluation completion

Evaluation Criteria

- Performance Evaluation: Evaluations are based on the key performance indicators (KPIs) established annually.
- Competency Evaluation: Evaluations are based on the company's core competencies and job-specific professional skills.

Work-Life Balance

Kumho-CARE

- Kumho Petrochemical has significantly expanded employee welfare benefits by introducing the Kumho-CARE program, which will be fully implemented from 2024, to actively support employees in the stages of pregnancy, childbirth, and child-rearing and to fulfill its corporate social responsibility amidst the national low birth rate situation.
- New welfare benefits introduced through Kumho-CARE include increased childbirth congratulatory bonuses, paternity leave, elementary school admission care leave, adoption leave, prenatal check-up leave, and infertility treatment support.

Kumho-CARE

Pregnancy	Pregnancy celebration package	• Congratulatory gifts such as maternity items	
	Fetal examination time guarantee	• Time off guarantees for prenatal check-ups according to the pregnancy stage	
		• Paid half-day leave for prenatal check-ups	New
	Reduced working hours during pregnancy	• An additional 4 weeks beyond the legally mandated period	Enhanced
	Infertility treatment support	• Unlimited support up to 3 million KRW per session	New
	Infertility leave	• An additional 6 days beyond the legally mandated period	Enhanced
Childbirth	Childbirth congratulatory bonus	• First child: KRW 5 million • Second child: KRW 10 million • Third child: KRW 20 million • Fourth child and beyond: KRW 30 million	Enhanced
	Postnatal care expense	• KRW 1 million per child	Enhanced
	Paternity leave	• An additional 5 days beyond the legally mandated period	Enhanced
Childcare	Parental leave	• 1 year (80% of regular wage paid for the year)	
	Reduced working hours during childcare	• Combined with parental leave up to 1 year	
	Family care leave	• For illness, accident, aging, and childcare	
		• Elementary school admission care leave	New
	School admission bonus	• Congratulatory bonuses for kindergarten, elementary school, middle school, and high school admissions	
Adoption	Adoption leave	• 5 days (paid)	New
	Adoption congratulatory bonus	• KRW 3 million per child	New
Disability	Rehabilitation allowance	• KRW 500,000 per month per recipient	Enhanced
	Assistive device purchase support	• KRW 4 million per recipient (every 3 years if needed)	Enhanced

Flexible Work System

- Kumho Petrochemical operates a flexible work system to enhance work efficiency and employee satisfaction, maintaining a standard 40-hour workweek. This includes flexible hours, remote work, and staggered start and end times.
- To support work-life balance and reduce unnecessary overtime, the company implements a “PC-OFF” system that automatically shuts down employees’ computers 15 minutes after the official end of the workday.

Mental Health Improvement Program

- In 2023, Kumho Petrochemical introduced the employee assistance program (EAP) to help employees manage workplace stress and enhance psychological well-being. The program, which includes services such as psychological counseling, assessments, and coaching, benefited 25 employees in its inaugural year.

Employee Assistance Program (EAP)

Physical Health and Welfare System

- Kumho Petrochemical provides annual health checkups for all employees and supports medical and dental expenses within an annual limit.
- The Central R&BD Center is equipped with a fitness room to promote employee health and fitness.
- Various in-house sports clubs, including baseball, tennis, and marathon running, are actively supported to encourage physical fitness and personal development for employees.

Maternity and Lactation Lounge

- Kumho Petrochemical operates break room for pregnant women to rest and breastfeeding.
- A lounge equipped with beds, recliners, a refrigerator for storing breast milk, and air purifier is available for use by pregnant workers at any time of day.

Housing Support

- To support employees' housing stability, interest-free loans are provided for housing purchase, jeonse (a key money deposit lease system in South Korea), and monthly rent deposits (KRW 40 million per loan, up to twice per employee) for employees without a home.
- New hires, including experienced hires, and employees transferred to new work locations are provided with dormitories at the plants and Central R&BD Center.

Retiree Support

- A re-employment support program is offered to help retirees plan and prepare for their second career, with special focus on those over 50 years old, providing career counseling, planning, job training, and employment assistance.
- In 2022, various support measures were implemented to ensure the livelihood stability of retirees, such as providing educational support for children of those who opted for voluntary retirement for a certain period after retirement.

Labor Relations and Organizational Culture

Labor Relations

- Kumho Petrochemical currently operates under a structure of one company with three labor unions (Ulsan Rubber Plant, Ulsan Resins Plant, and Yeosu Energy Plant).
- Each business site holds regular labor-management council meetings to promote ongoing communication between labor and management. During collective bargaining, a unified negotiation channel is used to reach agreements and conclude collective agreements.
- As of 2023, Kumho Petrochemical has achieved 36 consecutive years without labor disputes, establishing a healthy labor-management culture through cooperative relations free of conflicts.

Employee Communication Programs

- Kumho Petrochemical runs employee communication programs to foster a horizontal and inclusive organizational culture, considering generational diversity.

Program		Details
Reverse mentoring		• Provides mentoring to senior executives (mentees) by Millennials and Generation Z employees (mentors) • Focuses on post-work life and digital skills learning
Employee meetings	2022 (junior staff)	• Collects grievances and suggestions • Gathers feedback and improves systems related to job rotation, approval processes, performance bonuses, and leave
	2023 (assistant managers)	• Collects grievances and suggestions • Gathers feedback and improves systems related to performance evaluation, welfare, attendance, and organizational culture activities
Exciting lunches		• Introduces lunch programs for all headquarters employees • Facilitates communication among employees from different departments and ranks
Gratitude expressed		• Creates opportunities for colleagues and senior-junior employees to send digital gift vouchers and messages of appreciation to each other

Employee Engagement Survey

- The Employee Engagement Survey is conducted to analyze the organization's strengths and weaknesses and to seek ways to improve organizational culture, evaluating seven areas, including communication, assessment, compensation, and leadership.
- Based on the Importance-Satisfaction Analysis, the focus is placed on improving the areas of evaluation and compensation.
- In 2023, the Employee Engagement Survey score was 3.17 out of 5 points.

Capacity Building

Employee Training System

- Kumho Petrochemical provides various learning opportunities to help employees grow as Solution Mates, our vision-aligned talent profile.
- The company makes continuous efforts to develop employee competencies by offering training programs tailored to different job levels and functions.

New Hire Training

- New hires undergo a three-week induction training to learn basic skills, foster bonds, and gain on-site experience.
- After completing the induction training, they are assigned to teams for a 12 week-long on-the-job training (OJT) before being fully integrated into their roles.

Job Level Training

- To retain top talent and address employee concerns, specific training programs are provided for employees with 2-3 years of experience.
- The KPGC (Kumho Petrochemical Group Competence) program is conducted to enhance competencies for assistant managers in their third year and managers and senior managers in their fourth year.
- In addition, various level-specific training programs are conducted, including courses for new position holders and leadership training for team leaders and higher positions.

Women's Leadership Program

- The Women's Leadership program is designed to foster female leaders, expand the pool of female talent, support individual growth, and promote diversity and inclusion within the organization.
- In 2023, 66 participants joined the Women's Leadership program, and the program is set to expand to 86 participants in 2024.
- The Women's Leadership program is expected to enhance organizational effectiveness and positively impact goal achievement by contributing to the development of female talent and leaders.

Self-Development Program

- To strengthen individual competencies, Kumho Petrochemical offers self-development training programs based on the results of personal competency assessments.
- In 2023, 754 employees participated in competency assessments and self-development training. By providing these self-development opportunities, the company enhances employees' job skills, thereby improving the overall competitiveness of the organization and contributing to the company's competitive edge.

Professional Certification Program

- Kumho Petrochemical operates a professional certification program that supports employees in obtaining domestic and international certifications and national technical qualifications, covering various associated costs. In 2023, 2 employees earned job-related professional certifications through this program.
- The company covers tuition fees, textbook costs, and examination fees for job-related certifications. If the certification exam is not available in Korea, airfare for taking the exam abroad is also provided.

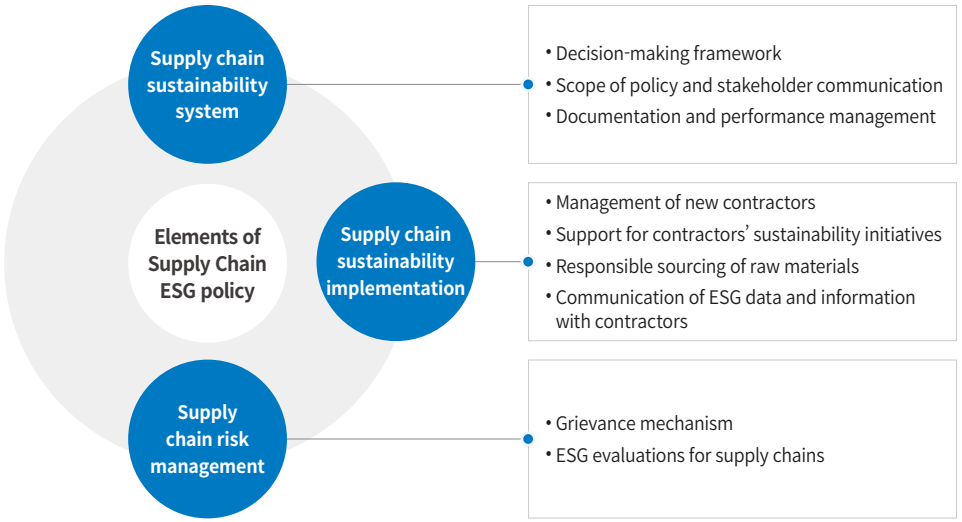
Supply Chains

Supply Chain Management System

Supply Chain ESG Policy

- Kumho Petrochemical has established an "Supply Chain ESG Policy" based on the management philosophy of mutual growth, aiming to lead a transparent and fair trading culture that adheres to international standards and regulations.
- The Supply Chain ESG Policy is regularly updated by continuously monitoring changes in the internal and external environment, as well as market and stakeholder demands.

Supply Chain ESG Policy



Supplier ESG Guidelines

- Kumho Petrochemical has established the "Supplier ESG Guidelines" to specify the principles and standards that contractors engaged in direct or indirect transactions must adhere to, facilitating communication with them.
- All first-tier and new contractors transacting directly with Kumho Petrochemical are required to sign a consent form on the Supplier ESG Guidelines.
- Compliance is monitored through supply chain ESG assessments, and if risks are identified, subsequent actions such as risk mitigation and prevention activities are implemented.

Supplier ESG Guidelines

Purchasing Committee

- To oversee and enhance sustainable practices throughout the supply chain, a dedicated Purchasing Committee has been formed.
- The committee comprises members from Procurement Team, ESG Management Team, and depending on the agenda, other relevant departments such as the R&BD Planning Team.

2023 Discussion Agenda

Supply chain policy development
- Revising supply chain ESG policy and ESG guidelines for contractors

Supply chain ESG assessment and due diligence
- Redefining criteria for evaluation and due diligence
- Planning supply chain ESG assessments and due diligence
- Discussing how to reflect assessment and due diligence results

Conflict and responsible minerals
- Defining conflict and responsible minerals
- Establishing management processes
- Identifying the procurement and usage status of conflict and responsible minerals

Supply Chain ESG Assessment and Management

New Contractor Management

- Kumho Petrochemical monitors sustainability factors, including financial stability and environmental and social compliance, when selecting new contractors.
- In 2023, the company advanced its e-procurement system to streamline the management and assessment of contractors, establishing a robust process for selecting and managing outstanding contractors.
- Decisions on contracts with new contractors are based on safety and health assessment results, prioritizing contracts with companies that demonstrate strong safety and health capabilities.

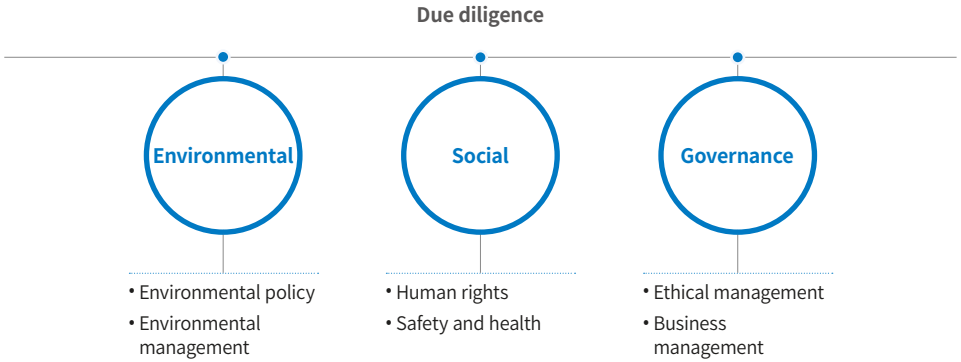
Supply Chain ESG Risk Assessment

- Kumho Petrochemical conducts ESG risk assessments of contractors to identify and manage potential ESG-related risks in the supply chain.
- Assessment criteria are based on guidelines such as the UNGC Human Rights Due Diligence, RBA Code of Conduct, and the Ministry of Trade, Industry and Energy's K-ESG Guidelines.
- ESG risk assessments of contractors involve self-assessments and due diligence. In 2023, due diligence focused on on-site subcontractors most vulnerable to supply chain ESG risks.
- Based on assessment results, feedback and improvement suggestions are provided to contractors needing enhancements to reduce ESG risks.

Supply Chain ESG Assessment Performance

Supply Chain Categorization		Key raw material suppliers	Auxiliary material suppliers	Equipment, materials, construction suppliers
		11	323	719
ESG Assessment	Target	• Primary supplier	• Primary supplier annual purchase ≥ KRW 1 billion	• Annual purchase ≥ KRW 20 million and at least one annual contract
	2023 Assessment Results	10 companies (self-assessment)	74 companies (self-assessment)	26 companies (due diligence)
	Future Plans	• 2024 ESG risk assessment and due diligence (third-party assessment) • ESG self-assessment and evaluation using the e-procurement system • ESG education for contractors		

Assessment Criteria



Conflict and Responsible Minerals

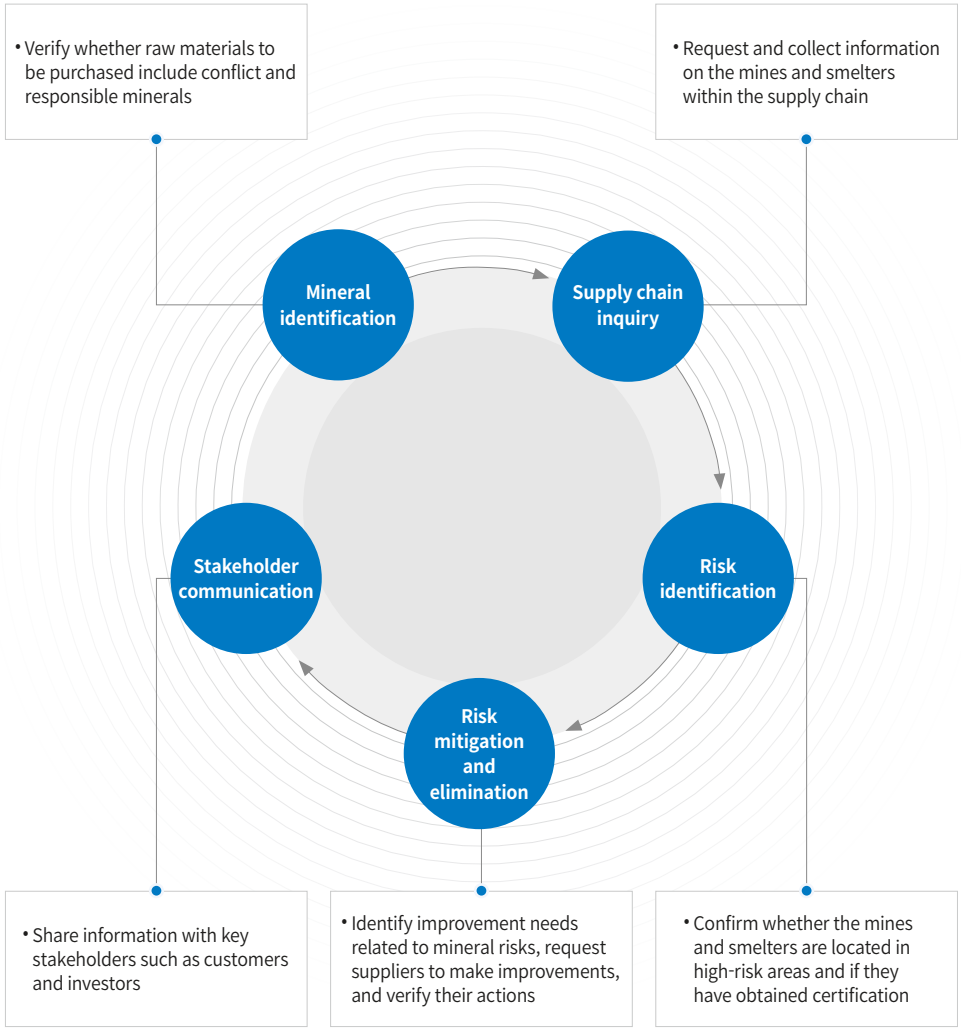
- Kumho Petrochemical strictly prohibits the use of conflict and responsible minerals, which are associated with illegal mining activities, forced labor, child labor, environmental destruction, and violence, as per internal regulations.
- If raw materials being purchased are suspected to be conflict or responsible minerals, suppliers are required to submit documentation such as the RMI (Responsible Minerals Initiative) CMRT (conflict minerals reporting template) or EMRT (extended minerals reporting template) for thorough verification.
- If suppliers use materials from non-certified mines or smelters, they are required to switch to certified sources. If the supplier fails to make the necessary improvements or refuses to provide relevant documentation, Kumho Petrochemical terminates business relations with them.

Conflict and Responsible Minerals

Conflict minerals	Responsible minerals
Definition	
Minerals illegally mined and produced in conflict-affected and high-risk areas (CAHRAs) by local militias	Minerals mined and produced in conflict-affected and high-risk areas involving human rights abuses and environmental destruction
Types of minerals	
• Tantalum • Tin • Tungsten • Gold	• Cobalt • Mica • Lithium

Reference to conflict, human rights violations, and environmental destruction in areas listed by CAHRAs

Conflict and Responsible Minerals Management Process



Shared Growth

- Kumho Petrochemical operates a shared growth program to build trust with contractors and enhance their competitiveness.
- The program includes multifaceted support in finance, technology, management, employment, and education, along with regular communication.

