SK chemicals

ABOUT THIS REPORT

SK chemicals Co., Ltd. has been publishing the Sustainability Report every year since 2010 to inform our stakeholders of our performance and activities to create economic and social values. The 2023 Sustainability Report intends to transparently disclose its ESG management strategies, goals, and performance, driving us towards a sustainable future.

The environmentally friendly materials, eco-friendly products, and green materials mentioned in the report refer to CR-Copolyester (with a recycle content of over 50%) and CR-Polyester (with a recycle content of over 30%), which use recycled materials, as well as PO3G (with a bio-content of 100%), which uses biomass as a raw material. These products fall under the circular economy sector of the Korean Green Taxonomy Guidelines (K-Taxonomy) for the recycling and upcycling of waste resources. Additionally, they have obtained certifications such as the Global Recycled Standard (GRS) for the use of recycled materials and ISCC (International Sustainability & Carbon Certification) Plus to ensure their ongoing compliance.

Scope of Report

This report includes all operations under SK chemicals Co., Ltd., including the headquarters, R&D institute (Eco Lab), and business sites in Ulsan and Cheongju (S HOUSE). SK bioscience and SK multi utility, two major consolidated subsidiaries in Korea, are also included in this report. Business activities that fall under financial reports are included, unless otherwise noted.

Period of Report

The primary reporting period is from January 1, 2023, to December 31, 2023, and a number of qualitative performances include those from the first half of 2024. In addition, this report contains data for the previous three years—2021, 2022, and 2023—to identify current growth status and trends. Any changes from the previous reports and their corresponding reasons are detailed within. Our Sustainability Report is published annually, with this edition released in June 2024.

Principle of Report

This report is prepared in accordance with the 2021 Global Reporting Initiative (GRI) standards. As a member of the UN Global Compact (UNGC), the report includes our activities to achieve the 10 principles of human rights, labor, environment, and anti-corruption, as well as the Sustainable Development Goals (SDGs). Furthermore, to select major issues that fit the characteristics of the industry, we considered the Sustainability Accounting Standards Board (SASB) standards, and reflected recommendations from the Task Force on Climate related Financial Disclosure (TCFD). The financial data in this report abides by K-IFRS (Korean International Financial Reporting Standards).

Data Assurance

This report was verified by BSI Group Korea, a third-party independent assurance provider. The verification applied AA1000AS, Type 2, and Moderate level standards, and encompassed the general scope of ESG, including social and environmental KPIs. The independence and qualifications of the provider are described in the Assurance Statement. Furthermore, the GRI table disclosed on SK chemicals' website is included in the verification scope.

Additional Information

- SK chemical's Website
- Sustainability Report
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CEO Message

Dear our valued stakeholders

Last year was a year of global economic instability with high inflation, rising interest rates, and escalating conflicts and confrontations between nations. Despite this environment, SK chemicals realized inspiring financial results by expanding its portfolio of high-margin products in the copolyester business and expanding sales of its flagship products in the Pharma business.

2023 was the meaningful year for us to lay the foundation for sustainable growth in an unstable business environment.

We established SK Shantou, a production and sales company for circulating recycle materials in China, to strengthen the competitiveness of our business through the commercialization of circular recycle materials and expand the proportion of circular recycled materials in our product portfolio. In addition, we have approved science-based GHG reduction targets from SBTi and are actively implementing them, conducting human rights due diligence, and strengthening the diversity and expertise of our Board of Directors to ensure the sustainability of all stakeholders. As a result of these proactive and aggressive activities, our MSCI rating was upgraded from A to AA, and we received the highest rating of A+ from the Korea Institute of Corporate Governance and Sustainability for the second consecutive year, demonstrating the tangible results of our social and environmental efforts.

SK chemicals will play the role of a "Total Solution Provider" to address environmental issues with circular economy solutions.

As the issue of plastic waste has emerged as a global concern, and the responsibilities and obligations of companies and producers to become carbon neutral are continuously strengthened, most countries are enhancing policies and regulations to build a resource circulation ecosystem. These changes in the business environment are challenging for SK chemicals, but we recognize them as important opportunities to open up new horizons, and they have become a necessity for growth and environmental issues.

SK chemicals aims to establish a fully circular system for recycled plastics, positioning ourselves as a solution provider for brand owners who produce finished goods. With the mid to long-term objective of becoming the global leader in circular economy solutions by 2027, SK chemicals is consistently producing and expanding business that converts waste into raw materials through its ambitious BM transformation. Additionally, the company seeks to create a stable profit base by enhancing the competitiveness of its existing businesses. In the Green Chemicals sector, we will increase the proportion of high-value products, and in the Pharma sector, we will implement a medium-term growth master plan by strengthening competitiveness in key markets and diversifying its product portfolio.

Through these changes and innovations, SK chemicals will continue to fulfill our mission of "We care for the future, Healthcare, Earthcare."

We look forward to your continued support and interest in SK chemicals' journey.

Kim Cheol, CEO of SK chemicals

Ahn Jae-hyun, CEO of SK chemicals

Company Profile

About the Company

Company Overview

Since its establishment in 1969 as Sunkyung Synthetic Textiles, SK chemicals has driven innovation and growth in Korea's eco-friendly materials and life sciences sectors, dedicated to its mission of "improving human health and protecting the environment." To achieve a harmonious balance between humans and the environment, SK chemicals strives to become a global leader in eco-friendly materials and life sciences. This ambition is pursued through its Green Chemicals business, which delivers eco-friendly material solutions, and its Pharma business, which offers comprehensive healthcare solutions centered on innovative pharmaceuticals.

(As of Dec. 31, 2023)

Company Name	SK chemicals CO., LTD.
Business	Development/Production/Sales of eco-friendly resin and pharmaceuticals
Headquarters	310, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
Website	www.skchemicals.com
Revenue	KRW 1.7488 trillion
Operating Profit	KRW 83.3 billion
Net Profit	KRW 47.8 billion

* Financial results are presented on a consolidated basis.

For more details, you can visit the website.

Key Business Areas

SK chemicals leads in environmental protection and the enhancement of human health by providing eco-friendly materials and comprehensive healthcare solutions. Utilizing world-class technology, expertise, and production facilities, we build partnerships to enhance our business portfolio and sustain growth through significant investments and active R&D.

The Green Chemicals business division is advancing into the recycled plastic raw materials market (CR-copolyester, CR-PET) with top-tier global circular recycling technology, while also enhancing existing businesses like high-performance copolyester and adhesives and coatings. Additionally, we are bolstering our portfolio of eco-friendly materials, including bio-based plastic raw materials (PO3G), to deliver unique products that meet customer needs.

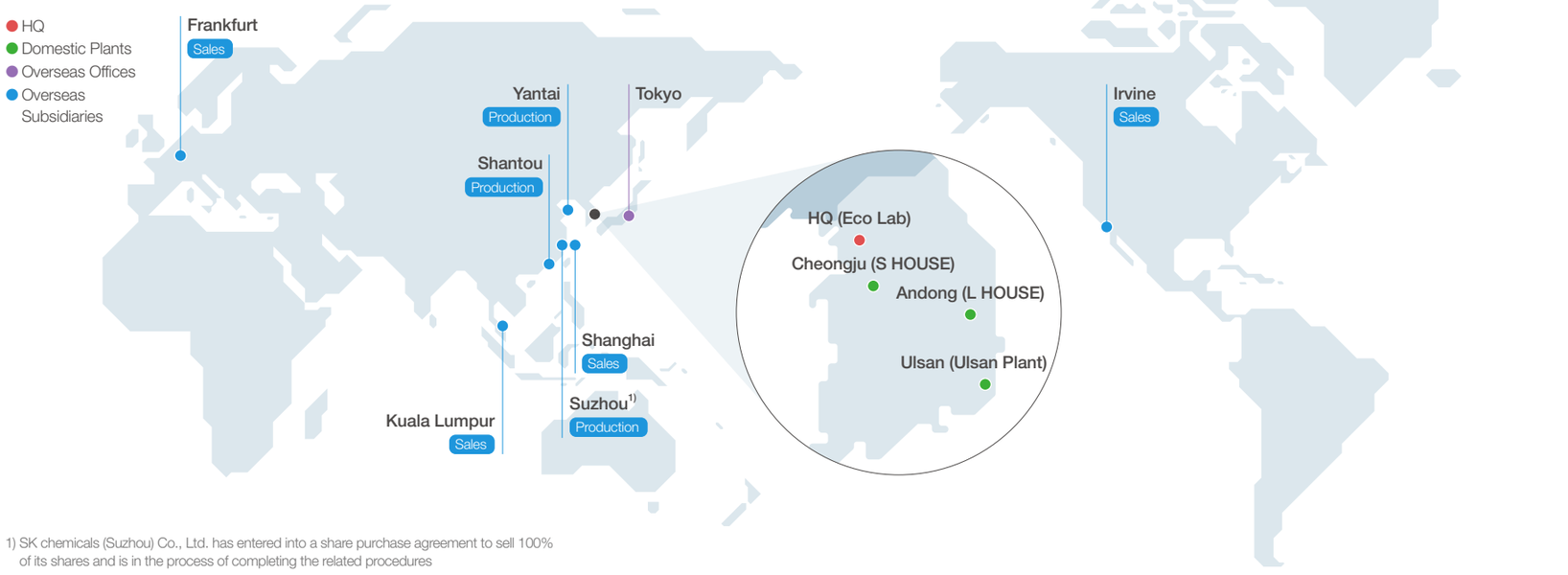
The Pharma business division manufactures and sells high-quality natural and synthetic drugs in Korea and internationally, expanding through continuous R&D achievements and strategic partnerships with leading global pharmaceutical companies. By focusing on R&D and investments in areas such as synthetic new drugs, natural products, and biotechnology, we are achieving significant results in developed global markets beyond Korea.

Subsidiaries and Investors Status

SK chemicals operates the Ulsan Green Chemical Plant, Andong SK bioscience Plant, and Cheongju Pharmaceutical Plant, all coordinated from its headquarters at Eco Lab in Pangyo, Seongnam-si, Gyeonggi-do. With overseas sales subsidiaries in the United States, Germany, Shanghai, China, and Malaysia, along with offices in Japan and Guangzhou, China, and production plants in Shantou and Yantai, China, SK chemicals has established a robust global network and earned recognition for its excellence in the international market.

SK chemicals encompasses a total of 11 consolidated subsidiaries, including three domestic companies (SK bioscience, SK multi utility, and SK chemical Daejung) and eight overseas companies located in the U.S., Germany, and China.

Domestic Offices and Global Network



1) SK chemicals (Suzhou) Co., Ltd. has entered into a share purchase agreement to sell 100% of its shares and is in the process of completing the related procedures

Status of Subsidiaries/Investors

Share (as of. 2023.12.31)

Consolidated Subsidiaries

SK bioscience Co., Ltd. — 68%
Founded on 2018.07.01
310, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
Pharmaceutical manufacturing

SK multi utility Co., Ltd. — 100%
Founded on 2021.12.01
718, Cheoyong-ro, Nam-gu, Ulsan
Manufacturing

SK bioscience USA,Inc. — 100%
Founded on 2022.12.19
3 Park Plaza Suite 430, Irvine CA 92614
Bio technology development

SK chemicals GmbH — 100%
Founded on 2008.06.20
ESCHBORN,GERMANY
Wholesale

SK chemicals America — 100%
Founded on 2002.07.19
3 Park Plaza Suite 430, Irvine CA 92614
Wholesale

Shuye-SK chemicals (Shantou) Co., Ltd. — 100%
2023.03.06
Shantou,Guangdongprovince,P.R.China
Plastic manufacturing

SK chemicals Yantai Co., Ltd. — 100%
Founded on 2020.06.15
Yantai Economic and Technological Development Zone, Shandong
Resin manufacturing

SK chemicals-Daejung Co., Ltd. — 50%
Founded on 2020.04.01
310, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
Organic solvent manufacturing

SK chemicals Shanghai Co., Ltd. — 100%
Founded on 2018.11.02
Shanghai,China
Management consulting

SK chemicals Malaysia — 100%
Founded on 2020.08.25
KUALA LUMPUR MALAYSIA
Management consulting

Associates

JSI Co., Ltd. — 40%
Manufacturing

HDC Polyol Co., Ltd — 20%
Manufacturing

Joint Venture

ENTIS Co., Ltd. — 50%
Manufacturing

Key Subsidiaries

SK bioscience

General Overview

SK bioscience was established through a split-off from SK chemicals on July 1, 2018, leveraging the expertise accumulated in the vaccine business. With the aim of enhancing human health from prevention to treatment, we are accelerating our performance, developing our own vaccine portfolio and continuously promoting global projects. Our effective response to the COVID-19 pandemic, employing a two-track strategy of global vaccine C(D)MO and our own vaccine development, has allowed us to build a high level of competence and an extensive network in the vaccine field. This is propelling our growth toward re-emerging as a Global Top 10 Vaccine Company.

Company Name	SK bioscience Co., Ltd.
Business	R&D, production and sales of vaccines and biopharmaceuticals
Headquarters	Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
Website	www.skbioscience.com
Revenue	KRW 369.5 billion

Key Business Areas

Self-development and production of vaccines

- R&D of original products including the commercialization of five SKYVAX series based on excellent R&D capabilities
- Large-scale commercial/clinical vaccine production through Andong L HOUSE, a global-level vaccine manufacturing facility specializing in vaccines

Joint development and technology transfer on a global scale

- Collaboration with global players across the entire vaccine development value chain, from candidate discovery to process development, clinical trials, licensure, and commercialization, including the development of Korea's first COVID-19 vaccine, SKY Covione, and co-development of the next-generation pneumococcal vaccine with Sanofi in France

Globally outsourced development and production

- Process development and outsourced production of vaccine products from global companies based on experience in developing various vaccine platforms, technology, and flexible production system

Domestic business

- Improvement of the convenience of vaccination based on SK's strong domestic sales and marketing infrastructure, and expansion the vaccine market through distribution and co-promotion of vaccine products with domestic and foreign partners

Key Business Areas

Green Chemicals Business

Business Areas

Resins

High-performance Materials

Bio Materials

Key Business Performances in 2023

Revenue Share
73%

Revenue
KRW 1.2852 trillion

Operating Profit
KRW 52 billion

Business Overview

SK chemicals has established itself as a leading player in the chemical sector both in Korea and internationally by producing high value-added chemical materials, including highly transparent, BPA free and heat-resistant copolyester, thermoplastic elastomers known for their exceptional heat resistance and mechanical strength, and polyester adhesives used as essential raw materials in various industries. Additionally, SK chemicals is pioneering initiatives as a global leading company in developing eco-friendly materials aimed at protecting the environment, such as plastic recycling technologies and bio-based plastics.

Business Directions

The global chemical industry's competitive landscape is shifting from traditional price competition to a focus on eco-friendly and recyclable technologies, driven by the paradigms of "sustainability" and the "circular economy." With the Basel Convention amendments taking effect in 2021, strict controls on the export and import of plastic waste have underscored the importance of local access to waste feedstocks for recycling as a critical competitive factor. Moreover, global regulations on plastic usage are tightening. The European Union's new plastics regulation aims for a more comprehensive reduction of plastic use beyond traditional recycling methods. In the United States, state-level legislation on recycled plastics is gaining momentum. China, as the largest producer and consumer of plastics, is intensifying regulations by banning waste plastic imports, promoting separate collection systems, and restricting the production and use of single-use plastics. Recently, Korea has also implemented a post-plastic policy to foster a transition towards a circular economy. To navigate this evolving market environment and maintain a competitive edge, SK chemicals' Green Chemicals business is actively pursuing strategies, such as developing new products incorporating recycled materials, securing renewable raw materials through regional bases, and establishing a vertically integrated system for monomer-polymer production. By focusing on unique technology acquisition and enhancing marketing competitiveness, SK chemicals aims to further solidify the position as a global leader in eco-friendly and recycled materials.

Key Business Areas

Copolyester

SK chemicals leads the market with the commercialization of ECOTRIA, a renewable raw material (PCR)[1] product. We have partnered with a third-party organization to conduct Life Cycle Assessments (LCA) for 19 copolyester product lines, including ECOGEN, ECOTRIA, SKYGREEN, and ECOGEN CLARO, among others. Nine of these product lines have received UL Environmental Product Declaration (EPD) certification. Despite increasing competition in the copolyester market, SK chemicals remains dedicated to shifting its portfolio towards higher-value-added applications. The company continues to innovate in eco-friendly and recyclable technologies to maintain its industry leadership.

1) Post-Consumer Recycled (PCR) : Plastic products that have been used and discarded by end-customers, which are then selected and collected for recycling purposes.

SKYGREEN

This is a high-performance PETG product that is BPA-free, transparent, chemical resistant, and processable for food contact applications. With its excellent transparency and processability, it can be used in various applications such as cosmetic containers, construction materials, food containers, and decorative films.

ECOZEN

It is a copolyester product containing biomass-derived components (carbon weight 1.5~18%) and has improved heat resistance. It does not contain Bisphenol A (BPA, phthalate-based plasticizer) and is used in various fields from food containers to home appliances.

SKYPET CR

SKYPET CR is a chemically recycled PET resin. It has the same level of physical properties as conventional PET, enabling a wide range of applications.

ECOTRIA Claro

It is a crystalline copolyester that retains the excellent transparency and chemical resistance and is recyclable with PET. It is verified by the Association of Plastics Recyclers (APR) in the U.S. and the European PET Bottle Platform (EPBP) in Europe.

ECOTRIA

ECOTRIA is containing recycled raw material which is derived from PCR (Post consumer recycled) PET bottle. In 2021, SK chemicals started mass production of ECOTRIA-CR products using circular recycling technology. These products have been certified by the Global Recycled Standard (GRS) and International Sustainability & Carbon Certification (ISCC) Plus, affirming the use of recycled materials. Notably, two ECOTRIA products have received UL EPD Optimization certification, which recognizes the carbon reduction compared to conventional petrochemical copolyesters.

SKYDMT

It is used as a raw material in various fields, including films, fibers, engineering plastics, and adhesives. With 30 years of experience since the first production in 1989, it has been recognized for its quality excellence by both domestic and overseas customers, owing to the rigorous global quality control standards.

SKYCHDM

This monomer is used as a raw material for polyester polymer resins, polyurethane resins, and resins for paints. It serves as a replacement or blend for conventional aromatic or aliphatic raw materials. By leveraging the advantages and addressing the disadvantages of existing raw materials, it can enhance various properties of the resin, particularly the transparency and processability of polyester resins, depending on the blending ratio.

Functional Materials

SK chemicals provides functional value to customers with products that are durable, heat-resistant, and chemical-resistant. Additionally, we are continuously developing products using recycled and bio-based materials.

SKYTRA

It is a compounding grade of PET, which is a polyester-based compound known for its excellent heat, chemical, and mechanical strength. Some grades contain recycled content, offering an environmentally friendly approach.

SKYPURA

It is a brand name for Poly-Cyclohexylene dimethylene Terephthalate (PCT) produced by SK chemicals. It is a super engineering plastic material suitable for industrial applications requiring high heat and light resistance as well as excellent electrical properties.

SKYPEL

It is a polyester-based thermoplastic elastomer that combines the properties of both rubber and engineering plastics. It is widely used in the electrical and electronics, automotive, and film and textile sectors.

SKYBON

SKYBON, a high molecular weight polyester resin, serves as a versatile adhesive and coating material across multiple industries. It is applied in coating steel plates for home appliances and food cans, valued for its flexibility and strong adhesion properties. Our solvent-free Hotmelt product, which avoids organic solvents, functions as an adhesive resin in thermal transfer films for apparel, praised for its excellent anti-staining characteristics. Additionally, we are broadening our range of water-based polyester resins to meet the growing demand for eco-friendly solutions.

Bio Materials

SK chemicals not only advances eco-friendly initiatives through recycled materials but also contributes to a sustainable society by developing biomass-based material.

ECOTRION

Polyoxytrimethylene ether glycol (PO3G) is a advanced material that completely replaces traditional petroleum-based polyols with 100% biomaterials. Polyols serve as crucial raw materials for polyurethane applications, extensively utilized in synthetic leather, apparel, coatings, adhesives, and spandex, among other uses. PO3G offers several advantages over conventional products, including enhanced softness, elasticity, resilience, and abrasion resistance, resulting in more comfortable wear and reduced deformation. Moreover, its low carbon footprint significantly improves the environmental impact of products.

Life Science Business

Business Areas

Synthetic new drugs

Natural products

Vaccines

Key Business Performances in 2023

Revenue Share
43%

Revenue
KRW 745.6 billion

Operating Profit
KRW 19.5 billion

Business Overview

SK chemicals' Pharma business focuses on manufacturing and distributing a wide range of natural and synthetic pharmaceuticals, and continuously growing by achieving substantial accomplishments in R&D and building strategic partnerships. SK chemicals is dedicated to improving quality of life by providing diverse treatment options and considers the promotion of human health a fundamental principle.

Business Directions

The global healthcare market is seeing increased demand due to an aging population. In response, the domestic pharmaceutical industry is enhancing its abilities to navigate market changes, government health insurance policies, drug pricing regulations, compliance requirements, and ethical standards. This approach aims to expand the range of competitive products and increase penetration in both domestic and international markets. M&As are expected to rise, alongside ongoing investments in R&D and internal efficiencies to improve profitability. SK chemicals' Pharma business, leveraging its stable operations, has identified strategic priorities : 1) Strengthening competitiveness in key sectors, 2) Achieving concrete outcomes through open innovation and reinforcing the foundation for R&D growth, 3) Pursuing new business opportunities, including expanding capabilities in (C(D)MO). Promoting new drug development through open innovation collaborations with bio-venture firms and enhancing drug discovery capabilities using AI technologies are prime examples. Furthermore, SK chemicals is actively seeking additional partnerships both domestically and internationally to enhance its R&D capabilities across synergistic and new business areas. With a strong pipeline in place, SK chemicals aims to aggressively pursue new ventures to consolidate its leadership in the domestic pharmaceutical industry.

Key Products

Pharmaceuticals

The Pharma business features a broad pipeline based on strong marketing capabilities and substantial R&D accomplishments. Our expertise in therapeutic areas includes musculoskeletal and circulatory systems, where we generate consistent revenue with medications targeting conditions like inflammation and joint pain (rheumatism), circulatory issues (hypertension and hyperlipidemia), and neurological disorders (dementia and headache). We aim to expand our market presence further by continually diversifying our range of products.

JOINS

JOINS, a herbal treatment for arthritis, is the first natural product new drug registered in Korea, and is regarded as a cornerstone therapy for arthritis, exhibiting anti-inflammatory and analgesic effects comparable to conventional medications, with minimal side effects and protective benefits for cartilage tissue, as evidenced in clinical trials. Since its introduction in 2002, JOINS has amassed cumulative sales reaching KRW 592.1 billion as of 2023.

Wondron Patch (Rivastigmine)

Wondron Patch (Rivastigmine), the first patch-type treatment for dementia developed in Korea in 2010, became the first generic approved for sale in Europe in 2013, showcasing its advanced technology. It maintains a leading position in the European market for generics with the same active ingredient. Furthermore, it has obtained FDA approvals in Australia (2016), Colombia (2017), Mexico and Jordan (2018), Canada (2019), the U.S. (2019), and Brazil (2022), significantly bolstering our international footprint.

Ginexin-F

Ginexin-F is SK chemicals' flagship brand, leading the market in blood circulation improvement products with cumulative sales of KRW 533.6 billion in 2023. It is produced using a patented technology that extracts active ingredients from ginkgo biloba leaves to reduce blood viscosity and dilate blood vessels. In 2010, SK chemicals introduced Renexin, (anticoagulant combining Ginexin-F with the thrombolytic component cilostazol) offering lower side effects and improved efficacy. Further strengthening its market position, SK chemicals launched the 'Renexin CR Tab' in 2020, enhancing compliance and convenience for users.

Trast

Trast is a patch-type knee osteoarthritis treatment that has become a leading brand in Korea since its launch in 1996. This patch-type product is applied directly to the joint area, minimizing the side effects associated with existing medications, and provides a long-lasting effect of 48 hours with a single application. We began exporting Trast in 2006 after receiving the first product license in China, and we plan to continue expanding our global market presence.

Key Products

Vaccine

SK bioscience is committed to developing vaccines and biopharmaceuticals aimed at preventing and treating viruses that pose threats to humanity. We made achievement in developing Korea's first cell-cultured trivalent influenza vaccine in 2015, followed by a cell-cultured quadrivalent influenza vaccine in 2016, a shingles vaccine in 2017, and a chickenpox vaccine in 2018. In 2022, we developed Korea's first COVID-19 vaccine, SKY Covione. Since then, we have expanded our pipeline and platform technologies in both basic and therapeutic vaccines, introduced premium vaccines, diversified into biopharmaceuticals, and established a foundation for growth as a global leader in vaccines and biotechnology.

Cell-Cultured Influenza Trivalent Vaccine (SKY Celflu 3)

SKY Celflu 3 is the first cell-cultured influenza vaccine developed in Korea in 2015. This vaccine is produced using a state-of-the-art sterile incubator without the use of fertilized eggs, eliminating the need for antibiotics or preservatives. Consequently, it is suitable for administration to individuals with egg allergies.
It was the first cell-cultured flu vaccine in the world to obtain World Health Organization (WHO) Prequalification (PQ) certification.

Shingles Vaccine (SKY Zoster)

SKY Zoster is the second premium shingles vaccine in the world and the first in Korea. SKY Zoster is a live attenuated varicella-zoster virus vaccine that has undergone rigorous safety testing in specialized non-clinical laboratories overseas and has been supplied to numerous countries domestically and internationally.
It is a flagship product that addresses the growing global demand for shingles prevention.

Synthetic Antigen COVID-19 Vaccines (SKY Covione)

SKY Covione is a COVID-19 vaccine co-developed by the Institute for Protein Design (IPD) at the University of Washington in the United States and SK bioscience. Supported by funding from the Bill & Melinda Gates Foundation (BMGF) and the Coalition for Epidemic Preparedness Innovations (CEPI), along with institutional backing from the Korean government, our company became the first domestic vaccine developer to successfully complete Phase 3 clinical trials and begin commercialization in 2022. One of SKY Covione's key advantages is its ability to be stored at 2-8 degrees Celsius for an extended period. It not only enhances vaccination rates in underdeveloped regions but also supports widespread distribution globally.

Cell-Cultured Influenza Surface Antigen Vaccine (Sky Celflu 4)

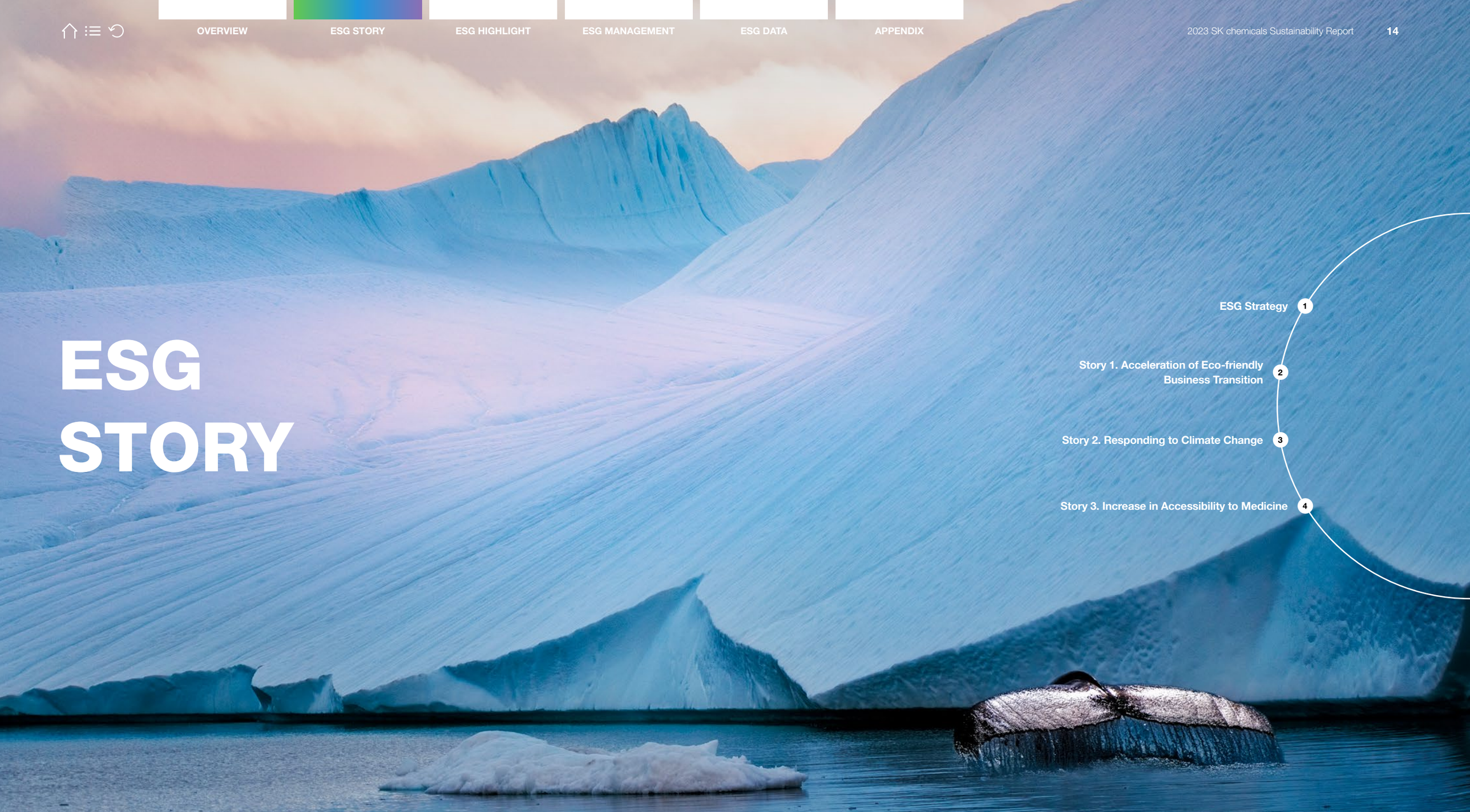
SKY Celflu 4 is the only quadrivalent influenza vaccine in Korea and the first of its kind in the world.
Like SKY Celflu Trivalent, SKY Cellflu 4 is produced using animal cell-based technology, which shortens the production period by 2-3 months compared to traditional egg-culture vaccines and ensures production stability independent of egg supply. Recognized for its innovation and reliability, SKY Cellflu 4 has obtained WHO PQ certification and holds a high market share both domestically and globally.

Varicella Virus Vaccine (SKY Varicella)

SKY Varicella is a varicella vaccine developed utilizing our proprietary bioprocess technology. Its effectiveness and safety were validated in a global Phase 3 clinical trial conducted at 19 clinical centers across both domestic and international locations. We are the second company globally to achieve WHO PQ certification for a varicella vaccine. Furthermore, we have been awarded a contract by the Pan American Health Organization (PAHO), an international body under the United Nations, to supply SKY Varicella to Latin America.

Typhoid Vaccine (SKY Typhoid)

SKY Typhoid is a polysaccharide protein conjugate vaccine developed by conjugating diphtheria toxin protein. Our R&D efforts for this typhoid vaccine, conducted in collaboration with the International Vaccine Institute (IVI) and the BMGF since 2013, culminated in its completion in 2022 and subsequent licensing for export. SKY Typhoid has shown strong immunogenicity and provides long-term preventive effects even with a single dose, making it particularly suitable for immunizing infants and young children in harsh and impoverished environments where access to clean water is limited.



ESG STORY

ESG Strategy

Key Business Areas and Action Strategies

SK chemicals has established an ESG strategy that aligns the company's business and activities with the goal of contributing to a sustainable future. First, SK chemicals is actively responding to climate change by expanding low-carbon products, building a circular economy, and promoting sustainable businesses, such as healthcare solutions, to create a virtuous ecosystem that considers the future and contributes to improving the quality of human life. Additionally, SK chemicals is committed to practicing sustainable management by implementing core strategies and activities related to E, S, and G principles to minimize negative impacts and maximize positive impacts on the environment, society, and people throughout its management and business operations.

We generate social and environmental value and foster sustainable growth through green materials and healthcare solutions.