Shared Growth Program

Category	2023 Achievements
Financial support	• Established a KRW 20 billion shared growth fund • Supported KRW14.1 billion in loan interest
Online education	• Provided online self-development courses for contractor staff • Offered ESG and climate change courses to strengthen contractors' ESG capabilities
Opinion listening sessions	• Conducted regular quarterly meetings with an average attendance of 15 companies per session
Shared growth mall	• Supported the market expansion of SMEs' products
Contractor incentives and welfare support	• Provided KRW 16 billion in production incentives and awards for outstanding contractors • Supported KRW 200 million for Christmas gifts, contractor events, and resort benefits during the vacation season
Safety and health consulting	• Participated in the 2023 Safety and Health Cooperation Programs Between Large Enterprises and SMEs, hosted by the Korea Occupational Safety and Health Agency • Provided consultations to a total of 23 companies


Opinion Listening Sessions

Fair Trade

- Kumho Petrochemical adheres to the "Four Key Principles for Fair Trade," based on guidelines issued by the Fair Trade Commission.

Four Key Principles for Fair Trade

Desirable contract formation
- Specifies that contract methods should not restrict autonomous competition
- Clearly outlines contract requirements such as rational pricing, timely payment schedules, and objective quality inspection criteria, while detailing the content to avoid, including unfair treatment and managerial interference

Fair selection of contractors
- Clearly outlines the criteria, procedures, and results for contractor selection to ensure specificity, clarity, and fairness
- Ensures that all contractors are given equal opportunities for trade and prohibits arbitrary exclusion based on subjective interpretation

Referral to Internal Review Committee
- Operates Internal Review Committee centered on the Executive Director of Business Strategy (chair) and the team leader of Contract Department (member)
- Ensures the fairness and legality of subcontract transactions and practices desirable contract formation and fair selection of contractors through internal review committee referrals

Documentation and retention
- Specifies contractual rights and obligations in writing
- Details the timing, methods, and retention of documenting such contract-related matters

Community

Local Community Engagement Policy

- Kumho Petrochemical has established a "Local Community Engagement Policy" to respect the rights of community members and contribute to local development and the creation of social value.
- The policy aims to provide guidelines for discovering, implementing, and managing the performance of community engagement activities, focusing on stakeholders who are directly or indirectly affected by the activities conducted at the company's business sites.

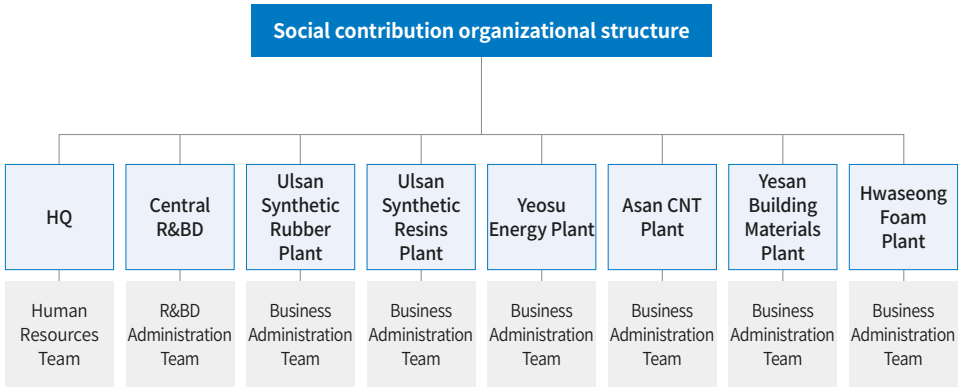
Local Community Engagement Policy

Community Engagement Strategy

- Kumho Petrochemical has implemented a community engagement strategy focused on creating value through "social responsibility and a relationship of trust, coexistence, and growth with communities." Instead of merely providing monetary or material assistance, social contribution programs are integrated with the company's business characteristics.
- Each business site actively engages in community activities tailored to their geographical location and specific characteristics. In addition, to promote employee participation, outstanding contributions to social programs are rewarded.
- The company continually seeks new community engagement activities, such as volunteering for children, teens, single-person senior households, and socially-underprivileged families, as well as biodiversity conservation efforts.

Implementation Organization

- The headquarters' Human Resources Team and Business Administration Team at each business site lead and evaluate various activities, including social contribution efforts, while also planning and implementing new initiatives based on the established community engagement strategy and direction.



Community Engagement Activities

Outdated Windows Replacement in Welfare Facilities

Activity	• Supported the replacement of outdated windows in welfare facilities through Kumho Petrochemical's building materials brand, Hugreen • Provided approximately KRW 91.3 million worth of Hugreen windows to New Life House, a welfare facility for the disabled in Icheon, Gyeonggi Province in 2023
Beneficiary	• Welfare facilities for the disabled
Effectiveness	• Improved heating efficiency in the facilities by using Hugreen windows, which have excellent insulation properties and are certified as low-carbon

Mobility Enhancement for the Disabled

Activity	• Donated specialized wheelchairs equipped with devices for maintaining custom postures based on individual physical characteristics to 447 severely disabled individuals since 2008 • Donated approximately 40 assistive devices to 16 residential facilities for the disabled in the Seoul metropolitan area in 2023 • Donated durable aluminum white canes to 1,395 severely visually impaired individuals nationwide in 2023
Beneficiary	• Severely disabled individuals, Visually impaired individuals
Effectiveness	• Enhanced mobility for the disabled • Reduced economic burden by periodically replacing assistive devices due to users' physical changes or wear and tear

Small Change Donations

Activity	• Raised funds through small change donations and matching grants since 1991 to support marginalized communities • Donated KRW 160 million to local welfare organizations, including the Eastern Social Welfare Society, in 2023 * Matching grant provided by Kumho Petrochemical for sum of employee contributions of the final three digits of their monthly salary
Beneficiary	• Marginalized communities in our society
Effectiveness	• Increased employee participation in donations and fostered a culture of giving within the organization

Blood Donations

Activity	• Expanded annual blood donation activities from 2021 to four sessions in 2023, with 116 employees participating (scheduled to increase to 18 sessions in 2024)
Effectiveness	• Fostered a culture of volunteerism among employees • Contributed to alleviating the blood supply shortage

Community Engagement Activities per Business Sites

Ulsan Synthetic Rubber Plant	• Supported travel for 70 disabled individuals through a program facilitating travel for those with mobility impairments, with employees participating in a 2-night, 3-day volunteer trip to Jeju Island, assisting the travelers
Ulsan Synthetic Resins Plant	• Improved living conditions for low-income households in Seonam-dong by providing wallpapering, floor replacement, and electric mats • Supported local senior residents by delivering gifts during holidays and Parents' Day and conducting summer relief activities
Yeosu Energy Plant	• Has been implementing the "Confidence Up, Happy Smile" project since 2016, providing denture treatments for low-income middle-aged and elderly individuals

Outdated Windows Replacement in Welfare Facilities

Mobility Enhancement for the Disabled


Small Change Donations


Blood Donations


Community Engagement Activities per Business Sites

Human Rights

Human Rights Management Policy

- To manage potential human rights risks in corporate management, Kumho Petrochemical has established a "Human Rights Management Policy," providing guidelines for implementing human rights management activities, managing risks, and addressing human rights violations.
- This policy applies to all stakeholders directly or indirectly involved with Kumho Petrochemical's business activities.

Human Rights Management Policy

Mid-to-Long-Term Human Rights Management Goals

Management Indicator	2023		2025	2027
	Goal	Achievement	Goal	Goal
Expansion of human rights impact assessments	Perform assessments at two business sites	Completed at Headquarters and Ulsan Synthetic Rubber Plant	Expand to other sites beyond those already assessed	

Human Rights Violation Redress Process at Kumho Petrochemical Group

Whistleblowing and Handling Human Rights Violations

- Kumho Petrochemical operates a redress process for addressing issues related to human rights, such as sexual harassment, bullying, and discrimination in the workplace.
- All stakeholders, including employees, customers, and contractors, can report violations through online and offline channels.
- Reports are forwarded to the responsible person (Head of Human Rights Department) for prompt investigation.
- All whistleblowing reports related to human rights violations are investigated and processed within 15 days of being received. Based on the investigation results, disciplinary actions and preventive measures are carried out by the Personnel Committee.

Whistleblowing Channels for Human Rights Violations

Where to Report	Kumho Petrochemical Group whistleblower office	
Channels	Website	Kumho Petrochemical Group online whistleblower office https://justice.kkpcgroup.com / available 24/7
	Telephone	+82) 2 6961 1018
	Fax	+82) 2 6961 1017 / available 24/7
	Email	hotline@kkpc.com / available 24/7
	Postal mail	Kumho Petrochemical Management & Auditing Team, East Building (12F), Signature Tower, 100 Cheonggyecheon-ro, Jung-gu, Seoul, 04542, Korea

Whistleblower Protection Principles

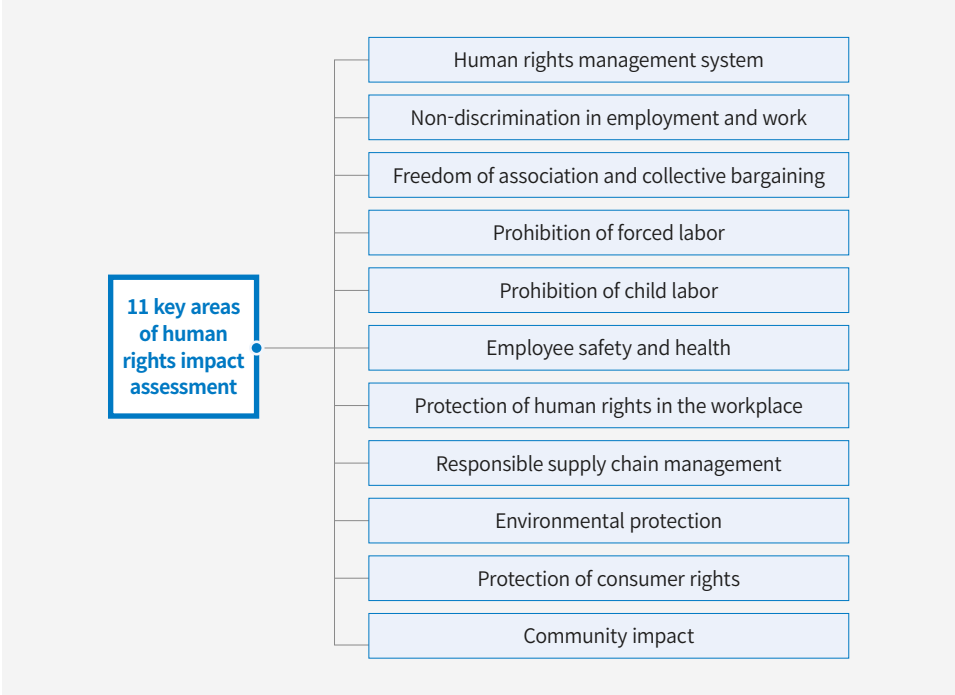
- Confidentiality and protection are maintained to prevent any disadvantages or secondary harm to whistleblowers, with their identities kept anonymous and thorough measures taken to safeguard their personal information.
- If whistleblowers request departmental transfers or changes in their positions to avoid inconvenience or disadvantages resulting from their report, such requests are accommodated as much as possible to avoid retaliation.
- The Whistleblower Protection principles can be found in the Reporting Policy.

Reporting Policy

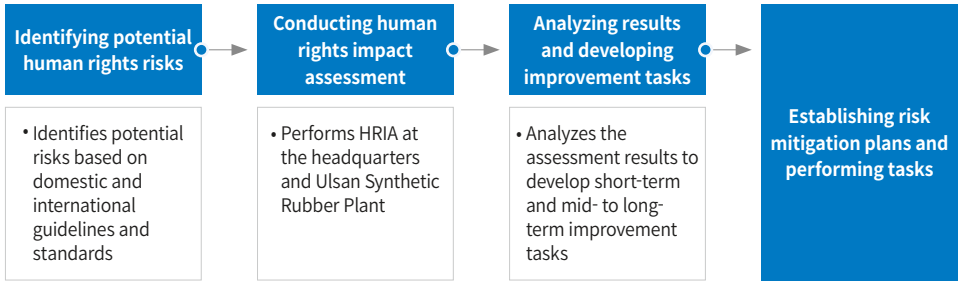
Human Rights Risk Assessment

Human Rights Impact Assessment

- Kumho Petrochemical conducts human rights impact assessments (HRIA) to sophisticate human rights management and identify key human rights risks proactively.
- Before conducting the HRIA, potential human rights risks are identified based on guidelines from the National Human Rights Commission of the Republic of Korea's Human Rights Management Manual, the Ministry of Justice's Business and Human Rights Guidelines, and major global initiatives in the chemical industry such as Responsible Care (RC) and Together for Sustainability (TfS), forming the basis of the HRIA.
- In 2023, the scope of HRIA was expanded to include the headquarters and the Ulsan Synthetic Rubber Plant.



Human Rights Impact Assessment Process



Human Rights Impact Assessment Results

- The results of the human rights impact assessment (HRIA) are thoroughly reviewed, and the identified improvement tasks are monitored for implementation.

Year	Assessment Target	Improvement Tasks	Implementation Status and Plans
2022	Headquarters	• Conduct human rights education beyond legal requirements • Regularize HRIA • Expand the scope of mid- to long-term human rights management obligations	• Review for implementation by 2024
2023	Headquarters	• Develop a human rights management training program	• Implement by 2024
	Business Sites	• Improve employee rest areas and convenience facilities • Continuously review the effects of renewable energy adoption • Install additional defibrillators • Review the adequacy of ventilation and dust collection facilities	• Implement by 2024

Customer Management

Product Quality Management System

- Kumho Petrochemical ensures product quality through ISO 9001 (quality management systems) and IATF 16949 (global quality management system standard for the automotive industry).
- The company employs an independently developed quality checklist based on ISO 9001 to inspect and improve product quality.
- Monthly monitoring of indicators such as defect rate, on-time delivery rate, extra shipping fee rate, and changes to or inability to meet clients' manufacturing demands helps manage customer-specific performance. These indicators are also used as a measure of customer satisfaction, reflecting the credibility in transactional relationships.

Product Quality Management Certifications

Certification	Certified Business Site
ISO 9001	HQ, Central R&BD Center, Ulsan Synthetic Rubber Plant, Ulsan Synthetic Resins Plant, Yeosu Synthetic Rubber Plants 1 & 2, Yeosu Specialty Chemicals Plant, Yeosu Energy Plant
IATF 16949	Ulsan Synthetic Rubber Plant, Ulsan Synthetic Resins Plant, Yeosu Synthetic Rubber Plants 1 & 2, Yeosu Specialty Chemicals Plant

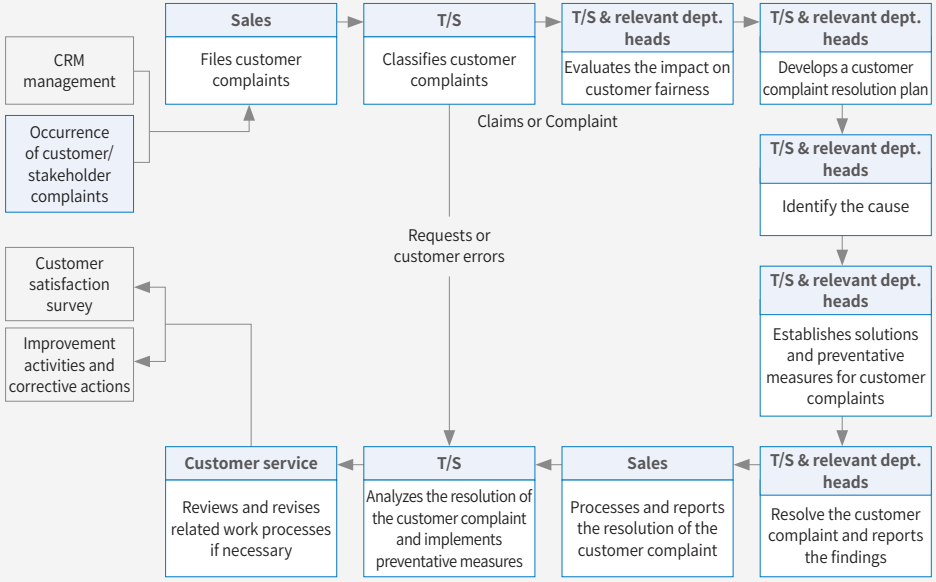
CRM System Sophistication

- To strengthen sales competitiveness, Kumho Petrochemical standardized CRM (customer relationship management) processes and initiated a project to establish a CRM platform.
- This systematization of sales activities, including customer acquisition and information management, has improved operational efficiency and increased customer satisfaction.
- The company will be utilizing the CRM system to standardize dispersed customer information, establish customer information governance, and progressively enhance such processes.

Customer Feedback Process

- To address customer feedback on products and services and prevent recurrence of issues caused by the same factors, Kumho Petrochemical has established a process for filing and resolving customer complaints.

Customer Complaint Reception and Resolution Process



- Claim: When a product user expresses dissatisfaction during use, requiring product replacement or compensation for losses.
- Complaint: When a product user officially notifies issues related to the product that are at the level of caution or warning.
- Request: When a product user or prospective user inquires about or requests changes in product specifications, transportation, or packaging methods as needed.
- Customer Error: When issues arise due to improper transportation, storage, or use of the product by the user.

Customer Communication Channels

- Kumho Petrochemical operates various channels to gather and address customer feedback as a means of improving its products and services.
- Customer feedback is collected through hosting technology exchange fairs, exhibitions, dealership meetings, participation in expos, and operating a dedicated website. This feedback is reviewed by relevant departments to address complaints, provide responses, and implement product improvements.
- To further enhance customer interaction, the company plans to update its product catalog and website.

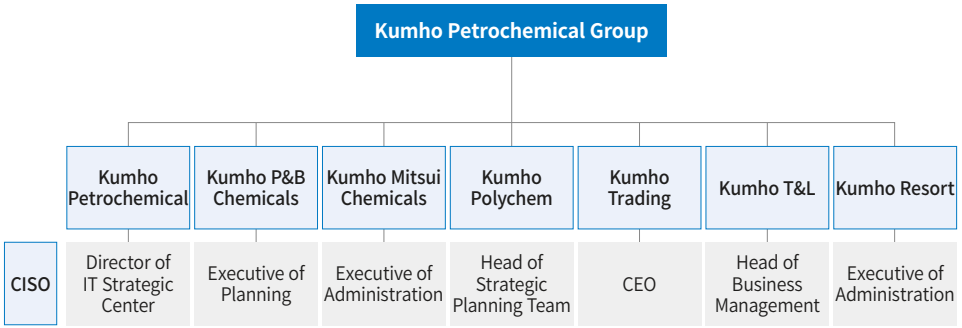
Customer Requirements Monitoring

- Customer requirements, especially those related to ESG management, are monitored in real-time, with quarterly analysis results shared with relevant departments.
- Actions are taken on various requirements, including developing bio-based products, obtaining ISCC Plus certification, providing carbon footprint information on products, and sharing ESG assessment scores and grades.
- When immediate responses are not feasible, detailed implementation plans and tasks are developed to ensure these requirements are met effectively.

Information Security and Personal Data Protection

Information Security System at Kumho Petrochemical Group

- To prevent the occurrence of information security risks, Kumho Petrochemical Group has established and operates an information security system.
- Through the implementation of systematic security protocols and technical control measures, the Kumho Petrochemical Group manages and protects its data and systems.

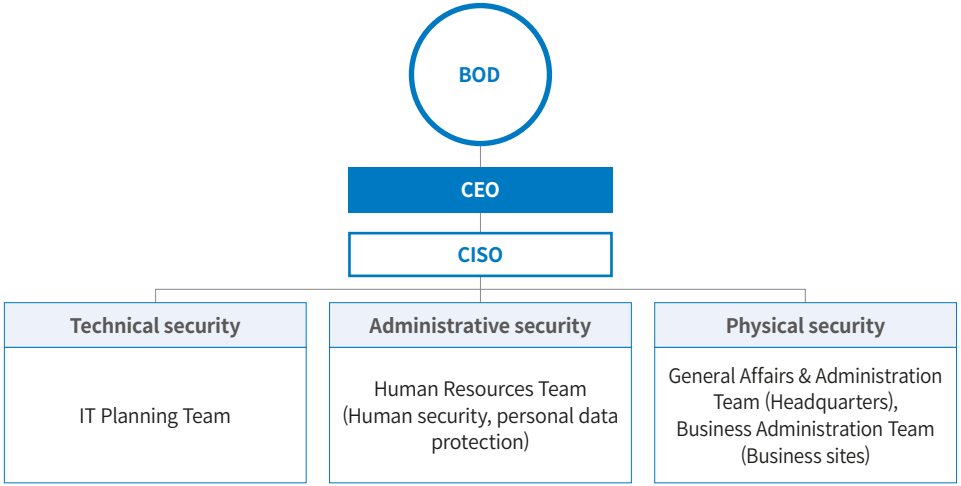


Group-wide Information Security Council

- Within the Kumho Petrochemical Group, each subsidiary has designated security officers who participate in the Information Security Council.
- This council shares quarterly updates on internal and external security issues and the security system operations of each subsidiary.

Information Security and Personal Data Protection System at Kumho Petrochemical

- Kumho Petrochemical has appointed a Chief Information Security Officer (CISO) to ensure robust protection of corporate information, personal data, and information related to product and technology development.
- Information security and personal data protection are managed across three key areas: administrative security, physical security, and technical security. Each area is overseen by specialized organizations in accordance with established regulations.
- In the event of information security or personal data protection issues, the dedicated department reports the matter to the CEO and BOD. Furthermore, the current status is shared among the dedicated organizations to ensure a swift and coordinated response.



Privacy Policy

- To prevent the improper use of personal data, Kumho Petrochemical has established and published a "Privacy Policy" on its website, reflecting relevant laws, such as the Personal Information Protection Act and the Act on Promotion of Information and Communications Network Utilization and Information Protection.
- Based on this policy, the procedures for collecting, using, providing, entrusting, and destroying personal information are managed.

Privacy Policy

Information Security Regulations

- To define the guidelines and procedures necessary for security management and to protect the company's trade secrets and research and development results, Kumho Petrochemical has established security management regulations.
- These regulations are made accessible to all employees via the company intranet.

Cybersecurity Breach Response

- In case of an illegal and unauthorized cybersecurity breach or suspected case from internal or external sources, response measures are taken according to the "Cyber Attack Response Manual."
- Employees who discover traces of a breach must immediately report to the security officer (IT Planning Team member) and the security manager (IT Planning Team leader).
- If an actual breach occurs, the incident is classified into five stages: Normal, Caution, Attention, Alert, and Severe, and the security monitoring center is activated according to the stage-specific work and reporting system.

Reporting System for Suspected Cybersecurity Breaches

Category	Responsibility
Discoverer of breach	• Reports the breach to the security officer or the reporting manager immediately upon discovery • Controls the dissemination of information about security vulnerabilities to designated reporters only
Security officer	• Regularly monitors the system to investigate traces of intrusions • Reports the extent of damage situation to the security manager in the event of a breach
Security manager	• Investigates and assesses the extent of damage and collect evidence in the event of a breach • Restores the system with the security officer • Prepares a report on the breach and any system malfunctions

Information Security Activities

Information Security Education

- Newly hired employees receive information security education aimed at raising awareness of technical security.
- Online information security education is provided to all employees, including contract workers and contractor staff.

Emergency Response Drills

- A specialized third-party institution conducts a simulated drill based on virtual scenarios to prepare for malware infections across all affiliates of Kumho Petrochemical Group once a year.
- In 2023, a drill was conducted that simulated malware infection and propagation through a phishing email on an imaginary event. This exercise improved emergency response capabilities and highlighted the importance of regular blocking and management of malignant emails.

Information Security System Inspections

- Security vulnerabilities were diagnosed in 21 servers containing critical information, including diagrams, personnel data, and groupware at Kumho Petrochemical.
- Service security vulnerabilities were also assessed for the websites of subsidiaries such as Kumho Resort, Asiana CC, and Asan Spavis.

Access Control

- Since 2022, a facial recognition-based access control system has been implemented across all business sites. This system ensures thorough management of entry and exit records for employees and contractor staff.

Personal Information Protection Activities

DLP System Sophistication

- The data loss prevention (DLP) system has been sophisticated to strengthen the control over the leakage of personal information within the company.
- Robust measures have been implemented to restrict the export of internal documents and prevent the printing of documents containing personal information through encryption, ensuring strict control over personal information leakage.
- In 2023, the introduction of a PC screen watermark system further reinforced the personal information protection framework.

Capacity Building on Personal Information Protection

- Newly hired employees are required to sign an information security agreement, which verifies the confidentiality of their previous employment and checks for any hiring restrictions from other companies.
- All employees, including contract workers, are required to undergo regular security education at least once a year. This includes education on security management status, maintenance of trade secrets, external company and personnel information security, external access control, and specialized education for security officers. Additionally, an information security agreement is signed annually.

GOVERNANCE

Transparent and stable governance structures, along with a practical culture of ethical management, are the foundation of corporate operations and bedrock for sustainable growth.
Kumho Petrochemical enhances governance stability by ensuring the independence and expertise of the Board of Directors, as well as by operating committees based on the directors' specialized knowledge. Additionally, through proactive ethical management activities, a corporate culture is fostered that is rooted in integrity and trust, preventing ethical risks in advance and continually building trust with stakeholders.

Board of Directors and Shareholders

Board of Directors

Composition of the Board

- The Board of Directors at Kumho Petrochemical comprises three inside directors and seven independent directors, maintaining a higher ratio of independent directors than legally required.
- To diversify the capabilities and expertise of board members, the Board actively utilizes the Board Skills Matrix. As a result, during the regular shareholders' meeting in March 2024, independent directors Do-sung Choi and Jung-mi Lee, and inside directors Jong-hoon Baek and Young-do Koh were reappointed, while Jung-won Yang was newly appointed as an independent director.

(As of March 28, 2024)

Classification	Name	Profile	Expertise	Initial Appointment & Term of Office	Committees					
					ESG Committee	Audit Committee	Independent Director Nomination Committee	Internal Transactions Committee	Compensation Committee	Management Committee
Independent Director(Chair)	Do-sung Choi	Former) Professor, College of Business, Seoul National University Current) President , Handong Global University	Finance, risk management, corporate governance	Mar. 26, 2021 – Mar. 26, 2027	○	○	●			
Inside Director (CEO)	Jong-hoon Baek	Current) President and CEO, Kumho Petrochemical Co., Ltd	Management, industry, sales	Mar. 26, 2021 – Mar. 26, 2027	○					●
Inside Director	Jun-kyung Park	Former) Executive Vice President, Sales Division, Kumho Petrochemical Co., Ltd. Current) President, Kumho Petrochemical Co., Ltd.	Management, industry, sales	Jul. 21, 2022 – Jul. 21, 2025	○					○
Inside Director	Young-do Koh	Former) Senior Executive Director, Procurement & Accounting Division, Kumho Petrochemical Co., Ltd. Current) Senior Executive Director, Administration & Management Division, Kumho Petrochemical Co., Ltd.	Management, finance risk management	Jun. 15, 2021 – Mar. 22, 2027						○
Independent Director	Sang-soo Park	Former) Chairman, Stewardship Code, National Pension Service Current) Professor Emeritus, College of Business, Kyung Hee University	Finance, risk, management, law/policy	Mar. 25, 2022 – Mar. 25, 2025		●		○		
Independent Director	Jung-mi Lee	Former) Justice, Constitutional Court of Korea Current) Senior Advisor, Logos Law LLC	Risk management, corporate governance, law/policy	Mar. 26, 2021 – Mar. 26, 2027	○		○	●		
Independent Director	Young-woo Park	Former) Regional Director, Asia and the Pacific, UNEP Current) Director, EcoNow (non-profit organization)	Law/policy, environment (climate change)	Mar. 25, 2022 – Mar. 25, 2025	○			○		
Independent Director	Tae-kyun Kwon	Former) Administrator, Public Procurement Service Current) Independent Director, POSCO Holdings Inc.	Finance, trade/procurement, corporate governance	Jul. 21, 2022 – Jul. 21, 2025				○	●	
Independent Director	Ji-yoon Lee	Former) Director, Environmental Health Policy Division, Ministry of Environment Former) Vice President, Korea Chemicals Management Association	Law/policy, environment (climate change), safety/health	Jul. 21, 2022 – Jul. 21, 2025	●				○	
Independent Director	Jung-won Yang	Former) CEO, Samsung Active Asset Management Current) Independent Director, KB Securities	Management, finance, risk management	Mar. 22, 2024 – Mar. 22, 2027		○	○		○	

●: Chair, ○: Member

Independence of the Board

- To enhance the independence of the Board, Kumho Petrochemical appointed Do-Sung Choi, an independent director, as the Board Chair on December 14, 2022, thereby separating the roles of Board Chair and CEO, with his reappointment on March 26, 2024, further solidifying this separation.
- In addition, regulations were formalized to ensure that the Board includes at least three independent directors, constituting at least 60% of the total board members.

Policy on the Composition of the Board of Directors

Diversity and Expertise of the Board

- Kumho Petrochemical prioritizes competence and expertise over gender, age, nationality, or cultural background when appointing independent directors, ensuring a diverse Board of Directors (BOD) using the Board Skills Matrix.
- The current BOD comprises members with expertise in various fields, including management, industry, sales, finance, trade and procurement, risk management, governance, law and policy, environment (climate change), and safety and health.
- Notably, the Audit Committee is reinforced with three financial experts, exceeding legal requirements for financial expertise.

Board Committee Independent Director Ratio

(As of March 28, 2024)

Committee	Ratio of Independent Directors
ESG Committee	67%
Audit Committee	100%
Independent Director Nomination Committee	100%
Internal Transactions Committee	100%
Compensation Committee	100%

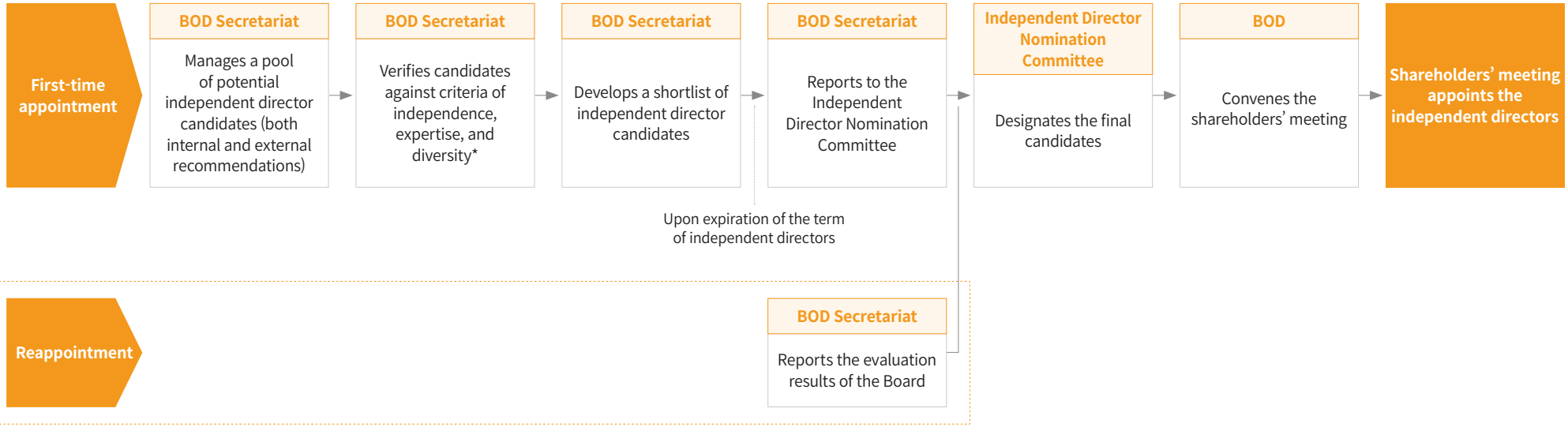
Board Skills Matrix

(As of March 28, 2024)

Classification	Board Members	Skills & Expertise									
		Management	Industry	Sales	Finance	Trade/ Procurement	Risk Management	Corporate Governance	Law/ Policy	Environment (Climate Change)	Safety/ Health
Inside director	Jong-hoon Baek	●	●	●							
	Jun-kyung Park	●	●	●							
	Young-do Koh	●			●		●				
Independent director	Do Soung Choi				●		●	●			
	Sang-soo Park				●		●		●		
	Jung-mi Lee						●	●	●		
	Young-woo Park								●	●	
	Tae-kyun Kwon				●	●		●			
	Ji-yoon Lee								●	●	●
	Jung-won Yang	●			●		●				

Independent Director Appointment Procedure

- In 2023, the Independent Director Nomination Committee newly established Guidelines for Recommending Independent Director Candidates. These guidelines set principles and procedures for ensuring independence, expertise, and diversity when recommending candidates to the shareholders' meeting. Additionally, an external pool of potential candidates vetted by professional institutions was secured, complementing the existing candidate pool.
- In line with these guidelines, the Board Secretariat develops a shortlist of independent director candidates and submits it to the Independent Director Nomination Committee, which then designates the final candidates. For reappointments, the Committee makes its designation based on the Board's evaluation results.
- The appointment of independent directors is decided by a resolution at the shareholders' meeting.



* In accordance with the criteria set in the Independent Director Nomination Guidelines

Roles and Responsibilities of Directors

Evaluation of Directors

- In 2023, Kumho Petrochemical introduced a board evaluation system and established the Director Evaluation Guidelines to enhance the operational efficiency of the Board, with evaluations of directors set to commence in 2024.
- The Board Secretariat conducts evaluations annually, and the results are actively utilized in determining the compensation and reappointment of directors.
- Evaluations include self-evaluations, peer evaluations by other directors, and evaluations by Board Secretariat staff, covering eight areas: diligence, fairness, business awareness, ethical awareness, shareholder orientation, external relationship skills, information management, ownership, and leadership.
- To emphasize responsibility, each director is required to attend at least 75% of BOD meetings.

Restriction on Concurrent Positions

- Independent directors are allowed to hold a directorship position at only one other company besides Kumho Petrochemical.
- Each of Kumho Petrochemical's independent directors currently do not hold directorship positions at more than two companies.

Expertise and Capacity Building

- To enhance the expertise of independent directors, Kumho Petrochemical conducts regular annual education.
- Since 2022, the company has implemented field management by the board to reinforce board-led management. In 2023, board members visited various business sites in Ulsan and the Central Research Institute in the first and second halves of the year to receive education on business status and research projects.
- In addition, educational programs provided by external professional organizations such as accounting firms are utilized to provide necessary education for audit committee members in carrying out their duties.

Board Operations

- Regular board meetings are held quarterly, with ad hoc meetings convened as necessary.
- In 2023, a total of eight board meetings were held to review and approve matters related to the general shareholders' meeting, management, finance, and board directors.
- Prior to each board meeting, directors are provided with sufficient information and resources necessary for their duties and decision-making. To enhance the operational efficiency of the board, the Director Evaluation Guidelines were established in 2023, with the first evaluation set to commence in 2024.

Committees under the Board

- In accordance with the current Articles of Association and board regulations, six committees operate under the board.
- Each committee comprises members with relevant expertise and deliberates on matters within the scope of authority defined by the committee regulations. Decisions made by these committees are reported to the board.

Committee	Roles and Responsibilities
ESG Committee	• Establishes and reviews and ESG strategies and policies • Reviews strategies and policies for sustainable management and the creation of social value • Approves other ESG-related matters delegated by the board
Audit Committee	• Supervises the work of directors and management • Approves the selection of external auditors • Reviews matters related to auditing as defined in the Articles of Association or internal regulations
Independent Director Nomination Committee	• Establishes, reviews, and supplements principles for the appointment of directors • Recommends director candidates to be appointed at the General Shareholders' Meeting • Manages the pool of director candidates and verifies their credentials
Internal Transactions Committee	• Reviews and approves internal transactions to enhance fairness and transparency • Reviews and approves internal transactions in accordance with the Commercial Act, the Monopoly Regulation and Fair Trade Act, and other relevant laws
Compensation Committee	• Reviews and approves the limit on directors' remuneration and the compensation system for registered directors
Management Committee	• Establishes management strategies and policies • Reviews and approves matters related to management status

Shareholder Rights Enhancement

Communication with Shareholders

- The date, time, location, and agenda of the General Shareholders' Meeting are disclosed on the electronic disclosure system and the company website at least two weeks before the meeting, ensuring shareholders can exercise their voting rights, with proxy voting actively encouraged.
- To cater to foreign shareholders, performance reports, key financial indicators, and sustainability reports are provided in English.
- Starting in 2024 (with the disclosure of the 2023 business report), XBRL (eXtensible Business Reporting Language) will be introduced to enhance user convenience by allowing financial statements to be viewed in English.