Sustainable Business

Active response to climate change with
Expansion of Low-carbon Products

Future transitioning into the green ecosystem with
Establishment of Circular Economy

Make everyone happy with
Healthcare Solution

Core Strategy

For sustainable Planet

- Responding to climate change
- Minimizing environmental impact

For sustainable Society

- Strengthening management focusing on human rights
- Managing the supply chain's ESG
- Building a safe office
- Contributing to the local community

For sustainable Governance

- Management centering around the board of directors
- Advancing the management system

Core Activity

Planet

- **Lead actions toward low-carbon**
  - Execute NET ZERO & RE100
  - Reduce the energy use
- **Strengthen the environmental risk management**
  - Minimize the emission of contaminants
  - Reduce the use of water resources and enhance efficiency
  - Reduce the waste and increase the recycle rate

Society

- **Make the human right-related issues zero**
  - Diagnose and manage the human right risks of stakeholders
- **Improve the safety and health management system**
  - Advance the safety health management system and expand the safety culture
- **Enhance the ESG values in the supply chain**
  - Diagnose the supply chain's ESG level and enhance the growth of capability
- **Join the local community and put more collaboration**
  - Enhance the social contribution activities joined by employees

Governance

- **Strengthen the BOD's responsible management**
  - Enhance independence/expertise/diversity of the BOD
  - More disclose the BOD's activities and performances
- **Improve ethical management/information security**
  - Advance the internal management system that meets the global standard

Status of Key ESG Task Performance

		2023 KPI (Key Performance Indicator) Goal	2023 Performances	KPI	
				2024 Goal (or Mid to long-term Goal)	Groups/Responsible Leader
For sustainable **Planet**	Responding to climate change	• Join the Science-based Target Initiative (SBTi) and submit the targets	• Received the Science-based Target Initiative (SBTi) near-term target approval	• Build a SBTi-based Scope 3 target and overseas office GHG emission reduction plan	ESG Progress team/ ESG Progress team Leader*
		• Reduce the company-wide GHG emission ('23 target emission : 268K tCO_2eq)	• Reduced 12% of GHG emission target in 2023 with 236K tCO_2eq	• Achieve 2040 Scope 1&2 Net Zero	Company/CEO*
		• Proceed with the GHG emission reduction plan	• Signed the renewable energy PPA contract • Performed GHG emission reduction task (Use of hydrogen with fuel on DMT process)	• Apply the renewable energy to the Ulsan plant	ESG Progress team/ Engineering Group Leader*
		• Reduce the energy use (Reduce 1.5% of last year's energy cost)	• Reduced 1.3% of energy cost of the previous year	• Reduce 1.5% of energy costs of the previous year	Ulsan Plant/Ulsan Plant Head*
	Minimizing environmental impact	• Keep the water recycle rate to the level of 2022 (96.9%)	• Achieved 97% of used water recycling	• Reduce 1.5% of the used water volume of the previous year	Ulsan Plant/Ulsan Plant Head*
		• Tightly manage the water quality/air contaminant emission amount to comply with the legal standard - Remain at the 50% (COD/BOD/SS), 80% (TOC) of the legal standard - Remain at the 50% of the legal standard (NOx, SOx, dust)	• Overachieved the water quality/air contaminant emission amount of the legal standard	• Manage the emission concentration to the 50% of the legal concentration (Water quality : COD/BOD/SS, air quality : NOx/ SOx/dust)	SHE Team/SHE Group Leader*
		• Keep the Zero Waste to Landfill (ZWTL) Silver level	• Achieved the Zero Waste to Landfill (ZWTL) Gold level	• Maintain the Zero Waste to Landfill (ZWTL) level to Gold	SHE Team/SHE Group Leader*
		• Reduce the harmful substance (Solvent Naphtha) (Reduce 40% of the 2021 level)	• Reduced 37% of harmful substances (Solvent Naphtha) usage of 2021	• 2024 Goal : Reduce 60% of 2021 level • Phase out the harmful substance (Solvent Naphtha) phase-out by 2025	Functional Material Business Group/Functional Material Business Group Leader*
		• Manage LCA-based product and product responsibility - Expand the product LCA performance ratio	• Products' LCA performance share (91%, based on 2023 revenue)	• Make the Green Chemical product to reach 100% of LCA by 2025	PSRA Team/R&D Center Leader*
For sustainable **Society**	Strengthening human rights management	• Stakeholders' human rights risk diagnosis and management	• Performed human rights impact assessment (for employees in HQ, Ulsan plant) and mitigation action	• Expand the human rights due diligence (All employees including overseas companies ~2025) • Perform the improvement task and verify effects	ESG Progress team/ Organization Culture Group Leader*
	Managing the ESG supply chain	• Diagnose the supply chain ESG level and support the capability enhancement	• Expanded and improved the supply chain ESG assessment(Completed the core supply chain's ESG self-diagnosis/evaluation, finished the high-risk group coaching)	• Build the supply chain's ESG policy and verify the supply chain ESG assessment performance	Procurement Team/Procurement Team Leader
	Implementation of a safe workplace	• Achieve zero in the SHE accidents - Company-wide Lost-Time Injuries Rate (LTIR) : 0	• Established the compay-wide safety management system • Company-wide Lost-Time Injuries Rate (LTIR) : 0	• Advance SHE and site execution power - Settle the SHE operation for the overall overseas affiliates by 2026	SHE Team/ SHE Group Leader*
	Contributing the local community	• Develop the social contribution program in sync with business and expand the participation of employees	• Expanded the local community employees' participation to volunteering (2023 participants : 996)	• Contribute 3% of the estimated operating profit to the local community	ESG Progress team
For sustainable **Governance**	Management centering around BOD	• Secure the diversity in the BOD • Disclose more information on the BOD	• Disclosed the Board Skills Matrix (BSM) on the website	• Recruit the female outside director	BOD Secretariat
	Ethical management/ information security	• Build the global standard-level management system	• ISO 37001 (Anti-corruption), ISO 27001 (Information security) certified	• ISO 37001 (Anti-corruption management system), ISO 27001 (Information security management system) certified	Legal Group/Legal Group Leader* DT Group/DT Group Leader*

* The responsible leaders are graded as S,A,B,C based on the KPI target achievement, and the assessment result is connected to the reward system.

Acceleration of Eco-friendly Business Transition

STORY 1

SK chemicals is growing by focusing on the development of circular recycling solutions and the establishment of a recycled plastics supply chain, amid the market where interest and regulations in the environment are growing. We are also expanding our green materials business to transition towards eco-friendly business, aiming to strengthen our reputation for sustainability and environmental stewardship while enhancing overall competitiveness.

1 **Our Ambition**

We aim to become a global leader in green materials by replacing petroleum-based raw materials and using recycled plastics and bio-based materials.

2 **Connection to Sustainable Growth**

The global demand for eco-friendly products and technologies is rising in support of sustainable development, alongside evolving environmental regulations and shifting consumer perceptions. SK chemicals aims to generate social and environmental value while achieving sustainable growth through the transformation of its green portfolio.

3 **Target**

Expand the green materials' sales portion*
- 2030 : 80%, 2040 : 90%

Expand the R&D cost share for the eco transition (Recycle materials, bio materials)
- Expand the chemical R&D center's research cost share by 50% by 2025

4 **Key Activities**

Reinforce the value chain to expand the eco-friendly business
- Invest in the global recycle production infrastructure
- Establish the waste business collaboration system for a stable raw material supply
- Expand the eco-friendly product market through collaboration with the customer
- Expand the investment in Green portfolio R&D

5 **2023 Performance**

Invest in global recycle production infrastructure

Enhance the green portfolio R&D investment

* The percentage of green material sales refers to the portion of sales derived from recycled and bio-based contents within the total sales of copolyester products, CR-PET, and other bio-based materials.

Expansion of the Green Business Value Chain

Securing Recycling Production Infrastructure

SK chemicals has acquired a depolymerization plant that chemically decomposes waste plastics to produce 'r-BHET', a circular recycled raw material, and a 'CR-PET' production facility that produces circular recycled PET from circular recycled raw material, and has established SK Shantou in Shantou, China.

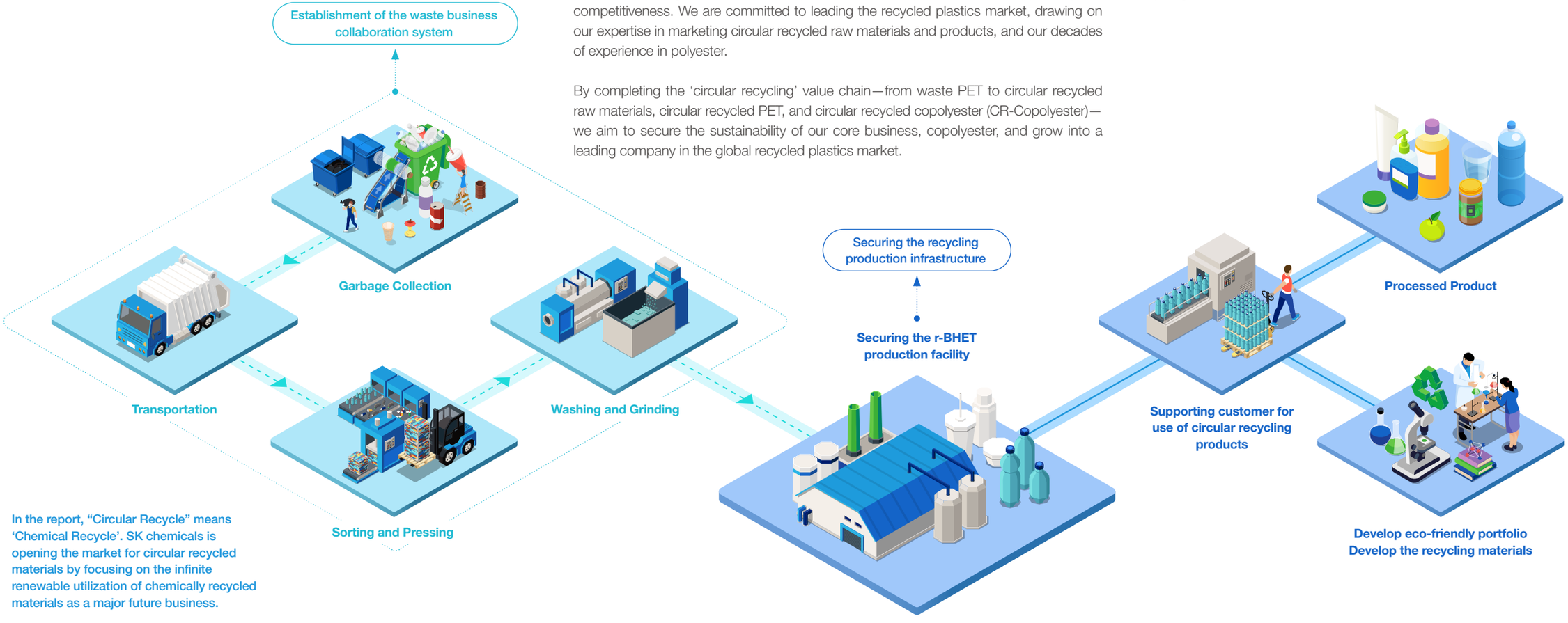
This allows SK chemicals to secure commercialized circular recycled raw materials and production facilities, enabling the sale of r-BHET and CR-PET. By leveraging local production in China, which has abundant plastic waste like PET suitable for circular recycling, SK chemicals expects to achieve production stability and price competitiveness. We are committed to leading the recycled plastics market, drawing on our expertise in marketing circular recycled raw materials and products, and our decades of experience in polyester.

By completing the 'circular recycling' value chain—from waste PET to circular recycled raw materials, circular recycled PET, and circular recycled copolyester (CR-Copolyester)—we aim to secure the sustainability of our core business, copolyester, and grow into a leading company in the global recycled plastics market.

Establishment of the Waste Business Collaboration System

With the growing interest in the recycling market, the stability of the supply of our raw material, waste PET, has become a critical factor for our recycling business. To ensure a more reliable supply of recycled raw materials and to make the process from recovery to recycling more systematic and transparent, we are working with Shanghai Yuekun, a leading Chinese waste recycling company.

Through this collaboration, SK chemicals will stably produce recycled products that customers want and secure price competitiveness in the increasingly competitive recycling market.



In the report, "Circular Recycle" means 'Chemical Recycle'. SK chemicals is opening the market for circular recycled materials by focusing on the infinite renewable utilization of chemically recycled materials as a major future business.

Investment in Eco-friendly Businesses

Expansion of the Eco-friendly Product Market

SK chemicals is actively developing customers and markets based on its portfolio of circular recycled products. The market opportunity for these products is expanding as regulations on plastic use in the EU and the U.S. continue to tighten, prompting voluntary commitments from FMCG and other brand owners. SK chemicals is actively collaborating with global cosmetics brand owners and cosmetic container developers. In 2023, SK chemicals participated in the Shanghai Beauty Expo in China to introduce materials optimized for eco-friendly cosmetic containers and support application technologies to global cosmetics brand representatives, receiving a great response from related customers.

SK chemicals is actively engaging with customers across various applications to offer new material and technology solutions, addressing technical limitations experienced with conventional recycled materials. This effort has resulted in a steady rise in commercial cases adopting our eco-friendly portfolio. Moving forward, we aim to expand the market further by enhancing our collaboration network with customers and brand owners.

Establishment of Closed Loop

SK chemicals is building a closed-loop solution that not only supplies recycled materials but also recycles waste from brand owners' product production processes and post-consumer waste back into raw materials for productization.

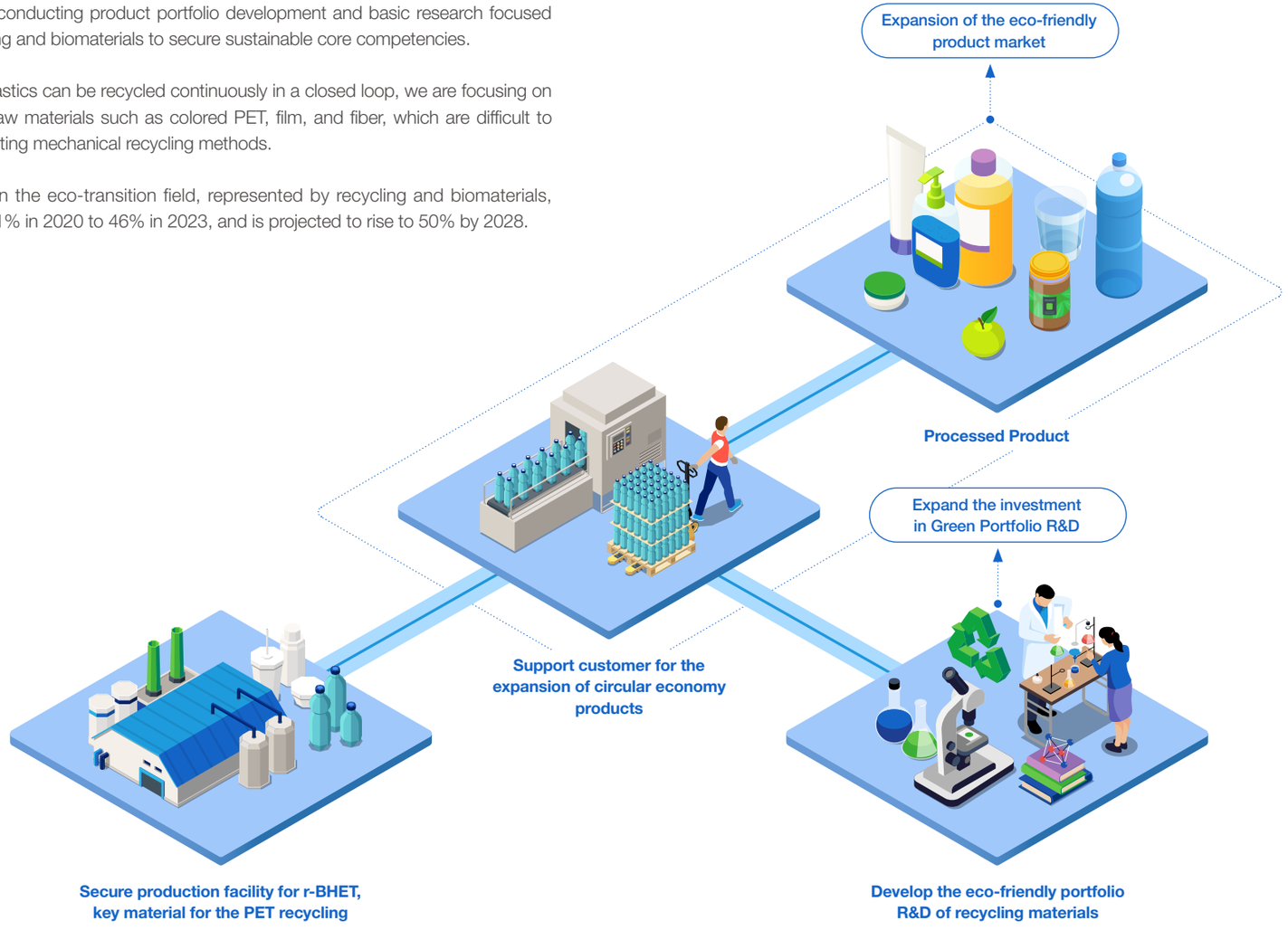
Based on our deep understanding of the unique business characteristics and needs of brand owners in each industry, we are currently expanding our collaboration with various brand owners, and we are committed to becoming an eco-solutions provider that can implement carbon reduction together with our stakeholders.

Expansion of Investment in Green Portfolio R&D

SK chemicals is conducting product portfolio development and basic research focused on plastic recycling and biomaterials to secure sustainable core competencies.

To ensure that plastics can be recycled continuously in a closed loop, we are focusing on hard-to-recycle raw materials such as colored PET, film, and fiber, which are difficult to recycle using existing mechanical recycling methods.

The investment in the eco-transition field, represented by recycling and biomaterials, increased from 11% in 2020 to 46% in 2023, and is projected to rise to 50% by 2028.



Responding to Climate Change

STORY 2

Our Ambition

We will actively respond to climate change by executing our 2040 Net Zero roadmap and scaling up carbon reduction in our value chain.

Connection to Sustainable Growth

Greenhouse gases are significant contributors to global warming and extreme weather events, impacting both humans and nature profoundly. Contributing to achieving carbon neutrality for a sustainable growth is a crucial responsibility shared by organizations and individuals worldwide.

Target

2032 RE100

2040 Net Zero (Scope 1&2)

2050 Net Zero (Scope 3)

Key Activities

Get SBTi-based GHG reduction targets' approval

Implementing Scope 1&2 Carbon Reduction Challenges

-Switching to cleaner fuels and expanding the use of renewable energy in operations

Scope 3 Building a Circular Economy for Scope 3 Reduction

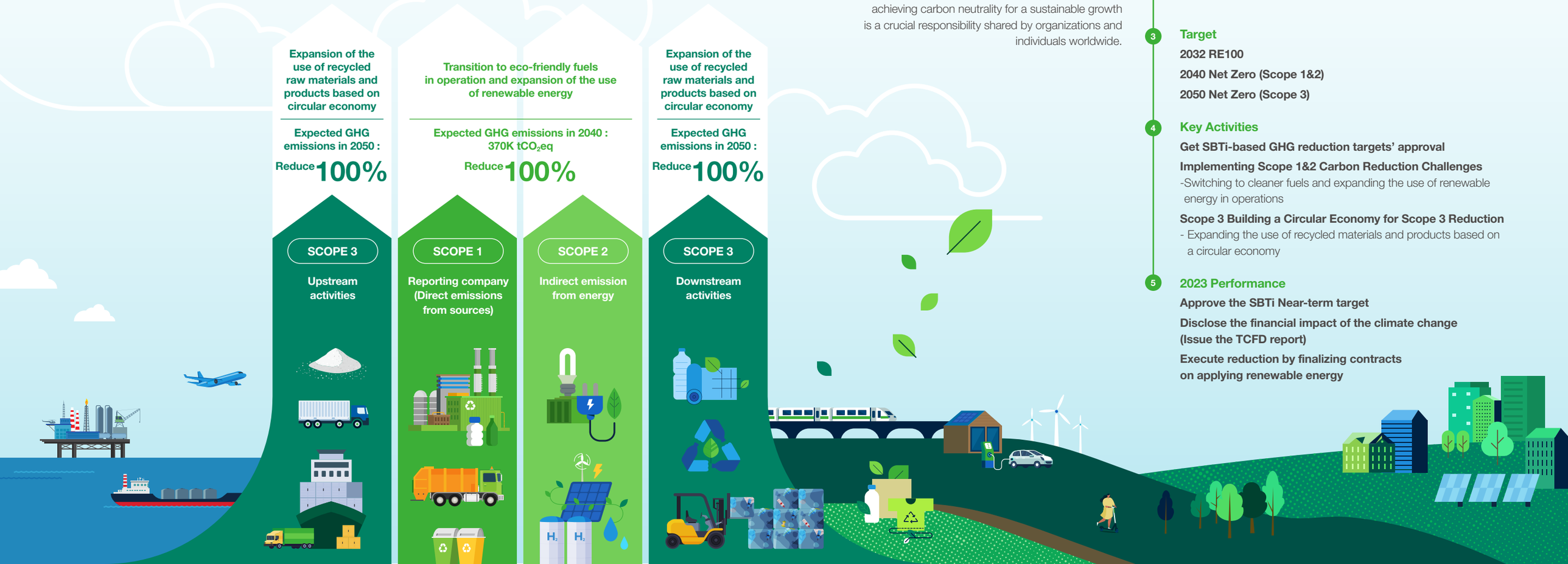
- Expanding the use of recycled materials and products based on a circular economy

2023 Performance

Approve the SBTi Near-term target

Disclose the financial impact of the climate change (Issue the TCFD report)

Execute reduction by finalizing contracts on applying renewable energy



Climate Change Response Strategies

Establishment of SBTi-based Climate Strategies and Response

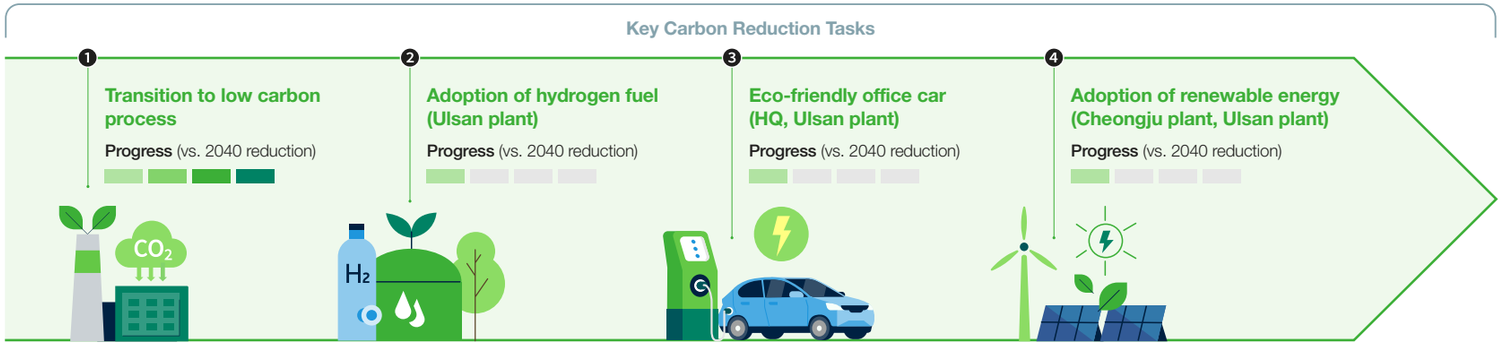
SK chemicals has established GHG reduction targets aligned with Science Based Targets Initiative (SBTi) guidelines to address the climate crisis, receiving SBTi approval for these near-term targets in December 2023. To systematically implement these goals, they are integrated throughout management processes. By 2032, SK chemicals aims to reduce direct GHG emissions (Scope 1) and indirect GHG emissions (Scope 2) from product production by 50.4% compared to 2021, and GHG emissions (Scope 3) from the entire value chain by 30.0%. For Scope 1&2, this will involve optimizing production processes, increasing renewable energy usage, and transitioning to eco-friendly fuels. Additionally, SK chemicals plans to lower Scope 3 emissions by expanding its recycled plastics business and enhancing the recycling of waste plastics.

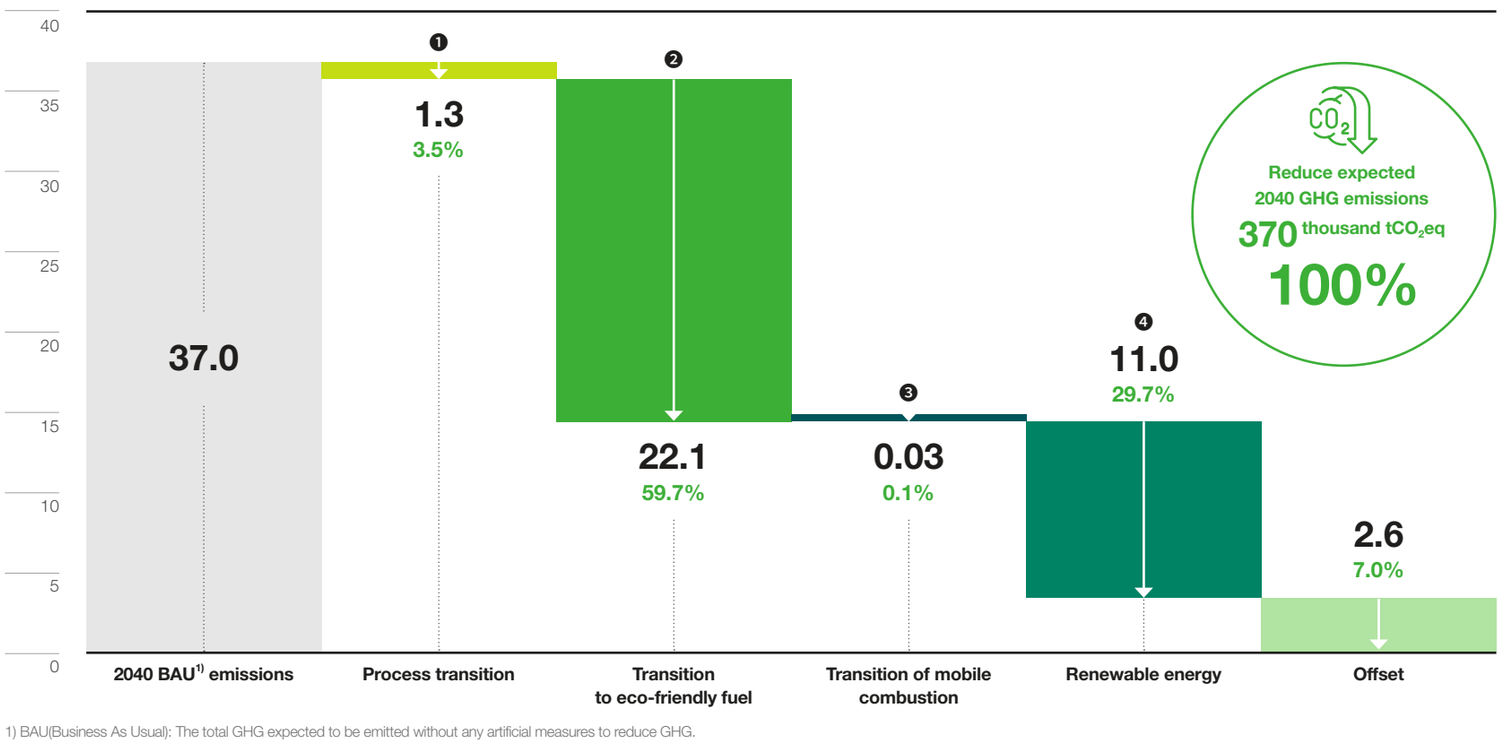
With the approval of the SBTi target as a stepping stone, SK chemicals will make further efforts to accelerate the realization of Net Zero GHG emissions by 2040.

Scope 1&2 Net Zero Solution

To achieve the 2040 Net Zero goal for Scope 1 and Scope 2 emissions, SK chemicals has established annual reduction plans that include process conversion, eco-friendly fuel conversion, mobile combustion conversion, the introduction of renewable energy, and offsetting plans for the remaining emissions.

To reduce Scope 1 GHG emissions, we plan to reduce carbon emissions and implement sustainable production methods by expanding the use of hydrogen blending-based fuel, an eco-friendly raw material, and introducing strategies for eco-friendly processes. To reduce GHG emissions from Scope 2 electricity, we will build our own solar power generation facilities at our plants and expand the use of renewable energy through Power Purchase Agreements (PPAs) and Renewable Energy Certificates (RECs). Additionally, to reduce Scope 2 emissions from steam, we will actively work to reduce our carbon footprint by using steam produced with eco-friendly fuels such as hydrogen.

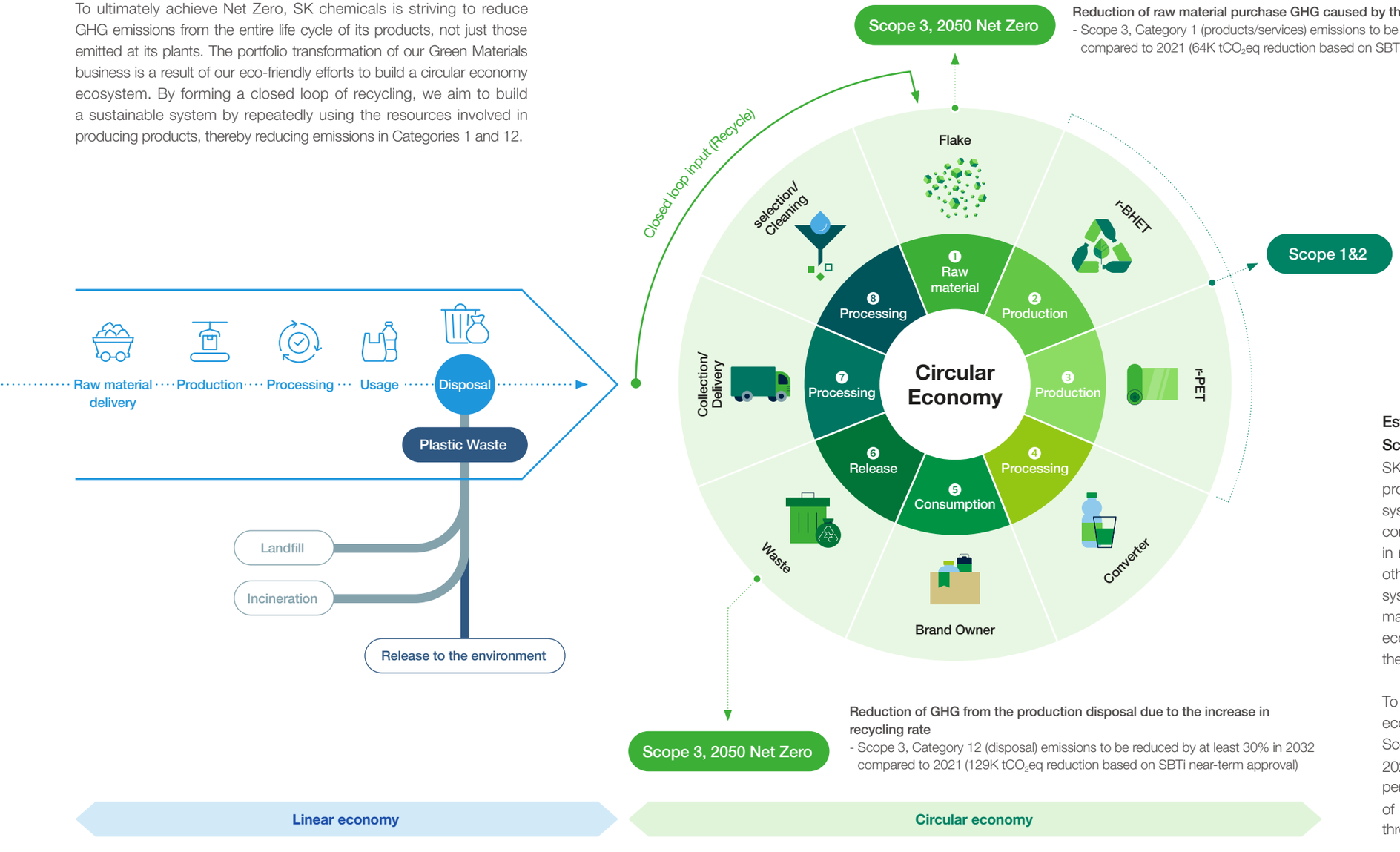




1) BAU(Business As Usual): The total GHG expected to be emitted without any artificial measures to reduce GHG.

Scope 3 Net Zero Solution

To ultimately achieve Net Zero, SK chemicals is striving to reduce GHG emissions from the entire life cycle of its products, not just those emitted at its plants. The portfolio transformation of our Green Materials business is a result of our eco-friendly efforts to build a circular economy ecosystem. By forming a closed loop of recycling, we aim to build a sustainable system by repeatedly using the resources involved in producing products, thereby reducing emissions in Categories 1 and 12.



Establishment of A Circular Economy System and Reduction of Scope 3

SK chemicals promotes the establishment of eco-friendly production processes and a circular economy to build a sustainable economic system. In the existing linear economy system, raw materials must be continuously discovered and harvested to produce products, resulting in resource depletion, water pollution, greenhouse gas emissions, and other environmental pollution factors. In contrast, a circular economy system reuses the resources needed to produce products repeatedly, maximizing the efficiency of resource use and building a sustainable economic system to minimize the negative environmental impacts of the linear economy and the amount of waste generated.

To measure and manage the actual performance of the circular economy system, SK chemicals has set a specific goal of reducing Scope 3 emissions by 30% by 2032 compared to the baseline year of 2021. To achieve this goal, SK chemicals aims to reduce 64K tCO_2eq per year in Category 1 (Purchase of Products/Services) through the use of recycled raw materials and 129K tCO_2eq in Category 12 (Disposal) through the recycling of sold products.

Increase in Accessibility to Medicine

STORY 3

1 Our Ambition

Through continuous research and active investment in new drug development, we aim to provide a variety of treatment options to reduce socioeconomic costs and improve the quality of life for people.

2 Connection to Sustainable Growth

As the accelerating aging of people and the increase in chronic diseases, the burden of medical expenses is emerging as a social problem.
SK chemicals' goal is to generate social value by enhancing treatments, improving the effectiveness, and enhancing the convenience of current therapies.