Mid-to-Long-Term Dividend Policy

- Based on the "one share, one vote" principle, Kumho Petrochemical is actively pursuing shareholder return policies, such as cash dividends, share buybacks, and cancellations, to enhance shareholder value.
- According to the mid-to-long-term dividend policy established in 2021, the company has returned over 40% of its standalone net profit to shareholders over the past three years. In 2023, a total of KRW 176.5 billion was returned to shareholders, including cash dividends and share cancellations.
- The new mid-to-long-term shareholder return policy will be announced by December 2024.

Mid-to-Long-Term Dividend Plan and Performance (2021–2023)

Plan for 2021	Petrochemical established a plan to use 25–35% of its standalone net profit for shareholder returns over the next three years.
Performance from 2021 to 2023	Over the three years, the company has returned more than 40% of its standalone net profit to shareholders each year through cash dividends, share buybacks, and cancellations.
Performance in 2023	In 2023, the total amount returned to shareholders was KRW 176.5 billion.

Share Buyback and Cancellation

- In 2024, Kumho Petrochemical established a plan to cancel 50% of its existing treasury shares (2,624,417 common shares) over the next three years. Accordingly, 875,000 shares were canceled in March 2024.

Ethical Management

Vision and Strategy of Ethical Management at Kumho Petrochemical Group

- Kumho Petrochemical Group has established a strategic direction and ethical foundation for management activities that align with its group-wide vision of ethical management.

Vision

To be a company that is trusted by and responsible to stakeholders through compliance with laws and principles, and by conducting fair business activities, promoting continuous growth and development.

Strategy

Building and strengthening the infrastructure of ethical management grounded in the firm commitment of top management.

Ethical Management Infrastructure

Ethical standards	Communication channel (Online Friends)	Operational systems	Education
• Ethics towards customers and business partners • Ethics towards shareholders • Ethics towards employees • Ethics towards the state and society	• Operation of a reporting channel (Online Friends) • Operation of an ethics consultation center	• Commitment to compliance with ethical management • Ethical management campaigns • Operation of the reporting center for acceptance of money, entertainment, and gifts	• Distribution of the Kumho People Manners Handbook • Educational programs tailored for employees at different levels • E-learning courses on preventing workplace sexual harassment, harassment, and improving awareness of disability

Ethical Management System

Ethical Management Policy and Guidelines

- Kumho Petrochemical has established an “Ethical Management Policy” to foster a corporate culture based on integrity and trust and to provide a standard for proper value judgment.
- The Ethical Management Policy encompasses guidelines for all stakeholders of Kumho Petrochemical, including customers, shareholders, business partners, employees, local communities, and the government, and detailed guidelines that all employees shall adhere to are provided, covering areas such as bribery prevention, anti-money laundering, and whistleblower protection.
- The establishment and revision of the Ethical Management Policy and guidelines are reviewed and approved by the ESG Committee.
- All employees are required to sign a compliance pledge with the ethical management policy once per year.

Ethical Management Policy and Guidelines

Ethical Management Organization and Reporting System

- Kumho Petrochemical promotes group-wide activities through the organic collaboration of responsible departments to enhance ethical management awareness among all employees and foster a culture of ethical practice.
- The annual audit plans, internal audit results, and reports of ethical violations are presented to the Audit Committee. Compliance-related activities are reported to the Board of Directors, which oversees and supervises ethical and compliant management practices.

Ethical Management Activities

Internal Audit

- Kumho Petrochemical Group conducts internal audits across all its affiliates, including Kumho Petrochemical's headquarters and domestic and international business sites, to prevent internal fraud and unethical behavior.
- In cases where significant violations of company regulations are identified during these audits, thorough investigations are conducted to eliminate corruption.
- The results of these internal audits are communicated to the audited departments, and their implementation of subsequent corrective actions is verified.

Internal Audit Activities

Category	Activity
Regular audit (every 3 years per business site)	• Establishes annual audit plans considering changes in the business environment and the risks of each subsidiary and business unit, with final audit targets confirmed through Audit Committee reports • Verifies the compliance of work processes with laws and regulations
Ad-hoc audits	• Conducts audits in response to specific issues or significant reports filed
Year-round monitoring	• Performs regular checks on transactions in purchasing, accounting, finance, and sales, as well as the proper use of corporate cards by employees • Monitors for signs of fraudulent risks to prevent incidents

Ethical Management Education

- To enhance the ethical awareness of employees, Kumho Petrochemical provides ethical management education to all workers at its business sites, including regular employees, contract workers, and employees of on-site subcontractors.
- The educational programs cover topics such as sexual harassment, workplace bullying, and disability awareness improvement, as well as ethics programs for newly hired employees.
- Additionally, the company distributes the Kumho People Manners Handbook to foster a culture of ethical management and cooperation among employees.

Ethical Transactions

Integrity Campaign for Festive Seasons

- To prevent unethical transactions with stakeholders, such as bribery and solicitations, Kumho Petrochemical operates a Clean Practices Campaign every Chuseok and Lunar New Year. The CEO sends a letter to all contractors to stress the importance of ethical management.
- When employees receive Chuseok and Lunar New Year gifts under unavoidable circumstances, they must report the gifts to the gift reporting center at business sites before returning them. If a gift cannot be returned due to size or physical constraints, Management & Auditing Team handles (if necessary, disposes of) them it sees fit.

Ethical Management Campaign for Overseas Contractors

- Since 2023, Kumho Petrochemical has expanded its ethical management campaign, which previously targeted only contractors in Korea, to include overseas contractors, under the title "Ethical Management Campaign for Overseas Contractors."
- To implement this, letters from the CEO regarding ethical management are sent to foreign suppliers. These letters highlight the prevention of bribery, gifts, solicitations, and illegal and unfair practices.
- Furthermore, the campaign promotes the online whistleblower office to ensure that contractors have a channel to report any violations.

Whistleblowing Channels

- Various whistleblowing channels are operated to enable all internal and external stakeholders, directly or indirectly related to the company, to report issues related to ethical management.
- Upon receiving a whistleblowing report, Management & Auditing Team conducts investigations focusing on violations of ethical management, company regulations, and relevant laws.
- The contents and results of the reports filed through these channels are reported to the Audit Committee annually.
- In 2023, the "Reporting Policy" was established, including guidelines for the entire whistleblowing process. Furthermore, the Online Whistleblower Office (officially named "Online Friends") was revamped to include an introduction page to ethical management and an ethics counseling function for employees, with an additional English page developed to facilitate whistleblowing in English.

Reporting Policy

Whistleblowing Channels for Ethical Violations

Where to report	Kumho Petrochemical Group whistleblower office		
Violations eligible for whistleblowing	• Acceptance of gifts or entertainment • Embezzlement of company funds • Theft • Pursuit of personal interests	• Granting preferential treatment to specific business partners • Equity investments using undisclosed information • Equity investments for personal gain through favoritism • Leakage of confidential company information	• Poaching of key company personnel • Lax work discipline • Accounting fraud such as window dressing • Unfair trade practices and other discrimination • Sexual violence and gender discrimination
Channels	Website	Kumho Petrochemical Group online whistleblower office https://justice.kkpcgroup.com / Available 24/7	
	Telephone	+82) 2 6961 1018	
	Fax	+82) 2 6961 1017 / Available 24/7	
	Email	hotline@kkpc.com / Available 24/7	
	Postal mail	Kumho Petrochemical Management & Auditing Team, East Building (12F), Signature Tower, 100 Cheonggyecheon-ro, Jung-gu, Seoul, 04542, Korea	

Reporting and Investigation Procedure

(Based on Kumho Petrochemical Group standards)

Compliance

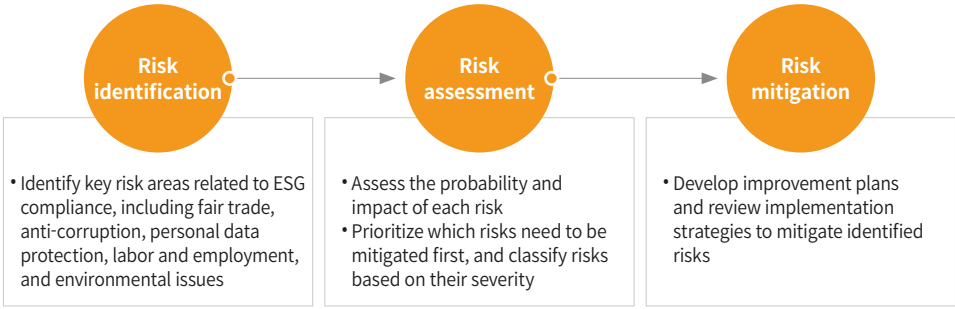
Compliance Management System

- Kumho Petrochemical Group has established a compliance management system to ensure fair trade practices through adherence to laws and regulations.
- Legal Affairs Team, which is responsible for compliance, provides compliance services and legal advice to the Group's subsidiaries.

ESG Compliance Inspections

- Kumho Petrochemical Group has established an ESG compliance inspection process to identify and prevent potential risks arising from non-financial factors.
- Through these inspections, risks related to violations of relevant laws and regulations within business processes are identified and mitigated.

ESG Compliance Risk Assessment Process



2023 Risk Mitigation Activities

Risk Area	Relevant Law	Activity
Fair Trade	Act on Fair Transactions in Subcontracting Act on the Promotion of Mutually Beneficial Cooperation Between Large Enterprises and Small and Medium Enterprises	• Distributed internal notices in preparation for the implementation of the Subcontract Payment Indexation System and the Delivery Price Indexation System under the Act on Fair Transactions in Subcontracting and the Act on the Promotion of Mutually Beneficial Cooperation Between Large Enterprises and Small and Medium Enterprises • Held legal seminars for Kumho Petrochemical Group employees • Conducted separate on-site explanatory sessions for employees at business sites
HR & Labor Relations	Serious Accidents Punishment Act	• Extended the scope of overall risk and management reviews to include external rental facilities and entrusted management facilities beyond Kumho Petrochemical's own business sites • Conducted legal seminars to analyze first-instance rulings issued since the enforcement of the Serious Accident Punishment Act and highlighted key considerations • Planned reviews in 2024 for Kumho Petrochemical's facilities within other companies' business sites

(Based on Kumho Petrochemical Group standards)

Compliance Education

- To foster an ethical corporate culture, Kumho Petrochemical Group operates regular and ad-hoc compliance education programs for its employees.
- In 2023, regular compliance education was provided for 62 new university-graduate hires and 28 team leaders in their fifth year.
- The compliance education for new hires uses a “Compliance Handbook” as the main textbook, focusing on basic understanding and case studies related to anti-corruption. For team leaders, the education centers on prohibiting unfair collective actions (collusion), offering differentiated programs based on their positions.
- Furthermore, an online legal update bulletin board is utilized to share updates on major laws and amendments across all subsidiaries under the group.

Compliance Handbook

- As part of our compliance education initiatives, Kumho Petrochemical Group has developed a “Compliance Handbook” to guide employees across all group subsidiaries on key compliance issues.
- The handbook covers various topics such as types of unfair trade practices, precautions when interacting with competitors, corruption related to bribery and financial transactions, and the collection, use, transfer, destruction, and protection of personal information.
- Moving forward, additional handbooks focusing on other compliance areas will be created and distributed to ensure continuous compliance education.

Compliance Handbook

Internal Transactions Risk Management

- Kumho Petrochemical Group has established internal transaction procedures to prevent legal risks related to internal transactions and to enhance employees’ awareness of these risks across all subsidiaries.
- A separate checklist for reviewing the appropriateness of internal transactions is provided to each relevant department. Departments then apply this checklist to additionally assess risks based on their specific work and environment.
- Important laws related to internal transactions are posted on the compliance bulletin board for all affiliates. Separate sessions are held with the Board of Directors and IR staff from affiliates to discuss internal transaction risks.

(Based on Kumho Petrochemical Group standards)

Tax

Tax Strategy

- Formulating its tax strategy through the Tax Team to manage risks, Kumho Petrochemical has established a consolidated internal accounting management system for tax management, continuously reviewing and refining control items and flow charts.

Tax Policy

Tax Risk Management

- The Tax Team proactively identifies and reviews tax issues that may arise from business activities.
- Timely updates on domestic and international tax law amendments are ensured, and potential tax risks arising from interpretative differences in tax laws are mitigated through active communication with external experts and tax authorities.
- Additionally, tax information is transparently disclosed according to reporting standards.

Tax Law Compliance

Compliance with Tax Obligations

- Kumho Petrochemical complies with the tax laws of each region where its domestic and international business sites are located to fulfil its tax reporting and payment obligations.
- Transactions aimed at tax evasion or involving entities without business substance are strictly prohibited.
- When tax authorities request the submission of materials, they are provided and maintained in anticipation of such requests. In the event of conflicting interests, thorough consultations are held to reach a consensus as a show of commitment to cooperating with tax authorities.

Adherence to International Agreements

- Kumho Petrochemical does not engage in transactions or contracts that shift income to take advantage of differences in tax regimes between countries or jurisdictions, nor does it utilize tax havens.
- Through a proper tax structure, appropriate taxes are recognized and paid in each jurisdiction where the company operates. Transactions with related parties are conducted at arm's length prices calculated using reasonable methods that reflect standard market conditions to ensure fairness and adherence to market norms.

Key Affiliates

beyond the best

KUMHO P&B CHEMICALS

Founded in 1976, Kumho P&B Chemicals entered into joint ventures with Shell in 1987 and Nippon Steel Chemical in 2000 before becoming a wholly-owned subsidiary of Kumho Petrochemical in 2018. The company specializes in the manufacturing and sale of phenol, acetone, BPA, MIBK, and epoxy resin—key materials used across various industries, including electronics, pharmaceuticals, coatings, construction, and shipbuilding. By leveraging joint ventures and technology partnerships with leading global chemical companies, Kumho P&B Chemicals continuously incorporates cutting-edge technologies while expanding its facilities to achieve economies of scale and enhance its competitive edge.

Key ESG Peformance

- Awarded EcoVadis Silver medal
- Joined UN Global Compact
- Established ESG Management Council and conducted quarterly meetings
- Developed LCA system
- Installed RTO for Yeosu Plants 1 and 2
- Initiated development of epoxy for new and renewable energy infrastructure (e.g., recyclable wind turbine blades, hydrogen storage tanks)
- Achieved ISCC PLUS certification for five products: cumene, acetone, phenol, bisphenol A, epoxy
- Performed damage repair and provided aid for victims of summer monsoon flooding (Group-wide)
- Obtained ISO 9001, ISO 14001, and ISO 45001 certification

Financial Information

Revenue	KRW 1.51 trillion
Net profit	KRW 35.4 billion
Ownership percentage by Kumho Petrochemical	100%
World-class products	MIBK, bisphenol A, acetone, phenol

(as of Dec. 31, 2023)

Global Network

Korea
- Seoul Office
- Gimpo R&D Center
- Yeosu Plant 1
- Yeosu Plant 2

Overseas
- Rotterdam Office
- Chicago Logistics Center
- Houston Logistics Center
- Savannah Logistics Center
- Newark Logistics Center
- Norfolk Logistics Center
- Los Angeles Logistics Center
- Antwerp Logistics Center
- Barcelona Logistics Center

Joint Ventures
- Jiangsu Yangnong Kumho Chemical
- D&K Chemtech
- OCIKumho

ESG Vision and Strategic Directions

- Kumho P&B Chemical's three-pronged ESG Strategic Directions is grounded in its vision, "We Promise to Rise Sustainable Value in Chemistry."
- These strategic directions encompass three management pillars: Promise for Planet (Environmental Management), Promise for People (Value Management), and Promise for Prosperity (Trust Management). Each management strategy is carried out through a set of specific tasks.

ESG Vision

"WE PROMISE TO RAISE SUSTAINABLE VALUE IN CHEMISTRY."

ESG Strategic Directions and Key Tasks

Promise for planet environmental management	Promise for people value management	Promise for prosperity trust management
Climate action/ pollution and emission management resource circularity eco-friendly products and product responsibility	**Human capital/human rights management safety & health/ community impact supply chain responsibility management**	**Compliance communication with stakeholders ESG management sophistication**
• Reducing carbon emissions and addressing climate change • Expanding resource circularity • Developing eco-friendly products	• Enhancing talent development and employee satisfaction • Sophisticating safety and health systems • Managing supply chain responsibility	• Ensuring compliance and risk control • Strengthening communication with stakeholders • Implementing ESG strategies and establishing consultative bodies

UN SDGs

Environmental Performance

Environmental Management System

- Kumho P&B Chemicals is driving environmental management based on the ISO 14001, and currently, all facilities including the Seoul office and Gimpo R&D hold ISO 14001 certification.
- HSE committee meetings are held quarterly to report on environmental issues and responses

Environmental Awareness Enhancement

- Kumho P&B Chemicals fosters environmental management awareness by conducting environmental education and campaigns for employees and monitoring relevant legal and regulatory trends.
- At the Gimpo R&D Center, quarterly environmental campaigns are conducted both on-site and in the surrounding areas.
- Furthermore, specialized education is provided for environmental technicians and employees who handle hazardous chemicals, manage fugitive emissions, and oversee waste management.

Product Life Cycle Assessment (LCA) System

- Kumho P&B Chemicals has established a product LCA system to respond to global carbon regulations, customer demands, and to develop a carbon reduction strategies and calculate Scope 3 emissions.
- By the second quarter of 2024, the company aims to complete an LCA for all products and undergo third-party verification.

Sustainable Business Initiatives

- The development of waterborne epoxy resins and hardeners has been completed, quality approvals received from some client companies and commercialization is underway.
- Kumho P&B Chemicals is currently developing epoxy based on eco-friendly bio materials and in the process of reviewing improvements in physical properties.
- Efforts are underway to obtain bio certification for epoxy products made from glycerin-derived ECH, a plant-based raw material, with a bio carbon content of over 25%.
- Development is ongoing for epoxy that is suitable for recyclable wind turbine blades and large hydrogen storage tanks used in commercial vehicles.
- The company has obtained ISCC Plus certification for five products: cumene, acetone, etc.