3 Target

Secure the momentum for R&D growth
- Expansion of formulation technology-based ODF and patch-type pharmaceuticals portfolio

Accelerating open innovation
- Goals of projects in progress (Non-alcoholic steatohepatitis, anti-cancer)
- Expansion of joint research partnership

4 2023 Performance

2 Item authorizations
- Arthritis drug (Dosing/Dosage Improvement)
- Migraine drug (New drug combination product)

1 in-licensing agreement
-Stomach ulcer treatment (Joint research in progress)

CDMO supply contract
- Expand the portfolio through supply contract on 'SIDAPVIA' with AstraZeneca

Contributing to Health Improvement through Expanding Medicine Portfolio

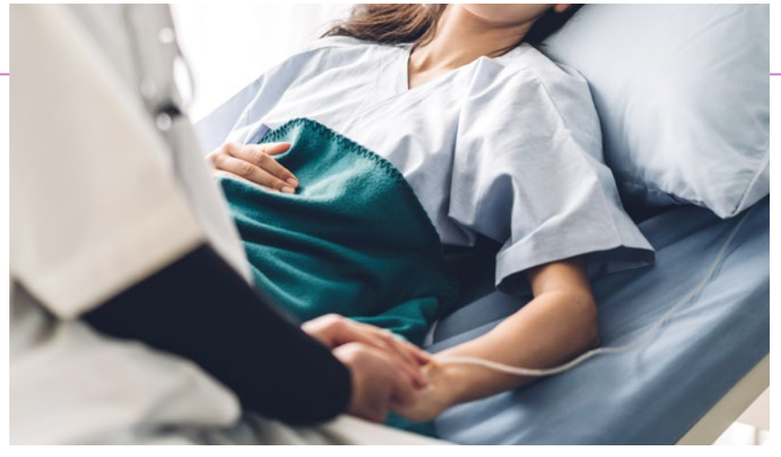
Expanding the CDMO Business based on Partnership with Global Pharmas

In 2023, SK chemicals entered into a contract with AstraZeneca for the outsourced production and supply of the diabetes drug 'SIDAPVIA[1)]'. This collaboration aims to leverage the strengths of both companies to address pressing social concerns effectively.

Under the supply agreement, SK chemicals will be responsible for the production and supply of SIDAPVIA, and AstraZeneca will be responsible for the future commercialization of the combination product as the Marketing Authorization Holder (MAH). The strategic collaboration between SK chemicals and AstraZeneca has led to international recognition of SK chemicals' pharmaceutical technology and production capabilities and has paved the way for the supply of medicines to more countries. Building on this collaboration, we aim to fulfill our corporate social responsibility by creating social value through the development of innovative medicines and offering improved treatment options for patients.

SK chemicals recognizes this collaboration as more than just a business success story, but as an innovative way to grow for a sustainable future, and we will continue to promote various collaborations to actively fulfill our social responsibilities.

1) SIDAPVIA is a combination of Forxiga (Dapagliflozin) and Sitagliptin, approved in Korea for the treatment of type 2 diabetes in adults 18 years of age and older.



Development of Medicines for Rare and Incurable Diseases

SK chemicals is dedicated to advancing orphan drug development to improve health outcomes and enhance the quality of life for patients with rare and incurable diseases, as well as their families. In Korea, where rare diseases affect fewer than 20,000 patients, high diagnosis and treatment costs present significant challenges, imposing economic strain and societal burdens. To address these issues, we have acquired global licenses for drugs targeting intractable neurological diseases without effective treatments, thereby expanding access to medications for Korean patients suffering from degenerative neurological conditions.

Ongentys Capsule (active ingredient : OPICAPONE), introduced in October 2020 for Parkinson's disease, offers enhanced convenience with once-daily dosing compared to previous regimens requiring multiple daily administrations, thereby easing the financial burden on patients. Additionally, TEGLUTIK Oral Suspension (active ingredient : Riluzole), launched in January 2023 for Lou Gehrig's disease, features a liquid formulation, addressing swallowing difficulties commonly experienced by the majority of patients. We remain committed to expanding our portfolio of medications for rare and challenging diseases to meet unmet patient needs and improve access to vital treatments.

Strengthening Social Responsibility Activities in the Medical Field

Strengthening Social Contribution Activities in Sync with the Medical Information Platform

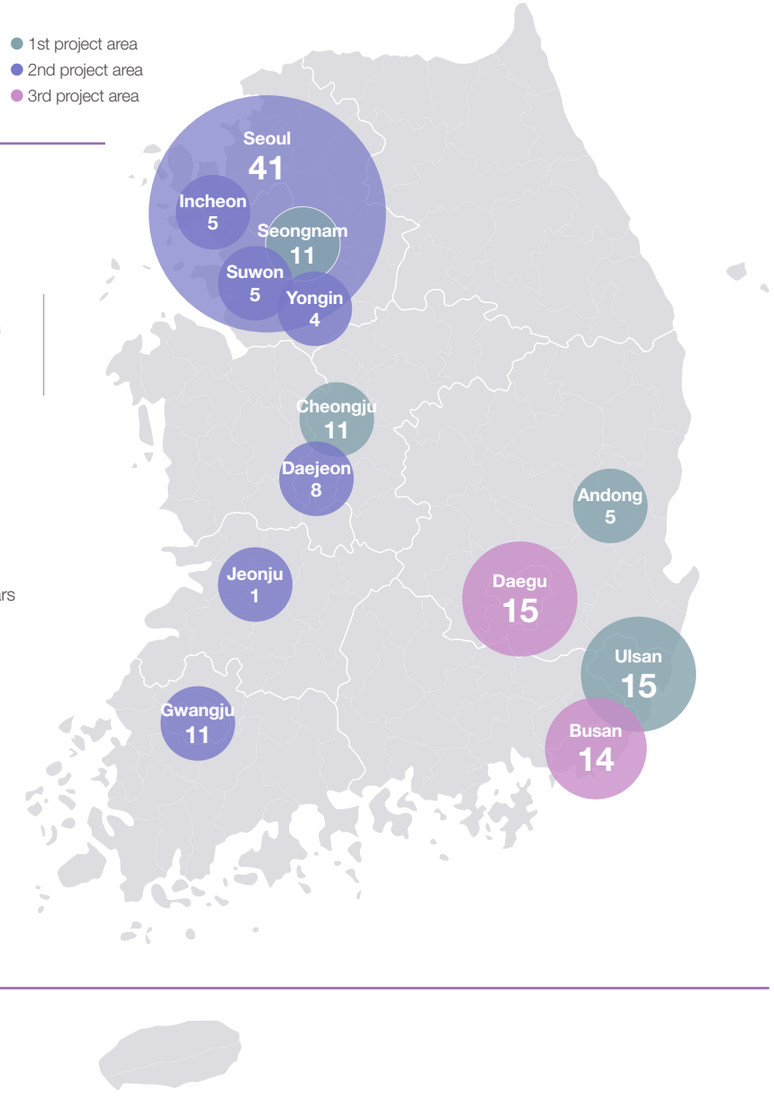
SK chemicals is actively addressing the pressing issue of dementia through its 'Smart-Key' medical information platform and impactful social initiatives involving healthcare professionals.

A key initiative involves donating the 'SoundMind' app service to regions where Smart-Key is used by medical practitioners. 'SoundMind', a recognition and language training program developed by a social venture company SoundMind, utilizes self-developed voice recognition and AI technologies to provide help the elderly and individuals with mild cognitive impairment, aiming to prevent or delay dementia symptoms. Additionally, SK chemicals operates a program enabling medical professionals to donate points earned through Smart-Key activities to the Korea Childhood Leukemia Foundation. Since 2022, 2,000 participants have contributed a total of KRW 17 million, assisting in covering surgical and treatment costs for leukemia patients.

In 2024, entering its third year, the program will expand its outreach to include southern regions such as Daegu, Busan, and Gwangju. Looking ahead, SK chemicals is steadfast in fulfilling its social responsibility in the medical field through the expansion of its social contribution activities, utilizing platforms such as the medical information platform.

Achievement of the Digital Recognition Training Project Aiming for Dementia Prevention

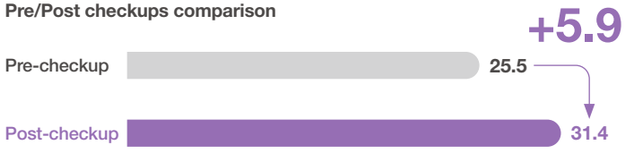
Distributed Organizations	Participating Organizations
134	109



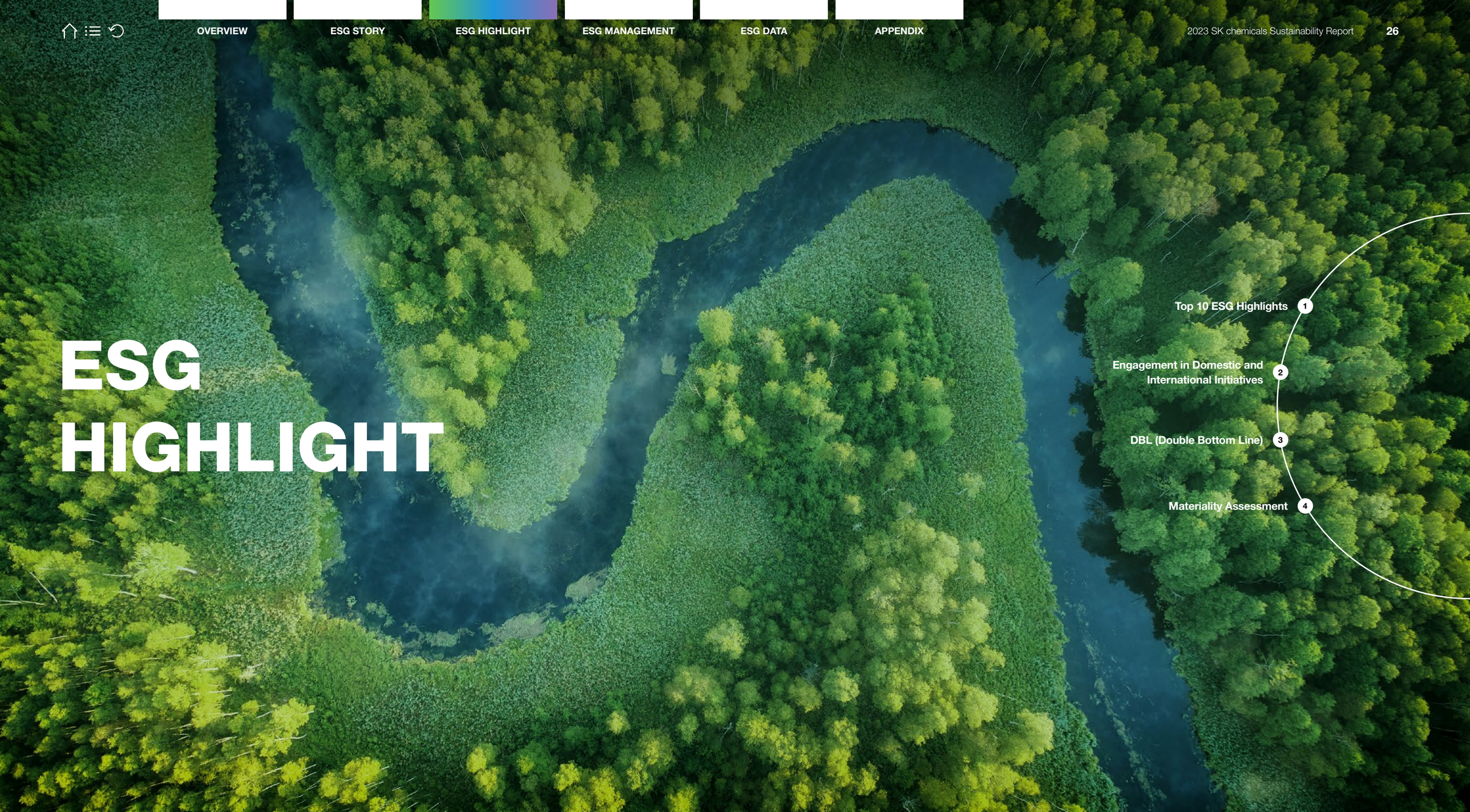
Delay in Cognitive Decline and Dementia Prevention

5.9 point increase from pre- to post-checkup with a delay in natural aging by 6.3 years
3.8 point increase in MMSE[1] (0.6 point natural decline per year)

Pre/Post checkups comparison



1) MMSE : Short for Mini-Mental State Examination, a standardized test to assess cognitive function and dementia in older adults in a short amount of time.



ESG HIGHLIGHT

Top 10 ESG Highlights

● Environment ● Social ● Governance

Securing approval of the SBTi goals

The Science Based Targets Initiative (SBTi) has approved SK chemicals as the first Korean chemical company to work toward the near-term greenhouse gas reduction objective in 2032. The reduction plan and path of Scope 1&2 and Scope 3 were designed along with the 1.5°C scenario, and the acceptance of SBTi guaranteed the objectivity of the greenhouse gas reduction.

Obtaining the ZWTL Gold Grade for Waste Recycling Certification

In 2023, SK chemicals Ulsan Green Chemical Plant obtained a gold grade from ZWTL (Zero Waste to Landfill), also known as eco-friendly certification system waste, with a recycling rate of 96%. Not satisfied with the 94% recycling rate in 2022 and the silver level, we are continuously discovering and implementing tasks to recycle waste. Efforts to boost recycling rates at the facility and decrease the production of sludge have been made to enhance the process.

Introducing renewable energy

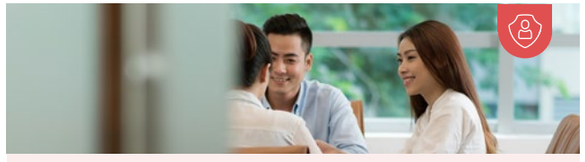
As part of its efforts to achieve the RE100 objective, the Cheongju plant implemented solar power self-generation in 2023, while the Ulsan plant successfully completed a virtual power purchase contract (VPPA) to convert 10% of its electricity consumption to renewable energy. SK chemicals has secured a VPPA contract that will provide the company with 10 megawatts (MW) of solar energy annually from 2024 to 2047. This decision is expected to result in a significant reduction of about 6,000 tCO_2eq of greenhouse gas emissions per year.

Introducing the internal carbon pricing system

SK chemicals has implemented a "Internal carbon pricing system" that takes into account future carbon prices in its management decisions. The guidelines of the internal investment review committee include the internal carbon pricing system. The economic cost of carbon emissions from investment in new investment decisions has also been established to be reflected in decision-making. Consequently, we intend to actively identify the potential investment risks that create substantial carbon emissions and speed up the conversion of its low-carbon business portfolio.

Elaborating the SHE system

SK chemicals has been actively working on developing a comprehensive roadmap and carrying out various tasks to establish and operate a top-tier SHE system in Korea since 2021. In 2023, the management of SHE expanded to include resident business partners, with a strong emphasis on risk assessment, eliminating potential risk factors.



Executing due diligence on human rights and implementing improvement tasks

Strategies have been developed and put into action by assessing the state of human rights management for employees and executives (GC division headquarters, Ulsan plant), partners, and local communities in 2023 and identifying improvement tasks. Also, human rights inspection based on global guidelines has been promoted. In order to better understand the state of human rights today and address vulnerable regions, the scope will expand to LS executives and employees (headquarters, Cheongju plant), subsidiaries, and local communities in 2024 and workplaces abroad in 2025.

Expanding investment in eco-friendly businesses

In 2023, SK chemicals made a strategic choice to expand its circular recycling business by acquiring Shuye, a circular recycling company in China. With the acquisition, a depolymerization plant has been added to the company's operations. This plant effectively breaks down PET waste and utilizes recycled raw materials to produce new products. Furthermore, We have established a complete value chain for recycled plastics, resulting in the production of recycled copolymers using recycled raw materials.

Establishing a global ethical management system Certified for ISO 37001

(Anti-Corruption Management System)

By developing risk control and preventive measures, we developed an anti-corruption management system, determined and assessed corruption risks by department, and attained ISO 37001 certification—an international standard for anti-corruption management systems.

Advancing the information protection management system Certified for ISO 27001

(International Standard for the Information Protection Management System)

In 2023, SK chemicals has acquired ISO 27001 certification, an international standard for the information protection management system, in an effort to bring the information security management system up to par with worldwide standards. In order to achieve this, we have developed continuous operation management capabilities, created a process for protecting information assets throughout production and research management, and will continue conducting regular information security inspections.

Securing board diversity

The board of directors at SK chemicals, which is made up of two inside directors, one non executive director and four outside directors are responsible for actively gathering and reviewing the opinions of stakeholders and shareholders on behalf of management. In 2023, the board of directors ensured diversity and added female outside directors in an attempt to reinforce governance.

Engagement in Domestic and International Initiatives

Expanding Support and Engagement for Initiatives

In order to transparently communicate its objectives and accomplishments in ESG management, SK chemicals is increasing its disclosure of ESG information in accordance with global standards such as SASB and TCFD.
Also, we have been authorized to pursue the Science Based Targets Initiative (SBTi) near-term objective and has been actively engaged in the Carbon Disclosure Project (CDP).
SK chemicals has been acknowledged for its excellence by international assessment authorities for these endeavors.
We were included in the DJSI Korea index for three consecutive years in 2023 and received AA in the MSCI ESG evaluation, A- in the CDP evaluation, and the highest grade of A+ from the Korea ESG Standards Institute (KCGS).

Engagement in Global Initiatives

RE 100

RE100 is a global initiative that aims to convert 100% of the electricity used by companies to renewable energy. The domestic companies began laying the foundation for energy conversion through the so-called Korean RE100 (K-RE100), and SK chemicals joined K-RE100 in June 2022 to contribute to this effort.

TCFD

In July 2022, SK chemicals declared support for TCFD and released its first TCFD report in September.

SBTi

As part of its commitment to science-based GHG reduction targets, SK chemicals joined the 1.5°C Alliance Membership in February 2023. It has also received approval for its 2023 GHG reduction target.

CEPI

In 2022, SK bioscience and the Coalition for Epidemic Preparedness Innovations (CEPI) signed an agreement to support R&D expenses for the development of mRNA vaccine platform technology.

International Vaccine Institute

In November 2021, to honor the achievements of the late former Vice Chairman Park Mahn-hoon, who significantly enhanced SK bioscience's research capabilities, SK bioscience and the International Vaccine Institute (IVI) established the Park Mahn-hoon Award. This award, along with a cash prize, is presented annually to individuals and organizations that contributed to the discovery, development, distribution, and advancement of global health.

External ESG Evaluation Results

DJSI

- Included in the DJSI Korea for three consecutive years
- Selected as the member of the 2023 Sustainability Yearbook

MSCI

AA

CDP

Climate Change, Water A-

KCSG

A+

EcoVadis

Bronze

DBL (Double Bottom Line)

Creating and Spreading SK DBL Performance

SK Group strives to enhance both economic value (EV) and social value (SV) through its management activities. By addressing corporate social issues and prioritizing the happiness of its employees, the company aims to create social values and make a positive impact. Through the Double Bottom Line (DBL) approach, we effectively manage both economic and social values. Social values are measured by evaluating indirect economic contributions, environmental performance, and social performance, which provide tangible indicators and benchmarks. SK chemicals annually discloses these economic values and social value measurements.

Economic Value

In 2023, SK chemicals achieved annual sales of KRW 1.7488 trillion and an operating profit of KRW 88.3 billion, based on consolidated financial statements under the Korean International Financial Reporting Standards (K-IFRS).

Social Value

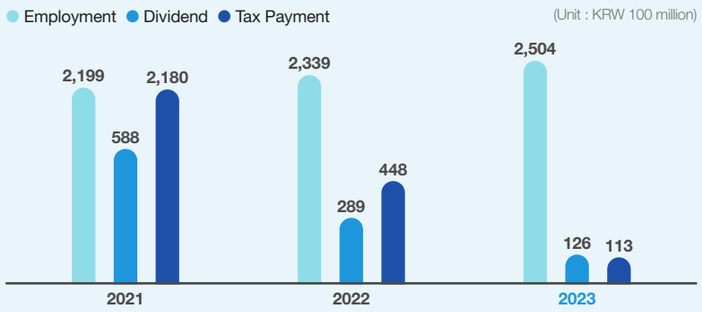
With the mission of "We enhance human health and protect the environment," SK chemicals produces and provides eco-friendly products and creates social value by pursuing the happiness of its stakeholders.

Achievements in Social Value

Indirect Economic Contribution

Indirect economic contribution performance refers to the performance of an enterprise indirectly contributing to society through economic activities. These performances include the employment costs paid by the enterprise, dividends paid to shareholders, taxes paid to society, and welfare expenses provided to employees.

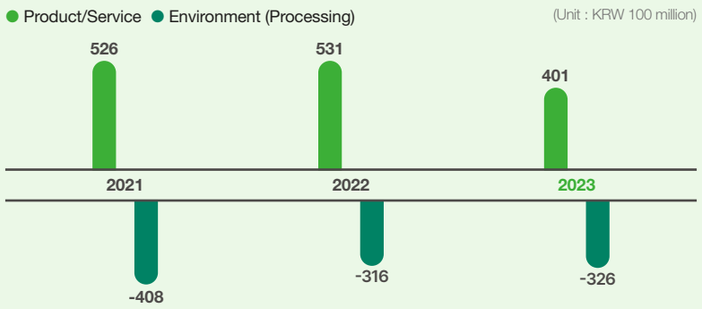
Employment	SK chemicals is continuously improving the performance of 'employment' by hiring employees and increasing salaries.
Dividend	SK chemicals maintains a net profit of 30% separately from its dividend propensity.
Tax Payment	The decline in operating profit resulted in a decrease in national and local taxes, which in turn led to a drop in the performance of "tax payment".



Environmental Contribution

Environmental contribution consists of a 'product/service' area in which products and services produced by companies directly affect the environment and an environmental (processing) area that measures the degree of environmental pollution generated in the production process.

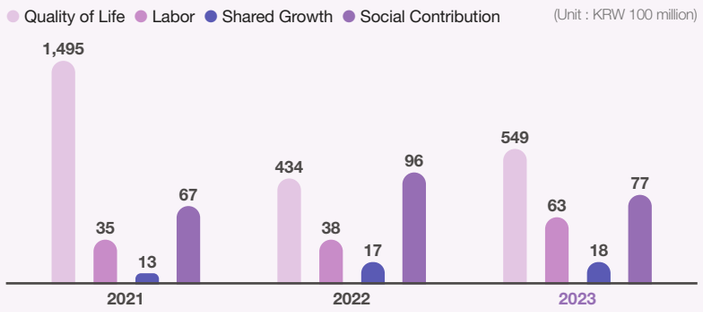
Product/ Service	Due to unfavorable market conditions, sales of socially valued products like ECOZEN and ECOTRIA declined, resulting in a decrease in the performance of the "product/service".
Environment (Processing)	SK chemicals has successfully maintained an equal level to the previous year by implementing measures to reduce greenhouse gases in the workplace and optimizing operations in the environmental (processing) area, which includes factors such as water usage, greenhouse gases, air/water pollutants, and waste.



Social Contribution

Social contribution measures the social value created by improving the quality of life of buyers or users, consumer protection for the purchasing process, social contribution through fair labor and shared growth, and community support.

Quality of Life	The effect of creating social value through products has increased due to the effect of preventing diseases and reducing treatment costs through the expansion of sales of shingles vaccines for SK bioscience.
Labor, Shared Growth	We are setting example in the protection of consumers by promoting vaccination and providing stable welfare to employees as well as purchasing products through fair trade with impoverished countries.
Social Contri-bution	SK chemicals uses 3% of its operating profit for social contribution.



Materiality Assessment

Double Materiality Assessment

Material Issue Selection Procedure

Every year, SK chemicals conducts a materiality assessment and publishes a sustainability report based on its results. This assessment involves both internal and external stakeholders and adopts a comprehensive risk perspective that encompasses social, environmental, governance, and ethical considerations. Also, it is reviewed by the Board of Directors and verified by an independent organization for assurance to ensure the reliability of the material issue process. We use the double materiality assessment framework, which assesses materiality based on the defined environmental, social, and financial impacts. Furthermore, we have integrated the entire materiality assessment process into the Enterprise Risk Management (ERM) process, incorporating major risks that have the potential to materially impact the management environment into the issue list. Core issues identified through the materiality assessment are also managed and monitored within the ERM process.

STEP ❶ Issue Identification and Listing

- **Identify issues that impact or may impact the present and future through a business strategy review and an external environment analysis**
  - Consider risks identified through international standards, evaluation indicators, media analysis, in-house enterprise risk management, competitor analysis, and internal data
- **Create a list of ESG issues (20 issues)**

	Issues
8 Environmental Issues	Climate change response
	Water resource management and water scarcity risk response
	Biodiversity impact analysis and conservation activities
	Waste reduction and increased recycling rate
	Use of renewable raw materials
	Development and investment of eco-friendly businesses
	Emissions management of pollutants and hazardous chemicals
	LCA-based product management (environmental, social) and product stewardship
5 Social Issues	Supply Chain ESG management
	Safety and health management
	Working environment improvement and talent development
	Protection of human rights
	Community contribution
7 Governance Issues	Ethical management (anti-corruption, anti-competition, fair trade)
	Reinforced board expertise, independence, and diversity
	Board-centered sustainable management
	Enhanced ESG disclosure
	Risk management
	Information security
	Shareholder rights protection and value enhancement

STEP ❷ Double Material Assessment

- **Assess the materiality of 20 issues from a financial materiality and environmental & social materiality perspective**

Financial Impact Impact of external environment and society on business activities (Outside-in perspective)	Environmental & Social Impact Impact of business activities on the external environment and society (Inside-out perspective)
International Standard Analysis • Apply key investment institutions 'frameworks such as DJSI, MSCI, and CDP • Review use and impacts of investment institutions such as TCFD and SASB, and reflect the requirements of IFRS, CSRD and S&P Global	**International Standard Analysis** • Analyze environmental and social materiality metrics such as GRI Standards, ISO 26000, and UN SDGs • Respond to disclosure requests from external stakeholders such as governments and civic groups
Business Strategy • Review strategies for the Green Chemicals and Life Science Businesses - Apply Product Stewardship such as green portfolios and product safety • Consider business portfolios that match climate change strategies and RE100 commitments	**Business Strategy** • Analyze internally and externally disclosed data of global leading companies and competitors (10 companies) • Assess nonfinancial impacts that comprehensively reflect industry initiatives and trends
Media Research • Analyze articles in media publications that could lead to financial impacts - Examine ESG issues that can financially impact SK chemicals • Incorporate financial risks related to stakeholders and investors identified in media publications	**Media Research** • Analyze corporate ESG activity issues in media publications - Analyze articles where SK chemicals had environmental and social impacts • Analyze company reputation, branding, and social value in media
Stakeholder (Employees, Investors) Engagement • Review important issues and financial impacts by E/S/G areas • Reflect expectations and concerns of stakeholders (including shareholders) about non-financial activities • Analyze severity of negative, positive, and financial impacts	**Stakeholder (Government, Business partner) Engagement** • Reflect the interests of stakeholders from present/future perspectives and positive and negative impacts • Assess stakeholder expectations and concerns regarding the impacts of business activities on ESG

STEP ❸ Prioritization

- **Select material issues using the top 8 issues as a baseline**

Results of external stakeholder engagement to identify material issues

4 Environmental Issues	3 Social Issues	1 Governance Issues

Material Issue Selection Steps	Stakeholder Engagement
Step1. Issue Identification and Listing	• Issues collected through regular external stakeholder communication channels such as business partners, customers, investors, shareholders, etc. • Reflect stakeholder needs through media research
Step 2. Double Materiality Assessment	• Conduct surveys on external stakeholders at home and aboard and reflect the results into materiality assessment • Incorporate feedback on ESG matters from major investment institutions such as DJSI and MSCI • Collect opinions through media analysis and reflect them into the materiality assessment - Conduct media analysis on external stakeholders (Jan-Dec, 2023)

Assessment Results

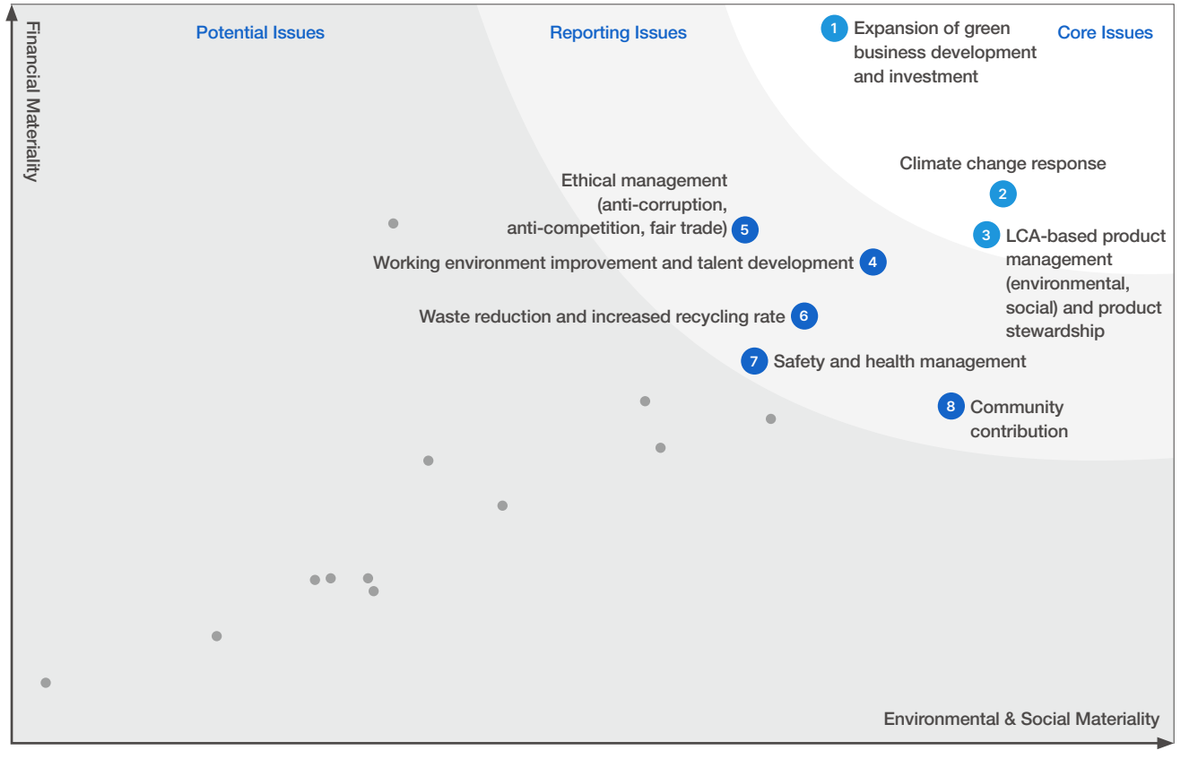
Through the 2024 materiality assessment, we selected eight material issues—including the expansion of green business development and investment, and climate change response—which are categorized into core issues and reporting issues for systematic management. The eight material issues have been finalized through review and approval by the ESG Committee and the Board of Directors. They are incorporated into the Enterprise Risk Management system for continuous monitoring and management.

Impact Level : ○ Low ◐ Mid ● High

Material Issues

no	Issues			Stakeholders	Double Materiality		Impact	
					Financial Impact	E/S Impact	Short term	Mid-and long-term
1	Core Issues	E	Expansion of green business development and investment	Investors, customers	●	●	●	◐
2	Core Issues	E	Climate change response	Employees, customers, local community	●	●	◐	◐
3	Core Issues	E	LCA-based product management (environmental, social) and product stewardship	Customers, business partners, employees	●	●	○	●
4	Reporting Issues	S	Working environment improvement and talent development	Employees	●	◐	●	○
5	Reporting Issues	G	Ethical management (anti-corruption, anti-competition, fair trade)	Employees, business partners	●	◐	●	○
6	Reporting Issues	E	Waste reduction and increased recycling rate	Employees, customers	◐	◐	●	○
7	Reporting Issues	S	Safety and health management	Employees, business partners	◐	◐	●	○
8	Reporting Issues	S	Community contribution	Customers, local community	○	●	○	●

Double Materiality Matrix



Core Issues

Material Issues for Corporate Value Creation

SK chemicals identifies and manages material issues that can impact the creation of corporate value and business activities.
We define the risks and opportunities associated with these material issues, present the resulting business impacts and response strategies, and set performance indicators and targets to systematically implement and monitor these strategies.