Water Management

- In the first quarter of 2024, the fire water pipes at the Yeosu Plant 2 will be replaced to reduce water loss caused by aged pipelines.

Water Pollution Control

- Each business site ensures that wastewater is properly treated and discharged. To prevent environmental pollution and adhere to discharge standards, pollutants are strictly measured at the final discharge point before entering stormwater drains.
- Yeosu Plant 1 replaced cooling tower chemicals with low-phosphate alternatives. Yeosu Plant 2 will be installing a monitoring device to track the pollution levels of its open ditch in real-time.

Air Pollution Control

- Air pollutants are measured and monitored in real-time via the TMS, and emissions are managed to meet target levels through air pollution control facilities.
- 2023 Investments:
  - Two additional RTO units were installed to strengthen the air pollution control system.
  - An LDAR system and OGI (Optical Gas Imaging) cameras were installed to reduce fugitive emissions.
  - A new VRU (Vapor Recovery Unit) was installed to reduce odors from ECH (epichlorohydrin).

Waste Management

- Each business site has developed waste reduction plans and manages emissions accordingly.
- Yeosu Plant 1 has transitioned from traditional landfill and incineration methods to recycling for the treatment of sludge and spent ion exchange resins.
- At Yeosu Plant 2, a new waste storage facility has been constructed to ensure proper waste management practices are followed.
- Additionally, the Gimpo R&D Center is actively involved in reducing wood waste by cleaning and reusing TOTE containers and partnering with suppliers to use more durable pallets.

Hazardous Chemical Management

- Kumho P&B Chemicals operates a comprehensive chemical management process covering all stages from procurement to sales.
- To ensure compliance with industrial safety and health regulations, the company maintains an internal management process for Material Safety Data Sheets (MSDS).
- Hazardous chemicals are managed in accordance with the Chemical Substances Control Act, which stipulates standards for handling hazardous substances.
- The company has established safety work standards, safety guides, and handling standards for the transportation and handling of hazardous materials.
- Safety Data Sheets (SDS) are provided to customers in compliance with the REACH regulations.
- Employees are trained on registering, labeling, and distributing hazardous substances throughout all stages, including packaging of raw materials and products.
- Kumho P&B Chemicals collaborates with partner companies to form a chemical safety management council that conducts regular inspections, provides related information, and offers management guidance and technical support.
- The company adheres to the principles of Responsible Care.
- Plans are in place to introduce an internal chemical classification and labeling system that includes GHS or regional classifications.
- Monthly drills are conducted to prepare for chemical spill incidents, enhancing emergency response capabilities.
- Comprehensive chemical accident prevention plans are developed for the Yeosu Plant 1 and Yeosu Plant 2. These plans include both internal and external emergency response strategies, which are regularly communicated to nearby businesses and residents to minimize potential damage.
- Each business site appoints chemical management personnel exceeding legal requirements to strengthen the management of hazardous chemical handling and shipment.

Soil Contamination Management

- Each business site conducts regular soil contamination inspections through outside agencies.

Social Performance

Employee Satisfaction

- To foster a culture of communication and enhance employee satisfaction, Kumho P&B Chemicals has implemented mentoring programs for university-graduate new hires.
- In 2023, employee satisfaction surveys were conducted for all office employees. The survey revealed strengths in internal communication and collaboration but identified areas for improvement in evaluation and compensation. Based on the survey results, improvement tasks have been established and are being pursued.

Welfare Programs

- To ensure work-life balance for employees, the company has enhanced its welfare programs, particularly focusing on addressing the national low birth rate issue by significantly improving policies related to pregnancy, childbirth, and childcare.

Category	Details
Housing loan support	• Increased housing loan support amount by KRW 10 million compared to previous amount (extension may be granted after the support period expires or if necessary)
Comprehensive health check-up support	• Changed check-up cycle for spouses of employees over 40 years old from biennial to annual
Kumho-CARE (Support for Pregnancy, Childbirth, and Childcare)	• Introduced a new half-day leave system for fetal check-ups • Extended reduced working hours during pregnancy • Introduced a new support system for infertility treatment costs and extended leave for infertility treatment • Increased childbirth congratulatory bonus • Extended paternity leave for male employees and introduced child care leave • Introduced adoption leave and adoption congratulatory bonus • Increased rehabilitation allowance and support for purchasing assistive devices for employees with disabilities

Safety and Health Management

- Key safety and health objectives were set in accordance with the management directive of 2023.
- The Chief Plant Manager, under the direct supervision of CEO, operates the HSE Committee quarterly, and reviews issues and manages performance according to the plans.
- Safety and health management is implemented based on the ISO 45001, and an Environment Safety System Task Force Team (TFT) is in operation to improve the safety and health system.
- Safety and health systems are evaluated biannually, with external professional evaluations conducted in the first half of the year. Results from biannual evaluations of safety and health system implementation are reflected in KPIs and PMs.
- A task force was established to preemptively respond to the Serious Accident Punishment Act, including diagnostics and consulting for safety and health system establishment through specialized agencies.
- Continuous efforts are made to prevent major industrial accidents such as hazardous chemical leaks, fires, and explosions through the PSM system. PSM compliance and implementation status are checked and evaluated by conducting internal audits through external specialized agencies.
- Training and inspection activities are conducted to prevent potential hazards in high-risk tasks during major maintenance periods.
- On-site supervisors are appointed to manage and notify violations of safe work procedures and other hazardous activities.

Safety and Health Goals

Slogan	Our top priority is safety		
2023 Key Safety and Health Goals	Sustaining accident-free workplaces	Establishing a safety and health system	Integrating industrial safety and PSM systems

Safety and Health Management for Partner Companies

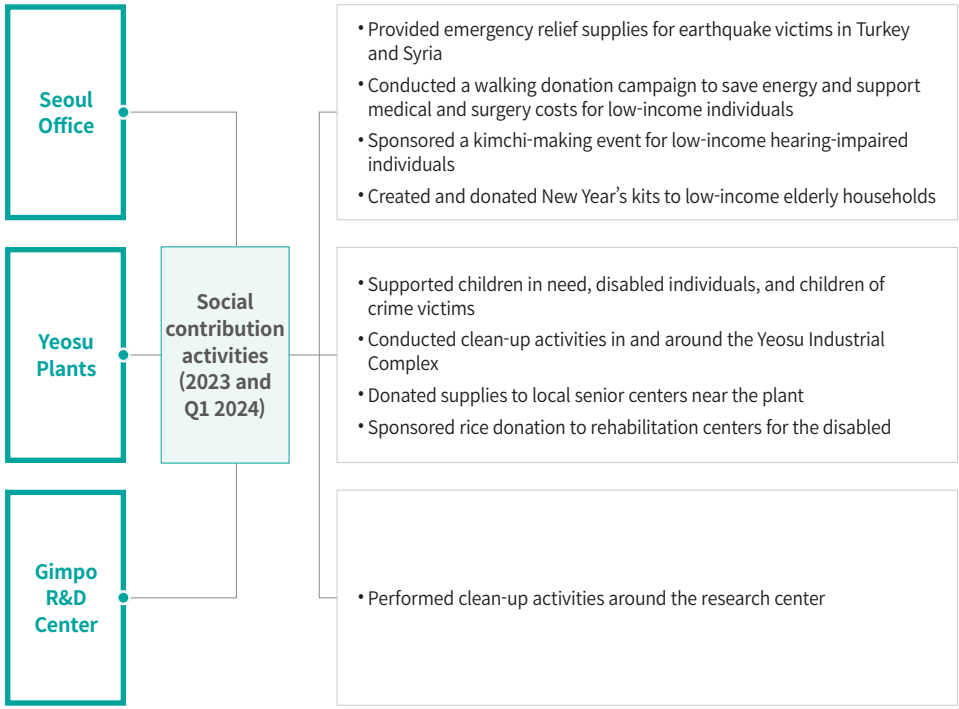
- Monthly meetings with partner company councils are held to gather feedback from partner companies and develop improvement plans.
- To drive improvement activities, quarterly joint safety inspections with partner companies are conducted.
- Safety meetings with construction partner companies are held, particularly during major maintenance periods, to review the implementation of high-risk work prevention activities.
- An on-site subcontractor council is operated to review safety management status and eliminate potential hazards.
- Safety and health training materials are provided to the employees of partner companies regularly, and online training is provided to the employees of construction partner companies.

ESG Management for Partner Companies

- A code of conduct based on international standards, relevant laws, and regulations has been established to provide guidelines for partner companies regarding environmental and safety practices, labor and human rights, and ethics and anti-corruption. Partner companies sign an action agreement based on this code of conduct.
- In 2023, ESG risk assessments were conducted for construction partner companies, and assessments for raw material suppliers are scheduled for the first quarter of 2024.
- To ensure the growth of partner companies, payments for raw materials and construction services are made in cash.

Social Contributions

- Kumho P&B Chemicals is continuously engaged in social contribution activities that leverage the unique characteristics of the chemical business.



Customer Management

- Kumho P&B Chemicals operates a quality management system based on ISO 9001.
- Customer satisfaction surveys are conducted biennially. (2023 Customer Satisfaction Score: 4.7 out of 5)
- Customer feedback is gathered through various channels such as the website and Sales team. The Quality Management Committee reviews customer complaints quarterly and implements improvements based on such feedback.

beyond the best

KUMHO MITSUI CHEMICALS

Founded in 1989 as a joint venture between Kumho Petrochemical and Japan's Mitsui Chemicals, Kumho Mitsui Chemicals has grown over the past 30 years into a leading global manufacturer of MDI. MDI, a crucial raw material used in insulation, automotive interiors, and liquefied natural gas (LNG) carriers, is at the core of our operations. Kumho Mitsui Chemicals became Korea's largest MDI producer upon establishing a production capacity of 350,000 tons. Through process improvements, the company expanded its production capacity to 410,000 tons in 2019. Currently, it is embarking on a significant expansion project to add an additional 200,000 tons of capacity, incorporating cutting-edge environmentally friendly raw material recycling technologies.

Key ESG Performance

- Awarded EcoVadis Gold medal
- Joined UN Global Compact
- Established an ESG strategy framework and designated key tasks
- Obtained ISO 9001, ISO 14001, and ISO 45001 certifications
- Ongoing implementation of a new raw material recycling process
- Pursuing ISCC Plus certification for all MDI products
- Ongoing development of products certified as Bio-Plastic

Financial Information

Revenue	KRW 1108.7 billion
Net profit	KRW 136.1 billion
Ownership percentage by Kumho Petrochemical	50%
World-class products	Polymeric MDI, Monomeric MDI

(as of Dec. 31, 2023)

Network in Korea

- Seoul Head Office
- Yeosu R&D Center
- Yeosu Plant

Sustainable Management System

- In 2023, Kumho Mitsui Chemicals established a sustainable management system by formulating four key strategic directions for sustainable management and designating corresponding strategic tasks.
- The company is committed to practicing environmental protection through chemical technology and fulfilling corporate social responsibility.

Sustainable Management Mission

Realizing a sustainable world through innovative chemical technology that protects the environment and fulfills social responsibility.

Sustainable Management Vision

Pioneering chemical innovation for future generations and leading sustainability as an ESG partner.

Four Strategic Directions and Tasks:

Innovation	Environment	Social	Governance
Building a sustainable growth system	**Implementing eco-friendly management for the future**	**Fulfilling social responsibility to stakeholders**	**Growing as an ESG leader in the chemical industry**
• Expanding economic value • Diversifying business portfolio and securing new growth engines • Driving corporate innovation through digital transformation	• Strengthening climate change response • Sophisticating eco-friendly policies • Securing competitiveness in eco-friendly products/ technologies	• Creating a safety and health-focused workplace • Fostering a great organizational culture and developing future talent • Strengthening ESG management capabilities in the supply chain	• Establishing a sound decision-making system • Building and internalizing a sustainable management foundation to enhance ESG capabilities • Strengthening ethical management and compliance

UN SDGs

Environmental Performance

Environmental Management System

- Environmental management is conducted based on the ISO 14001 certification system. All business sites, including the headquarters and research center, are ISO 14001-certified.

Carbon Emission Reduction Technology

- Carbon emissions are being reduced through the development of hydrochloric acid oxidation technology (FOX, Fixed Bed Oxidization), which regenerates hydrochloric acid, a by-product of MDI (Methylene Diphenyl Diisocyanate) production, into chlorine.
- This technology, co-developed with Mitsui Chemicals, Japan, began with the introduction of a pilot facility in 2018. After approximately four years of joint development, the necessary technology was secured, and the process to have it recognized as an internal carbon reduction project is underway.

Bio-based Products

- The development of MDI products based on bio-based raw materials is in progress, with the goal of obtaining ISCC Plus certification for these bio-based MDI products by June 2024.

Water Management

- Various measures to reduce water usage are being implemented, such as using steam condensate in processes and reusing cooling water in accordance with the characteristics of each process.
- As part of the MDI capacity expansion investment, the introduction of wastewater electrolysis technology is underway. This technology regenerates high-salinity wastewater into chlorine, caustic soda (NaOH), and hydrogen. Once fully implemented, this technology will reduce wastewater discharge through recycling.

Water Pollution Control

- Process wastewater undergoes primary physicochemical and biological treatments before being transferred to the final wastewater treatment facility within the Yeosu Industrial Complex for secondary treatment and discharge into the nearby sea.
- Notably, the Yeosu Plant operates a wastewater treatment facility utilizing microorganisms that do not require energy, thereby reducing energy consumption. Water quality standards for different types of wastewater, including industrial, incoming, and discharged wastewater, are regularly monitored at the site.

Air Pollution Control

- Emission targets are set and managed based on allocated air pollutant emissions under the Air Quality Control Act, applying internal standards that are more stringent than legal requirements.
- Environmental compliance checks are conducted by the Safety & Environment Team to identify and address deficiencies in the air pollutant management system and to continuously pursue improvement tasks.

Waste Management

- Efforts to reduce waste are ongoing by reapplying reusable equipment in processes and reusing product packaging materials.
- The proportion of reusable packaging materials stands at 23% of total packaging materials used.

Hazardous Chemical Management

- Revisions of the material safety data sheets (MSDS) were completed in 2023.
- The MSDS provide detailed information on the composition, hazards, handling precautions, mandatory protective equipment, and emergency response measures for hazardous chemicals.
- Chemicals are classified according to the GHS regulations. This classification system is then applied to the labeling system.
- An internal chemical classification and labeling system that includes country-specific classifications for the US and China is also implemented.

Soil Contamination Management

- Facilities that could potentially cause soil contamination are equipped with waterproof concrete flooring and spill control equipment to enable immediate response in case of soil pollutant leaks.
- Regular inspections are conducted for facilities that could potentially cause soil contamination, with biennial inspections for areas where soil pollutant leaks are a concern.

Social Performance

Safety and Health Management

- Safety and health management is implemented based on the safety and health management policy, with safety and health meetings conducted under the supervision of the Chief Safety and Environment Officer.
- Inspections to ensure compliance with safety and health obligations are conducted, with four inspections carried out in 2023, exceeding the legal requirement of two annual inspections.
- In 2023, the InBody Health Improvement Program was conducted for Yeosu Plant employees. Employees who had excellent results in the InBody assessments were rewarded to establish a health-sensitive corporate culture.

Human Rights and Labor Policy

- Human rights and labor policies have been established in accordance with international standards and guidelines related to human rights and labor, such as the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights (UNGPs), and the UN Global Compact Ten Principles. These policies apply to all members of Kumho Mitsui Chemicals and are shared with stakeholders affected by the company's business activities.

ESG Management for Supply Chains

- Supply chain management is driven by the purchasing department, based on the Sustainable Procurement Policy and the Code of Conduct for Partner Companies. These guidelines ensure that members are aware of and comply with the practices required for procurement activities, supply chain evaluation and management, and the establishment of fair trade.
- By June 2024, a supply chain audit will be conducted for the on-site subcontractors at Yeosu Plant.

Customer Management

- To enhance customer satisfaction, product defect rates are included in the KPIs of departments responsible for quality management and customer service.
- As of 2023, the rate of products receiving non-conformance requests from customers was 0.016%.

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KUMHO POLYCHEM

Founded in 1985 as a joint venture between Kumho Petrochemical and Japan Synthetic Rubber (today, JSR), Kumho Polychem was established in response to the Korean government's policy to cultivate heavy and chemical industries and to domestically produce key materials. Initial commercial production began in 1987 with an annual capacity of 10,000 tons. Through three expansions utilizing proprietary cryogenic polymerization technology and the construction of a second plant in 2013, the company has grown to become a leading global supplier of EP(D)M with an annual capacity of 240,000 tons. Aiming to be a "Global Leading Elastomer Solution Partner," Kumho Polychem continuously engages in R&D to develop eco-friendly materials and next-generation components, along with a TPE production capacity of 12,000 tons. These efforts contribute to the advancement of the automotive industry, meet diverse customer demands, and ensure the stable supply of high-quality products to the global elastomer market.

Key ESG Performance

- Completed the installation of MVR in Line 4 (Improved energy intensity by producing steam through process waste heat exchange)
- Awarded EcoVadis Silver medal
- Joined UN Global Compact
- Established plans to reduce greenhouse gas emissions by 2030
- Formed and operated Sustainable Management Implementation Council (internal subcommittee)
- Obtained ISO 9001, ISO 14001, ISO 45001, and IATF 16949 certifications

Financial Information

Revenue	KRW 646.8 billion
Net profit	KRW 81.8 billion
Ownership percentage by Kumho Petrochemical	100%
World-class products	EP(D)M

(as of Dec. 31, 2023)

Network in Korea

- Seoul Head Office
- Daejeon R&D Center
- Yeosu Plant 1
- Yeosu Plant 2
- Busan Sales Office

ESG Management System

• Kumho Polychem is advancing ESG management based on the vision "Sustainable Challenge 2030," which is supported by four key strategic directions.

Sustainable Management Mission

Realizing a sustainable future centered on nature and humanity through creative innovation.