Core Issues	Risks and Opportunities	Business Cases	Business Impacts	Business Strategies	Progress	Targets/Indicators	Target Year	Indicators for Executive Performance Rewards
1 Expansion of green business development and investment	• Developing sustainable products and services • Discovering new business opportunities	• The severity of environmental issues such as global warming and air pollution is rising, leading to a surge in demand for eco-friendly products. • Reduction in plastic usage and promotion of recycling are emerging as critical issues in relation to environmental regulations • There is a continuous increase in environmental contributions and demand for the development of alternative products and recycling, especially for food and cosmetics companies	• Sales of existing fossil-fuel based products may decrease • Sustainable products and services can present opportunity for increased sales	• Building a stainability sustainable product portfolio and securing technology to gain market competitive advantage in the market • Increasing production capacity of core recycled materials to securing a leading position in the plastic recycling business • Establishing key overseas bases and a stable raw material supply value chain	• Eco-friendly product market discovery • Securing of recycling business infra (establishment of SK Shantou) • Establishment of a waste business collaboration system	• Increase in green material sales	• 80% by 2030, 90% by 2040	• Sales volume of circular recycled copolyesters
					• Expansion of green portfolio and R&D investment	• Increase in eco-friendly product R&D investment	• Maintaining 50% by 2028	• Circular recycling technology and quality
2 Climate change response	• Incurring costs to transition to low-carbon energy from climate change risk responses • Expanding new business areas to respond to climate change	• There is an increasing need for responses to carbon taxes and carbon border adjustment mechanisms that some countries are implementing to reduce emissions, in addition to increased regulations and carbon trading prices related to climate change. • Expanding production bases and exporting countries may face increased production costs, impacting price competitiveness	• Passive responses to climate change have an impact on operations and production competitiveness, as well as negative effects on profits due to carbon-related regulations.	• Actively participating in climate change initiatives - Declared TCFD endorsement in 2022 - Published TCFD Report from 2022 to 2023 - Joined K- RE-100 in 2022 - Joined SBTi in 2023 and received approval for Near-term GHG Reduction Targets • Implementing Net Zero through process innovation and renewable energy at business sites • Implementing climate change response based on stakeholder engagement and linking ESG performance with executive rewards	• Scope 1&2 reduction through energy/carbon reduction initiatives • Operation of the ESG investment framework by the Investment Review Committee and the establishment an internal carbon pricing system • Gradual expansion of self-generation and purchase of renewable energy	• Net Zero for Scope 1&2 GHG emissions	• Scope 1&2 Net Zero by 2040	• Company-wide total GHG emissions
						• Supply of renewable energy	• Transition to 10MW of renewable energy at the Ulsan site by 2024	• Renewable energy introduction activities
						• Reduction in waste at business site to lower Scope 3 emissions	• Maintaining ZWTL Gold by 2024	• Waste recycling certification grade
3 LCA-based product management (environmental, social) and product stewardship	• Ensuring business safety by minimizing safety and environmental impacts throughout the entire product lifecycle • Addressing potential risk factors by managing environmental and consumer-impacting substances	• A growing number of global companies are demanding low-carbon products and the disclosure of reliable LCA data • Failure to disclose transparently the human and environmental impacts related to chemical use can lead to financial losses such as product recalls and fines, as well as non-financial losses like declining customer trust	• Conducting lifecycle assessments of products and substituting hazardous substances enables the minimization of risks associated with business operations and product usage, thereby reducing potential non-financial losses related to product responsibility	• Conducting environmental impact assessments of products through LCA • Enhancing transparency in product safety and regulatory compliance information • Establishing and implementing a phase-out plan for hazardous chemicals in use	• 91% LCA completion of Green chemical products (based on sales revenue)	• LCA implementation rate (100%)	• 2025	• LCA performance
					• 37% reduction of hazardous chemicals usage (Solvent Naphtha) compared to 2021	• Substitution of hazardous chemicals (100%)	• 2025	• Reduction rate of hazardous chemicals usage (Solvent Naphtha)

Material Issues Impacting External Stakeholders

SK chemicals identifies material issues that impact or may impact external stakeholders as a result of its business operations and it manages and improves their positive and negative impacts.
We set and monitor output and impact indicators that may impact external stakeholders and continue to work towards continuous improvements through dedicated tasks.

Core Issues	Value Chain	Scope of Impact	External Stakeholders/Impact Assessment Areas	Impact Type	Relevance and Importance to External Stakeholders	Output Indicators	Impact Assessment	Impact Indicators*
1 Expansion of green business development and investment	• Products and services	100%	• Environment • Consumers and end-users	• Positive	• Plastic recycling and biomaterial development and investment are key factors in addressing environmental issues as traditional petroleum-based plastic products can cause social and environmental problems such as depletion of natural resources and increased waste. • Developing low-carbon products can have a positive impact on customers and local communities while contributing to environmental conservation (raising awareness and changing perception of eco-friendly products).	• Sales volume of recycled materials-based products	• Environmental costs incurred/avoided	• KRW 600 million Saved from reducing plastic waste disposal costs and raw material use by increasing the use of recycled materials
2 Climate change response	• Business sites • Supply Chain • Products and services	100%	• Environment • Society • Consumers and end-users • Business partners	• Positive/ Negative	• There is a commitment to keep the global temperature below 1.5°C through the Net Zero strategy. • Establishing a circular economy as a key business strategy contributes to carbon reduction across the entire value chain, thereby reducing existing societal costs associated with carbon reduction.	• Company-wide GHG emissions reduction compared to the baseline year	• Environmental costs incurred/avoided	• KRW 6.2 billion saved from company-wide GHG emissions reduction compared to the baseline year (2021)
3 LCA-based product management (environmental, social) and product stewardship	• Business sites • Supply Chain • Products and services	100%	• Environment • Society • Consumers and end-users • Business partners	• Negative	• LCA measurements help assess environmental impacts such as global warming, acidification, and ecological/human toxicity, enabling us to minimize potential impacts through corresponding reduction activities. • LCA provides consumers with objective sustainability information about products, aiding in their decision-making. It also enhances the sustainable management capabilities of business partners through environmental impact improvement activities across the supply chain.	• Sales volume of Eco-friendly products[2)] • LCA of eco-friendly products	• Environmental costs incurred/avoided	• KRW 600 million Saved environmental impact value through LCA-reduced products

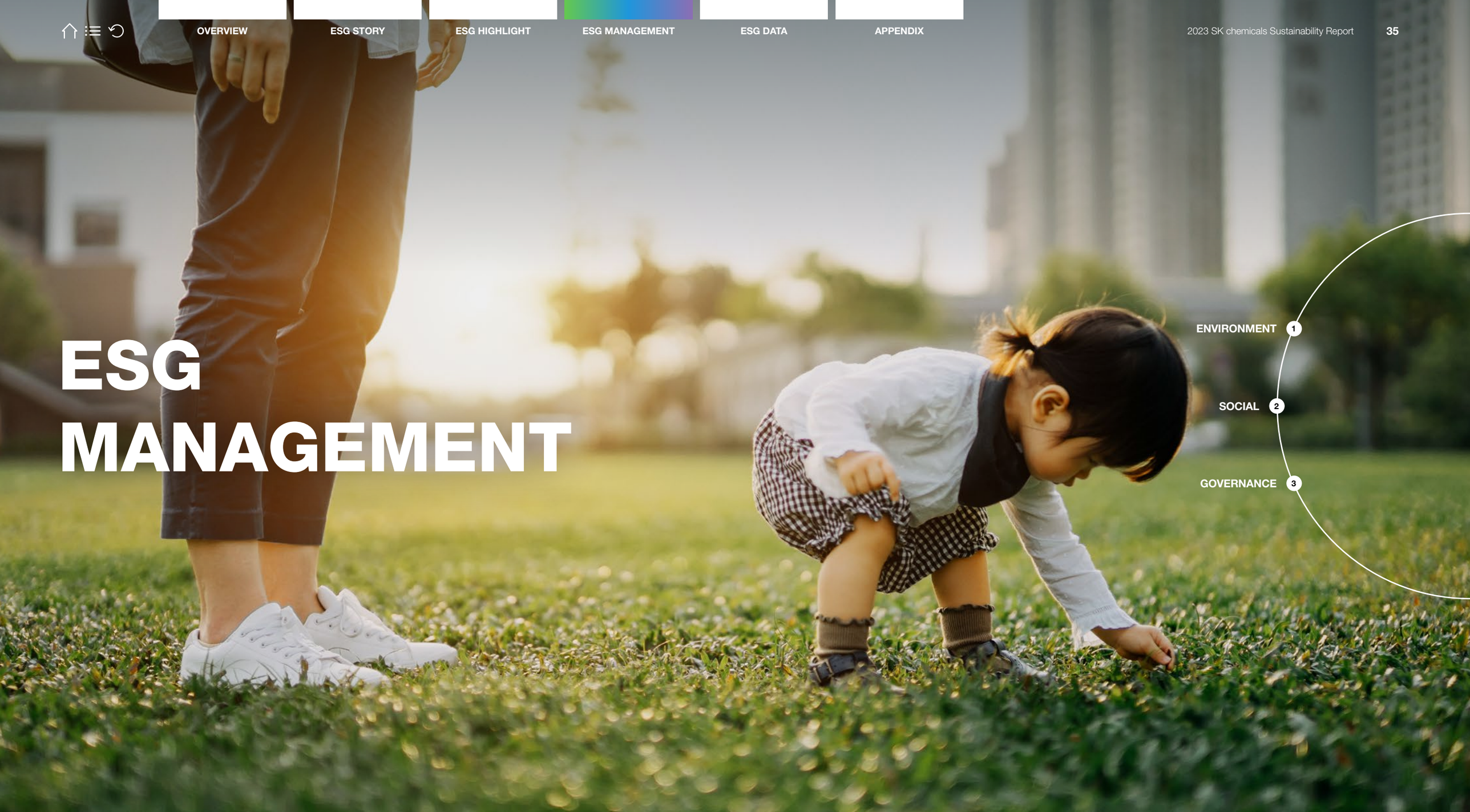
1) Impact indicators are calculated based on SK Group's Social Value (SV) measurement methodology.
2) Eco-friendly products : ECOZEN, ECOTRIA, SKYPETCR, ECOTRION only

Reporting Issues

Reporting Issue Response Activities and Performance

SK chemicals categorizes material issues of high importance and interest to stakeholders, aside from core issues, as reporting issues. We clearly recognize their significance and use this understanding to set management directions and drive continuous improvements.

Reporting Issues	Materiality	Response Directions	Major Activities	Mid to long-term Targets
4 Working environment improvement and talent development	• Attracting talented people and developing their capabilities are key to corporate competitiveness. Recognizing that talent is our most important asset, SK chemicals promotes sustainable growth by fostering creative and passionate people.	• We actively support our employees' professional and competency development by providing various training programs and growth opportunities. We also strive to create a positive work environment by emphasizing work-life balance. • To expand our global business and implement our eco-transformation strategy, we expand environmental education and recruit and cultivate human resources who possess foreign language proficiency.	• Systematizing training by job function and level and strengthening employees' job skills (Upskilling, language education) • Operating flexible work policies and employee mental health support programs	• Implementing the talent development roadmap - 2023-2025 : Business strategy-based talent development - 2025- : Segment-based talent development
5 Ethical management (anti-corruption, anti-competition, fair trade)	• Transparent and rational corporate management, along with honest business practices, are crucial in building trust with stakeholders. SK chemicals strives to build this trust with customers, partners, and society at large by fostering an ethical corporate culture and establishing a foundation for transparent management.	• We enhance our employees' ethical awareness through our Code of Ethics and integrity training. Additionally, we have established and continuously upgraded guidelines and internal management systems to maintain transparency and fairness in all business activities.	• Obtaining the Anti-Corruption Management System (ISO 37001) Certification • Establishing a mid-term audit plan	• Achieving the leader level of the SK Discovery Ethical Management Measurement System • Conducting systematic audit work in line with the mid-term audit plan
6 Waste reduction and increase in recycling rate	• Reducing waste and increasing recycling play a crucial role in environmental protection and resource circulation. By minimizing environmental impact and promoting sustainable resource use, SK chemicals fulfills its environmental responsibilities while contributing to economic value creation.	• We operate a systematic management system to minimize waste and maximize recycling rates. We thoroughly monitor the amount of waste generated and processed, focusing on developing technologies and building partnerships to enhance waste recyclability. Additionally, we contribute to resource circulation through sustainable product development and continuously strive to innovate product designs and processes that promote recycling. • We create recycling friendly products to increase the recycling rate at the end-consumer stage, thereby contributing to the circulation of resources.	• Monitoring waste generation and expanding recycling sources • Achieving a ZWTL (Zero Waste to Landfill) Gold rating • Developing a recyclable product portfolio and expanding its market presence • Expanding the recycling and reusing of waste from local communities by building a circular economy	• Maintaining a ZWTL (Zero Waste to Landfill) rating of Gold
7 Safety and health management	• Safety and health are fundamental prerequisites for corporate activities. SK chemicals prioritizes the safety and health of all employees and is dedicated to maintaining and improving a systematic safety and health management system.	• We continuously enhance our management system to ensure the safety and health of all stakeholders in our business activities. • We expand programs to raise employees' safety awareness and support their health through ongoing education and training. These initiatives aim to prevent accidents, evaluate and improve workplace safety, and provide comprehensive health management programs.	• Establishing a SHE organization system at all worksites and improving SHE management capabilities • Spreading a safety culture and encouraging employee participation • Managing safety accidents (Lost-Time Injuries Rate)	• Achieving 'Zero' SHE accidents (safety/fire/explosion/leakage/environmental accidents/violations of laws and regulations)
8 Community contribution	• Demands for fulfilling corporate social responsibility are constantly increasing, making it a crucial factor in creating a positive corporate reputation in the mid to long-term. SK chemicals takes its corporate social responsibility seriously and strives to create positive social value by actively supporting the development of local communities.	• Through various social contribution activities and talent donations, we actively engage in solving problems within local communities. We also contribute to community development by conducting support activities in various fields such as education, culture, and environmental protection.	• Expanding employee participation in social contributions and implementing business-linked social contribution programs	• Committing 3% of estimated operating profit to social contribution



ESG MANAGEMENT

ENVIRONMENT 1
SOCIAL 2
GOVERNANCE 3

ENVIRONMENT

Context

SK chemicals has implemented a robust environmental management strategy to achieve corporate sustainability, actively reducing its impact on ecosystems and the environment. In response to climate change, we have expanded our 'Green Chemicals' business and implemented a comprehensive Life Cycle Assessment (LCA) roadmap for all products. 'Environmental Sustainability' serves as a cornerstone of our management strategy.

Moreover, we have implemented policies to safeguard biodiversity, bolstered by our own environmental systems and strengthened environmental management practices. Continual enhancements in environmental stewardship underscore our determination to navigate and thrive amid the climate crisis.

This report outlines how SK chemicals fulfills its responsibilities as a sustainable enterprise, highlighting our environmentally-focused business initiatives and actionable R&D plans aimed at achieving long-term sustainability goals. It underscores our commitment to best environmental practices and our resolve to meet our SBTi-based Net Zero roadmap, effectively addressing climate change challenges.

Approach

In 2024, SK chemicals continues its dedication to sustainable management practices by integrating business strategies and environmental management with balance. Our main goal is to minimize environmental impact, strictly adhering to environmental policies in investment decisions and product development. We prioritize initiatives to reduce GHGs and strengthen environmental risk management, integrating ESG criteria into investment evaluations. Furthermore, we are expanding environmental management certifications, advancing eco-friendly portfolios, and promoting a circular economy. These strategic efforts aim not only to protect the environment but also to contribute to positive societal outcomes. Through these initiatives, SK chemicals is steadfastly advancing towards a sustainable future.

*** Scope of Business site**

- SK chemicals - HQ (Eco Lab), Ulsan, Cheongju (S HOUSE)
- SK multi utility - Ulsan
- SK bioscience - Andong (L HOUSE)

Environment Management Strategy & System | **Product Stewardship** | **Climate Change Strategy** | **Conservation of Biodiversity** | **Water Resource Management** | **Contaminant Management**

2023 Achievement & Progress

Key Areas	Key Agenda	2023 Target	2023 Key Performances	Mid to Long-Term Plan	page
Environment Management Strategy & System	❶ Strengthen the ESG governance system	• Create the screening system for investment to reduce the impact of the decision to make investment in new businesses on ESG	• Adopted a system for the internal carbon price review when making investment decisions to new businesses	• Enhance the C-level leaders' environment management and supervision capabilities	38-39
	❷ Establish the environment management system	• Maintain the environment management certification	• Maintained the environment management system certification level as ISO 14001 (Ulsan, Andong, Cheongju plant)	• Have all the domestic plants achieve ISO 14001 by 2024	40
Product Stewardship	❶ Expand the green portfolio	• Make the infrastructure for commercialization and production of circular recycling products • Expand the sales of circular recycling products • Secure the waste PET resources	• Secured the circular recycling raw material production capability by establishing SK Shantou	• Expand the green material sales ratio to 80% in 2030, 90% in 2040	42-45
	❷ Reduce the harmful chemical substance usage	• Reduce the use of a harmful substance, Solvent Naphtha, by 40% from 2021	• Reduced the use of a harmful substance, Solvent Naphtha by 37% from 2021	• Replace the harmful substance, Solvent Naphtha 100% by 2050	46-48
	❸ Expand the LCA	• Lay the foundation to achieve SKYBON/SKYPEL products' LCA performance data	• Finished installing the energy gauge for the SKYBON/SKYPEL production plant	• Finish performing LCA of all Green Chemicals business products by 2025	49
Climate Change Strategy	❶ Establish the climate change system	• Join SBTi and submit targets	• Approved the SBTi GHG reduction near-term target	• Find and perform SBTi reduction target implementation tasks	55
	❷ Reduce the GHG	• Achieve 2023 GHG emission target : 268K tCO_2eq	• Reduced the GHG emission by 12% in 2023 with 236K tCO_2eq	• Achieve 100% Renewable Energy by 2032 • Reduce the GHG emission more than 50% by 2032 vs. the base year (2021) • Achieve Net Zero by 2040	56
	❸ Reduce the energy use	• Reduce the energy use (Reduce 1.5% of the energy cost of a previous year)	• Reduced the energy cost by 1.3% from last year	• Continue looking for energy reduction tasks and perform	58
Conservation of Biodiversity	❶ Establish the biodiversity system	• Make the biodiversity system	• Planned for employees' volunteering programs for biodiversity preservation	• Improve activities to analyze the biodiversity risks and to preserve it	59-61
Water Resource Management	❶ Manage the water resource risks	• Keep the waste water recycling ratio at 2022 level (2022 performance : 96.85%)	• Achieved the goal of 97% of waste water recycling ratio • Establish the employees KPI metrics for 2024 water usage (Reduce 1.5%from the previous year)	• Strengthen the water resource risk management system in sync with the physical risk analysis results followed by climate change • Reduce the water use 10% by 2030 vs. 2021	62-63
Contaminant Management	❶ Increase waste recycling	• Keep the waste recycling certification grade of ZWTL at Silver	• Overachieved the goal by reaching the waste recycling certification ZWTL Gold	• Keep the ZWTL Gold by 2024	64-65
	❷ Reduce contaminants	• Manage the contaminant concentration by using an internal standard reinforced from the legal emission bar - Manage 50% of the legal management standard for NOx, Sox, and waste - Water contaminant emission concentration COD/BOD/SS : 50% of the legal standard TOC : 80% of the legal standard	• Air/water contaminant : Overachieved the goal strengthened from the legal emission standard	• Strengthen the internal management standard compared to the legal emission standard • Water contaminant in 2024 : BOD, COD, SS 50%, TOC 80% • Air contaminant in 2024 : SOx, NOx, dust 50%	66

ENVIRONMENTAL MANAGEMENT STRATEGY & SYSTEM

1

Key Agenda

1. Strengthening of the ESG governance and system
2. Establishment of the environmental management system
3. Improvement of the investment screening

2023 Key Performances

1. • Committees within the BOD given with the role as the environmental management supervisor
2. • Expansion of the environmental management certification office's coverage
3. • Establishment of a system for reviewing the feasibility of ESG aspects in investment decisions

Mid to Long-Term Plan

1. • Improvement of the c-level leadership's environmental management supervision capability
2. • All domestic plants' acquisition of ISO 14001 by 2024
3. • Minimization of any possible impact to environment/society when making a decision to make investment in new businesses

Environmental Strategy and Governance

Environmental Management Strategy and Target

SK chemicals is dedicated to continuously innovating eco-friendly products and services for our stakeholders. Our commitment extends to optimizing management across all operations, including production processes, to save energy, reduce greenhouse gas emissions, and conserve water resources. We aim to minimize air and water contaminants while increasing recycling rates through partnerships with waste recycling firms and the development of new recycling technologies. Additionally, we uphold our corporate social responsibility by establishing environmental indicators and targets, and implementing a comprehensive management system for raw materials, products, and in-process chemicals to promote a sustainable environment.

Environmental Management Policy

Key Agenda for Environmental Management

Production Stewardship	Expansion of green portfolio, ensuring product safety based on LCA, systematically managing and replacing hazardous chemicals
Climate Change Strategy	SBTi-based climate strategy, response and energy reduction activities
Conservation of Biodiversity	Biodiversity approach and framework, biodiversity risk management and mitigation
Water Resource Management	Water risk management organization and monitoring, water recycling and wastewater reduction
Contaminant Management	Increase in waste management and recycling, reduction of air contaminants

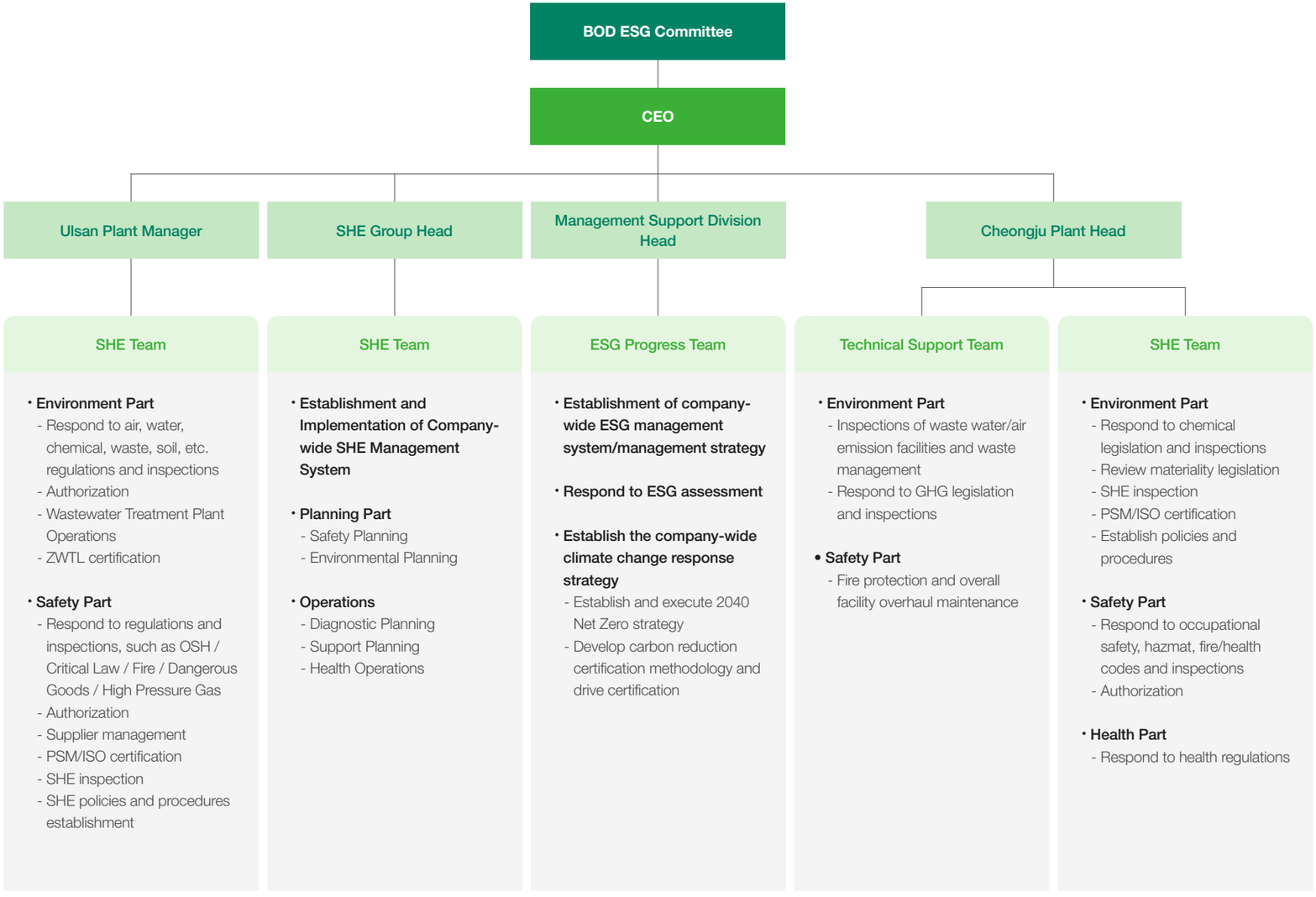
Environmental Management Governance

SK chemicals has established a structured environmental management system that includes the ESG Progress team and the ESG Committee under the Board of Directors. The ESG Progress team is tasked with systematizing environmental management by establishing strategies and goals based on environmental data from each business site. This team ensures systematic environmental management aligned with ESG principles, reporting and overseeing these efforts through executives and the CEO. The ESG Committee, a subset of the BOD, annually reviews detailed action plans, strategies, and performance related to environmental management as per its regulations. In line with our company-wide eco-friendly policy, we integrate eco-friendly considerations from the outset of projects and set specific environmental objectives for each business site, striving to achieve them. Moving forward, we will enhance our capabilities to develop and execute environmental management strategies across all business units, ensuring SK chemicals remains dedicated to promoting and achieving sustainable environmental practices.

Environmental Management related ESG Committee 2023 Agenda

Date	Agenda	Result
2023. 2. 20	Establishment of Company S' Joint Venture	Approved
2023. 3. 27	Reported 2022 Materiality Assessment result	Reported
2023. 7. 6	Reported 2023 TCFD report publishing	Reported
2023. 9. 18	Adoption of renewable energy for execution of RE100	Approved
	Plan to review the execution of internal carbon price plan	Reported
2023. 12. 6	2023 ESG performance and 2024 plans	Reported

Environmental Management Organization



Environmental Management System and Investment

Establish the Environmental Management System (ISO 14001)

Through the 'Environmental Information Disclosure System', SK chemicals discloses information on raw materials, air and water contaminants, energy, greenhouse gases, and safety/health to the government and related organizations. This transparency enhances SK chemicals' voluntary commitment to environmental management and fosters continuous communication with stakeholders about environmental issues. In addition, SK chemicals established its own SHE IT System in 2020 to systematically collect and manage data related to the environment and safety at all business sites. In 2005, SK chemicals' Ulsan Plant received ISO 14001 certification, the environmental management system certification from the International Organization for Standardization (ISO). In 2022, the Cheongju Plant and SK bioscience's Andong Plant also acquired ISO 14001 certification, resulting in 92% of SK chemicals' total sales (75% of its plants) being ISO 14001 certified. SK chemicals conducts regular follow-up internal and external audits annually and undergoes renewal audits every three years. To further enhance its environmental management system, SK chemicals is encouraging its subsidiary, SK multi utilities, to obtain ISO 14001 certification and is expanding the scope of its management. This commitment underscores SK chemicals' dedication to maintaining and upgrading robust environmental management practices across its operations.

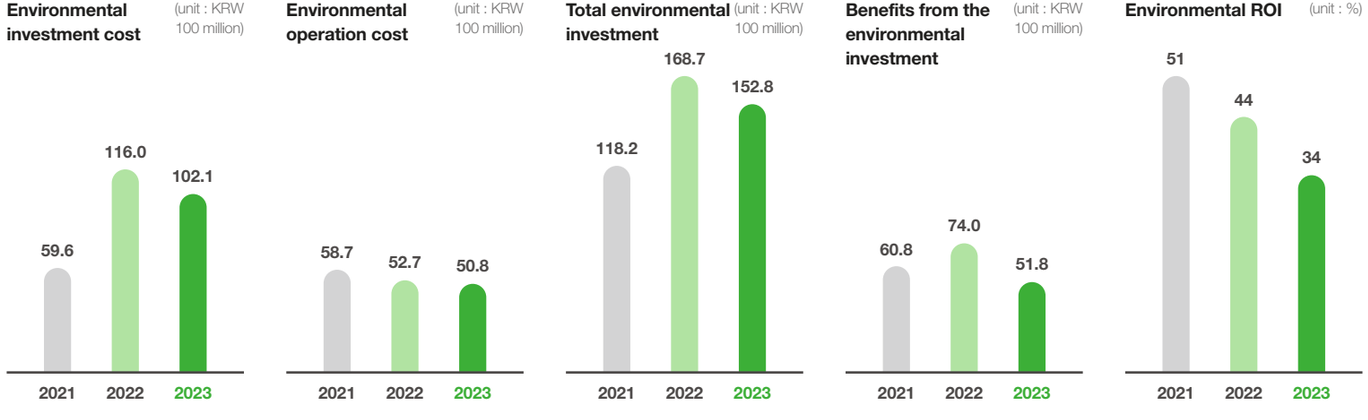
Investment in the Environment

SK chemicals has established systematic environmental investment principles to minimize environmental impacts and create benefits for the environment, guiding its investment decisions accordingly. For instance, we have invested in building solar power generation facilities at the Cheongju plant to introduce renewable energy, and invested in new prevention facilities for water and air quality management at the Ulsan plant to comply with stricter contaminant management regulations.

ISO 14001 Certification

SK chemicals Ulsan Plant	SK chemicals Cheongju Plant
ISO 14001 ○	ISO 14001 ○
Revenue Share (Consolidated) 74%	Revenue Share (Consolidated) 12%
SK Bio Science Andong Plant	**SK multi utility Ulsan Plant**
ISO 14001 ○	ISO 14001 -
Revenue Share (Consolidated) 6%	Revenue Share (Consolidated) 8%

Status of Environmental Investment



Environmental Compliance

Regulations on Environmental Compliance

SK chemicals is committed to environmental compliance, resulting in no fines or penalties in 2023 (based on fines exceeding USD 20,000). Additionally, none of SK chemicals' sites have received any significant fines or non-monetary sanctions for environmental management violations in the past three years, demonstrating stable environmental management.

SK chemicals will continue to strive for environmental compliance and build a more robust internal audit system and training programs to maintain and develop the trust of all stakeholders.

Operation of Eco-friendly Sites

Establishment of Eco-friendly Sites

SK chemicals considers the environmental impact of its business sites from the outset, adopting eco-friendly building technologies such as energy efficiency. Notable examples include Eco Lab, SK chemicals' headquarters, and L HOUSE, SK bioscience's Andong Vaccine Center. Both buildings have received domestic and international green building certifications. Eco Lab became the first residential building in Korea to achieve Platinum status in the U.S. LEED certification when completed in 2011, and L HOUSE became the first pharmaceutical plant in the world to achieve Gold status in the U.S. LEED certification while complying with Good Manufacturing Practices (GMP), a strict standard applied to food, drug, and cosmetics manufacturing.

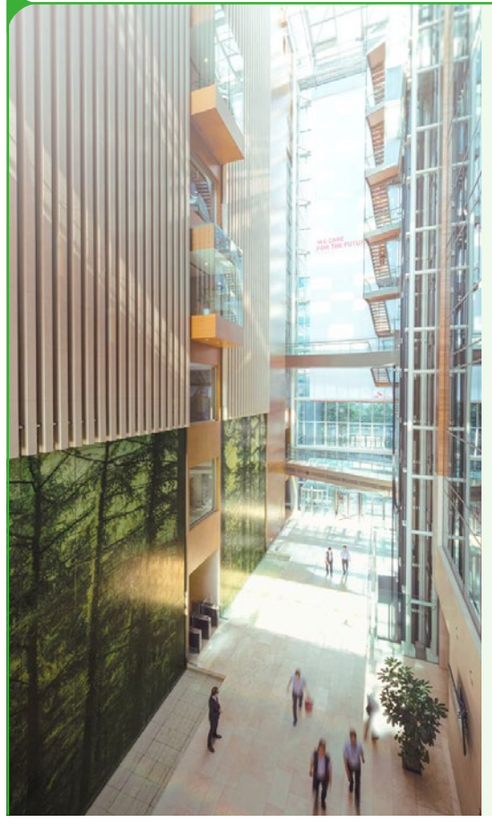
Eco-friendly/LEED/Energy certificates from home and abroad

Domestic eco-friendly certification (GBCC)
Acquired eco-friendly building Grade 1, the highest points (110pt)

Overseas eco-friendly certification (LEED)
Acquired the first Platinum for Korean residential buildings

Building energy efficiency grade certification
Acquired Grade 1 for energy efficiency

SPECIAL ISSUE



Eco-friendly technologies applied to Eco Lab

SK chemicals applied 101 technologies, including architectural planning, IT technology, and eco-friendly elements, to the construction of the Eco Lab at its headquarters to minimize environmental impact by reducing energy and resource usage.

Three years after its completion, the Eco Lab was verified for building efficiency and found to use 44% less energy, 63% less water, and emit 31% less carbon dioxide than conventional business facilities.

BIPV (Building Integrated Photovoltaic System)
Electricity generated by solar modules installed on the building envelope provides lighting. Alternative energy systems are used to power electric heating equipment.

Stormwater system
It collects stormwater and dewatering from building rooftops and grounds, reusing it for graywater and landscape water. This contributes to water conservation and flood prevention.

* LEED : Leadership in Energy and Environmental Design, US standard for eco-friendly buildings
* GBCC : Green Building Certification Criteria, domestic eco-friendly building certification

Eco-friendly Office Status

SK chemicals — HQ Eco Lab

Applied the building design that adopted 101 eco-friendly materials and technologies

Vs. existing facilities	Energy reduction 44%
	Water resource reduction 63%
	CO_2 emission reduction 31%
Work building energy efficiency	achieved Grade 1
Eco-friendly building certification (2011)	LEED PLATINUM
	GBCC Grade 1

SK bioscience — L HOUSE (Andong)

Adopted 16 eco-friendly technologies

Vs. existing plants	Energy reduction 30%
Eco-friendly building certification	LEED Gold
	GBCC Grade 1

PRODUCT STEWARDSHIP

2

Key Agenda

1. Expansion of the green portfolio
2. Reduction of the harmful chemical substance usage
3. Expansion of the LCA

2023 Key Performances

1. • Securing circular recycling raw material production capability by establishing SK Shantou
2. 3 • Reduction of the use of a harmful substance, Solvent Naphtha by 37% compared to 2021

Mid to Long-Term Plan

1. • Expansion of the green material sales to 80% in 2030, 90% in 2040
2. • Replacement of the harmful substance, Solvent Naphtha 100% by 2050
3. • Completion of performing LCA to all Green Chemicals business products by 2025

Expansion of Green Portfolio

Expansion of Green Portfolio Investment

SK chemicals aims to achieve the goal of becoming a global leader in green materials by realizing its Eco Transition management strategy, strengthening plastic recycling businesses, and investing in green materials.

In 2023, SK chemicals invested approximately KRW 130 billion to acquire assets related to circular recycled raw materials and the circular recycled PET business from Shuye, a Chinese green materials specialist company. This acquisition enables SK chemicals to operate a depolymerization plant that chemically decomposes waste PET to produce recycled raw materials and a CR-PET facility that produces PET by using circular recycled raw materials (r-BHET) from the depolymerization plant. By securing commercial facilities and technologies for recycling plastics from waste to copolyester, SK chemicals is enhancing cooperation with domestic and international brand companies based on its 30 years of expertise in polyester marketing and product development technologies.

SK chemicals plans to expand the proportion of sales related to green materials to 80% by 2030 by targeting global markets and securing customers with its green portfolio, which includes circular recycled materials and bio-based materials.

Establishment of Stable Raw Material Supply Value Chain

The global recycling market is attracting increasing attention due to stricter regulations and rising demand for recycled raw materials, accompanied by heightened competition. In this competitive landscape, securing stable raw materials is pivotal for SK chemicals' recycling business. To achieve this, SK chemicals has been collaborating with various partners, particularly in Guangdong Province, China, a key hub for recycling production. In 2023, SK chemicals signed a MOU with LOVERE, the recycling brand of Shanghai Yuekun, a leading Chinese waste recycling company, to jointly develop their recycling business.

SK chemicals is focused on securing stable supplies of waste plastic raw materials through partnerships with multiple waste supply companies. This initiative is part of their strategy to establish a circular economy value chain encompassing 'waste collection, sorting, and the production of recycled products'. Additionally, SK chemicals plans to expand its global raw material supply channels and strengthen partnerships with waste management companies and multinational corporations (MNCs) in various regions, aligning with their global expansion plans for CR (circular recycled) plants.

Establishment of Waste Plastic Circular System

To reduce waste plastics, SK chemicals is creating a circular economy jointly with local communities, private organizations and social venture companies.

In 2023, SK chemicals initiated a project focusing on recycling industrial PCR (Post Consumer Recycled) trays collected from automobile parts companies to create traffic safety activity goods, which were then donated to the Save the Children campaign. Typically, industrial waste trays from auto parts companies are disposed of through incineration due to the oils used during their use. SK chemicals introduced a waste recycling solution that combined mechanical and circular recycling processes. This innovative approach allowed the industrial PCR trays to be converted into 100% recycled raw materials. The recycled materials were further utilized to produce 2,000 pieces each of umbrellas and bag covers for traffic safety activities, and then distributed as part of the SafeXUpcycling campaign.

Development of Eco-friendly Bio Materials

Commercialization of 100% bio-based eco-friendly polyol PO3G | Through years of research and development, SK chemicals has established a production system for 5,000 tons of biopolyol PO3G (brand name : ECOTRION) per year and started full-scale commercial production in 2022. The commercialization of biopolyol PO3G is the first in Korea and the second in the world.

'ECOTRION' is a polyol made by fermenting 100% plant-derived industrial starch and is used as an essential raw material in the manufacture of urethane elastic materials, spandex, artificial leather, etc. As an eco-friendly material that can reduce greenhouse gas emissions compared to existing petrochemical products, it is attracting attention from companies in the global textile and sporting goods markets where carbon regulations are being tightened, including the EU.

Biomaterial development achievements and plans | PO3G, a biopolyol derived from plant-based industrial starch, has received certification as 100% biobased from relevant organizations in the U.S. and Europe. The use of plant-derived biomaterials, which generate 40% less greenhouse gas emissions compared to conventional petrochemical raw materials, allows us to significantly reduce emissions throughout the production process. Moving forward, we aim to expand the scope of life cycle assessments and further decrease environmental impact through collaborations with raw material suppliers and customers.

Developing new application for biomaterials and expanding sales | Hyosung TNC, a specialist in spandex, and Carbon Corporation, a global leader in 3D printing, have started using ECOTRION, a naturally derived material developed by SK chemicals. Hyosung TNC has introduced the world's first bio-spandex using ECOTRION and is utilizing it in 3D printed liquid resins for high-performance sports goods that require shock absorption and support, supplying them to global sports brands. Meanwhile, SK chemicals showcased ECOTRION at the NW Materials Show, a prominent footwear exhibition in the western United States, receiving a positive reception and actively expanding its market presence. In 2024, ECOTRION was incorporated into the 'Foot Pillow Cushioning', an insole foam for trekking shoes by Blackyak, a brand specializing in mountaineering footwear, due to its flexibility and resilience. SK chemicals plans to further broaden its market by developing various applications tailored to customer needs.

ECOTRION's bio spandex apparel

Tracking shoes implemented ECOTRION

ECOTRION's vegan leather brand, 'Nakes'

Expansion of Circular Recycling Business Market

SK chemicals is actively collaborating with brand owners and customers to expand the circular recycling market. We participate in plastics exhibitions, as well as exhibitions for cosmetics, medical supplies, and other applications where there is a demand for circular recycled materials, to promote our products and hold technical seminars to solve technical problems for our customers.

At the Shanghai Beauty Expo in China in 2023, we showcased various samples and technologies applied to circular recycled products and received significant responses from various global brand owners and cosmetic container converters. We also highlighted the differentiation from mechanical recycled products and processing technology solutions through technical seminars during the event, garnering interest.

As a result of these efforts, circular recycled products are being applied to various products in daily life, such as tire cords, records, food containers, and cosmetic containers, and are reaching consumers. In the future, we will continue to focus on active marketing, new product development, and expanding production infrastructure to grow the market and ensure a stable supply of products in various industries in Korea.

Establishment of Circular Solution

SK chemicals is building a Closed-Loop solution that not only supplies recycled materials but also recycles waste from brand owners' production processes and post-consumer waste back into raw materials for productization. Based on our deep understanding of the unique business characteristics and needs of brand owners in each industry, we are currently expanding our collaboration with various brand owners, which will enable us to establish ourselves as an eco-solutions provider that can implement carbon reduction together with our stakeholders.

Chinaplas 2024 booth

SPECIAL ISSUE

Case of circular recycle product application expansion in 2023

Applied SKYPET CR to 'iON' tire code for electric car tire

- Collaborated with Hyosung Advanced Materials and Hankook Tire to jointly develop a tire with 45% sustainable raw materials
- Developed a tire code that incorporates recycled PET

Applied SKYPET CR to the vinyl (LP) 'EcoRecord'

- Developed in collaboration with global record producer Sonopress, a subsidiary of Germany's largest media group Bertelsmann
- Introduced circular recycled PET to replace polyvinyl chloride (PVC), reducing energy used in the process by 85%.
- Signed an MOU to cooperate in building a plastic resource circulation ecosystem

Applied SKYPET CR to Ottogi pork fritter steak sauce renewal package

- Applied 100% post-consumer recycled material for Ottogi and food containers
- Same physical properties and safety as conventional PET, while dramatically reducing carbon emissions

Green Material Portfolio Performance

2019.10
Used mechanical recycling technology

- Released 'ECOTRIA R', a product that used 30% of the recycling material, PCR
- Acquired Global Recycle Standard (GRS)

2021.05
Secured an authority to purchase circular recycling materials

- Invested in shares of a Chinese company that has a technology and facility to chemically decompose the used PET
- Acquired an authority to purchase 20K tons of circular recycling materials

2021.10
Applied circular recycling technology (1)

- Released 'ECOTRIA CR' that implemented the circular recycling technology
- Established a lineup of different eco-friendly packaging materials

2022.01
Applied circular recycling technology (2)

- Established a mass production system for 'SKYPET CR', a PET that first adopted the circular recycling material technology in Korea
- Built a copolyester and PET lineup in the circular recycling field

2022.05
Started operating a PO3G 5,000 ton-scale mass production facility

- Fully supplied 'ECOTRION', a highly functional polyol made out of plant based biomaterials
- This can be an alternatives to different areas such as artificial leathers used for cars, running shoes, etc.

2023.03
Acquired production capability of circular recycling materials and products

- Secured the circular recycling production facility by acquiring a Chinese green material company
- Acquired both the commercial polyester circular recycled materials and production facility at the same time

2023 ~
Acquired recycling certification

- Obtained international recycling certification of recyclable products
- Verified by The Association of Plastic Recyclers (APR) in US (5 products) and European PET Bottle Platform (EPBP) (10 products)
- Expanded recycling material certificate ISCC Plus items

Using Renewable Raw Materials

SK chemicals is expanding its use of recycled raw materials alongside building a green portfolio. 'ECOTRIA R', which uses mechanical recycling technology, and 'ECOTRIA CR', which uses circular recycling technology, contain recycled plastic raw materials (PCR) and are certified by the Global Recycled Standard (GRS) or International Sustainability & Carbon Certification (ISCC) PLUS. ECOGEN, a bio-based copolyester, uses a bio-based raw material derived from corn, which has the ability to absorb 1.807 kg of carbon dioxide per kilogram. ECOTRION, a biomaterial, also uses 1,3-Propanediol, which is 100% plant-derived. SK chemicals plans to continue strengthening its green portfolio and will actively expand its use of renewable raw materials.

* The total of renewable raw material usage (Isosorbide,1, 3Propanediol, r-BHET, PCRPET)

Advancing Harmful Chemical Substance Management System

Establishment of Chemical Substance Management Governance

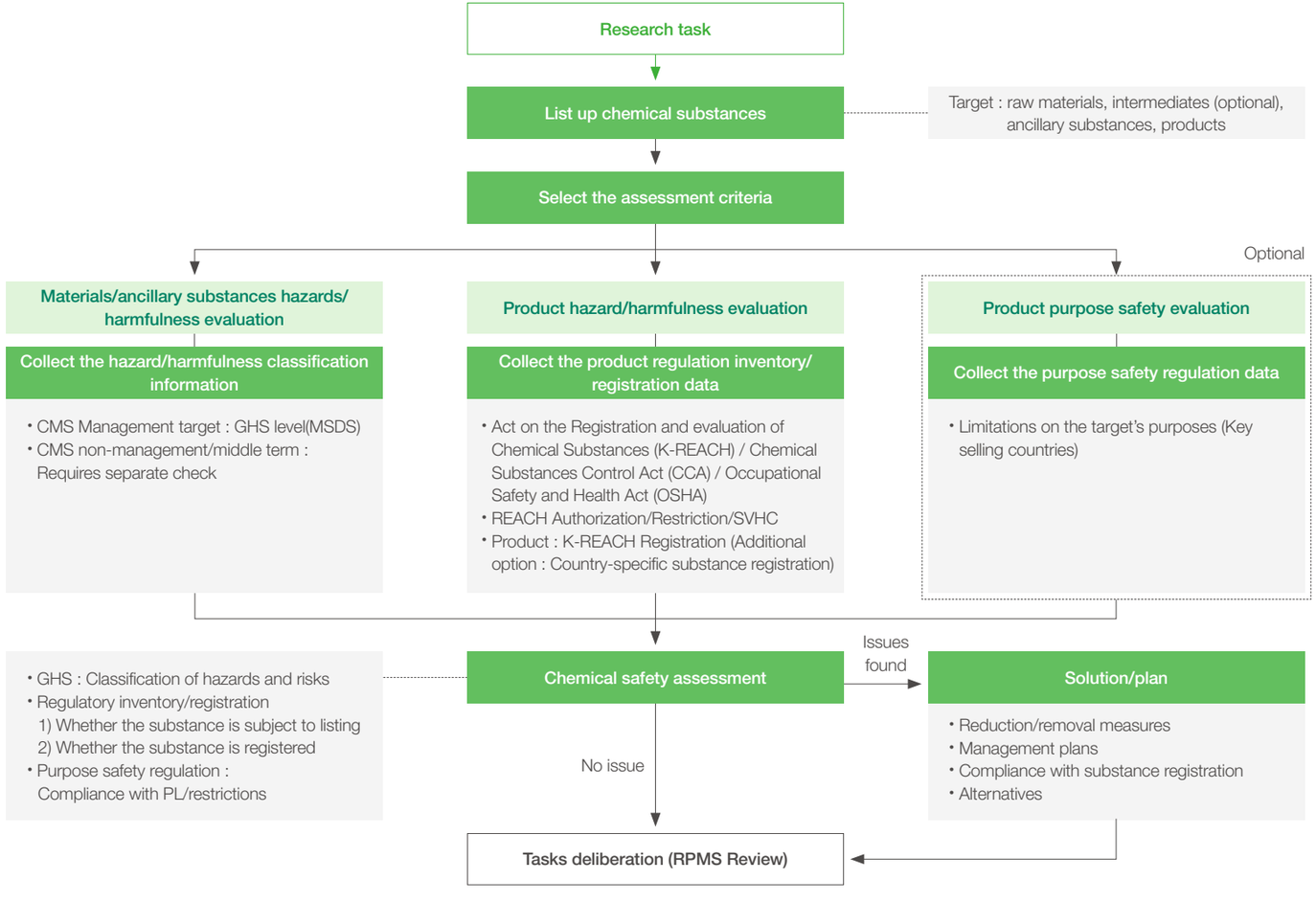
SK chemicals is strengthening its management of chemical substances through the Risk Management Committee under the BOD. Additionally, the Product Stewardship & Regulatory Affairs (PSRA) team, a department dedicated to establishing regulatory infrastructures for products and minimizing compliance risks was created. We are advancing our internal controls for product stewardship and human impact, and our company-wide chemical management system beyond regulatory scope.

Operation of R&D Chemical Safety Assessment/Deliberation System

SK chemicals has improved its internal management processes to ensure that the hazards of raw materials and subsidiary substances are reviewed during product design and development, as well as the hazards of products from the research and development stage. When developing products, we check whether raw materials and subsidiary substances are subject to the Chemical Management System (CMS) or the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) through MSDS. We also compile the substance regulatory inventory/registration information of the developed products and comprehensively evaluate their chemical stability to deliberate on product development issues. In the future, we plan to expand the scope of the system to include the uses of the developed products in order to conduct R&D that considers the safety of end consumers.

Establishment of Chemical Management System (CMS)

In 2022, we introduced the Chemical Management System (CMS) to systematically manage the entire process of purchasing, using, and disposing of chemicals at our Ulsan plant and chemical research institute. Through this system, we systematically manage compliance with relevant laws, regulations, and licensing procedures via a database for all chemicals handled at the plant, and block purchases in the event of non-compliance. Additionally, we continuously monitor and manage items, amounts, and legal regulations regarding the status of chemical use.



Advancing Harmful Chemical Substance Management System

Enhancing Legal/Regulation/Certification Compliance Management and Information Disclosure

SK chemicals strives to transparently disclose its efforts and achievements in managing hazardous chemicals so that various stakeholders can choose safe and environmentally friendly chemical products. To this end, we disclose the total amount of SVHCs and Sin List substances, which are international standards, and toxic and banned substances, which are domestic standards, on our website.

We also review the safety of our products, including food contact substance regulations (U.S., Europe, China, etc.), substance registration regulations (Act On Registration And Evaluation Of Chemical Substances, REACH, etc.), regulations related to hazardous chemicals, and certifications by use. In particular, for our copolyester product line, we disclose information on chemical system compliance to our customers through the Regulatory Affairs Product Stewardship Information/Certification Data (RAPID) sheet. The RAPID sheet communicates product information related to various regulations, including the product's country-specific chemical inventory status, whether the product contains SVHCs (Substances of Very High Concern, a list of candidate substances published under Article 59 (10) of the EU REACH Regulation), and whether the product meets food contact material regulations in each country. In addition, the PSRA team monitors the latest regulations required by the applications in which our products are used and reviews regulatory compliance to ensure that our products are used correctly and meet the certification and substance registration requirements of our customers.

Connection of Chemical Management Programs and Performances

SK chemicals educates employees about company policies on chemical safety, regulation, handling, and chemical management. To prepare for chemical spills, we have strengthened the training process to ensure that chemical safety policies are reflected in MSDSs, chemical management, and chemical product development.

In 2023, we held a chemical management workshop organized by the team to provide training on domestic chemical regulations, chemical management, and MSDSs to employees in business divisions and research centers. In addition, SK chemicals' Pangyo office, a complex building comprising a research and an office building, uses more than 23,000 chemicals and high-pressure gas, exposing it to the risk of chemical leakage and fire accidents. Therefore, we regularly conduct chemical leakage and fire drills once a year to raise the awareness level of researchers on the safe use of chemicals and to familiarize them with quick initial response/evacuation methods in the event of a disaster caused by chemical leakage/fire.

SK chemicals is also striving to establish an internal management system by introducing KPIs to measure and monitor chemical management performance. The chemical management KPIs cover all aspects of hazardous substance management, including the implementation of a chemical stability evaluation/review system for R&D, the goal of achieving a full product LCA including human health effects, the phase-out and reorganization of hazardous substances, and the development of alternative technologies.

Transparent Chemical Substance Disclosures

Harmful substances to be disclosed	International standard	SVHC Sin List	
	Domestic standard	Toxic Substances Restricted Substances Prohibited substances	Accident Preparedness Materials Authorized substances

RAPID Information Disclosure Range[1)]

Chemical restrictions of major countries	Food contact materials regulations of major countries
Regulations for purposes of major countries	Others (e.g.: whether SVHC or conflict minerals are included)

1) The disclosure range differs by product

2023 Emergency Response Training

Purpose	• In the event of a disaster (chemical leakage/fire), checks are conducted for quick initial response, evacuation, use of fire protection facilities, and utilization of protective equipment.
Target	• Firefighting self-defense units and all employees
Details	Step 1 Initial control → Step 2 Fire response Extinguishing activities → Step 3 Evacuation and get a head count → Step 4 Hands-on fire extinguisher and hydrant drills

Harmful Chemical Phase-out

Harmful Chemical Phase-out

SK chemicals has established and is implementing a phase-out plan for hazardous chemicals in use. In the long term, SK chemicals will replace all hazardous chemicals to protect the health and safety of stakeholders and minimize the impact on the global environment and ecosystems.

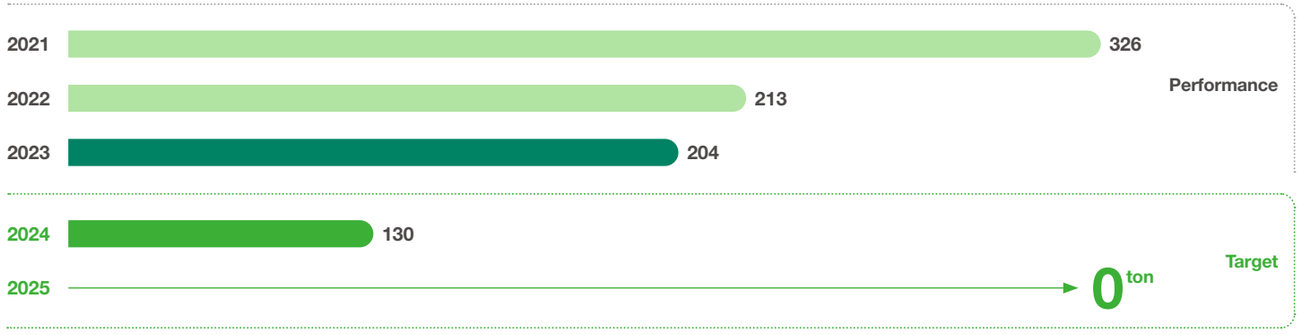
In 2022, we established a mid to long-term plan to change and develop substances in SKYBON products to substances that do not have hazardous issues, and by 2025, we plan to reduce the use of solvent naphtha by 100%. To this end, we present a roadmap by year and include the achievement and progress of the substitution plan in the executive KPI performance indicators to ensure that we achieve our goal of replacing hazardous chemicals.

Chemical Management and Phase-out Accomplishment

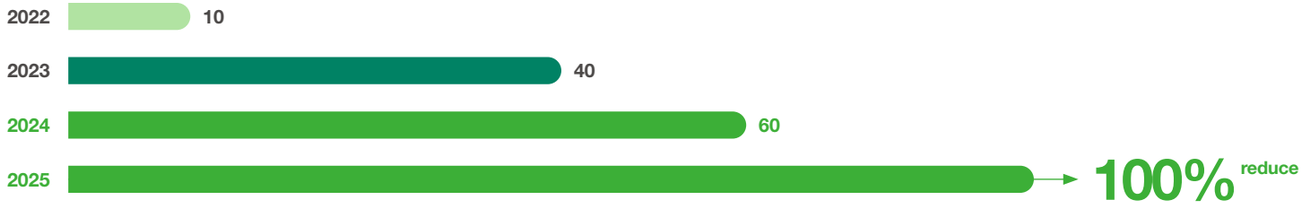
SK chemicals is making various efforts to continuously improve its chemical management capabilities. Following the establishment of the Chemical Research Institute in 2021, we introduced CMS at our Ulsan plant in the first half of 2022 to strengthen chemical management. In addition, we have developed a 'Chemical Accident Prevention and Management Plan' to respond to laws and regulations related to hazardous chemicals and enhance workplace safety, and we take measures such as accident prevention, off-site impact assessment, and emergency response programs to minimize damage in the event of a chemical accident.

SK chemicals is continuously making efforts to replace hazardous chemicals in use. We have significantly reduced the amount of PX used by optimizing DMT raw materials and succeeded in replacing 100% of it in May 2022. In addition, we disclose the amount of hazardous chemicals used on our website, as well as MSDSs for each product, to enhance trust in our sustainable product production and responsibility. Through these efforts, we achieved zero chemical-related environmental/safety accidents and zero violations of chemical-related laws and regulations last year.

Harmful substance phase-out target (unit : ton)



Solvent Naphtha reduction target (unit : %)



Status of chemical substance law and regulations violation*

	Exposure to chemical substances	Workers exceedingly exposed to chemical substances	Violation of chemical substance laws and regulations
2023	0 case	0 case	0 case

* Based on fines exceeding $10,000

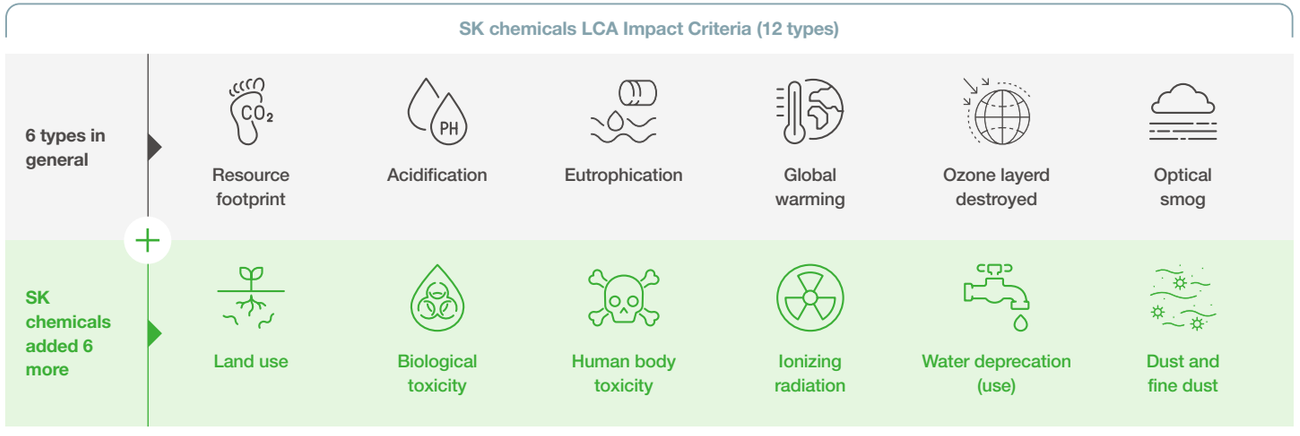
Strengthening Product Environmental Impact Assessment Through LCA Measurement

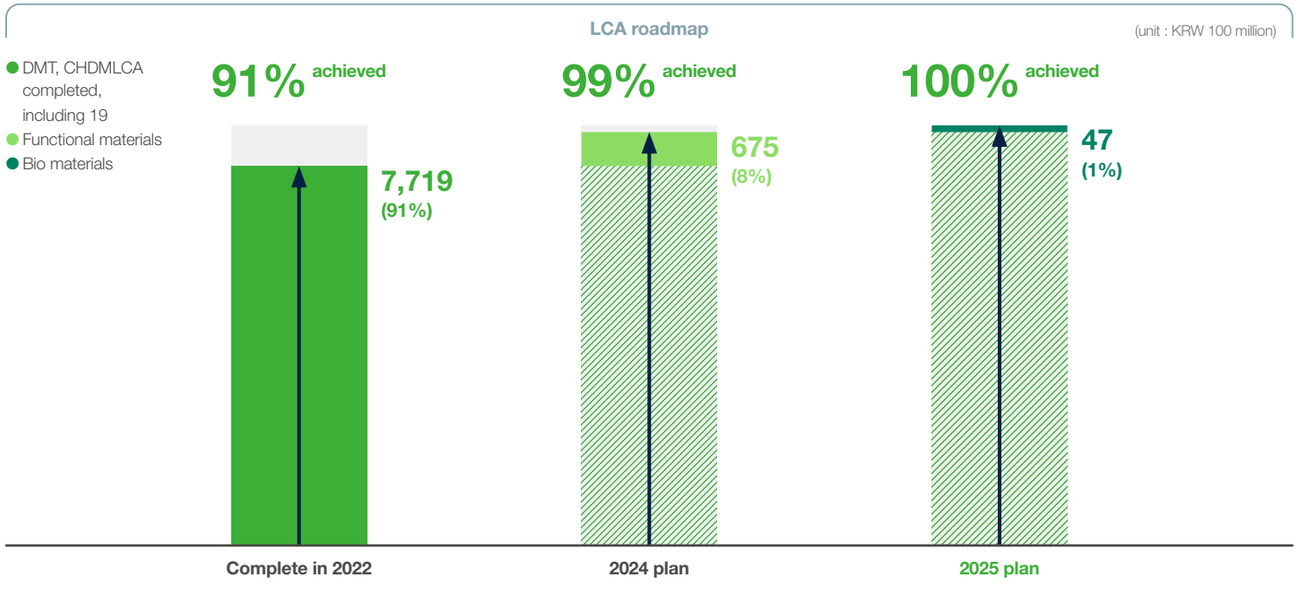
All Product LCA Roadmap / Target and Performance

SK chemicals has established the 'All Product LCA Roadmap' for its green chemicals business by 2025. According to this roadmap, LCAs for functional materials SKYBON and SKYPEL are planned for 2024, and LCAs for the mass-produced bio-based material PO3G will be secured by 2025. Additionally, specific products that have completed LCAs are targeted to obtain UL EPD (Environmental Product Declaration) certification. The products that have already received UL EPD certification include two SKYGREEN product lines, five ECOZEN product lines containing bio-derived raw materials, and two ECOTRIA CR product lines incorporating circularly recycled materials. This certification spans a total of nine product lines and covers 79 grades of copolyester. Furthermore, LCA assessments were conducted for an engineering plastic line (SKYPURA-PCT) as well as for SKYDMT and SKYCHDM, raw materials used in various polymer resins. This indicates that LCA results have been obtained for products representing 91% of SK chemicals' 2023 sales in the Green Chemicals business and 63% of total sales, which includes the Pharma business. SK chemicals is actively striving to develop environmentally friendly products, aiming to reduce the environmental impact associated with their production processes.

Certification of Recycling Copolyester Carbon Reduction Effect

SK chemicals has achieved UL EPD certification for 79 product grades across 9 copolyester product lines, with two of these, recycled copolyester products, receiving UL 'EPD Optimization' certification. This recognition acknowledges the carbon reduction achieved through plastic recycling via 'UL Solutions'. Notably, Claro CR50, a product with UL 'EPD Optimization certification', demonstrates a carbon reduction compared to Claro products that do not contain recycled materials. SK chemicals conducted third-party LCAs to assess environmental impacts, including product carbon footprints, and subsequently obtained UL EPD certification. This certification underscores the company's commitment to credibility and objectivity in environmental performance assessment. These certifications are expected to positively influence industries such as cosmetic containers, food packaging, home appliances, and household goods, where there is significant interest in low-carbon materials.





CLIMATE CHANGE STRATEGY

3

Key Agenda

1. Establishment of the climate change system
2. Reduction of the GHG

2023 Key Performances

1.
   - 2023 : Submission of targets and approve the SBTi GHG reduction near-term target
   - Finalization of renewable energy PPA contract
2.
   - GHG emissions 267K tCO_2eq
   - GHG reduction by building solar power generation facility at Cheongju plant, utilizing CHDM off-gas and improving DMT

Mid to Long-Term Plan

1.
   - Achievement of 100% Renewable Energy by 2032, reduction of the GHG emission more than 50% by 2032 vs. the base year (2021)
2.
   - Achievement of Net Zero in 2040

Climate Change Response Governance

Climate Change Organization

To systematically address climate change, SK chemicals has implemented a structured organizational system. This system includes the ESG Committee, which provides strategic oversight and decision-making on sustainability issues like climate change. The Management Council collaborates with various departments to put these strategic decisions into actionable plans and initiatives. Supporting these efforts is the ESG Progress team, which ensures the smooth implementation of strategies, monitors progress, identifies issues, and reports findings to management regularly. SK chemicals remains committed to enhancing and activating this Climate Change Response Organization to bolster its overall capacity to effectively respond to climate challenges.

Stakeholders Participation and Communication

SK chemicals is strengthening its collaboration with stakeholders to pursue sustainable development as well as joining global efforts to curb the rise in the average global temperature, such as declaring support for the TCFD and participating in SBTi. Through close collaboration with various stakeholders, including suppliers, consumers, and local governments, we aim to lead the eco-friendly circular economy and play a role as a key participant in driving market growth. In addition, we will publish a TCFD report every year to transparently disclose SK chemicals' climate strategy to promote the achievement of Net Zero by 2040 based on economic feasibility.

Connection of Climate Change Performance Rewards

To enhance climate change performance management effectively, SK chemicals has implemented the 'Net Zero' task as a pivotal KPI for the CEO and production executives. This initiative includes evaluating company-wide GHG emissions as a critical metric, and the results of these KPI evaluations are integrated into the compensation system for the CEO and CFO. Similarly, the head of the Ulsan plant, a core operational site, has GHG emissions as a key KPI, ensuring alignment with organizational goals. The production manager at the Ulsan plant is setting detailed energy-saving tasks aimed at reducing GHG emissions, which are also integrated into their performance metrics. At the end of each year, these established KPIs are assessed and graded (S, A, B, C) based on the level of goal achievement. The outcomes of these evaluations influence the compensation systems for executives and employees alike.

ESG Committee

- The ESG Committee, responsible for reviewing critical ESG matters company-wide, including climate change responses, convened seven times between April 2023 and April 2024. It established a framework for climate change issues based on international standards and industry characteristics, conducting a materiality assessment to identify and prioritize key concerns.
- These identified issues have been integrated into the company's management strategy and are actively pursued as core business strategies to meet diverse stakeholder needs.
- Moreover, the ESG Committee assessed the company's progress and strategies regarding climate change, including a detailed plan to reduce greenhouse gas emissions by 50% by 2030 and achieve Net Zero emissions across all sites by 2040. It also deliberated and approved various initiatives with potential environmental impacts, such as adopting renewable energy for RE100 compliance and establishing the Shuye Limited Partnership.

Management Council

- The management team, led by the CEO, acknowledges the significance of stakeholder demands regarding climate change response in corporate governance. They spearhead investments and business development initiatives aimed at expanding eco-friendly operations and foster company-wide collaboration across strategy, R&D, and production departments to achieve these goals.
- Additionally, in pursuit of ESG management, we have established greenhouse gas emissions and environmental efficiency indicators as KPIs linked to compensation. ESG KPI tasks associated with the Management Council are managed and executed through collaborative efforts among working groups in conjunction with unit-specific KPIs.

Responsible Organization

ESG Progress team

- The organization establishes company-wide Net Zero targets and strategies to address climate change. It leads detailed tasks or supports and oversees their implementation by relevant departments. It also measures greenhouse gas emissions from each business site and ensures compliance with related regulations and global initiatives such as CDP, TCFD, and SBTi.
- As a risk management entity responsible for overseeing financial and non-financial risks across the enterprise, including climate risks, it discusses and reviews significant issues with each executive department and reports findings to management.

Production/SHE Team

- We are implementing greenhouse gas reduction tasks through measures such as optimizing energy usage in processes and adopting low-carbon fuels and processes. Additionally, we are promoting detailed tasks to enhance environmental management, including contaminant management, compliance with relevant environmental laws and regulations, and pursuing ZWTL certification.