Sustainable Management Vision

Sustainable Challenge 2030
A company that constantly strives for sustainability

Four Strategic Directions and Tasks

Entrepreneurship	Proactive approach	Delightful workplace	Mutual trust
Creating new value through **entrepreneurship**	**Responding proactively** to climate change	Fostering a **people-centric work environment**	Practicing **trust management** through transparent decision-making
• Enhancing global competitiveness • Developing sustainable products and pursuing technological innovation • Improving customer satisfaction and communication	• Responding to climate change • Creating eco-friendly workplaces • Participating in sustainable resource circulation	• Fostering a respectful organizational culture • Establishing safe workplaces • Creating a sustainable ecosystem	• Building and internalizing a sustainable management foundation • Strengthening compliance and ethical management • Establishing a sound decision-making system

UN SDGs

Environmental Performance

Environmental Management System

• Yeosu Plants 1 and 2 have obtained ISO 14001 certification for their environmental management system.

• In 2024, the headquarters and research center also plan to obtain ISO 14001 certification in order to enhance the company's overall environmental management system.

GHG Reduction Strategy

• A two-track strategy involving process improvement and process technology research is being pursued to reduce greenhouse gas emissions.

Strategic Direction	Details
Procedural improvement through equipment investments	• Selected unit processes with low energy efficiency for targeted equipment investment - Achievement in 2023: Installed MVR in Line 4 - Plan for 2024: Installation of a low-pressure turbo chiller in Line 2, steam turbines, and MVR in Line 3 under review
Process technology research	• Pursuing the KP Green Process (low-carbon process technology) project to improve utility efficiency per unit by enhancing C3 conversion rates and increasing reaction temperatures for productivity improvements

Product Life Cycle Assessment (LCA) System

• In response to global eco-friendly trends and the decarbonization movement in supply chains, a life cycle assessment (LCA) is underway with completion targeted for the end of 2024.

• The results of the LCA will be analyzed and incorporated into management strategies, with a mid-to-long-term roadmap established for achieving carbon neutrality from a product life cycle perspective.

Water Management

- Currently, all water from catalyst removal processes is transferred to the wastewater treatment facility. A new process is being developed that will allow this water to be reused for filter cleaning.

Water Pollution Control

- A wastewater treatment procedure has been established and is being operated to comply with legal standards and prevent water pollution.
- Wastewater undergoes physicochemical treatment at the plant's wastewater treatment facility before being transferred to the final treatment facility.
- Effluent samples are collected and analyzed quarterly by an external water quality analysis agency to monitor pollutant discharge levels.

Air Pollution Control

- To manage air pollutants efficiently and minimize environmental impact, an air pollution management system compliant with laws and regulations has been established and is being operated.
- Monthly self-monitoring of each emission outlet is conducted to track emissions.
- In 2023, an RTO was installed at Plant 2 to reduce air pollutant emissions. RTO and VCU installations are scheduled for Plant 1 in 2024.

Waste Management

- Waste management procedures have been established and are being operated to manage and reduce waste generated at the plant.
- Waste is categorized into 17 items based on characteristics, with separate storage and management for each item.
- Leachate control measures, such as drainage systems and regular disinfection, are in place in the waste storage area to prevent secondary contamination.
- Waste generation data is managed through the Allbaro system.
- Recycling potential is prioritized when selecting waste disposal contractors. Regular visits to waste disposal contractors are conducted to verify legal compliance in waste handling. Contractor evaluations influence decisions on contract renewals.

Hazardous Chemical Management

- Management procedures for hazardous chemicals are established and complied with from warehousing to storage and shipping, according to legal standards.
- Regulatory information sheets are issued for each product, detailing compliance with major regulations such as EU REACH and US FDA, and product hazards.
- Designated hazardous chemical managers and technical personnel oversee hazardous substances, based on which usage data is compiled monthly.
- Storage facilities for hazardous chemicals are equipped with safety gear (fire extinguishers, gas masks, protective gloves, clothing, chemical-resistant boots) and protective materials. Standards for storage facilities include waterproof flooring, locking devices, double-walled tanks, retention walls, and containment basins to manage spills and recover leaks. Emergency response procedures for chemical spills have been established and are being operated.
- Waste hazardous chemicals are properly stored and disposed of according to chemical and waste management laws, with safety training provided for personnel who handle hazardous substances.

Soil Contamination Management

- Soil contamination management procedures are established to manage facilities and contaminants. Regular soil contamination inspections are conducted biennially by outside agencies.

Social Performance

Workforce Diversity

- Equal employment opportunities are ensured during new hires, with no discrimination based on gender, religion, or age, by conducting blind recruitment that evaluates candidates based on their potential and job skills.
- The proportion of women among new hires has steadily increased, from 28.6% in 2021 to 34.4% in 2023. By the end of 2023, women made up 16.1% of all executives, an increase of 4.0 percentage points from the end of 2021.

Welfare Programs

- Efforts are being made to create an environment where employees can balance work and childcare by introducing Kumho-CARE, a comprehensive program for pregnancy, childbirth, and childcare, which is a common policy across the Kumho Petrochemical Group.
- The Health Check program supports employee wellness by measuring body fat percentage semi-annually, rewarding those with excellent management, and providing fitness subsidies to encourage health-promoting activities.

Employee Capacity Building

- Training is provided for all employees, focusing on developing competencies required for different levels (team leaders, managers, assistants, and staff). ESG-related education is mandatory for all employees regardless of their position.

Communication with Employees

- Communication is enhanced by holding town hall meetings, offering all employees a platform to engage directly with the CEO.
- These meetings are crucial for sharing key management issues and gathering employee feedback, leading to initiatives such as the recent installation of separate rest areas for male and female employees at the plants.
- Various club activities are supported to encourage hobbies and strengthen team bonds.

Safety and Health Management

- Executives responsible for safety and health management have been appointed at each workplace. These executives are granted authority and responsibility for performing safety and health management tasks, as well as for budget planning and execution, to ensure prompt on-site response capabilities.
- Quarterly inspections are conducted across all business sites to ensure compliance with safety and health-related legal obligations. These inspections identify hazardous and risk factors, leading to the development of improvement plans.
- The progress of corrective actions for identified hazardous and risk factors is tracked and managed during monthly safety and health management meetings led by the CEO. Completion of these actions is confirmed during the next quarter's compliance inspections.
- To establish a company-wide safety and health management system, the goal of "Zero Accidents" is integrated into the KPIs of all employees, driving continuous improvement in hazardous and risk conditions.
- Safety and health training is conducted quarterly for three hours for office staff at the headquarters, in addition to the legally mandated safety and health training for plant/research staff.
- Monthly meetings with partner companies are held to discuss major safety and health-related issues and gather feedback, fostering collaboration and continuous improvement in safety and health practices.

Social Contributions

- The headquarters in Seoul annually supports the improvement of study room facilities at local children's centers and organizes kimchi-making activities for socially-underprivileged individuals.
- The Yeosu Plants run The Hope Meal Truck program, which provides free meals to elderly residents of low-income areas on a monthly basis. Due to health concerns for the elderly during the COVID-19 pandemic, this program was temporarily replaced with food package deliveries. However, The Hope Meal Truck program will resume in 2024.

Customer Management

- The quality management system operates based on ISO 9001. Given the high relevance to the automotive industry, IATF 16949 certification has been obtained, with annual follow-up and renewal audits conducted.

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KUMHO T&L

Kumho T&L was established in 2009 to serve as a dedicated logistics hub for the Yeosu National Industrial Complex, aiming to reduce logistics costs and ensure a smooth supply of raw materials for major power plants in the area. The company currently operates in four main sectors: port cargo handling, terrestrial transport, power plant transfer and maintenance services, and the supply of tire-derived fuel (TDF). The port cargo handling business strives to be an Eco-Port by utilizing a closed equipment system for unloading, transportation, and storage. The TDF supply business focuses on converting waste tires into fuel. Looking forward, Kumho T&L plans to expand its logistics operations and broaden its waste tire recycling initiatives.

Key ESG Performance

• Established goals for the transition to pollution-free vehicles by 2030

Financial Information

Revenue	KRW 84.7 billion
Net profit	KRW 8.2 billion
Ownership percentage by Kumho Petrochemical	100%

(as of Dec. 31, 2023)

Network in Korea

• Yeosu Head Office
• Seoul Office
• Yulchon TDF Plant
• Nakpo Coal Port
• Cheongwon TDF Plant

Environmental Performance

Environmental Management System

- Currently, the company is in the process of obtaining ISO 14001 certification for its environmental management system, with expected certification by December 2024.

GHG Reduction

- Kumho T&L has set goals to transition its corporate-owned and leased vehicles to electric and hydrogen vehicles by 2030. Additionally, the company is considering the installation of electric vehicle charging facilities at Nakpo Coal Port.

Air Pollution Control

- To manage air pollutants efficiently and minimize environmental impact, an air pollution management system compliant with laws and regulations has been established and is being operated.
- Emissions are monitored through self-measurements conducted twice per month at each emission outlet.
- Monthly inspections are carried out by outside contractors to ensure proper maintenance of filtration and dust collection systems.

Water Pollution Control

- A wastewater treatment procedure has been established and is being operated to comply with legal standards and prevent water pollution.
- Wastewater undergoes physicochemical treatment at the business site's wastewater treatment facility before being transferred to the final treatment facility. Effluent samples are collected and analyzed monthly by an external water quality analysis agency to monitor pollutant discharge levels.
- Self-monitoring of water emissions is conducted once a month to track discharge levels.
- Oil fences have been installed to prevent the spread of oil and dust into the sea during unloading operations.

Waste Management

- Waste generation data is managed in the Allbaro system.
- Waste management procedures have been established and are being operated to manage and reduce waste generated at the business site.
- Waste is categorized into 10 items based on characteristics, with separate storage and management for each item.

Production of Fuel from Waste Tires

- Waste tires, which have been indiscriminately discarded causing water and soil pollution, are recycled into fuel. The collected waste tires are shredded to remove the steel belts, and the resulting material is processed into tire derived fuel (TDF). The extracted steel is then sold to steel mills.

Social Performance

Employee Capacity Building

- Support is provided for those who wish to gain professional certification as a means of fortifying the Company's education system and job-specific competencies.

Employee Satisfaction

- To improve work-life balance and job satisfaction, the PC-OFF system, which shuts down computers after work hours, has been introduced and operated at Kumho T&L as part of the common policies implemented by the Kumho Petrochemical Group.
- Diverse clubs are funded to encourage employees to strengthen team bonds over shared interests and/or hobbies.

Welfare Programs

- To support a work-life balance, Kumho-CARE, a comprehensive program for pregnancy, childbirth, and childcare, has been introduced across the Kumho Petrochemical Group.
- To promote employee health, fitness expenses are provided to encourage health-enhancing activities through exercise.
- Support is provided for obtaining job-related certifications to enhance employees' self-development and job-specific competencies.

Safety and Health Management

- A detailed safety inspection of silo structures has been completed.
- A computerized safety work permit system has been established.
- Cross-affiliate and cross-site joint safety inspections are conducted to enhance workplace safety. Safety and health improvement cases are shared across different sites.
- Investments in workplace safety and health have been expanded, and training to enhance the safety and health competencies of employees has been implemented.
- The company is in the process of obtaining ISO 45001 certification for its safety and health management system, with expected certification by December 2024.

Social Contributions

- Funds have been raised through small change donations and matching grants to support local organizations assisting vulnerable groups.
- Donation campaigns are actively carried out in collaboration with Beautiful Store.

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KUMHO RESORT

Kumho Resort is a comprehensive leisure company that offers a variety of tourism and recreational facilities, including resort hotels, glamping and caravan sites, yacht tours, water parks, and both domestic and international golf clubs. Each facility is thoughtfully integrated with the natural environment, providing guests with relaxing stays and unforgettable experiences. Kumho Resort operates four resort hotels across South Korea (Tongyeong, Hwasun, Seorak, and Jeju); Asan Spafore, a nature-oriented glamping and caravan site; and Asan Spavis, a the thermal thermal water park. Additionally, the company owns two prestigious golf clubs: Asiana Country Club (36 holes, Yongin) and Asiana Weihai Country Club & Resort (18 holes, Weihai, China).
In 2023, Kumho Resort signed a cultural heritage protection agreement with the Cultural Heritage Administration to help preserve the natural beauty and cultural sites near its business locations. Both the head office and all business sites actively participate in cultural heritage conservation activities in collaboration with the Cultural Heritage Administration.

Financial Information

Revenue	KRW 108.3 billion
Net profit	KRW 3.6 billion
Ownership percentage by Kumho Petrochemical	66.72%

(as of Dec. 31, 2023)

Global Network

Korea

- Seoul Head Office
- Gwangju Sales Office
- Busan Sales Office
- Asiana Country Club
- Kumho Tongyeong Marina Resort
- Kumho Seorak Resort
- Kumho Hwasun Resort
- Kumho Jeju Resort
- Asan Spavis

Overseas

- Asiana Weihai Country Club & Resort (China)

ESG Management System

- Short-term, mid-term, and long-term tasks have been established to realize the ESG vision. Participation in the Kumho Petrochemical Group's ESG council allows for quarterly performance management. An annual review is conducted for whether new task will be added.
- As part of these efforts, a sponsorship agreement with the Cultural Heritage Administration was signed in 2023, and ongoing support activities have been conducted.

Environmental Performance

GHG Reduction

- A goal has been set to transition all corporate-owned and leased vehicles, excluding special-purpose vehicles, to zero-emission vehicles by 2030.
- Three zero-emission vehicles will be purchased in 2024. This will result in zero-emission vehicles accounting for 15% of all corporate vehicles.
- The installation of electric vehicle charging stations at Tongyeong Resort will be completed by 2024, ensuring that all business sites are equipped with EV charging facilities.

Waste Management

- Each business site has established a waste management system to continuously strive for waste reduction.
- To reduce the amount of general waste, recyclable waste is further segmented and filtered, leading the way in minimizing waste output.

Social Performance

Workforce Diversity

- Equal employment opportunities are ensured during new hires, with no discrimination based on gender, religion, or age by conducting blind recruitment that evaluates candidates based on their potential and job skills.
- In 2023, women accounted for 35.9% of new hires.
- Socially-underprivileged individuals and persons of national merit are given additional points and undergo separate recruitment procedures. In 2024, two individuals from socially-underprivileged backgrounds and one person of national merit were hired.

Welfare Programs

- Kumho-CARE, a comprehensive program for pregnancy, childbirth, and childcare, has been introduced as a common policy across the Kumho Petrochemical Group to create an environment where employees can balance work and childcare.
- The number of supported in-house club activities will be increased from 12 to 15 in 2024 to promote hobbies and encourage personal development among employees.
- Additionally, each business site operates a grievance settlement committee to address employee concerns related to human rights and undertake improvement activities.

Safety and Health Management

- A dedicated team for safety and health is operated, and evaluations of safety and health managers are conducted twice per year, with results incorporated into the PM and KPI metrics of the head office and business sites.
- Regular inspections are carried out twice per month by specialized safety and health management agencies, and a comprehensive annual risk assessment is conducted for all business sites, with additional assessments performed as needed.
- Annual training is provided for safety and health officers to ensure they are well-equipped to manage workplace safety and health effectively.

Social Contributions

- As a community contribution reflecting the industry's characteristics, Kumho Resort engages in cultural heritage protection activities.
- In 2023, the head office participated in cleaning activities at Changdeokgung Palace, and in 2024, cultural heritage protection activities are planned for Asan Spafore, Asiana CC, and Hwasun Resort.
- In addition to cultural heritage preservation, each business site have performed various contribution activities to support stakeholders in the nearby communities who are in need.

Cultural Heritage Protection Activities in 2023 and 2024

Business site	Location	Number of Participants
Seoul Head Office	Changdeokgung Palace	37
Asan Spafore	Houseof the Maeng Clan in Asan	27
Asiana Country Club	Simgok Seowon (Simgok Confucian Academy)	16
Hwasun Resort	Imdaejeong Pavilion and Garden	15

Local Community Contribution Activities

Business Site	Activity
Tongyeong Marina Resort	Helped elderly people living alone with bathing
Hwasun Resort	Supported local events and donated resort tickets to local residents during holidays
Jeju Resort	Assisted local farms with labor and supported local festivals
Asan Spafore	Hosted events for children from local child facilities

Customer Management

- Customer compliments and complaints are being received and processed every six months, and improvements are monitored.
- In 2023, an annual award system was introduced to recognize the employee who received the most compliments, fostering a spirit of service among employees.

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KUMHO TRADING

Kumho Trading, established in 2000, operates in both the trade and insurance sectors. In the trade sector, Kumho Trading supplies essential petrochemical raw materials, such as synthetic rubber and synthetic resin, to both domestic and international markets. The company focuses on enhancing trade infrastructure and pioneering niche markets, particularly in countries with underdeveloped import and export regulations and logistics services. In the insurance sector, Kumho Trading provides support for various indemnity insurance contracts, including fire insurance, comprehensive property insurance, machinery insurance, and construction insurance. These services cater to the affiliates of Kumho Petrochemical Group as well as other corporations and individuals. The company also handles claims and offers insurance consulting services. Looking ahead, Kumho Trading plans to expand beyond bioenergy raw material trading by securing procurement and sales rights through equity investments, including the establishment of raw material supply bases in both Korea and overseas. Furthermore, the company is committed to exploring new business areas for sustainable growth, such as waste plastic recycling, real estate investment, and asset management.