Advancing Climate Change Response Management System

ESG Assessment of New Investment Deliberation Agenda

SK chemicals integrates ESG factors deeply into its investment decision-making process to effectively address environmental and social challenges, particularly those related to climate change. A new Investment Review Regulation has been established to evaluate and report on ESG considerations, utilizing the K-Taxonomy System and the Financial Society Investment Exclusion List. This framework ensures that potential environmental and social impacts are minimized during the assessment of investment proposals, supporting sustainable management practices.

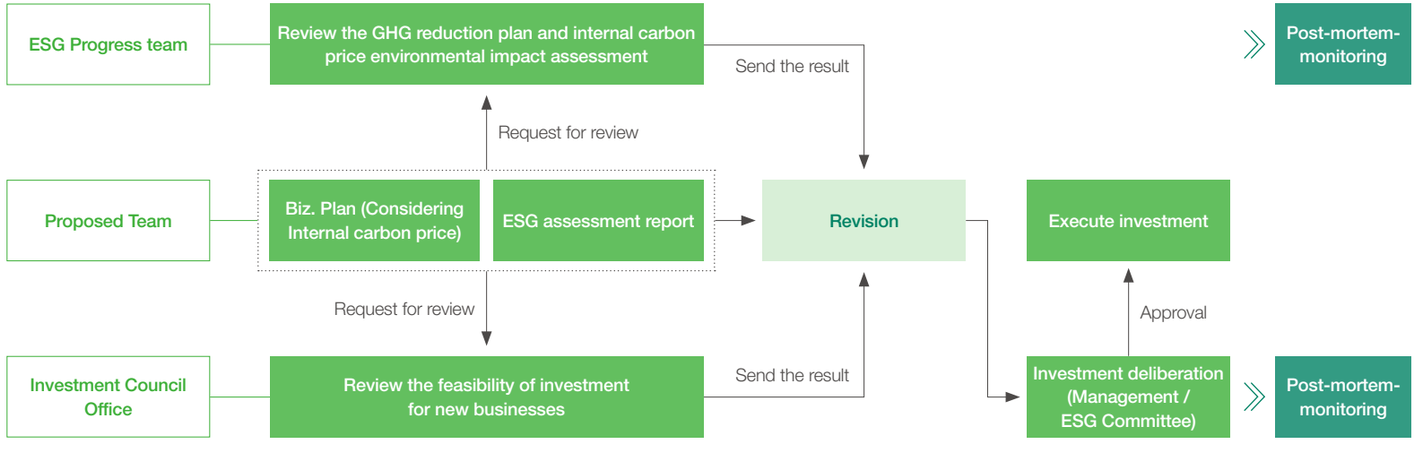
Throughout 2022 and 2023, all significant investment proposals underwent thorough scrutiny against these criteria, ensuring alignment with sustainable development goals. After the investment, SK chemicals continues to monitor and assess the execution of planned tasks based on ESG assessment reports. This systematic approach underscores SK chemicals' commitment to sustainable development and proactive response to climate change through robust ESG-centered investment deliberations and decisions.

Adoption of Internal Carbon Price

SK chemicals has implemented an internal carbon pricing system to proactively address the global trend of assigning economic value to carbon emissions. This initiative integrates the cost of carbon emissions into business planning and investment decision-making processes of the leadership, enabling SK chemicals to manage potential carbon cost risks effectively. The system institutionalizes future carbon costs, ensuring they are considered in new investment decisions within the framework of the internal investment review committee. By incorporating carbon emissions from Scope 1&2 into the evaluation criteria for new investments, SK chemicals assesses the business feasibility while considering associated carbon costs. This approach enhances scrutiny of investments with higher carbon footprints, facilitating a shift towards a low-carbon business portfolio.

The carbon price is determined using anticipated Scope 1&2 emissions and authoritative scenario models like NGFS, with periodic adjustments planned. This strategic pricing mechanism aims to expedite new low-carbon investment initiatives and actively promote carbon reduction activities, thereby advancing SK chemicals' commitment to achieving Scope 1&2 carbon neutrality by 2040.

Investment Decision-making Process



Internal Carbon Price System Plan

Category	Detail
Overview	• NPV/IRR evaluations with an internal carbon price applied for CAPEX investment proposals such as expansions and equity investments submitted to the investment council
Applied range	• Apply estimated Scope 1&2 emissions
Implementation	• Prepare for future carbon price increases/volatility • Leverage prioritization to grow low-carbon portfolio
Carbon price	• Based on the NGFS GCAM 1.5°C scenario (unit : US$/$tCO_2eq$)

Category		2025	2030	2040
Carbon price	USD	69.7	104.0	183.0

Climate Risk and Opportunity Management

Climate Risk and Opportunity Management Process

To systematically address climate change, SK chemicals conducts regular identification and evaluation of climate-related risks and opportunities. We forecast long-term risks and opportunities using climate scenario analysis, and integrate them to our business strategies. Climate change risks are integrated into SK chemicals' company-wide risk management process, overseen by the ESG Committee. When significant risks are identified, these are escalated to top management for strategic decision-making and action.

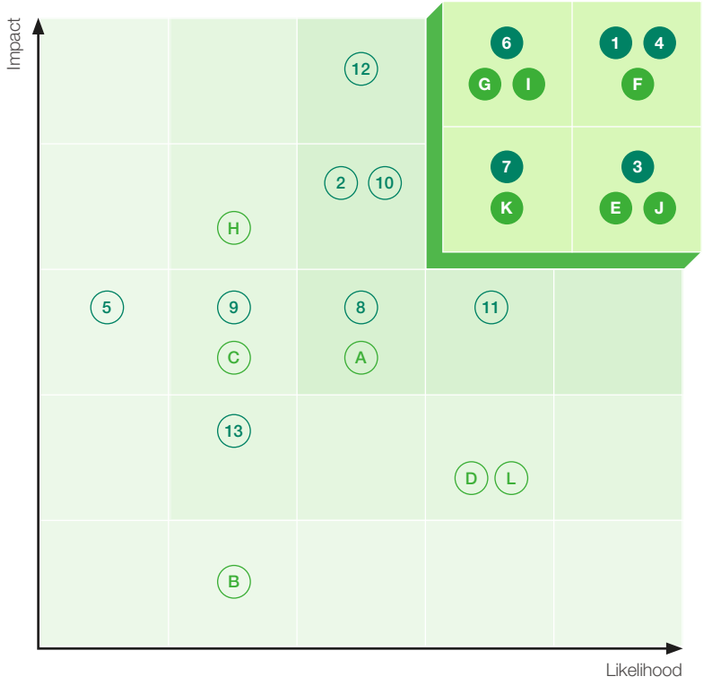
Climate Risk and Opportunity Factor Assessment

SK chemicals has systematically organized a pool of climate change risks and opportunities through thorough industry analysis and literature research. This effort has identified key factors that could impact the company's business goals, financial performance, and operational activities. Evaluating the likelihood of these factors occurring and their potential impact on our business strategy, market trends, and competitiveness, we have established response strategies aligned with our eco-transition business model, growth strategy, and stakeholder expectations. Additionally, detailed quantitative analysis of financial impacts and factors with high likelihood of occurrence has been conducted to inform stakeholders transparently. Moving forward, SK chemicals will manage each identified factor as performance indicators to effectively address climate change risks and leverage opportunities.

Climate Change Risk Management Process

Identify the climate change-related risks	• Identify climate change-related risks and opportunities across your operations, considering the specifics of your organization • List the identified risks and opportunities • Refine them by reflecting internal and external factors such as business status, domestic and foreign laws and regulations, and environmental
Find tasks and establish targets	• Evaluate material risks and opportunities through a materiality assessment,(categorizing the financial impact of risks and opportunities into short-, medium-, and long-term) • Set goals and establish management plans that consider the actual and potential impact
Mitigate risks and monitor	• A dedicated risk management organization monitors progress on key enterprise-wide risk issues • Identify new risks identified through monitoring and establish/implement strategies to respond to them
Report on risk results	• The Risk Management Committee reports to the BOD on the management of major risks and opportunities • Report to the BOD to ensure alignment with SK chemicals' sustainability management system and shape company-wide strategy and policy direction

Risk and Opportunity Factor Materiality Assessment Result



Risks	1	• Utility costs increase due to increased regulations and policies around fossil fuel use
	3	• Electricity prices rise due to restructuring of the National Energy Master Plan
	4	• Increased domestic and international plastic regulations are expected to increase customer response costs, reducing product competitiveness
	6	• Market demand changes due to customer requirements, such as increased consumer preference for eco-friendly products
	7	• Fail to secure a stable supply of recycled raw materials, resulting in a lack of leadership in the recycling market
Oppor-tunities	E	• Reduce operating costs and reduce carbon emissions with efficient and optimized production processes
	F	• Reduce carbon costs by switching to clean and renewable energy across all sites
	G	• Establish sustainable management strategy and secure product competitiveness by expanding low-carbon product development/sales
	I	• Generate revenues from carbon credit by securing greenhouse gas reduction certification of recycle polyester
	J	• Increase sales as consumers demand more eco-friendly products
	K	• Enter the eco-friendly materials market and finding new business opportunities through gradual expansion

Response Strategy of Key Climate Change-related Risks and Opportunities

To address the evolving climate crisis, SK chemicals will establish and implement a strategy to respond to both risks and opportunities. This strategy will be based on analyzing the impact of each major factor, with financial impacts anticipated from the short-term in 2023 to the long-term in 2050. To minimize these impacts and capitalize on opportunities, SK chemicals will achieve Net Zero GHG emissions for Scope 1&2 across all sites and lead GHG reductions throughout the entire value chain by establishing a circular economy system. Furthermore, SK chemicals will focus on transforming and expanding its green materials business to align with market and customer demands, thereby promoting sustainable development.

Risk realization timing : Short (~2025), Mid (2025~2035), Long (2035~2050)
Risk impact : ● Low ● Mid ● High

Climate Change Risk Management Process

Category			Key Risks and Opportunities	Response Strategies/Status	Risk/Opportunities Timing		
					Short	Mid	Long
Risk	Transition risk	Policy/laws	• Tighter regulations on fossil fuel use • Rising electricity prices due to energy plan reform • Tighter domestic and international plastics regulations	• Set 2040 Scope 1&2 Net Zero targets and implementing action items based on SBTi • Minimize the impact of electricity price volatility through self-generation of solar power and introduction of renewable energy • Secure sustainability with recycled materials and recycling business	●	●	●
					-	●	●
					●	●	●
		Market	• Changing demand, including increased consumer demand for environmentally friendly products • Stability of supply of recycled raw materials	• Building an eco-friendly materials business model • Establish SK Shantou to secure production capacity for circular recycled materials	●	●	●
					●	●	●
	Physical risk	Acute	• Increased frequency of extreme weather events, such as flooding and typhoons, resulting in higher costs to restore your business	• Operate safety and health committees for each business site under the company-wide SHE steering committee to proactively implement detailed tasks to prevent risks and distribute/educate safety rules to employees/partners	●	●	●
		Chronic	• Increased operating costs due to long-term changes in climate patterns, such as rising average temperatures	• Analyze the factors that may pose long-term risks due to the location-specific nature of your business and develop a plan to continuously monitor them	-	●	●
Opportunities		Resource efficiency	• Reduce operating costs and reduce carbon emissions through energy efficiency improvements	• Reflect/execute KPIs of executives in charge of energy saving such as optimization of raw materials and energy use	●	●	●
		Energy resource	• Reduce carbon costs by transitioning to clean, renewable energy	• Increase renewable energy to reach RE100 by 2032	●	●	●
		Product/services	• Gain a competitive edge by selling low-carbon products • Create carbon credit's environmental value	• Transition to 100% Recycled copolyester by 2030 • Pursue certification of carbon reduction performance for circular recycled products	●	●	●
					-	●	●
		Market	• Increasing consumer demand for eco-friendly products • Expand green markets to unlock new opportunities	• Set a goal of 80% green material content in products sold by 2030 • Set a goal of becoming global No.1 of the circular economy solution by 2027	●	●	●
					●	●	●

Climate Change Scenario Analysis

Climate Change Scenario Risk Analysis

In line with TCFD recommendations, we conducted scenario analyses for transition and physical risks to assess the financial implications of potential climate change impacts and proactively plan responses. For assessing transition risks, we utilized the authoritative International Energy Agency (IEA) 1.5°C Net Zero Emissions (NZE) scenario, the Network for Greening the Financial System (NGFS) Below 2°C rise scenario, and the Above 3°C scenario. Additionally, to analyze physical risks by site, we conducted an evaluation using the four RCP (Representative Concentration Pathway) scenarios from S&P Global Climanomics Hazard Modeling. The analysis targeted SK chemicals' operational and owned sites, including the Pangyo headquarters, Ulsan plant, Cheongju plant, and Yantai plant in China.

Transitioning Risks

Policy/Law
- More restrictions on fossil fuel use
- Rising electricity prices due to energy plan overhaul
- Tighter domestic and international plastics regulations

Market
- Changes in demand, including increased consumer demand for eco-friendly products
- Recycle raw material supply stability

Scenario	Assumptions	2040 carbon costs analysis (KRW 100 million)	
Paris-aligned 1.5°C Scenario • A scenario for high-intensity reductions under the Paris Agreement	• Carbon price up to $205.0 in 2040 • International reduction as the green technologies such as solar, hydrogen and CCUS, which are part of National Carbon Neutrality Plan have expanded	BAU	1,730
		Net Zero	730
Below 2°C Scenario • A scenario with delayed response in policy, technology, etc.	• Carbon price up to $127.7 in 2040 • No global annual emissions reductions by 2030, with strong policies in place thereafter	BAU	1,280
		Net Zero	700
Above 3°C Scenario (No Mitigation) • A scenario where inaction results in a global temperature increase of more than 3°C.	• Carbon price up to $5.6 in 2040 • Global emissions continue to rise through 2080, maintaining a high carbon intensity (high-carbon) energy system	BAU	760
		Net Zero	670

Up to KRW 173 billion in costs in 2040 under a business-as-usual (BAU) scenario

Up to KRW 73 billion in costs in 2040 under the 1.5 °C scenario with high intensity abatement

Physical Risks

Acute
- Increased frequency of weather events, such as floods and typhoons, resulting in increased costs to restore your business

Chronic
- Changes in long-term climate patterns, such as rising average temperatures, will increase operating costs

Risk factors

Extreme Temperature	Wildfire
Tropical Cyclones	Drought
Fluvial Flooding	Coastal Flooding
Water stress	-

Scenario	Assumptions	Accumulative Asset Loss in 2040 (KRW 100 million)		
RCP 2.6 Scenario (420ppm)[1)] • Take actions to reduce GHGs immediately	• Global temperature rise of 0.9-2.3°C and sea level rise of 0.26-0.55 meters by 2100			2,800
RCP 8.5 Scenario (940 ppm)[1)] • A scenario where some policies are realized due to passive response	• Global temperature increase of 2.0-3.7°C and sea level rise of 0.33-0.63 meters by 2100	Sum		7,700
		Sites	Pangyo HQ	2,300
			Ulsan Plant	3,100
			Cheongju Plant	2,200
			Yantai Plant	150

RCP8.5 scenario projects 2040 cumulative asset losses of KRW 770 billion

1) Refer to Information Portal of Korea Adaptation Center for Climate Change

Climate Change Response Performance and Target

Approve SBTi-based GHG Reduction Near-term Reduction Targets

SK chemicals has established GHG reduction targets under the Science-Based Targets initiative (SBTi) to responsibly and systematically address the climate crisis and actively contribute to limiting global temperature rise to 1.5°C. In December 2023, SK chemicals received approval for these GHG reduction targets.

The targets encompass direct emissions (scope 1), indirect emissions from purchased electricity (scope 2), and GHG emissions from the entire value chain, including the product use stage (scope 3). A systematic reduction plan has been formulated based on these targets. SK chemicals not only sets these targets but also conducts regular implementation checks to ensure continuous reduction. The company commits to managing these targets annually, considering the evolving business environment.

Engagement to Achieve Internal Target

To achieve Scope 3 Net Zero emissions, SK chemicals has established an Engagement strategy aimed at reducing Category 15 (investment) emissions in accordance with the SBTi Guidelines. Seven of our subsidiaries and affiliated companies are categorized as Scope 3 Category 15 emitters under the GHG Protocol, collectively accounting for 25% of SK chemicals' total Scope 3 emissions. (as of 2021)

By encouraging and supporting these subsidiaries to establish and adopt SBTi targets, we are taking a comprehensive and proactive approach to climate change risk management. This initiative ensures that achieving Net Zero emissions is not merely a declaration but a tangible reality, driven by accelerated implementation efforts.

SBTi Performance

First SBTi Near-term Targets Approved for Korean Chemical Company
(Scope 1&2, 3 Reduction Targets)

2023. 11
SBTi Near-term target finally approved

2023.08
SBTi verified

2023.03
Submitted the SBTi report

2023.02
Submitted the SBTi pledge

Assist making subsidiaries green and have SK chemicals set SBT goals

- Recommend to set Science-base Target
- Establish reduction goals
- Develop green technologies
- Calculate emissions

• Encourage development of green technologies by subsidiaries and affiliates
• Recommend and support SBT guideline-based goal setting

SK chemicals Achieves Net Zero

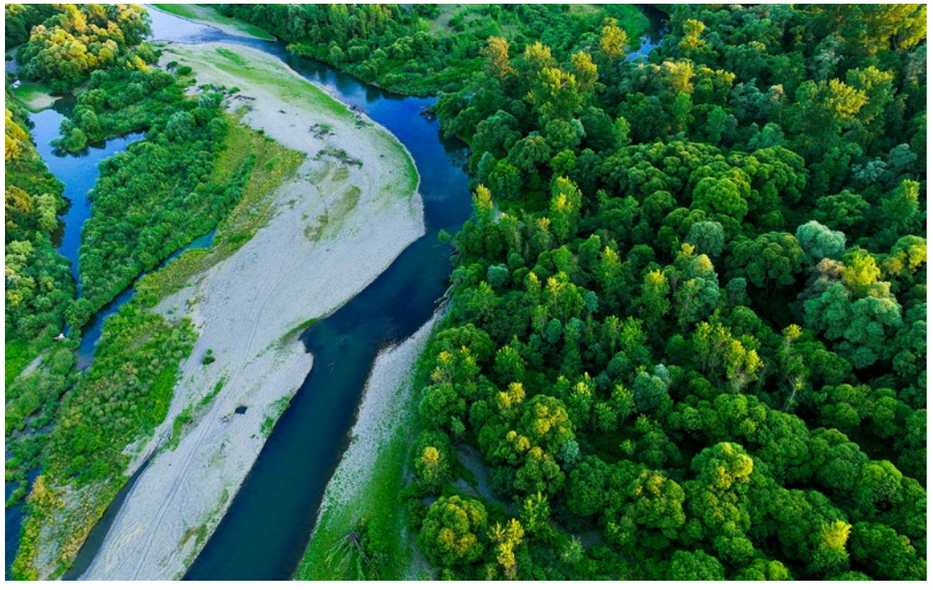
- Enhance corporate value through ESG management
- Expand green business opportunities and customer acquisition
- Extend leadership toward the green enterprise

• Reduce Total Value Chain GHG Emissions
• Manage financial risk from the climate crisis by going Net Zero

Disclosure of Climate Change Response Information

SK chemicals is committed to transparently disclosing its climate change response efforts to global financial investors and stakeholders through its ongoing participation in the Carbon Disclosure Project (CDP) and continuously improving its performance. In 2022, SK chemicals was recognized as an excellent company for climate change response by receiving the Carbon Management Sector Honors Award and the Water Sector Special Award at the 2023 CDP Climate Change Response and Water Management Awards Ceremony organized by the Carbon Disclosure Project (CDP) for the second consecutive year.

Moving forward, SK chemicals will persist in its efforts to address climate change. This includes establishing and operating an advanced climate change management system and systematically disclosing its activities and performance.



Scope 1 Reduction Strategy

To reduce Scope 1 emissions, SK chemicals has implemented key strategies focusing on enhancing production process efficiency and transitioning to eco-friendly fuels at the Ulsan Plant. In particular, in 2022, we are capturing and utilizing hydrogen gas generated during the process and reusing it as production energy. We are gradually expanding the application of hydrogen fuel to all processes at the Ulsan plant, such as DMT and CHDM, and switching to eco-friendly fuels for mobile combustion. we will reduce Scope 1 emission by 81% compared to 2040 BAU.

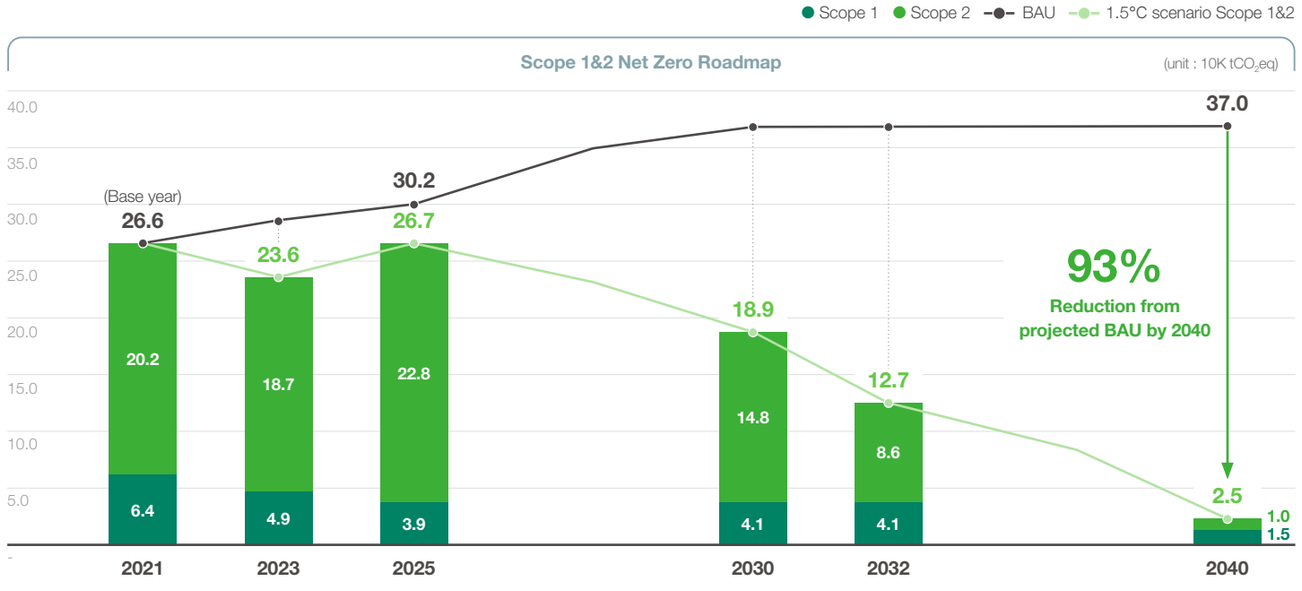
Scope 2 Reduction Strategy

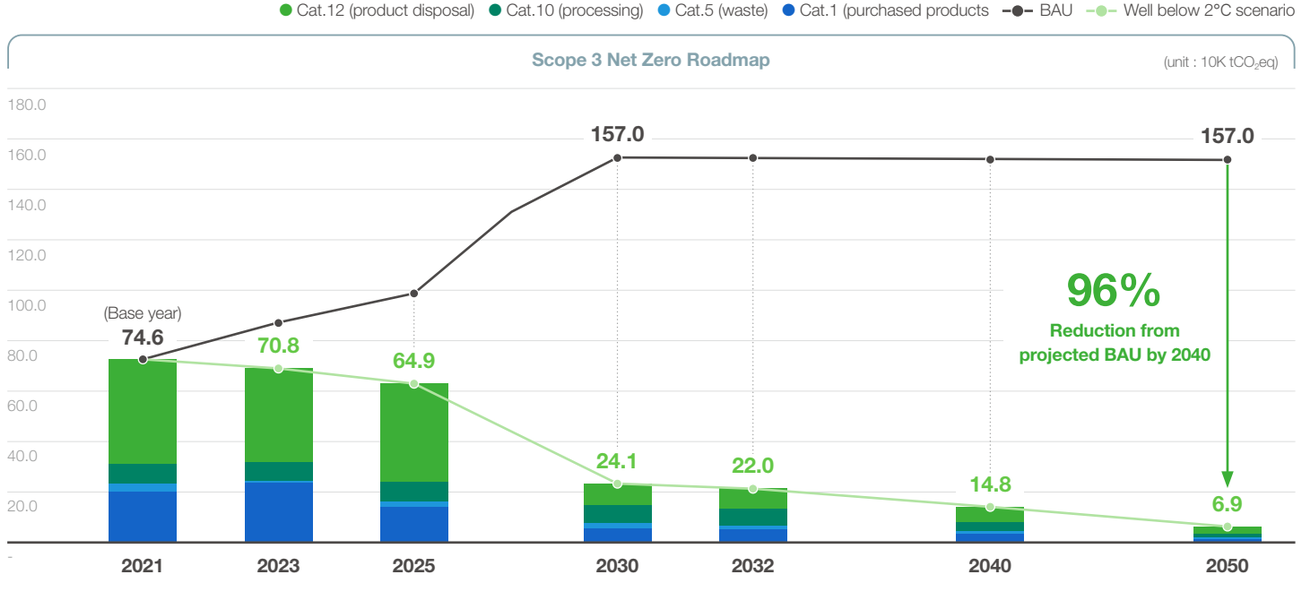
In the Scope 2 power sector, SK chemicals is committed to achieving RE100 status by 2032, aiming to use renewable energy across all its sites. A specific strategy includes initiating solar power generation at the Cheongju plant in 2023 and progressively expanding this capacity through 2032. Regarding Scope 2 steam emissions, SK chemicals plans to transition to eco-friendly fuel sources such as LNG and hydrogen from fossil fuels at the Ulsan plant, beginning in 2026. This shift is anticipated to reduce Scope 2 steam GHG emissions by 94% of BAU by 2040. SK chemicals is actively collaborating with its subsidiary SK multi utility to secure the supply of steam produced from eco-friendly fuels, underscoring its commitment to sustainable energy practices.

Scope 3 Net Zero Strategy & Plan

Since 2021, SK chemicals has been establishing a Scope 3 Inventory to calculate GHG emissions. We have selected major categories that account for 69% of our GHG emissions, amounting to 746K tCO_2eq, and have established a plan to reduce them by 96% compared to BAU and 91% compared to the baseline year by 2050 using the absolute reduction methodology. Our Green Materials business[1] and the establishment of a sustainable circular economy ecosystem are expected to rapidly reduce emissions from purchased products and services (Cat.1) and product disposal (Cat.12) to 484K tCO_2eq by 2030 compared to the baseline year. In addition, we will fulfill our responsibilities to future generations and the environment by achieving Net Zero by 2050 for the entire value chain through continuous operational waste reduction[2] and joint efforts with our partners' GHG reduction activities.

1) Transition to 100% recycled copolyester raw materials by 2030
2) The government announced a goal to reduce plastic waste generation by 50% and recycle 70% of generated waste by 2030 (Comprehensive Waste Management Plan) Ulsan Plant secured ZWTL Gold certification in 2023 (96% actual recycle rate)





Climate Change Response Activities

Promotion of Various GHG Reduction Activities

1 Utilization of CHDM Off-gas

In 2022, we identified that the off-gas generated and discharged during the CHDM reaction process contained a large amount of hydrogen. We improved the facility to inject this off-gas along with fuel for combustion in the boiler. The process was gradually implemented in 2022, resulting in a reduction of 46 Nm^3/h of LNG in 2023. Carbon dioxide savings from off-gas combustion with hydrogen amounted to 2,100 tCO_2eq/year. By the end of 2024, we anticipate further expanding the process to incorporate hydrogen fuel and off-gas, achieving an additional annual reduction of 1,020 tCO_2eq.

2 DMT Process Improvement

The PX oxidation process, which previously emitted a significant amount of greenhouse gases during the DMT reaction process, has been fully converted to QTA, resulting in a reduction of 12,600 tCO_2eq of greenhouse gas emissions per year. The process improvement to 70% QTA was completed in 2021, and by October 2022, the transition to 100% QTA was stabilized and is currently in continuous operation.

3 Fuel conversion in the production process at the Ulsan plant

At our Ulsan plant, we are actively reducing greenhouse gas emissions by transitioning the fuel used in our production processes. Our ultimate goal is to replace the current LNG fuel with hydrogen to achieve zero greenhouse gas emissions in the future. In 2022, we constructed facilities and secured hydrogen raw materials specifically for the DMT process. By the latter half of 2023, we initiated the use of hydrogen fuel in our production processes, beginning with the DMT process. It is anticipated that annually, blending hydrogen into the DMT boiler will result in a reduction of 10,000 tCO_2eq of greenhouse gas emissions.

4 Solar Power Generation

To mitigate greenhouse gas emissions and lower energy expenses, we erected a solar power generation facility at the Cheongju plant in 2022. Starting from 2023, approximately 12% of the Cheongju plant's energy consumption is sourced from solar power generation, with an anticipated reduction in GHG emissions by 600 tCO_2eq annually. In addition, the Ulsan Plant completed a Virtual Power Purchase Agreement (VPPA) in 2023 to convert 10% of its electricity to renewable energy. Through the VPPA, SK chemicals will receive 10 megawatts (MW) of solar energy annually from 2024 to 2047, which is expected to reduce greenhouse gas emissions by approximately 6,000 tCO_2eq per year.

5 Conversion of Business Vehicles to Hybrid/Electric Vehicles

SK chemicals is advancing its transition to eco-friendly vehicles by implementing a target program requiring a minimum of 22% of newly purchased or leased vehicles to be eco-friendly (hybrid, electric, or hydrogen vehicles) starting in 2022. Furthermore, electric vehicle chargers have been installed at business sites to facilitate charging for company vehicles, employees, and customers alike.

6 Cookstove Clean Development Mechanism (CDM) Project

SK chemicals' Myanmar cookstove distribution program aims to reduce residents' reliance on wood firewood, thereby lowering greenhouse gas and air contaminant emissions. This initiative also enhances living conditions by reducing cooking time and contributes to better health outcomes. Annually, this effort is equivalent to planting 7.8 million pine trees, helping to offset a portion of our greenhouse gas emissions. Looking ahead, our goal is to distribute 18,000 cookstoves to residents in north-central Myanmar by 2025, continuing to mitigate greenhouse gas emissions until 2027.

Energy Audit

SK chemicals identifies and promotes improvement tasks through monthly analysis of utility usage and cost trends to enhance energy savings and efficiency. These tasks are executed by individual production departments, and their progress and effectiveness are annually monitored and reported to plant managers. To ensure systematic implementation of these tasks, a structured system has been established. This system integrates these tasks as KPIs for management, linking them directly to evaluation and compensation processes.

Energy Reduction Task

SK chemicals analyzes its energy consumption and focuses on minimizing related costs through various initiatives. Researching energy-saving practices within our plants is a key aspect of this effort. Additionally, we closely monitor and analyze energy use across our facilities to identify inefficiencies and opportunities for optimization.

At the SK chemicals Ulsan Plant, our goal is to achieve annual energy cost reductions of at least 1.5% as outlined in our business plan. In 2023, we successfully realized savings totaling approximately KRW 1.4 billion through the implementation of five specific projects. This objective is integrated into the Key Performance Indicators (KPIs) of production executives responsible for the Ulsan plant on an annual basis, underscoring its importance as a major operational initiative.

Audit	• Analyze monthly energy usage and cost trends by utility
Analysis and Discussion	• Analyze current issues and identify energy reduction projects
Implementa-tion	• Implement and monitor energy reduction initiatives by production departments • Align with management (plant manager) KPI tasks

Transition of Eco-friendly Fuel

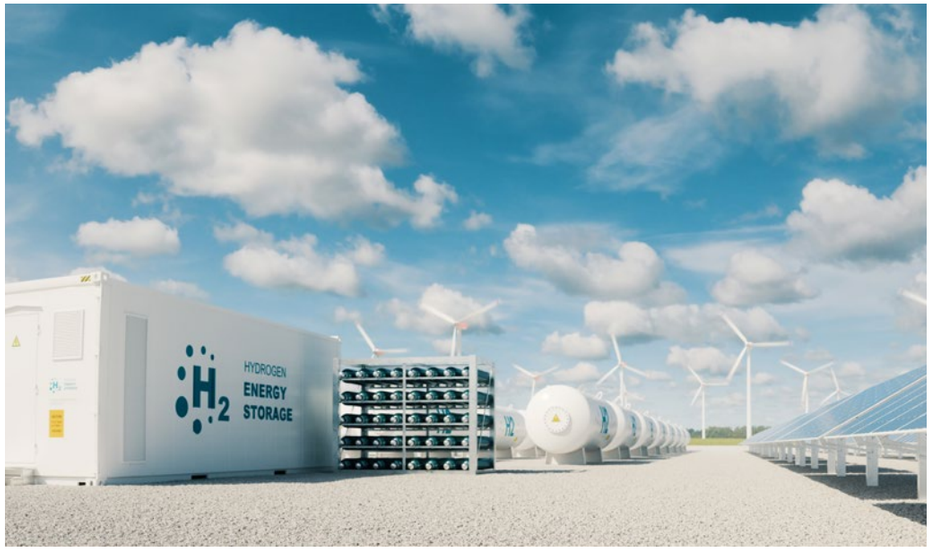
At the Ulsan Plant, we are progressively transitioning the fuel used in our production processes to eco-friendly alternatives. Our ultimate goal is to replace LNG fuel with hydrogen. To achieve this, we have commenced building facilities and securing raw materials to integrate hydrogen starting with the DMT process in 2022.

Additionally, our subsidiary SK multi utility is actively engaged in a project aimed at converting the fuel used in coal-fired cogeneration facilities to hydrogen and LNG. This initiative is a proactive response to both the government's carbon neutrality policy and the global climate crisis. In September 2022, the project was designated as a government-led 'Leading Project for Carbon Neutrality Transition.' SK multi utility is actively promoting the adoption of low-carbon fuels for cogeneration facilities, which is expected to significantly reduce environmental impacts by lowering air contaminants such as SOx and NOx, as well as greenhouse gases.

2023 Key Energy Reduction Tasks of Ulsan Site

SK DMT Driving Optimization Reduce 11,433t of steam KRW 760 million saved	Refinery operations streamlining Saved 29TJ steam/948MWh power KRW 610 million saved
Cooling tower driving streamlining Saved 182MWh electricity KRW 40 million saved	Changing the agitator coolant Saved 52MWh electricity KRW 20 million saved

KRW 1.4 billion saved



CONSERVATION OF BIODIVERSITY 4

Key Agenda

1 Establishment of the biodiversity system

2023 Key Performances

1
- Plan for the nature restoration programs for biodiversity preservation

Mid to Long-Term Plan

1
- Improvement of activities to analyze the biodiversity risks and preservation

Biodiversity Approach and System

Approach to Biodiversity and Systems

SK chemicals recognizes the critical importance of biodiversity conservation for sustainable growth and environmental protection, and has established comprehensive policies accordingly. When selecting business sites, including production plants, SK chemicals ensures that production activities are not conducted near biodiversity conservation areas. Additionally, environmental impact assessments are carried out for any site change activities in areas where business sites are located. SK chemicals actively monitors changes in the ecological environment, identifies biodiversity risks, and implements various mitigation activities to preserve biodiversity. These efforts are reported to the ESG Committee and disclosed in the Sustainability Report. Furthermore, SK chemicals is committed to preventing deforestation. The company does not engage in business expansion activities that involve deforestation, and it continuously monitors deforestation activities throughout its value chain. Specifically, SK chemicals plans to gradually replace paper and pulp used in its products and packaging materials with FSC-certified products.

Biodiversity policy

Conservation of Biodiversity Based on Stakeholders' Participation

SK chemicals is actively involved in biodiversity conservation efforts in collaboration with internal and external stakeholders. Initially, we prioritize raising awareness of biodiversity among employees by providing relevant training and engaging in various environmental conservation activities to promote awareness. Additionally, we expand our commitment through biodiversity-focused volunteer initiatives, including activities like river cleanups near our business sites. Moreover, SK chemicals emphasizes communication and collaboration with local communities and stakeholders to foster a society that values biodiversity protection. We identify and support social enterprises engaged in eco-friendly projects, and we collaborate with leading internal and external organizations to develop sustainable business initiatives that promote biodiversity conservation.

Biodiversity Risk Management and Mitigation Measures

Biodiversity Risk Management Process

In constructing our biodiversity risk management framework, SK chemicals has incorporated global assessment methodologies and frameworks, such as the Taskforce on Nature-related Financial Disclosures (TNFD) guidelines and the Locate Evaluate Assess Prepare (LEAP) approach, into our enterprise-wide risk management process. This risk assessment methodically addresses both dependency-related biodiversity risks and impact-related biodiversity risks, encompassing various domains such as our operational sites, surrounding areas, and upstream and downstream activities.

STEP 1	Analyze the site location/value chain
STEP 2	Measure dependency and impact
STEP 3	Establish the reduction plan, perform and officially post

Areas where the biodiversity is at risk

Key Biodiversity Risks and Mitigation Measures

Business phase	Up Stream Production and Processing of Raw Materials	Direct Operation Operation of sites	Adjacent areas to own operations operations Local communities	Down Stream Disposal and recycle
Key sites and regions	• Where we purchase major raw materials of copolyester : domestic companies such as Hanwha Impact, Lotte Chemical, etc. • Where we purchase major raw materials for vaccine products : European companies such as Lonza, Merck, etc.	• Korea offices (Seongnam, Ulsan, Cheongju, Andong)	• Adjacent regions to Korean sites (Seongnam, Ulsan, Cheonju, Andong)	• Regions disposed after production or after the customer's use
SK chemicals' dependency on natural resources	• The Green Chemicals business mainly purchases petroleum-based raw materials such as PTA and MEG from domestic chemical companies. These petrochemical products are highly dependent on ecosystem diversity and species diversity, including drilling for raw materials when traced back up the value chain.	• HQ - Seongnam • Production sites – Ulsan, Cheongju, Andong	Each sites' use of water resources • Seongnam (HQ) : Han Gang river, Ulsan Plant : Nakdong River, Cheongju Plant : Daecheongho Lake, Andong Plant : Andong Lake	• Green materials supplied by SK chemicals rely on landfill resources for disposal and energy resources for recycling when they reach the end of their product life cycle, during the distribution and use stages
SK chemicals' impact on the ecosystem	**High** • For the main raw materials used by SK chemicals, it is difficult to identify the primary ecological impact because we purchase products processed through Tier-1 suppliers as the main raw materials. • However, due to the nature of petrochemical-derived products, the mining of petroleum products and natural gas, which are the raw materials, is highly ecologically destructive and has a significant environmental impact. Therefore, it is necessary to closely track and review Tier-2 and below suppliers. • The raw materials for vaccine products in the Life Science business are sourced from European manufacturing sources, and the direct ecological dependence is likely to be lower than in the Green Chemicals business. However, as many pharmaceuticals are distributed through paper packaging, large-scale deforestation may occur when pulp is sourced.	**Moderate** • SK chemicals has no direct operations in areas where wildlife species designated by the Ramsar Convention, Basel Convention, Montreal Protocol, UN Convention on Biological Diversity (CBD), or the International Union for Conservation of Nature (IUCN) are endangered or red-listed. • We also do not operate in ecological or landscape conservation areas designated by the Korean Ministry of Environment (9 locations) and local governments (24 locations).	**Moderate** • SK chemicals discharges water used at its plants into nearby watersheds. However, all water discharged undergoes purification to ensure it meets or exceeds domestic water quality standards. This purification process is conducted through local sewage treatment plants before the water is released into the environment.	**High** • Plastic pollution is a global problem. South Korea's ban on specific single-use plastic products and the expansion of its deposit system for such items align with global efforts to combat plastic waste. Similarly, the European Union's prohibition on landfilling plastics from 2020 underscores the urgency of these environmental measures. • SK chemicals is striving to reduce waste generated at the post-consumer stage and minimize environmental impact by producing products using recycled raw materials from collected plastic bottles.
Mitigation measures	**Aggressive** • Since the real ecosystem impacts come from Tier-2 and below raw materials, we have limited control. • SK chemicals has adopted an active supply chain ESG policy, requiring manufacturers such as Tier-1 suppliers of PTA and MEG to ensure that their suppliers produce in a responsible manner. • In 2023, SK chemicals screened and evaluated a total of 150 suppliers, including biodiversity items. • For packaging materials for bio/life science products, we prioritize the purchase of FSC-certified pulp to minimize biodiversity impacts.	**Good** • SK chemicals conducts detailed feasibility studies and environmental impact assessments, including biodiversity, when building or modifying new sites. Our sites have been built with 100% environmental impact assessment, addressing anticipated biodiversity issues. • SK chemicals headquarters incorporates eco-friendly technologies into its architectural design to reduce energy and water use and reduce carbon emissions.	**Good** • The CHDM manufacturing process at SK chemicals recovers and reuses methanol from the wastewater stream to prevent the discharge of hazardous chemicals into the surrounding environment. • SK chemicals works with the local community to clean up the water quality of rivers near the Pangyo plant and remove plants that disrupt the ecosystem.	**Good** • SK chemicals contributes to resource recycling through product recycling by developing and selling ECOTRIA, a product that blends recycled raw materials into existing products, and ECOZEN Claro, which is recyclable. • To complete the plastic recycling value chain, SK chemicals acquired circular recycled raw materials and circular recycled PET production facilities from the Chinese green materials company Shuye in 2023. • In 2023, SK chemicals' Ulsan plant achieved a waste recycling rate of 96%, earning the Gold level of Zero Waste to Landfill (ZWTL).

Conservation and Protection of Biodiversity

Local Communities' Stream Cleanups and Removals of Plants Disturbing the Ecosystem

SK chemicals has collaborated closely with local communities to engage in eco-friendly family volunteer activities aimed at improving water quality. In 2023, a total of 47 employees and family members from SK chemicals, SK bioscience, and SK plasma participated in activities such as making EM (Effective Microorganisms) soil balls and producing EM earth soap. These activities focus on using ochre containing beneficial microorganisms to create soil balls, which are then deployed into rivers to enhance water quality through microbial purification.

Expanding on this initiative in 2024, SK chemicals extended participation to all employees at its Pangyo office, organizing six events dedicated to river water purification and ecosystem protection. To monitor changes in water quality resulting from the EM earth ball deployments, SK chemicals has partnered with the Environmental Action Association. Together, they are conducting assessments of Unjungcheon, an active stream, to gauge pollution levels. In addition to this, SK chemicals has initiated programs to identify and remove disruptive plant species residing in 1.4 km^2 area of Unjungcheon. These species, including Japanese hops, Sicyos angulatus, ragweed, and prickly lettuce, are being targeted for removal to safeguard the native plant environment, which includes species like Korean weigela, raspberry trees, azaleas, and crape myrtles.

In the first activity of 2024, 42 employees created 200 kg of earth balls and removed 40 kg of the disruptive plant species, specifically targeting Japanese hops. SK chemicals plans to sustain these activities throughout the year to further protect the biodiversity of Unjungcheon Stream.

Plants disturbing Unjungcheon stream : Japanese hops, Sicyos angulatus, ragweed, prickly lettuce

Removals of plants disturbing the ecosystem to protect biodiversity

EM soil ball creating activity to purify the local community's water quality

WATER RESOURCE MANAGEMENT 5

Key Agenda

1 Management of water resource risks

2023 Key Performances

1
- Achievement of 97% of waste water recycling ratio
- Establishment of a plan to reduce the water resource at Ulsan site

Mid to Long-Term Plan

1
- Enhancement of water resource risk management system in sync with the climate change physical risk analysis results
- Reduction of the water use 10% by 2028 vs. 2021

Water Resource Risk Management System and Monitoring

Water Resource Management System

SK chemicals manages critical water-related management aspects at the management level through a system that monitors real-time factors such as water usage, wastewater generation, and wastewater contaminants. These metrics are regularly reported to the ESG Committee. Moreover, SK chemicals conducts periodic assessments to ensure alignment between internal water-related policies and external regulations, with final evaluations conducted at the Board of Directors or management level. The company maintains compliance with all laws and regulations pertaining to water management, resulting in no violations of water-related legislation.

Stakeholders Participation and Support to Initiatives

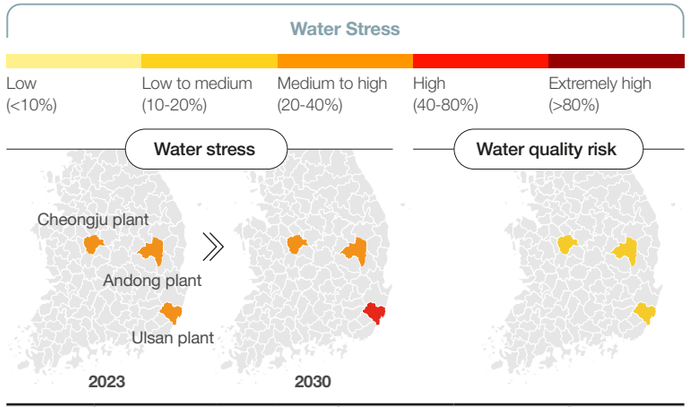
SK chemicals adheres to the targets and implementation processes outlined in the UN SDGs, evaluating key water management indicators such as water recycling rate and water contaminant concentration. These metrics are measured and disclosed as Social Value (SV), aligning with domestic and international initiatives. The company integrates these efforts into compensation structures to incentivize eco-friendly performance. Since 2019, SK chemicals has set water recycling rate and water contaminant concentration as KPIs for executives and team leaders, enabling proactive implementation of water resource protection activities. In 2024, the company established a plan to reduce water consumption at the Ulsan plant by 1.5% annually, incorporating it into the KPIs of executives and team leaders. Additionally, SK chemicals participates in CDP Water to systematically manage water risks and enhance transparency in communication. This ensures that the company's water risk management status is effectively communicated in investment decision-making processes.

Water Resource Risk Management and Monitoring

SK chemicals monitors the water consumption of all its plants monthly to ensure stable and systematic product manufacturing and production management. Each plant's operations management team oversees water consumption, with the Ulsan plant, which receives raw water from the Nakdong River through the K-Water, also managing water consumption for its neighboring partners. Since the plant directly releases treated wastewater into the watershed, we have set internal water quality standards, policies, and targets that exceed legal permissible standards and manage them as internal metrics.

Status of Water Resource Risk Exposure

As a chemical company, SK chemicals faces long-term water risks categorized into physical water stress for product development and water quality risks arising from emissions in chemical processes such as catalysts. To manage these risks effectively, we have implemented several initiatives, such as continuous monitoring and management of water withdrawal and usage, active communication with local communities, and diligent monitoring of policies related to water management. South Korea, where our headquarters and major business sites are located, manages water sources relatively well compared to other regions, and the likelihood of water pollution due to external factors is assessed as relatively low. We maintain rigorous monitoring activities and stringent water source management practices to prevent any potential water pollution during the discharge process.



Category	Sites			Water stress		Water quality risk
Site	Address	Latitude	Longitude	2023	Positive scenario (2030)	
Cheongju plant	Cheongju si, Chungcheongbukdo	36.6	127.5	Medium-high (20-40%)	Medium-high (20-40%)	Low-Medium (10-20%)
Ulsan plant	Ulsan si, KR	35.5	129.3	Medium-high (20-40%)	High (40-80%)	Low-Medium (10-20%)
Andong plant	Andong si, Gyeongsangbukdo, KR	36.6	128.7	Medium-high (20-40%)	Medium-high (20-40%)	Low-Medium (10-20%)

* Water stress was assessed based on the World Resources Institute's Aqueduct Water Risk Framework 3.0.

Water Resource Recycling and Waste Water Reduction

Water Recycling Status

Water, being a limited resource, underscores the importance of water recycling to reduce our reliance on it. SK chemicals has implemented a comprehensive system to monitor water recycling across all its domestic and international sites. Continuous monitoring of water intake is ensured through 24-hour flow meters, guided by assessments from water risk tools like WRI Aqueduct and WWF Water Risk Filter.

At the Ulsan plant, SK chemicals recycles concentrated water passing through the RO membrane of the PDH's pure water unit for firefighting purposes. A dormant RO unit has been refurbished to use this concentrated water as pure water, while condensate from the steam heat exchanger of the pure water unit is also recovered and recycled. This setup allows for a recycling volume of 1,080 tons per day based on pure water production.

Moreover, SK chemicals recovers cooling water from its processes to enhance water recycling rates. However, cooling water used in direct product contact, such as in the CC (Chip Cutter) machine, poses challenges for recovery and reuse. Currently, this cooling water undergoes treatment and discharge through a wastewater treatment plant. SK chemicals is exploring continuous improvements to increase the recovery rate of cooling water. As part of future plans, the relocation of some production facilities to China from May 2023 is expected to decrease the amount of cooling water used, further enhancing opportunities for its recovery and reuse.

Self-development of Water Resource

To mitigate the risks of natural disasters like droughts and floods at our Ulsan plant, which is located in a water-stressed area, SK chemicals procures raw water directly from the Nakdong River through the Korea Water Resources Corporation. This raw water undergoes self-treatment before use. Unlike typical water supplies, our process does not require a chlorination facility to remove chlorine, ensuring economical water use while maintaining operational stability and product production.

Waste Water Reduction Process

SK chemicals discharges wastewater to wastewater treatment facilities in consultation with local governments and either outsources the treatment or treats it directly before discharging it into the ocean. The headquarters in Seongnam sends wastewater to the Pangyo Water Quality Restoration Center, the Cheongju plant discharges wastewater to the Cheongju Industrial Complex public wastewater treatment facility, and the Ulsan plant discharges wastewater directly into the ocean. We monitor the total amount of emissions from all sources through flow meters at each location.

Ulsan Plant's Waste Water Disposal facility

- Real-time wastewater effluent concentration measurement with TMS equipment from the Ministry of Environment
- Installation of a new activated carbon filtration prevention facility

SK chemicals' headquarters and Cheongju plant transport wastewater to nearby public treatment facilities for contaminant removal before discharge. The Ulsan plant operates its own wastewater treatment plant to remove various water contaminants such as COD, TOC, BOD, and SS that could impact the ocean. When discharging water contaminants, we adhere to our own stricter standards compared to legal discharge permit standards. In 2023, we ensured that BOD, COD, SS, and TOC discharges were less than 50% (TOC less than 80%) of statutory discharge permit standards, and we aim to maintain tighter standards in 2024.

The Ulsan plant's wastewater treatment facility conducts regular water quality inspections to verify its operation and is equipped with the Ministry of Environment's TMS (Tele Monitoring System) for real-time measurement of wastewater discharge concentrations. In 2022, the indicators for managing contaminants in wastewater discharged under the Water Environment Protection Act were changed from COD to TOC. To strengthen management, we installed a prevention facility using activated carbon filtration to enhance wastewater quality.

Water Resource Management Training

To reduce wastewater generation, we conduct training sessions for employees at our Ulsan plant focusing on water pollution prevention and wastewater treatment system management. Additionally, we have integrated water education into our ESG internalization training program, accounting for 5% of team KPIs in fiscal year 2024, and offer online training. The Water Treatment and Reuse for the Next Decade course, which addresses the importance of water resource management and new technologies in water treatment, aims to enhance employee awareness of water resource management.

CONTAMINANT MANAGEMENT

6

Key Agenda

1. Increase in waste recycling
2. Reduction of contaminant

2023 Key Performances

1. • Achievement of the ZWTL grade Gold
2. • Installment of the air contamination prevention low Nox facility

Mid to Long-Term Plan

1. • Maintaining the ZWTL Gold in 2024
2. • Strengthening the internal management standard compared to the legal emission standard
   - Water contaminant in 2024 : Below BOD, COD, SS 50%, TOC 80%
   - Air contaminant in 2024 : Below SOx, NOx, dust 50%

Waste Management Direction

Waste Management Policy

To reduce waste generation, SK chemicals sets an annual target of reducing waste by 5% compared to the previous year. We also strive to reuse the waste. We prioritize recycling over disposal for the waste we generate and actively identify recycling opportunities for recyclable materials.

In efforts to minimize waste emissions, SK multi utility is advancing a project at our Ulsan plant to replace aging boilers, previously fueled by coal and waste wood, with eco-friendly LNG boilers. By June 2025, we anticipate reducing waste generation by approximately 17,000 tons of coal ash and incineration ash resulting from the decommissioning of the coal and waste wood boilers.

Waste Management

SK chemicals manages the quantity and type of waste generated and disposed of through the government's waste legal disposal system, ‘Allbaro’. In compliance with the Waste Management Act, we engage specialized waste treatment firms to handle waste generated across our business sites. This involves legal disposal methods such as incineration, landfilling, and recycling. Furthermore, our production and SHE teams collaborate to oversee recycling initiatives with partner companies and operate new projects to ultimately increase the process recycle rate.

Expansion of Recycling

Waste Audit

SK chemicals categorizes all surplus materials not managed as products as waste, managing them systematically even if they are sold for a fee. Waste is classified into general and designated categories. When introducing new processes, SK chemicals conducts a preliminary assessment of the quantity and characteristics of waste generated, which informs decision-making processes. Samples of waste from new processes undergo the initial laboratory analysis to determine recyclability. Recycling companies then verify whether these materials can indeed be recycled before they are discharged from the process.

Monthly checks monitor the type and volume of waste generated. SK chemicals collaborates closely with recycling partners to increase the quantity of recycled waste and continuously seeks out new recyclers with competitive capabilities. Furthermore, the production team identifies and implements improvement initiatives aimed at reducing waste generated through process enhancements.

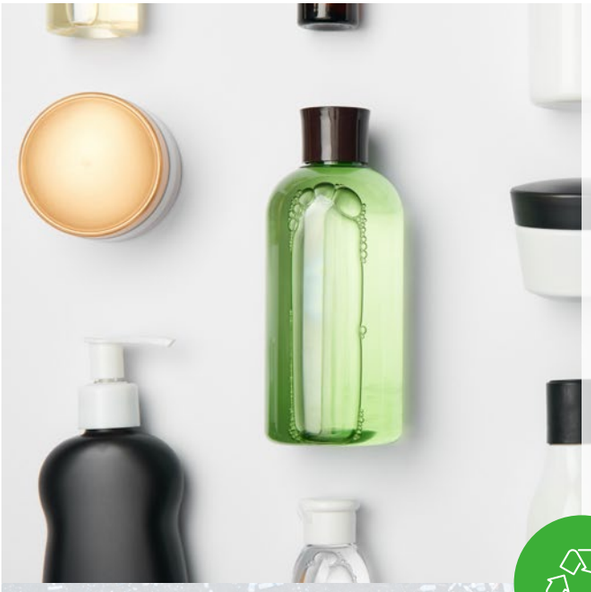
Waste Recycling Rate

SK chemicals actively promotes waste recycling by collaborating with waste treatment companies to ensure that waste generated at its plants is recycled.

At the Ulsan plant, the recycling rate started at 75% in 2016, and efforts have been ongoing to enhance this rate, taking into account the specific characteristics of the waste. In 2021, additional recycling initiatives were implemented, such as converting waste from wood boilers into flooring materials, thereby minimizing the amount of waste sent to landfills. In the DMT (dimethyl terephthalate) production process, SK chemicals improved the recycling rate by identifying a company capable of fully recycling MFB (methylparapomyl benzoate), a byproduct that was previously discarded. This optimization led to a reduction of over 50% in the amount of waste generated from DMT mixtures. SK chemicals continues to develop partnerships with recycling companies and implements tasks aimed at reducing process waste, thereby enhancing its overall waste recycling performance.

Certification of Waste Recycling

SK chemicals achieved the Zero Waste To Landfill (ZWTL) Silver level certification for the first time in 2021. Since then, the company has continuously sought to enhance its waste management practices by identifying new recycling partners and improving processes across its plants. In 2022, the Ulsan plant achieved a recycling rate of 94%, earning a Silver rating. Building on this success, in 2023, SK chemicals further increased its recycling rate to 96% through targeted process improvements aimed at reducing the generation of process waste. This achievement marked the attainment of the Zero Waste To Landfill (ZWTL) Gold certification for SK chemicals.



Air Contaminant Reduction

Minimization Strategy of Air Contaminant

To minimize the environmental impact of pollutant emissions, SK chemicals' Ulsan Plant adheres to both government regulations and its own stringent standards. When releasing air pollutants, the plant strictly adheres to its internal standards, which are more stringent compared to legal emission allowances. In 2023, SK chemicals managed emissions of NOx, SOx, and dust to meet targets set at 50% of the legal emission limits for each pollutant. Building on this, we are still maintaining the enhanced target level in 2024.

On-site Air Contaminant Management System

SK chemicals' Ulsan Plant has systematically managed the concentration and volume of nitrogen oxides, sulfur oxides, and dust—air pollutants generated from its production activities. In 2023, we successfully implemented the air pollutant management system (Tele Monitoring System, TMS) to transparently monitor nitrogen oxides emitted by our process heating facility. Since January 2024, the plant has consistently operated within compliance limits, ensuring that nitrogen oxide emissions remain below the permissible standard of 30%.

Air Contaminant Reduction Activities

From 2019 to 2023, we completed the phased replacement of 11 conventional burners with ultra-low-NOx burners at the Ulsan plant's heating facility to minimize nitrogen oxide emissions. Additionally, we installed a desulfurization facility for reducing hydrogen sulfide emissions, a by-product gas from the anaerobic digester at our wastewater treatment plant in 2023. Currently, we are maintaining hydrogen sulfide concentrations at 0 ppm.

These proactive measures in reducing air pollutant emissions have consistently surpassed our targets every year from 2020 to 2023. Particularly in 2023, we exceeded the Ministry of Environment's emissions quota by 25%. We aim to achieve similar success in 2024 as well.

Additionally in February 2023, we renewed our commitment by signing a new Voluntary Agreement to Reduce Fine Dust with the Ministry of Environment. This agreement builds upon our previous commitment signed in 2018, aiming to achieve a 40% reduction in fine dust emissions compared to 2014 levels by 2022. Under the new agreement, we are actively implementing initiatives to achieve a 40% reduction in fine dust emissions compared to 2016 levels by 2024.

Integrated Environmental Management

The Integrated Environmental Management System integrates the management of environmental laws and licensed facilities, encompassing air, water, and waste management to minimize pollutant emissions.

SK chemicals obtained its initial permit in November 2022 and has since maintained systematic environmental management. In 2023, SK chemicals was recognized as an 'Excellent Site for Environmental Management'[1] by the Ministry of Environment (MOE) following its regular inspections. This recognition was based on achievements in four key categories : pollutant reduction activities, on-site application of optimal practices, compliance with laws and regulations, and zero environmental accidents.

1) Excellent sites : Rate each item in order of 'Excellent'/'Good'/'Fair', where all are 'Good' or better and at least three are 'Excellent'.

Contaminant Emission Level

13 pt/13pt,'Excellent'

We achieved the highest score for maintaining emission concentrations below 30% of the permit limits in evaluations of air pollutants (dust, SOx, NOx) and water pollutants (BOD, TOC, SS, TN, TP).

On-site Adoption of Proper Environmental Management Method

15 pt /15pt,'Excellent'

The environmental management method is an environmental technique for the design, installation, operation, and management of emission/prevention facilities that can most effectively reduce the emission of pollutants technically and economically. SK chemicals received the highest score for applying the Best Available Techniques (BAT) at 91.2% of sites.

Legal Violation and Environmental Accidents

17 pt /17pt,'Excellent'

Since obtaining the integrated environmental license, we have maintained zero violations of laws and regulations in governmental and periodic inspections through systematic integrated environmental management. Additionally, we received the highest score for establishing an accident prevention management system by conducting education and training to prevent environmental pollution accidents.

Measuring / Monitoring Area

15 pt /17pt,'Excellent'

We received an "excellent" rating for monitoring pollutants discharged directly into the environment, surpassing legal requirements and ensuring the reliability of the monitoring.

SOCIAL

Context

Companies should encourage an environment in which each member can demonstrate their capabilities and fully engage in their work by providing fair performance evaluations and providing appropriate compensation. Furthermore, it is essential to prioritize the well-being of all employees by establishing a human resources development system that can enhance their capabilities and assist them in maintaining a positive balance between work and family. Additionally, it is imperative to implement a safety and health management system in the workplace to ensure employee safety and prevent a variety of accidents and disasters. In order to meet the increasing demand for ESG management in the supply chain, it is important to implement a system and activities for the assessment of ESG. This report covers SK chemicals' endeavors in this area.

Approach

With the goal of strategic human resource development, SK chemicals has implemented and is currently operating an ability-and-performance-oriented support system. Also, in order to establish a human rights management culture, human rights impact assessments and human rights management policies are being implemented. Furthermore, a company-wide SHE organization has been established and is actively communicating with the field through the safety report system in order to establish a secure working environment, which is one of the critical components of corporate management. Moreover, we have implemented ESG policies for supply chains and encourages the enhancement of business partners' ESG capabilities through on-site inspections when necessary, as the demand for ESG management of supply chains continues to grow.

*** Scope of Business site**

- SK chemicals - HQ (Eco Lab), Ulsan, Cheongju (S HOUSE)
- SK multi utility - Ulsan
- SK bioscience - Andong (L HOUSE)

Employee's Happiness

Human Rights Management

Implementation of a Safe Workplace

Responsible Supply Chain Management

Realization of Social Values

2023 Achievement & Progress

Key Area	Key Agenda	2023 Goal	Key Achievements in 2023	Mid to Long-Term Plan	page
Employee's Happiness	❶ Develop human resources	• Establish and support a plan to develop human resources for implementing core business strategies	• Reinforced the support for global capacity - Operated an Intensive language curriculum	• Implement the talent nurturing roadmap - 2023~2025 : talent nurturing based on business strategy - 2025~ : segment-based nurturing	69-70
	❷ Internalize ESG (environmental and social education)	• Expand environmental and social education for employees (safety and environmental management, human rights, Green Tech, Clean Earth, etc.)	• 40% of employees completed the environmental and social training	• 80% of the employees should complete the environmental education in 2024	71-73
	❸ Support employee benefits	• Continue to operate an anonymous mental health care programs for employees	• Operated programs to foster the employees' mental stability - Traveling Therapy Session and Happiness Battery Diagnosis	• Improve the employees' happiness and raise the awareness for happiness management	74
Human Rights Management	❶ Define and spread human rights management system	• Implement the first year's due diligence on human rights and carry out improvement tasks	• Identified six areas and nine implementation tasks from the results of the first human rights due diligence (headquarters, Ulsan plants, partners, local community) • Promoted five short-term implementation tasks for 2023 (four remaining tasks have been promoted as mid to long-term tasks after 2024.)	• Carry out human rights impact assessment across all business sites (~2025) - 2024 : carry out the second human rights impact assessment on two subsidiaries, 12 in-house partners, Cheongju plant, local Pharma office, community (Seongnam) - 2025 : headquarters, overseas corporations, local community (Cheongju) • 2026 : Enhance communication across all stakeholders	76-78
Implementation of a Safe Workplace	❶ Create a safe business management system	• Establish a SHE organizational system at the workplace and improve the SHE management capabilities	• Selected 10 SHE Upgrade tasks and derived and implemented minor improvement tasks	• Obtain 100% of ISO 45001 across all domestic business sites • Maintain A grade for the SK Discovery Assessment across all domestic business sites • Establish and improve the SHE management system for overseas subsidiaries	82-83
	❷ Spread a culture of safety	• Expand the culture of safety and the employees' participation	• Improved safety and health management policies		81
	❸ Enhance the management of safety accidents	• Achieve the Lost-Time Injuries Rate (LTIR) goal of 0.41	• Achieved Zero Lost-Time Injuries Rate (LTIR) in all business sites	• Achieve less than 0.05 for LTIR across all business sites by 2030	83
Responsible Supply Chain Management	❶ Establish an ESG due diligence system for partners	• Expand and improve the assessment of ESG in supply chain	• Reflected ESG as one of assessment items for partners • Expanded and improved ESG assessment on supply chain	• 2023 : Expand and improve ESG evaluation on supply chain • 2024 : Verify performance of supply chain ESG Policy	88-89
Realization of Social Values	❶ Engage in the local community and contribute to its development	• Develop social contribution programs linked to business and expand the employees' participation	• Achieved 64% for the employees' participation in social contribution programs	• Use 3% of profit for social contribution	91-92

EMPLOYEE'S HAPPINESS

1

Key Agenda

1. Development of human resources
2. Internalization of ESG through environmental education
3. Activate communication policy across the employees

2023 Key Performances

1
- Nurturing of Global capacity with intensive language curriculum

Mid to Long-Term Plan

1
- Implementation of the talent nurturing roadmap
  - 2023~2025 : talent nurturing based on business strategy
  - 2025~ : segment-based nurturing

2
- Achievement of more than 80% completion rate for employees' environmental education in 2024

3
- Improve employees' happiness and raise the awareness of happiness-oriented business management

Developing Human Resources

Recruiting Talent

SK chemicals has prioritized job-oriented recruitment in order to attract outstanding talents and adapt to the constantly changing business environment. Qualifications and skills are objectively verified through a set of systematic screening procedures and standards that are based on detailed job descriptions. Furthermore, we cultivate an environment that encourages the development of "Caring professionals" by means of a fair and reasonable evaluation and compensation system. This system evaluates job suitability through internships and industry-academic scholarship programs and acknowledges performance and competence after recruiting top talent.

Diversity Policy

SK chemicals is committed to cultivating an organizational culture that values all employees and strictly prohibits discrimination based on gender, religion, social status, nationality, disability, and other factors. The annual Sustainability report transparently discloses information of the employment status of individuals with disabilities, employee demographics, and age groups in compliance with the Constitution and Labor Standards Act.

Moreover, in the recruitment process, SK chemicals eliminates discriminatory factors unrelated to individual abilities, such as race, gender, and religion. The company ensures that talent is recruited and selected based on fundamental qualities and expertise by faithfully adhering to these principles.

CARING PROFESSIONALS

Caring professionals is the talent image that SK chemicals seeks and the central value of our culture.

Being a Caring professionals means striving to improve every day, both professionally and personally.

It means the people of SK chemicals who are growing, changing, trying, collaborating, and putting our hearts and souls into everything we do.

Talent Nurturing Roadmap

SK chemicals encourages its employees to participate in personalized support activities in order to cultivate them into so-called "Caring professionals." We cultivate skills through a job-based system and enhances employees' expertise through personalized career paths. SK chemicals implemented a job proficiency system in 2022 to facilitate the development of its employees by offering customized training based on their capabilities and performance. We have been promoting self-directed learning and competency development activities that are consistent with its business strategies since 2023. Starting in 2025, SK chemicals intends to implement particular growth requirements of each member by introducing a segment-based system. This system will group people based on their professional field, function, and work characteristics. Furthermore, we promote an environment that supports voluntary learning and diverse communication activities among its employees in order to foster organizational development.