Financial Information

Revenue	KRW 80.2 billion
Net profit	KRW 2.9 billion
Ownership percentage by Kumho P&B Chemicals	100%

(as of Dec. 31, 2023)

Network in Korea

• Seoul Head Office

ESG Data Pack

ESG Data Pack

Kumho Petrochemical | Separate ESG Performance

(Select Area with Right Button)

1. Economic and Governance Performance

1-1. Financial Performance

Category	Unit	2021	2022	2023
Assets	KRW 1 million	4,643,698	4,252,316	4,433,758
Liabilities	KRW 1 million	1,562,152	1,067,816	1,218,152
Equity	KRW 1 million	3,081,545	3,184,500	3,215,606
Revenue	KRW 1 million	5,501,282	5,086,856	4,196,148
Operating profit	KRW 1 million	1,342,782	656,206	232,568

1-2. Revenue by Business

See More

Category	Unit	2021	2022	2023
Synthetic Rubbers	KRW 1 million	3,052,105	2,578,915	2,162,199
Synthetic Resins	KRW 1 million	1,829,740	1,594,459	1,250,083
Specialty Chemicals	KRW 1 million	164,240	205,981	164,163
Others	KRW 1 million	455,197	707,501	619,703

1-3. Distribution of Economic Performance

Category		Unit	2021	2022	2023
Shareholder & investor	Total	KRW 1 million	294,093	160,546	92,232
	Dividends	KRW 1 million	280,856	146,432	76,486
	Interest rate cost	KRW 1 million	13,237	14,114	15,746
Employee	Total	KRW 1 million	231,166	206,444	200,875
	Pay	KRW 1 million	199,537	170,659	159,601
	Welfare benefits	KRW 1 million	31,629	35,785	41,274
Government	Corporate tax	KRW 1 million	369,234	167,117	32,713
Local community	Donations	KRW 1 million	1,584	503	963

* The ESG Data Pack is also available for viewing on the Kumho Petrochemical website (https://www.kkpc.com/eng/winwin/esg/sustainabilityList/)

Appendix

GRI Content Index

Statement of use	Kumho Petrochemical reported its economic, environmental and social performance from January 2023 to December 2023 in accordance with the Global Reporting Initiative (GRI) Standards, the international sustainability reporting guidelines, and included activities up to the first half of 2024 for some key achievements
GRI 1 Used	GRI 1: Foundation 2021
Applicable GRI Sector Standard(s)	Not Applicable (As of publication date)

GRI Standard 2021	Disclosure		Page	Note
Universal Standards: GRI 2				
GRI 2: General Disclosures 2021	2-1	Organizational details	p. 7, 9	
	2-2	Entities included in the organization's sustainability reporting	p. 2	
	2-3	Reporting period, frequency and contact point	p. 2	
	2-4	Restatements of information	-	No significant changes. Annotations were made for cases where the calculation criteria of some quantitative data were modified
	2-5	External assurance	p. 132~134	
	2-6	Activities, value chain and other business relationships	p. 7, 10~11, ESG Data Pack: 3-19. Supply Chain	
	2-7	Employees	ESG Data Pack: 3-1. Employee	
	2-8	Workers who are not employees	ESG Data Pack: 3-1. Employee	
	2-9	Governance structure and composition	p. 85~86	
	2-10	Nomination and selection of the highest governance body	p. 87	
	2-11	Chair of the highest governance body	p. 85	
	2-12	Role of the highest governance body in overseeing the management of impacts	p. 14, 18, 88	
	2-13	Delegation of responsibility for managing impacts	p. 14~15	
	2-14	Role of the highest governance body in sustainability reporting	p. 14~15, 21	
	2-15	Conflicts of interest	p. 85~88	
Universal Standards: GRI 2				
GRI 2: General Disclosures 2021	2-16	Communication of critical concerns	p. 18, 88	
	2-17	Collective knowledge of the highest governance body	p. 86	
	2-18	Evaluation of the performance of the highest governance body	p. 88	
	2-19	Remuneration policies	Annual Report p. 361~364	

GRI Standard 2021	Disclosure		Page	Note
Universal Standards: GRI 2				
GRI 2: General Disclosures 2021	2-20	Process to determine remuneration	-	The level of director's compensation is approved by the general shareholders' meeting after review by the board of directors regarding the limit of remuneration for directors in accordance with legal regulations
	2-21	Annual total compensation ratio	ESG Data Pack: 1-5. CEO to Employee Compensation Ratio	
	2-22	Statement on sustainable development strategy	p. 4~5	
	2-23	Policy commitments	ESG Policy and Guidelines	
	2-24	Embedding policy commitments	ESG Policy and Guidelines	
	2-25	Processes to remediate negative impacts	p. 51, 77, 79, 92	
	2-26	Mechanisms for seeking advice and raising concerns	p. 51, 77, 79, 92	
	2-27	Compliance with laws and regulations	ESG Data Pack: 2-15. Violations of Environmental Laws and Regulations ESG Data Pack: 3-14. Violation of Health and Safety Laws and Regulations	
	2-28	Membership associations	p. 130, ESG Data Pack: 1-12. Association Membership	
	2-29	Approach to stakeholder engagement	p. 131	
	2-30	Collective bargaining agreements	ESG Data Pack: 3-9. Labor-Management Relations	
Universal Standards: GRI 3				
GRI 3: Material Topics 2021	3-1	Process to determine material topics	p. 21	
	3-2	List of material topics	p. 22~24	
Implementation of Greenhouse Gas Reduction Strategy				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 23~24	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	p. 34, ESG Data Pack: 2-1. GHG (Scope 1, 2) Emissions	
	305-2	Energy indirect (Scope 2) GHG emissions	p. 34, ESG Data Pack: 2-1. GHG (Scope 1, 2) Emissions	
	305-3	Other indirect (Scope 3) GHG emissions	p. 34, ESG Data Pack: 2-2. GHG (Scope 3) Emissions	
	305-4	GHG emissions intensity	p. 34, ESG Data Pack: 2-1. GHG (Scope 1, 2) Emissions	
	305-5	Reduction of GHG emissions	p. 33~34, ESG Data Pack: 2-1. GHG (Scope 1, 2) Emissions	
	305-6	Emissions of ozone-depleting substances (ODS)	-	Based on Montreal Protocol, we do not use ozone-depleting substances
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	ESG Data Pack: 2-8. Air Pollutants Emissions	

GRI Standard 2021	Disclosure		Page	Note
Universal Standards: GRI 3				
Diversification of Sustainable Business Portfolio				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 23~24	
Non-GRI			-	No GRI Topic Standards available for this material topic
Establishment of Circular Economy System				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 23~24	
GRI 301: Materials 2016	301-1	Materials used by weight or volume	ESG Data Pack: 2-12. Raw Material Usage	
	301-2	Recycled input materials used	ESG Data Pack: 2-12. Raw Material Usage	
	301-3	Reclaimed products and their packaging materials	-	To be disclosed
Management of Safety and Health Risks				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 23~24	
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	p. 44, 47	
	403-2	Hazard identification, risk assessment, and incident investigation	p. 45	
	403-3	Occupational health services	p. 46, 68	
	403-4	Worker participation, consultation, and communication on occupational health and safety	p. 42, 49	
	403-5	Worker training on occupational health and safety	p. 48	
	403-6	Promotion of worker health	p. 68	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p. 48	
	403-8	Workers covered by an occupational health and safety management system	p. 44, ESG Data Pack: 3-13. Occupational Health and Safety Management System	
	403-9	Work-related injuries	p. 47, ESG Data Pack: 3-16. Occupational Accident Rate	
	403-10	Work-related ill health	p. 47, ESG Data Pack: 3-16. Occupational Accident Rate	
Improvement of Energy Efficiency and Reduction of Energy Consumption				
GRI 3: Material Topics 2021	3-3	Management of material topics	p. 23~24	
GRI 302: Energy 2016	302-1	Energy consumption within the organization	ESG Data Pack: 2-3. Energy Consumption	
	302-2	Energy consumption outside of the organization	-	To be disclosed
	302-3	Energy intensity	ESG Data Pack: 2-3. Energy Consumption	
	302-4	Reduction of energy consumption	p. 57, ESG Data Pack: 2-3. Energy Consumption	
	302-5	Reductions in energy requirements of products and services	-	Not applicable

SASB Index

Sustainability Disclosure Topics and Accounting Metrics (Chemicals)

Topic	Code	Metric	Unit of Measure	Report Page or Performance
Greenhouse Gas Emissions	RT-CH-110a.1	Gross global Scope 1 emissions	tCO_2-eq	ESG Data Pack: 2-1. GHG (Scope 1, 2) Emissions
		percentage covered under emissions-limiting regulations	%	100%
	RT-CH-110a.2	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	-	p. 26~34
Air Quality	RT-CH-120a.1	(1) NOx Emissions (excluding N2O)	ton	ESG Data Pack: 2-8. Air Pollutants Emissions
		(2) SOxEmissions	ton	ESG Data Pack: 2-8. Air Pollutants Emissions
		(3) VOCs Emissions	ton	ESG Data Pack: 2-8. Air Pollutants Emissions
		(4) HAPs Emissions	ton	ESG Data Pack: 2-8. Air Pollutants Emissions
Energy Management	RT-CH-130a.1	(1) Total energy consumed	GJ	ESG Data Pack: 2-3. Energy Consumption
		(2) Percentage grid electricity	%	ESG Data Pack: 2-3. Energy Consumption
		(3) Percentage renewable	%	ESG Data Pack: 2-3. Energy Consumption
		(4) Total self-generated energy	GJ	ESG Data Pack: 2-4. Energy Generation and Sales
Water Management	RT-CH-140a.1	(1) Total water withdrawn	m^3	ESG Data Pack: 2-5. Water Withdrawal and Consumption
		(2) Total water consumed	m^3	ESG Data Pack: 2-5. Water Withdrawal and Consumption
		(3) Percentage of water withdrawn in regions with High or Extremely High Baseline Water Stress	%	ESG Data Pack: 2-6. Water Risk
		(4) Percentage of water consumed in regions with High or Extremely High Baseline Water Stress	%	ESG Data Pack: 2-6. Water Risk
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	No.	ESG Data Pack: 2-15. Violations of Environmental Laws and Regulations
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	-	p. 56
Hazardous Waste Management	RT-CH-150a.1	Amount of hazardous waste generated	ton	ESG Data Pack: 2-11. Waste Management
		Percentage recycled	%	ESG Data Pack: 2-11. Waste Management

Topic	Code	Metric	Unit of Measure	Report Page or Performance
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	-	p. 54~64, 75~76
Workforce Health & Safety	RT-CH-320a.1	(a-1) Total recordable incident rate (TRIR) for direct employees	%	ESG Data Pack: 3-16. Occupational Accident Rate
		(a-2) Fatality rate for direct employees	%	ESG Data Pack: 3-16. Occupational Accident Rate
		(b-1) Total recordable incident rate (TRIR) for contract employees	%	ESG Data Pack: 3-16. Occupational Accident Rate
		(b-2) Fatality rate for contract employees	%	ESG Data Pack: 3-16. Occupational Accident Rate
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	-	p. 42~51
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use phase resource efficiency	KRW 1 million	N/A
Safety & Environmental Stewardship of Chemicals	RT-CH-410b.1	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances	%	p. 60
		(2) Percentage of such products that have undergone a hazard assessment	%	p. 60
	RT-CH-410b.2	(1) Discussion of strategy to manage chemicals of concern	-	p. 60~61
		(2) Discussion of strategy to develop alternatives with reduced human and/or environmental impact	-	p. 35, 37~41
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	%	N/A
Management of the Legal & Regulatory Environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	-	ESG Policy and Guidelines
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1	(1) Process Safety Incidents Count (PSIC)	No.	ESG Data Pack: 3-16. Occupational Accident Rate
		(2) Process Safety Total Incident Rate (PSTIR)	%	ESG Data Pack: 3-16. Occupational Accident Rate
		(3) Process Safety Incident Severity Rate (PSISR)	%	ESG Data Pack: 3-16. Occupational Accident Rate
	RT-CH-540a.2	Number of transport incidents	No.	ESG Data Pack: 3-16. Occupational Accident Rate

Activity Metrics

Code	Metric	Unit of Measure	Report Page or Performance
RT-CH-000.A	Production by reportable segment[1)]	m^3 or ton	ESG Data Pack: 1-2. Revenue by Business

1) Due to different units of the figures by business (energy business), it is replaced to the revenues by business

TCFD Index

TCFD Recommendations		Page
Governance	a. Describe the board's oversight of climate-related risks and opportunities	p. 26
	b. Describe management's role in assessing and managing climate-related risks and opportunities	
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	p. 27~33
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	
Risk Management	a. Describe the organization's processes for identifying and assessing climate-related risks	p. 33
	b. Describe the organization's processes for managing climate-related risk	
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	
Metrics and Targets	a. Disclose the metrics used by the organization to assess climaterelatedrisks and opportunities in line with its strategy and risk management process	p. 34
	b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	

ESRS Index

Environmental Standards			
Topic	**Code**	**Disclosure Requirement**	**Page**
ESRS E1. Climate Change			
Governance	ESRS 2 GOV-3	Integration of sustainability-related performance in incentive schemes	p. 23~24, 26
Strategy	E1-1	Transition plan for climate change mitigation	p. 32~33
	ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model(s)	p. 23~24
Impact, Risk and Opportunity Management	ESRS 2 IRO-1	Description of the processes to identify and assess material climate-related impacts, risks and opportunities	p. 27~29
	E1-2	Policies related to climate change mitigation and adaptation	ESG Policy and Guidelines
	E1-3	Actions and resources in relation to climate change policies	p. 26~34, 35~41, 54~61
Metrics and Targets	E1-4	Targets related to climate change mitigation and adaptation	p. 34
	E1-5	Energy consumption and mix	p. 34, ESG Data Pack: 2-3. Energy Consumption
	E1-6	Gross Scopes 1, 2, 3 and Total GHG emissions	p. 34, ESG Data Pack: 2-1. GHG (Scope 1, 2) Emissions, ESG Data Pack: 2-2. GHG (Scope 3) Emissions
	E1-7	GHG removals and GHG mitigation projects financed through carbon credits	-
	E1-8	Internal carbon pricing	-
	E1-9	Potential financial effects from material physical and transition risks and potential climate-related opportunities	p. 27~28, 31
ESRS E2. Pollution			
Impact, Risk and Opportunity Management	ESRS 2 IRO-1	Description of the processes to identify and assess material pollution-related impacts, risks and opportunities	-
	E2-1	Policies related to pollution	ESG Policy and Guidelines
	E2-2	Actions and resources related to pollution	p. 57~61
Metrics and Targets	E2-3	Targets related to pollution	p. 54, 57, 59
	E2-4	Pollution of air, water and soil	ESG Data Pack: 2-7. Effluent, ESG Data Pack: 2-8. Air Pollutants Emissions, ESG Data Pack: 2-9. Water Pollutants Emissions
	E2-5	Substances of concern and substances of very high concern	p. 60, ESG Data Pack: 2-10. Hazardous Chemical Substances Management
	E2-6	Potential financial effects from pollution-related impacts, risks and opportunities	-

Topic	Code	Disclosure Requirement	Page
ESRS E3. Water and Marine Resources			
Impact, Risk and Opportunity Management	ESRS 2 IRO-1	Description of the processes to identify and assess material water and marine resources-related impacts, risks and opportunities	p. 56
	E3-1	Policies related to water and marine resources	ESG Policy and Guidelines
	E3-2	Actions and resources related to water and marine resources	p. 56
Metrics and Targets	E3-3	Targets related to water and marine resources	-
	E3-4	Water consumption	ESG Data Pack: 2-5. Water Withdrawal and Consumption
	E3-5	Anticipated financial effects from water and marine resources-related impacts, risks and opportunities	-
ESRS E4. Biodiversity and Ecosystems			
Strategy	E4-1	Transition plan and consideration of biodiversity and ecosystems in strategy and business model	p. 62
	ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model	p. 63
Impact, Risk and Opportunity Management	ESRS 2 IRO-1	Description of processes to identify and assess material biodiversity and ecosystem-related impacts, risks and opportunities	p. 63
	E4-2	Policies related to biodiversity and ecosystems	p. 62, ESG Policy and Guidelines
	E4-3	Actions and resources related to biodiversity and ecosystems	p. 64
Metrics and Targets	E4-4	Targets related to biodiversity and ecosystems	p. 62
	E4-5	Impact metrics related to biodiversity and ecosystems change	p. 63
	E4-6	Anticipated financial effects from biodiversity and ecosystem-related risks and opportunities	-
ESRS E5. Resource Use and Circular Economy			
Impact, Risk and Opportunity Management	ESRS 2 IRO-1	Description of the processes to identify and assess material resource use and circular economy-related impacts, risks and opportunities	-
	E5-1	Policies related to resource use and circular economy	ESG Policy and Guidelines
	E5-2	Actions and resources related to resource use and circular economy	p. 37, 59
Metrics and Targets	E5-3	Targets related to resource use and circular economy	p. 36
	E5-4	Resource inflows	ESG Data Pack: 2-12. Raw Material Usage
	E5-5	Resource outflows	ESG Data Pack: 2-11. Waste Management
	E5-6	Anticipated financial effects from resource use and circular economy-related impacts, risks and opportunities	-

Social Standards			
Topic	**Code**	**Disclosure Requirement**	**Page**
ESRS S1. Own Workforce			
Strategy	ESRS 2 SBM-2	Interests and views of stakeholders	p. 131
	ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model	p. 23~24
Impact, Risk and Opportunity Management	S1-1	Policies related to own workforce	p. 77, ESG Policy and Guidelines
	S1-2	Processes for engaging with own workers and workers' representatives about impacts	p. 42, 69
	S1-3	Processes to remediate negative impacts and channels for own workers to raise concerns	p. 77, 92
	S1-4	Taking action on material impacts on own workforce, and approaches to mitigating material risks and pursuing material opportunities related to own workforce, and effectiveness of those actions	p. 44~45 ,78
Metrics and Targets	S1-5	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities	p. 47
	S1-6	Characteristics of the undertaking's employees	ESG Data Pack: 3-1. Employee
	S1-7	Characteristics of non-employee workers in the undertaking's own workforce	ESG Data Pack: 3-1. Employee
	S1-8	Collective bargaining coverage and social dialogue	ESG Data Pack: 3-9. Labor-Management Relations
	S1-9	Diversity metrics	ESG Data Pack: 1-6. BOD Composition ESG Data Pack: 3-1. Employee
	S1-10	Adequate wages	-
	S1-11	Social protection	p. 68~69
	S1-12	Persons with disabilities	ESG Data Pack: 3-2. Diversity by Position and Job Role
	S1-13	Training and skills development metrics	ESG Data Pack: 3-6. Performance Evaluation ESG Data Pack: 3-8. Employee Training
	S1-14	Health and safety metrics	ESG Data Pack: 3-16. Occupational Accident Rate
	S1-15	Work-life balance metrics	ESG Data Pack: 3-12. Parental Leave
	S1-16	Compensation metrics (pay gap and total compensation)	ESG Data Pack: 3-10. Equal Pay
	S1-17	Incidents, complaints and severe human rights impacts	p. 78, ESG Data Pack: 1-13. Whistleblowing Investigation
ESRS S2. Workers in the Value Chain			
Strategy	ESRS 2 SBM-2	Interests and views of stakeholders	p. 131
	ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model	p. 23~24
Impact, Risk and Opportunity Management	S2-1	Policies related to value chain workers	p. 71, ESG Policy and Guidelines
	S2-2	Processes for engaging with value chain workers about impacts	p. 74
	S2-3	Processes to remediate negative impacts and channels for value chain workers to raise concerns	p. 77, 92
	S2-4	Taking action on material impacts on value chain workers, and approaches to mitigating material risks and pursuing material opportunities related to value chain workers, and effectiveness of those actions	p. 72
Metrics and Targets	S2-5	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities	p. 72

Topic	Code	Disclosure Requirement	Page
ESRS S3. Affected Communities			
Strategy	ESRS 2 SBM-2	Interests and views of stakeholders	p. 131
	ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model	p. 23~24
Impact, Risk and Opportunity Management	S3-1	Policies related to affected communities	p. 75, ESG Policy and Guidelines
	S3-2	Processes for engaging with affected communities about impacts	-
	S3-3	Processes to remediate negative impacts and channels for affected communities to raise concerns	-
	S3-4	Taking action on material impacts on affected communities and approaches to mitigating material risks and pursuing material opportunities related to affected communities, and effectiveness of those actions	p. 76
Metrics and Targets	S3-5	Targets related to managing material impacts on affected communities	-
ESRS S4. Consumers and End-users			
Strategy	ESRS 2 SBM-2	Interests and views of stakeholders	p. 131
	ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model	p. 23~24
Impact, Risk and Opportunity Management	S4-1	Policies related to consumers and end-users	-
	S4-2	Processes for engaging with consumers and end-users about impacts	-
	S4-3	Processes to remediate negative impacts and channels for consumers and end-users to raise concerns	p. 79~80
	S4-4	Taking action on material impacts on consumers and end-users and approaches to mitigating material risks and pursuing material opportunities related to consumers and end-users, and effectiveness of those actions	p. 37~41, 80
Metrics and Targets	S4-5	Targets related to managing material impacts on consumers and end-users	-

Governance Standards

Topic	Code	Disclosure Requirement	Page
ESRS G1. Business Conduct			
Governance	ESRS 2 GOV-1	The role of the administrative, supervisory and management bodies	p. 14, 85~88
Impact, Risk and Opportunity Management	ESRS 2 IRO-1	Description of the processes to identify and assess material impacts, risks and opportunities	p. 92~94
	G1-1	Corporate culture and business conduct policies and corporate culture	p. 90, ESG Policy and Guidelines
	G1-2	Management of relationships with suppliers	p. 71~74
	G1-3	Prevention and detection of corruption and bribery	p. 90~92
Metrics and Targets	G1-4	Confirmed incidents of corruption or bribery	ESG Data Pack: 1-13. Whistleblowing Investigation
	G1-5	Political influence and lobbying activities	ESG Data Pack: 1-11. Policy Influence
	G1-6	Payment practices	-

Sustainability Initiatives

Supporting the UN SDGs

The United Nations Sustainable Development Goals (UN SDGs) are an international agreement adopted in September 2015 by UN member states based on a commitment to sustainable development in all countries. The international community strives to achieve 17 goals that are aimed at addressing universal human challenges, climate change, and economic and social issues.

Joining the UN Global Compact

The UN Global Compact is a global initiative that encourages companies to embed 10 principles across four areas—human rights, labor, environment, and anti-corruption—into their business operations, thereby enhancing corporate citizenship and sustainable development. Kumho Petrochemical joined this initiative in 2021 as a reaffirmation of its commitment to these principles.

Membership in the Korea Business Council for Sustainable Development

The Korea Business Council for Sustainable Development (KBCSD) is the Korean partner organization of the World Business Council for Sustainable Development (WBCSD). It facilitates communication among CEOs of leading companies both in Korea and overseas, serving as a platform for corporate dialogue on key ESG policies. Through its membership in KBCSD, Kumho Petrochemical actively responds to ESG-related laws and regulations and participates in global efforts towards sustainable development.

Participating in K-EV100

K-EV100 is an initiative led by Korea's Ministry of Environment in Korea to promote the transition to zero-emission vehicles. Participating companies publicly commit to converting all corporate-owned or leased vehicles to electric or hydrogen vehicles by 2030 and submit a detailed roadmap to achieve this goal. By joining K-EV100, Kumho Petrochemical aims to reduce greenhouse gas emissions not only in Scopes 1 and 2 but also in Scope 3.

ESG Ratings and Scores

(as of May 2024)

한국ESG기준원 Korea Institute of Corporate Governance and Sustainability	Integrated Rating: A / Environmental Rating: A / Social Rating: A+ / Governance Rating: A
S&P Global	Score: 66 — Member of Dow Jones Sustainability Indices Powered by the S&P Global CSA: Included in DJSI Korea Index — Sustainability Yearbook Member, S&P Global Corporate Sustainability Assessment (CSA) Score 2023: Selected as member of the S&P Global Sustainability Yearbook 2024
MSCI	MSCI ESG RATINGS BB — Rating: BB
SUSTAINALYTICS	19.1 Low Risk — Score: 19.1 (Low Risk)
CDP DRIVING SUSTAINABLE ECONOMIES	B — Rating: B

Stakeholder Participation and Communication

Kumho Petrochemical identifies and actively communicates with key stakeholder groups to incorporate their perspectives into its business activities. Recognizing the significant impact stakeholders such as customers, shareholders, investors, government agencies, media, partner companies, and employees have on its operations, Kumho Petrochemical employs various communication channels tailored to each group's characteristics to reflect their diverse opinions and expectations in its management activities. The company remains committed to enhancing transparency in its operations and sharing a wide range of updates on its corporate activities through ongoing stakeholder engagement.

Stakeholder Group	Engagement & Communication Channels	Frequency	Expectations
Customers	Website	Ongoing	• Sustainable products • Enhanced product quality management • Increased R&D investment ratio relative to sales • Response to ESG management and evaluations
	Customer Inquiry Center	Ongoing	
	Press Releases	Ongoing	
Shareholders & Investors	Disclosure Materials	Annual	• Enhanced corporate value • Establishment of sound governance structure • Integrated risk management • Strengthened ESG information disclosure
	General Meetings	Quarterly	
	Key Regular Reports	Annual	
	Sustainability Reports	Annual	
Government & Media	Website	Ongoing	• Implementation of carbon neutrality in the petrochemical industry • Support for occupational safety and health • Support for shared growth with partner companies • Disclosure of corporate management activities • Disclosure of ESG information
	Press Releases	Ongoing	
	Meetings and Consultations	Ongoing	
	Business and Audit Reports	Ongoing	
	Sustainability Reports	Annual	
Partner Companies	Safety and Health Consultative Body	Monthly	• Strengthened safety management for partner companies • Enhanced social contribution activities
	Partner Company Representative Meetings	Ongoing	
Employees	Internal Portal (Magazine, Webtoons)	Ongoing	• Strengthened workplace safety and health management • Capacity building
	Labor-Management Council Meeting	Quarterly	
	Occupational Safety and Health Committee Meetings	Quarterly	

Greenhouse Gas Assurance Statement

Kumho Petrochemical Co., Ltd.

Verification Scope

The Korean Standards Association (KSA) has conducted verification of the direct emissions (Scope 1) and indirect emissions (Scope 2) as reported in the Greenhouse Gas Emissions Statement of Kumho Petrochemical Co., Ltd.

Verification Standards and Procedures

The KSA carried out the verification process based on the following standards and procedures:

- Guidelines on Reporting and Certification of Emissions in the Emissions Trading Scheme (Ministry of Environment Notice No. 2023-221)
- Guidelines for Verification for the Operation of the Emissions Trading Scheme (Ministry of Environment Notice No. 2021-112)
- For aspects not covered by the above guidelines, the 2006 IPCC Guidelines, KS I ISO 14064-1: 2018, and KS I ISO 14064-3: 2019 were referenced.

Level of Assurance

The materiality assessment of the greenhouse gas emissions from Kumho Petrochemical Co., Ltd. satisfies a reasonable level of assurance, with a margin of error within ±2.5% of total emissions.

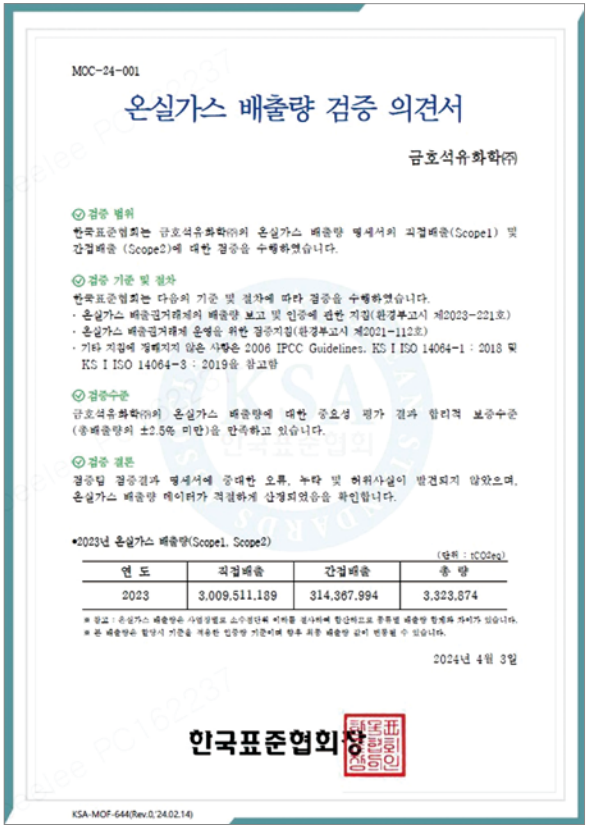
Verification Conclusion

Upon verification by the audit team, no significant errors, omissions, or misrepresentations were identified in the statement. Greenhouse gas emissions data has been correctly and appropriately calculated.

2023 Greenhouse Gas Emissions (Scope 1, Scope 2)

- Year: 2023
- Direct Emissions: 3,009,511.189tCO_2eq
- Indirect Emissions: 314,367.994tCO_2eq
- Total Emissions: 3,323,874tCO_2eq

Note: Greenhouse gas emissions have been rounded down to the nearest decimal point per business site. Therefore, total emissions may differ from the sum of individual emission types. Reported emission figure(s) are based on the verification criteria at the time of allocation and may be subject to future adjustments.



MOC-24-001

온실가스 배출량 검증 의견서

금호석유화학㈜

◎ 검증 범위

한국표준협회는 금호석유화학㈜의 온실가스 배출량 명세서의 직접배출(Scope1) 및 간접배출 (Scope2)에 대한 검증을 수행하였습니다.

◎ 검증 기준 및 절차

한국표준협회는 다음의 기준 및 절차에 따라 검증을 수행하였습니다.
- 온실가스 배출권거래제의 배출량 보고 및 인증에 관한 지침(환경부고시 제2023-221호)
- 온실가스 배출권거래제 운영을 위한 검증지침(환경부고시 제2021-112호)
- 기타 지침에 정해지지 않은 사항은 2006 IPCC Guidelines, KS I ISO 14064-1 : 2018 및 KS I ISO 14064-3 : 2019을 참고함

◎ 검증수준

금호석유화학㈜의 온실가스 배출량에 대한 중요성 평가 결과 합리적 보증수준 (총배출량의 ±2.5% 미만)을 만족하고 있습니다.

◎ 검증 결론

검증팀 검증결과 명세서에 중대한 오류, 누락 및 허위사실이 발견되지 않았으며, 온실가스 배출량 데이터가 적절하게 산정되었음을 확인합니다.

•2023년 온실가스 배출량(Scope1, Scope2)

(단위 : tCO2eq)

연 도	직접배출	간접배출	총 량
2023	3,009,511.189	314,367.994	3,323,874

2024년 4월 3일

한국표준협회장

KSA-MOF-644(Rev.0, '24.02.14)

April 3, 2024
President, Korean Standards Association

Independent Verification Statement

To readers of Kumho Petrochemical Sustainability Report 2023

Introduction

Korea Management Registrar (KMR) was engaged to conduct an independent verification of Kumho Petrochemical Sustainability Report 2023 for the year ending December 31, 2023. The preparation, information and internal control of the report is the sole responsibility of the management of Kumho Petrochemical KMR's responsibility is to comply with the agreed engagement and express an opinion to Kumho Petrochemical's management.

Subject Matter

The reporting boundaries included the performance and activities of sustainability-related organizations as described in Kumho Petrochemical's report:

- Sustainability Report 2023
- ESG Data Pack

Reference Standard

- GRI Standards 2021 : 2023 (GRI)

Verification Criteria

KMR conducted the verification in accordance with ISAE 3000 and SRV 1000 based on requirements of ISO 17029 and KMR EDV 01, and set the levels of assurance and materiality as below. ISAE 3000 was used to evaluate the reliability and quality of the data and information on the GRI indicators in the report while SRV 1000 enabled a three-dimensional audit with the goal of zero data errors. The level of materiality was determined based on our professional judgment.

- ISO 17029 : 2019, ISO 14065 : 2020, ISAE 3000 : 2021 (IAASB), SRV 1000 : 2022 (KMR), KMR EDV 01 : 2024 (KMR)
- Levels of assurance/materiality: limited/not set

Scope of Verification

The scope of our verification included the verification of compliance with the reporting requirements of the GRI Standards 2021. We confirmed that the following indicators of material topics were identified through the materiality assessment process:

- GRI Standards 2021 reporting principles
- Universal Standards
- Topic Specific Standards
  - GRI 301: Materials
  - GRI 302: Energy
  - GRI 305: Emissions
  - GRI 403: Occupational Health and Safety
- As for the reporting boundary, the engagement excluded the data and information beyond the organization, such as those of Kumho Petrochemical's partners, suppliers, and any third parties.

Verification Methodology

Our verification team carried out the following activities to verify the agreed scope of verification against the criteria described above:

- Evaluating the appropriateness of the reference standard used as a basis for preparing sustainability information and the reliability of the materiality assessment process and its findings;
- Conducting inquiries to understand the data management and control environment, processes, and information systems (the effectiveness of controls was not tested);
- Evaluating the appropriateness and consistency of the methodology for estimation (note that the underlying data was not tested and KMR has not made any estimates);
- Visiting the headquarters, determining visit sites based on the site's contribution to sustainability and the possibility of unexpected changes since the previous period and sampling data, and carrying out due diligence on a limited number of source records at the sites visited;
- Interviewing people in charge of preparing the report;
- Considering whether the presentation and disclosures of sustainability information are accurate and clearly defined;
- Identifying errors through comparison and check against underlying information, recalculation, analyses, and backtracking; and
- Evaluating the reliability and balance of information based on independent external sources, public databases, and press releases.

Limitations and Measures Taken

The absence of generally accepted reporting frameworks or well-established practices on which to draw to evaluate and measure non-financial information allows for different measures and measuring techniques, which can affect comparability between entities. Therefore, our verification team relied on professional judgment. The scope of this verification included the confirmation of the truthfulness of claims regarding results that have already been obtained as stipulated by ISO 17029. However, the plausibility of intended claims of forecasts or hypotheses was not validated even if the related content was contained in the report.
A limited assurance evaluates the appropriateness of the criteria used by Kumho Petrochemical for preparing sustainability information on subject matters, the risk of material misstatement in the sustainability information, whether due to fraud or error, responses to risks, and disclosure of the sustainability information on subject matters. However, the scope of the risk assessment process and the subsequent procedures performed in response to assessed risks, including an understanding of internal controls, is more limited than that of a reasonable assurance.
Our verification team conducted our work to a limited extent through inquiries, analysis, and limited sampling based on the assumption that the data and information provided by Kumho Petrochemical is complete and sufficient. To overcome these limitations, we confirmed the quality and reliability of the information by referring to independent external sources and public databases, such as DART and the National GHGs Management System (NGMS).

Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with Kumho Petrochemical on the revision of the report. We reviewed the report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the verification, it is our opinion that Kumho Petrochemical's report was prepared in accordance with the reporting principles of the GRI Standards 2021. Nothing has come to our attention to imply that the report was not prepared according to the reference standard used by Kumho Petrochemical.
Additionally, we verified the reliability of economic, environmental, and social performance information related to specific sustainability performance. We interviewed representatives to verify the information and data, and confirmed its reliability through data sampling as well as review of supporting documents, external sources and public databases. We did not find any intentional errors or misstatements in the sustainability performance information.

KMR's Competence, Independence, and Quality Control

Korea Management Registrar (KMR) is a verification body for the greenhouse gas emissions trading scheme, accredited by the Korea Laboratory Accreditation Scheme (KOLAS) under the National Institute of Technology and Standards of Korea for ISO/IEC 17029:2019 (Conformity Assessment - General principles and requirements for validation and verification bodies), ISO 14067, and additional accreditation criteria, ISO 14065. It is also recognized by the Korea Accreditation Board (KAB) for ISO/IEC 17021:2015 (Requirements for bodies providing audit and certification of management systems), and the National Institute of Environmental Research under the Ministry of Environment of Korea. Additionally, KMR maintains a comprehensive quality control system that includes documented policies and procedures of the KMR EDV 01:2024 (ESG Disclosure Verification System) based on ISO/IEC 17029 requirements and compliant with IAASB ISQM1:2022 (International Standard on Quality Management 1 by the International Auditing and Assurance Standards Board). Furthermore, KMR adheres to the ethical requirements of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior in accordance with the IESBA Code:2023 (International Code of Ethics for Professional Accountants). Our verification team consists of sustainability experts. Other than providing an independent verification, KMR has no other contract with Kumho Petrochemical and did not provide any services to Kumho Petrochemical that could compromise the independence of our work.

Limitations of Use

This verification statement is made solely for the management of Kumho Petrochemical for the purpose of enhancing an understanding of the organization's sustainability performance and activities. We assume no liability or responsibility for its use by third parties other than the management of Kumho Petrochemical. The statement is valid as of the verification date below. Certain events that may occur between the verification date and the time of reading this report could have a material impact on the report, which may lead to revisions to this verification statement. Therefore, we recommend visiting the Kumho Petrochemical website and verifying whether this is the latest version.

May 20, 2024

President and CEO E. J Hwang

Korea Management Registrar

SRV1000 Sustainability Committee Assurance

beyond the best

KUMHO
PETROCHEMICAL