Fostering Talents Roadmap

Phase1.0 ~2022

Fostering talents based on competency /performance

- Alignment of competencies and education and provide training support to develop educational content for each level and task
- 2020~ Reformed the job system / launched mySUNI
- 2021~ Achieved goal of having 100 hours of training on mySUNI
- 2022~ Fostered talents based on competencies
- Self-design by organization/individual (Support practical self-directed learning for employees)

Phase2.0 2023~2025

Fostering competency based on business strategies

- Define talents and fostering needed to realize business strategies and secure/foster talents in that direction
- Assess level of competency that we have/will need in the future
- Design system to secure competencies that we need
- Upgrade HR system to focus on competency and skills
- Clarify the directions for strategic fostering of talents (Provide directions for employees to strengthen their competency)

Phase3.0 2025~

Fostering based on segments

- Organize fostering for employees by each segment and provide career development training support Identify areas to foster talents based on skill data
- Check and identify levels of competency development
- Activate the Talent Market
- Support career design of the employees individual learning path directly related to their careers

Talent Nurturing Program and Performance

Organize training for each level

Procedures by role/rank/position

- Soft-landing : new recruits
- Change in roles : new leaders, newly promoted employees, expats
- Outstanding talent : HIPO

Constructed **20%** of the training time as a recommended course for the entire company (as of 2023)

Enhance future competency

ESG Internalization

- Linked to the HR policy (evaluation)
- Team leader KPI (weighted value of 5%)
  - Completion of 3 Badges + completion of 50% of the employees

Completion rate of all employees approximately at **62%** (as of 2023)

Average completion rate of Leader group approximately at **81%** (as of 2023)

Capability-Building Program for Employees

In order to achieve its eco-transition plan, SK chemicals employs a variety of capability-building initiatives designed to improve the execution capabilities of partnerships, technology, and global expansion, while simultaneously promoting member growth. We prioritize six essential areas in order to effectively address internal and external changes : cultivating a culture of continuous learning and self-direction, enhancing job expertise, developing key human resources, providing onboarding support, and strengthening digital transformation (DX) abilities for the future.

Individual Development Program (IDP) | SK chemicals offers the Individual Development Program (IDP), which allows employees to manage and develop their own skill development programs. In order to promote the development of personalized learning paths tailored to each employee's skills, 52 jobs were categorized : 8 in marketing, 12 in production, 11 in R&D, and 21 in management support. Furthermore, we promote the cultivation of work-based expertise and self-directed learning to encourage the development of its employees.

Career Development Program (CDP) | SK chemicals operates Career Development Program (CDP) to help employees design and pursue their desired career paths by selecting specific job-related skill and common skills. Notably, job postings are available for employees seeking transfer, and completion of relevant training is considered a key factor in the job transfer process.

Employees' Capacity-Building Program Operation Status

Category	Purpose	Effect	Name	Key Details
Self-Directed Learning	• Promote individual growth through strengthening employees' capabilities and sharing knowledge, thereby enhancing company-wide competitiveness	• Improve project performance and creative problem-solving ability and increase efficiency in collaboration among teams	mySUNI	• Composed of an online environment in which personalized course in line with one's capabilities and optional skill development followed by leaders' coaching, backed up by content of diverse topics, as the group-wide all-time learning platform
Leadership Training	• Improve the overall competitiveness of the organization by demonstrating leadership and strengthening management capabilities in performance, organization, and talent management for leaders and prospective leaders	• Create an innovative culture and build a foundation for sustainable growth as team performance and employee satisfaction improve	Leadership Training	• Implement for the the sake of nurturing coaching leadership for performance, organization, and talent
			New Leader Course	• Recognize the change in the role of the team leader and implement with the aim of cultivating the management and leadership capabilities necessary for the leader
			Training for the Newly Promoted	• Strengthen the professionalism and related capabilities according to the changed role
Job Training	• Strengthen employees' job competency and global communication skills to contribute to overall job performance capabilities	• Increase work efficiency and strengthen the global competitiveness of the organization as the employees' expertise and global capabilities improve	Upskilling	• Connect with the job and competency system, provide various educational opportunities for skill development, and actively support opportunities to participate in external education necessary for job competency enhancement
			Language Education Support	• Strengthen the employees' global communication capabilities, provide curriculum suitable for each subject, such as prospective leaders, key talents, and general employees, and support self-development expenses
Key Talent Nurturing	• Foster key talents with job skills and preemptive leadership to respond to changes in the future management environment, implement deep changes in the organization, and lay the foundation for sustainable growth	• Contribute to strengthening the job competency and leadership of excellent human resources, promoting innovative changes in the organization and strengthening competitiveness	Key Talent Nurturing Program	• Supported customized programs for candidates for the next generation of key leaders and fostered key human resources necessary for thorough changes through upskilling and fostering competencies and prospective leadership in response to changes in the business environment
			Degree Acquisition Support	• Provide educational opportunities for employees selected as outstanding personnel through fair procedures and in-depth discussions to develop their job competencies at domestic and international schools and specialized educational institutions. During the training period, we provide financial support to enable employees to focus solely on their training.
			Certificate Acquisition Support	• Implement a certificate acquisition support system to improve the professional competency of employees and provided an environment for self-directed growth to an outstanding expert in the market
Onboarding	• Help new and experienced recruits understand the organization's management philosophy and the industry and adapt to the organization early	• Secure the growth engine of the organization and improve overall work efficiency through rapid adaptation of employees and improvement of their capabilities	Newcomer Training	• Offer to help employees understand the business philosophy, industry, and products of the group and SK chemicals, and help them develop basic business competencies.
			New Recruit Training	• Increase the employees' understanding of SK chemicals and support soft landing to help them adapt quickly
DX Capacity-Building	• Understand new ways of working in the digital age and secure basic capabilities to lead digital transformation through AI and data analysis	• Promote the organization's digital transformation ability and promote innovative growth by improving digital-based job competency and data analysis skills	DX Change Management Training	• Leaders (executives, team leaders) : strengthen digital leadership and improve digital problem-solving capabilities to build a data-based work performance culture • Employees : applied digital problem-solving process learning to work
			PBV (Project-Based Value Creation)	• Enable data-based solutions for business experts and data analysis skills

Expanding Job Competency Training | In 2023, SK chemicals introduced an AI-based skill platform that recommends personalized training to support practical self-directed learning of its employees. It is a platform in which about 15 areas and 1,900 internal and external curriculums are recommended according to the employees' interests. As of the end of 2023, more than 80% of all employees have selected their interests, and more than 30% of all employees will be able to establish a learning plan and conduct learning through the skill platform.

Supporting Training by Segment | In addition to the employees' job competencies, SK chemicals supports additional training and soft landing for employees who need to change their competencies, such as new team leaders, newly-promoted, expats, and role changers, for smooth adaptation.

Training Outstanding Human Resources | SK chemicals provides various opportunities for all employees to develop the knowledge and skills necessary for their job performance. In particular, through fair procedures and in-depth discussions, the company provides an opportunity to develop job competencies through high-level education at domestic and overseas schools and vocational institution and financially supports the employees so that they can focus only on their studies during the training period.

Supporting Degree and Certificate Acquisition | SK chemicals supports degree and certificate acquisition to improve the employees' job competency. It supports educational expenses for obtaining degrees or certificates related to the job performance through selection procedures so that employees can grow into notable professionals in the industry.

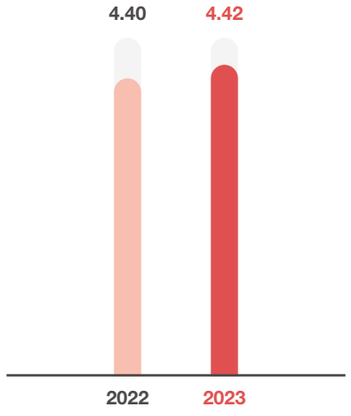
Internalizing ESG Through Environmental Education | SK chemicals is offering ESG-related education through mySUNI, SK Group's online education platform, to internalize the employees' ESG education in the HR system and the company's ESG management. By aligning the completion of the ESG education program with KPI, the team leader would have to acquire two badges (5% of the weighted performance value) and 70% of their team members would have to complete, which are defined as KPIs to further enhance the performance.

Training Hours per Type in 2023

Type	Total Training Hours	Hours of Training per person
Environment education	2,259	7
Fair trade/ethics education	472	1
Human rights/sexual harassment prevention education	3,441	2
Industrial safety education	11,724	13
Job-related training	96,829	80

Education Satisfaction

Satisfaction with Self-Directed Education (Out of 5)



* Based on a satisfaction survey for participants of major competency development programs

Participation and Communication Among Executives and Employees

Employee Communication Program | SK chemicals operates a variety of communication programs for each business sector to create a positive organizational culture through smooth communication of all employees. "G+," "L+," where the CEO and all employees share key management matters, a communication channel where opinions are shared freely between the CEO and the team leaders, "town hall meetings" for regular communication at the division/group level, a communication workshop for regular communication, and a workshop for fostering leaders are all taken place. Efforts are also put in place to increase the interest and participation of employees by producing and distributing promotional posters and letters.

SK chemicals Organizational Culture Survey | SK chemicals conducts a so-called Culture Survey every year for its employees, subsidiaries, and affiliates. Through this, we measure employees' awareness/understanding of SK Group's management philosophy, social values, employees' happiness, sustainable management, and community from various angles. In addition, we examine SK chemicals' organizational culture level through the results of the survey and derives and implements improvement tasks accordingly to establish the direction of organizational culture for the happiness of employees. Among 1,036 eligible respondents in 2023, 876 effectively responded.

In the 2023 SK Chemical Culture survey, the score of items related to employees' happiness, mental/physical health, satisfaction with job, and purpose awareness was 3.7 out of 5, which was up 0.1 point from 3.6 points last year.

Culture Survey

	2021	2022	2023
Satisfaction score (5 points as perfect score)	3.6	3.6	3.7
Response rate	78.3%	75.6%	82.3%

Human Resource Development Process

HR Strategy

Strategic HR plans

We build workforce plans tailored to each job position and function in line with the eco-transition business strategy. We define the required competency levels and experience for each role and carry out recruitment and deployment of suitable personnel accordingly. We develop a workforce classification model based on the business structure and characteristics, and implement workforce recruitment, management, development, and reward strategies aligned with it. Additionally, we support business performance and strive to create an optimal workforce structure through short-term and long-term planning for each workforce segment.

Recruitment

Recruitment strategy and process

To select talents who align with SK chemicals' organizational culture and talent profile, we place a strong emphasis on securing recruitment competencies based on data. We are in the process of building a system that utilizes AI competency assessments to increase the accuracy of competency evaluations. Additionally, we conduct interviews with team leaders and members at various levels to assess their professional expertise from different perspectives. In order to secure talents in a timely manner, we utilize various recruitment methods, including official recruitment websites, chemistry-related conferences, communicating with labs, internal referrals, and direct sourcing.

Turnover risk management

Through regular meetings at the corporate/headquarters level and the operation of a Junior Board, as well as channels for anonymous feedback, we aim to identify improvement areas requested by our employees and make efforts to incorporate them into our HR system. Furthermore, we proactively assess the risk of turnover among high-performing individuals and establish separate development plans to help them grow their competencies. We also offer mentoring programs by matching executives with mentees to further develop the expertise of our employees.

Competency Development

Develop competencies and skills with competitors' information

SK chemicals is piloting the operation of a Skill Platform in 2023. Firstly, we are assessing the required competencies and skill levels of our internal employees. Secondly, we are comparing the competencies and skill levels of our employees with those of competitors in the same industry to identify any gaps. Based on the information gathered, we are implementing a common Digital Transformation (DX) competency development system for all employees. In the future, we plan to establish competency and skill development systems focusing on areas where we may have deficiencies compared to our competitors.

Performance Evaluation

Evaluating performance of employees

SK chemicals implements a performance evaluation system to ensure fair assessment of employees' competencies and achievements. We operate a systematic and objective performance management process to verify whether individuals possess the required competencies according to each evaluation criterion. Through goal setting and four regular check-ins per year, we provide records and feedback on the progress of employees realizing their goals. Based on the accumulated data, final evaluation sessions are conducted at the organizational level. We also have a process for requesting adjustments to evaluation results. By establishing a system that allows discussions on processes and outcomes based on data, we strive to ensure fairness in performance management.

Identifying competency gaps among employees

SK chemicals conducts separate evaluations for performance and competencies without an overall composite rating. The results of the performance evaluation are linked to the payment of incentive bonuses based on business performance, while the results of the competency evaluation are linked to individual annual salary increases. The competency evaluation consists of company-wide core competencies and job-specific required competencies, enabling the identification of competency gaps within the organization and among employees in the same job category based on individual evaluation results. To address these competency gaps, we develop and implement annual job-specific training plans based on evaluation data. Starting from 2023, we plan to further enhance our competency development system by identifying the necessary competency items and levels to create an agile organization capable of adapting to internal/external environmental changes.

Communication

Better communication among employees

With various IT cooperation system within the company, SK chemicals encourages communication between organizations and teams to share information. To ensure efficient communication between employees, we host regular meetings by organizations led by the manager. The purpose of the meeting is to listen to the opinions of employees and find areas of improvement related to the happiness of our employees, business performance, organizational culture, and the HR system.

Creating an Ideal Workplace

Work-Family Balance Policy and Program

In order to support the efficient and self-directed work environment of employees along with the balance between work and life, SK chemicals is preparing a system in consideration of various aspects to provide an environment where employees can immerse themselves in work.

Expanding Flexible Workhours | SK chemicals has introduced a new work management system called 'Flex' to support autonomous work schedule management of its employees. It is actively recommended to utilize an optional work hours system every month to balance intensive working hours and relatively relaxed period. Employees can freely adjust their working hours within one month according to their work schedule.

Operational Status of the Work-Family Balance Support System

Category	Policy	Support Details
Flexible workhours	Flexible work system	A system to adjust commuting hours while complying with daily working hours (8 hours)
	Remote working/Working-from-home arrangements	A system for performing duties by selecting an optimal place of work for efficiency
	Flexible working	A system that adjusts one week or one day's working hours to the extent that one week's working hours do not exceed 40 hours
Family-orientation	Parental leave	A legal leave system that can be used by executives and employees with children under the age of 8 or in the second grade of elementary school (within a total of one year, can be divided into two separate sessions) - Period of paid parental for main caregivers : one year - Period of paid parental for non-main caregivers : one year
	Spousal maternity leave	A system that grants 10 days of maternity leave when one's spouse gives birth
	Reduced working hours during childcare	A system that reduces working hours for childrearing employees (one year)
	Childrearing support	A system for supporting children's school expenses and congratulatory reward for children's admission
Employee benefits	Financial support	Support for transportation expenses and welfare points
	Healthcare support	Support regular health check-ups, medical expenses support (including spouses), organic food support, health care office/in-house dental operation, and psychological counseling program "Pat-Doc."
	Breastfeeding facilities	Operate an exclusive breastfeeding lounge with refrigerators for storing breast milk
	Housing support	Support housing purchase and lease loans, housing expenses for regional employees
	Hobby/leisure	Support for condominium, operate fitness center, and in-house support for community activities
	Others	Reward for long-term service

Supporting Family-Oriented Activities | SK chemicals operates various systems to create a culture where work and family life can be harmonized. It operates a workplace daycare center in order to prevent a career break. Also we guarantee 10 days of spousal childbirth leave, along with a one-year of reduced working hours for pregnant employees and childrearing employees and a maximum of one year of parental leave after childbirth. Moreover, it provides housing funds, school expenses for children, and congratulatory reward for children's admission to reduce the burden of raising children and promote economic stability of each family. The company also supports the use of condominiums so that employees can enjoy vacations with their families.

Parental Leave | In addition to solving the problem of low birthrates, one of critical social issues, SK chemicals has institutionalized and operates parental leave to support the work-family balance and relieve the burden of childcare. Through this, not only female employees but also male employees can use parental leave. The number of male employees who used parental leave in 2022 was 12 and 8 in 2023.

Encouraging Going on Vacations | SK chemicals promotes a system that allows joint or individual use of vacations to balance the work and life of its employees and operates a variety of flexible vacation systems to maintain work-immersive environment. Furthermore, the new long-term vacation system, which was newly launched in 2021, is seeing growth in usage.

Employee Benefits Program | SK chemicals implements various welfare systems that allow employees to work happily and live conveniently. From 2021, it has been operating a psychological counseling program using EAP (Employer Assistance Program) companies to improve the happiness of employees by resolving psychological stress arising from the COVID-19 pandemic and to manage personal and job-related stress.

Guaranteed Pension for Retirees | SK chemicals operates a retirement pension (DB, defined benefit type) to guarantee retirees' right to receive benefits. As of 2023, 1,283 employees have subscribed to the retirement pension, and the operating amount is KRW 137.5 billion (based on SK chemicals exclusively).

Supporting Mental Health Management

SK chemicals is continuously striving to manage the mental health and promote happiness of its employees. The company supports activities with the aim of relieving stress that piles up during work and providing a better working environment. Psychological counseling programs are operated to manage personal/job stress for executives and employees, and online channels are also operated for convenience. In addition, we are continuously improving the programs by ensuring anonymity to minimize the burden or rejection that executives and employees feel when using the programs.

HUMAN RIGHTS MANAGEMENT 2

Key Agenda

1. Establishment and incorporation of human rights management system

2023 Key Performances

1.
- Establishment of human rights management policies and a new human rights management committee
- Execution of human rights impact assessment and due diligence (1st year)

Mid to Long-Term Plan

1.
- Implementation of a human rights impact assessment at all workplaces (~2025)
- 2023 : Headquarters, Ulsan plant, partner, community (Ulsan)
- 2024 : Cheongju plant and local community (Cheongju)
- 2025 : Overseas subsidiaries
- 2026 : Stakeholders engagement

Principles and System of Human Rights Management

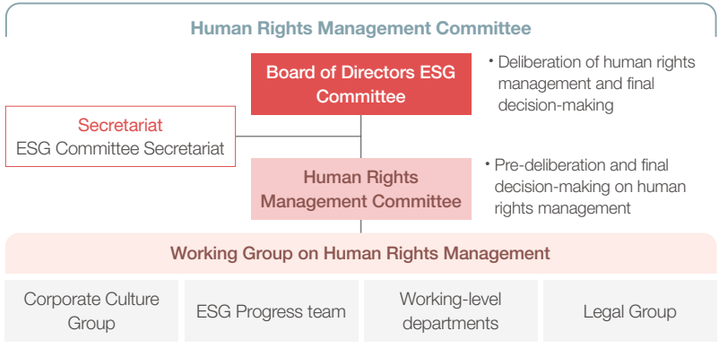
Reinforcing Human Rights Principles

SK chemicals has declared its support for the United Nations Global Compact (UNGC) in four areas of human rights, labor, environment and anti-corruption, and ten principles. In 2022, it declared human rights management, established guidelines for implementation of human rights management, established the Human Rights Management Committee to prevent human rights violations by stakeholders, and to disclose human rights-related issues in accordance with the UNGP reporting framework to fulfill its responsibility for respecting human rights. In addition, measures to promote and protect human rights for vulnerable groups related to human rights, such as children and the disabled, are included in the human rights policy. In addition, various HR regulations such as employment rules, safety and health environment (SHE) policies, ethics rules, and business partnership rules are established to prevent direct and indirect human rights violations or human rights damage caused by business relationships in the workplace, and strictly implement them in management activities.

Declaration of Human Rights Management/Guidelines for Implementing Human Rights

Strengthening Human Rights Management Governance

SK chemicals strengthened its human rights management governance in 2022 to promote systematic human rights management. In June 2022, the Declaration of Human Rights Management was proclaimed and guidelines for implementation of human rights management were prepared. In December 2022, the Human Rights Management Committee was established to protect and promote human rights of executives and stakeholders. Human rights management governance consists of the ESG Committee, the Human Rights Management Committee, and the Working Group on Human Rights Management. Among them, the Human Rights Management Committee consists of the CEO as the chairman, the head of Business Support, the head of Corporate Culture Group, and the Legal Team leader. It also operates a working group on human rights management to define human rights management evaluation indicators, evaluate risks, and improve the overall level. The working group consists of divisions related to human rights management such as the Corporate Culture Group, ESG Progress team, working-level departments and the Legal Group.



Strengthening Human Rights Management Processes

SK chemicals reviewed human rights issues for its entire Value Chain and strengthened the process to effectively manage risks. First of all, it established a systematic due diligence method consisting of six stages and strengthened internal expertise through due diligence guidelines and training of employees. Also, communication with internal and external stakeholders had been further strengthened through reports and external disclosures by the ESG Committee and the Human Rights Management Committee. In 2023, the human rights management indicators have a total of nine areas : human rights management system and relief procedures, prohibition of child labor and forced labor, guarantee of freedom of union and association, humanitarian treatment, responsible supply chain management, industrial safety and health, environmental rights, protection of local residents' human rights and consumer rights. The human rights indicators reflect the international guidelines such as key ILO conventions, the World Human Rights Declaration, the EU Supply Chain Due Diligence Guidelines, and the German Supply Chain Due Diligence Act.

Human Rights Education

SK chemicals is conducting human rights education to systematically settle human rights management within the organization and strengthen internal employee capabilities. It regularly conducts education to prevent bullying and sexual harassment in the workplace and secure ethical management, and 100% of the employees have completed the education.

Human Rights Risk Management

Elaborating the Human Rights Impact Assessment Items

SK chemicals has advanced the 2024 human rights impact assessment items to identify and systematically manage various potential risks on human rights. The existing human rights impact assessment area has been subdivided to check related issues. In particular, the evaluation items for the vulnerables such as women, the disabled, and irregular workers have been subdivided. Also, the evaluation items by major stakeholders such as partners, local communities, and consumers have been divided and improved to check detailed human rights issues. SK chemicals will continue to upgrade its human rights impact assessment system to identify and manage various human rights risks.

Assessment Items in 2023	Assessment Items in 2024		Major Improvements
Human rights management system and relief procedures	High risk identification evaluation	Employment security	Newly added the high-risk identification evaluation
Prohibition of child labor and prohibition of forced labor		Working hours	
Ensuring freedom of unity and association		Sufficient salary	
Humanitarian treatment	Human rights management policy	Freedom of association and collective agreement	
Responsible supply chain management	Governance and Due diligence system	Work-life balance	
Industrial safety and health	Human rights Complaint resolution system	Health and safety	Categorized the evaluation items for vulnerable groups of human rights, such as women, persons with disabilities, irregular workers, and diversity
Securing environmental rights	Human rights education	Women	
Protection of local residents' human rights	Existing human rights risks	People with disabilities	
Protection of consumers' human rights		Irregular workers	
		Diversity	
		Education and training	Elaborated customized evaluation items for key stakeholders such as partners, communities, and consumers
		Workplace bullying/sexual harassment	
		Child labor	
		Forced labor	
		Appropriate housing	
		Privacy	

Conducting Human Rights Impact Assessment

SK chemicals conducts an evaluation of the human rights management system, employment, labor rights, industrial safety, supply chain, and local residents at its headquarters and Ulsan plant in order to confirm the impact of corporate management activities on human rights. In the course of business operation, the company conducted an evaluation by defining groups that can negatively affect human rights as past of the human rights impact assessment. Also, in order to secure the reliability and expertise of human rights impact assessment, the company will conduct human rights inspections with external organizations. By doing so, we will discover human rights issues among employees and implement human rights management in compliance with the global guidelines. In 2023, we have established a three-year mid to long-term roadmap and plans to expand human rights impact assessment to all workplaces in the future.

To this end, SK chemicals plans to add two subsidiaries, 12 in-house partners, Cheongju plant, local Pharma office, and local community (Seongnam) to the evaluation target in 2024, starting with the headquarters, Ulsan plant, partners, and local community (Ulsan) in 2023, and conduct human rights assessment at overseas subsidiaries and local communities (Cheongju) in 2025. Furthermore, we plan to carry out mid to long-term tasks, including strengthening communication with stakeholders and evaluating the effectiveness of the improvement tasks derived from human rights impact assessment in 2026.

Build plans to Evaluate impacts	• Establish objectives, principles, participants, and timeline for human rights impact assessment • Create a human rights impact checklist tailored to the company's situation, followed by conducting assessments
Education on guidelines and checklist	• Offer training on the human rights management guidelines and the developed checklist for each responsible person in the department
ESG progress Team makes checklist	• Each department conducts its own self-assessment of human rights impacts (Providing sufficient supporting evidence for the detailed evaluation criteria on the checklist) • Coordinating department (ESG progess Team) brings together the assessment materials
On-site assessment by an external evaluator	• On-site evaluation by an external evaluator regarding the collected assessment results and evidence • Interviews with internal assessment departments and stakeholders
Report results to the Human Rights Management Committee	• Gather opinions from each department related to the evaluation results and finalize results • Identify improvement tasks and build department-specific implementation plans • Review assessment results from the previous year's human rights impact assessment and check progress
Report to top management and disclose results	• Report the assessment results to top management and disclose the results to the public on the company website

Major Issues and Reduction Measures According to Human Rights Impact Assessment

Area	Major Stakeholder				Scope of Impact Assessment and Risk Level		Major Human Rights Activities and Issues	Mitigation measure	
	Executives and employees	Partners	Local community	Customers and other stakeholders	Scope	Level of risk		Mitigation Rate	Major Activities
Human rights management system and relief procedures	●	●		●	100%	Middle	• Establishing a human rights management system, establishing committees, and implementing monitoring and risk assessment procedures. • Developing guidelines for human rights management : establishing principles such as ensuring the rights of children and freedom of association and collective bargaining, as well as promoting humanitarian treatment. • Operating practical consultation bodies, including an ESG committee under the board of directors and a human rights management committee. • Expanding human rights management throughout the value chain through human rights audits involving internal and external experts, as well as conducting supply chain ESG checks.	100%	• Strengthening human rights principles and governance • Human rights management process, human rights education • Grievance processing system • Report and disclosure regarding human rights impact
Prohibition of child labor and prohibition of forced labor	●	●	-	-	100%	Low	• Ensuring the absence of child/forced labor issues during the recruitment and separation processes : verifying the work history of minors, deposits, and voluntary retirement options. • For overseas business sites, subsidiaries, and business partners, monitoring is necessary to ensure that no forced labor takes place by providing human rights education and guidelines.	100%	• Management of human rights by area
Ensuring freedom of unity and association	●	●	-	-	100%	Low	• Establishing labor unions and conducting collective bargaining and agreement negotiations with labor representatives annually. • Prohibiting adverse treatment due to labor union activities and engaging in regular communication activities.	100%	• Management of human rights by area • Labor Union and Joint Labor-Management Committee
Humanitarian treatment	●		-	-	100%	Low	• Ensuring compliance with labor standards, preventing workplace harassment, prohibiting workplace sexual harassment, and providing protection for employees with disabilities/ Conducting regular inspections and training on humanitarian treatment. • Conducting regular inspections and training on employment discrimination, including discrimination based on employment status, gender, and nationality. Note : There are no employees with severe disabilities. • Promoting the free and expanded utilization of vacation, maternity leave, and childcare leave, as well as ensuring equal return to the same position after taking leave, and eliminating discriminatory factors.	100%	• Management of human rights by area • Diversity and prohibiting discrimination • Active use of childcare leaves and general leaves
Responsible supply chain management		●	-	-	100%	High	• Conducting ESG supply chain assessments and establishing a system to support ESG compliance among business partners, including a three-year roadmap for implementation and periodic inspections covering human rights issues. • Promoting ESG criteria, including human rights considerations, in purchasing management regulations, and supporting human rights management education to prevent human rights violations caused by security personnel.	100%	• Management of human rights by area • Responsible supply chain management
Industrial safety and health	●		-	-	100%	Low	• Establishing safety and health management systems, emergency response management systems, and chemical accident prevention systems. • Achieving advanced safety management through workplace safety measures, protection of pregnant women and disabled individuals, essential equipment, and conducting training, and providing support to workers affected by work-related accidents	100%	• Management of human rights by area • Making a safe workplace
Securing environmental rights	●		●	-	100%	Low	• Establishing and maintaining an environmental management system, including disclosing environmental information, adopting a preventive approach to environmental issues, and developing emergency plans. • Implementing systematic environmental management with a comprehensive environmental information management system and minimizing environmental impacts through regular environmental impact assessments and life cycle assessments (LCA).	100%	• Management of human rights by area • Environmental management strategies and system
Protection of local residents' human rights	-	-	●		100%	Low	• Promoting respect and protection of human rights for local residents and protecting intellectual property rights. • Engaging in ongoing communication and consultation with residents affected by business operations and conducting activities to protect their property rights and intellectual property rights.	100%	• Management of human rights by area • Stakeholder participation
Protection of consumers' human rights	-	-	-	●	100%	Low	• Ensuring compliance with regulations for product liability and consumer protection, taking appropriate measures in the event of product defects, and protecting consumer privacy to safeguard consumer rights. • Conducting pre-evaluation from product design to manufacturing, labeling, and pre-shipment inspection. • Providing clear information about products and prohibiting misleading advertising activities.	100%	• Management of human rights by area • Organized management and replacement of hazardous chemicals

Definition of Human Rights Vulnerable Group and Improvement Measures

Based on the human rights impact assessment, SK chemicals identifies and mitigates the potential human rights risks of vulnerable human rights groups. In particular, SK chemicals defines vulnerable human rights groups as new employees, women on annual salary, women on monthly paycheck, pregnant women/young children (under the age of 8) as child rearing groups, contract workers/people with disabilities and identifies human rights risks in the areas of management system, relief procedures, freedom of union and association in the form of FGI. In addition, the identified human rights risks are mitigated by reflecting the results of the human rights impact assessment. SK chemicals will continue to discover vulnerable human rights groups and their risks and prioritize improving their human rights.

Human Rights Risk Identification Area of Vulnerable Group

Human Rights Management System and Relief Procedures	Ensuring Freedom of Unity and Association
Awareness and education	Guarantee freedom of associated collective bargaining
Report channels	Prohibit the unfair treatment of trade union activities
Relief procedures	

Report and Disclosure of Human Rights Impacts

SK chemicals reports on human rights impact assessments and major implications through the ESG committee and the Human Rights Management Committee and reflects key issues in its management, as the results of major risks and impact assessments on human rights management are issues that have a significant impact on SK chemicals' management. In addition, we disclose impact assessment results, major risks, and human rights management processes every year through the sustainability report and SK Chemicals website.

Implementation Status of Human Rights Issue Improvement Tasks

CASE 1

Elaborating Human Rights Risk Management System

In order to ensure that potential human rights-related risks are systematically managed and internalized, SK chemicals is upgrading its human rights reporting channel and expanding its activities to enhance the understanding of the reporting channel to employees. In order to identify and improve various human rights issues, we expanded the reporting channels for each human rights risk category and improved the process, and conducted guidance and promotional activities considering the activation of reporting channels. We have implemented an exclusive surveillance system for sexual harassment in order to effectively address the possibility for sexual harassment in the workplace. Also, we plan to implement a continuous evaluation of its reporting channel's effectiveness. SK chemicals will persist in its efforts to enhance the system's capacity to properly handle potential rights tasks and to ensure that human rights management can be internalized.

Process

- Specify reporting channels by type of human rights risk
- Create content to explain the reporting channels' processes
- Introduce and promote consultative/informative channels
- Evaluate the effectiveness of reporting channels

CASE 2

Advanced Monitoring System for Human Rights Management of business partners

SK chemicals is upgrading its monitoring system to assess the status of human rights management implementation by business partners in order to alleviate human rights issues and risks in the supply chain. We recognized the importance of establishing an exclusive monitoring system for the human rights field in addition to the ESG risk assessment for the supply chain through the human rights impact assessment. As a result, we have implemented a system and procedure to oversee the current state of human rights management among its business partners. We employ the self-diagnosis protocol to identify any issues related to human rights management. Also, we plan to enhance the fulfillment and implementation level of human rights management of business partners by establishing specific countermeasures and assessing the current status of implementation in line with the results of the monitoring. SK chemicals will keep investing in strengthening its human rights management monitoring system for business partners in order to reduce human rights risks in the supply chain.

Process

- Simplified monitoring of business partners' human rights management
- Survey on the human rights management of business partners
- Conduct a self-diagnosis checklist for supplier human rights management
- Prepare solutions for improvement issues

Treatment of Human Rights Complaints and Countermeasures

Grievance Handling System

SK chemicals operates an in-house complaint management channel and an SK ethics management counseling and reporting channels for external stakeholders centered on the Corporate Culture Group and the Compliance Team. By doing so, we collect various opinions from stakeholders on human rights. Furthermore, External Complaint Handling Channel has been established and operated since 2023 to strengthen the anonymity, accessibility, and independence of the employee complaint management system.

Complaint Resolution Channels

Category	Internal	External (New)
Channel	• Compliance Team - e-mail : skchemicals.ethics@sk.com - Phone : 02-2008-2486 - Address : Ethics Management Manager, Compliance Team, 310 Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do • SK Group - SK Ethical Management Comprehensive System : https://ethics.co.kr	• Operate a communication hotline - sotonghotline.com
Type of Report	• Human rights violations such as ethics/corruption, BP denial and abuse, workplace harassment/sexual harassment, etc.	• Focus on human rights violations of employees such as workplace bullying/ sexual harassment, labor rights violations, and discrimination treatment
Registration/ Survey	• Internal people in charge	• External experts - External investigators may step in for fact-checking in case the informant wishes so or there is a serious risk to the informant's safety.

Grievance Handling Process

STEP ❶ Receive Report
website/telephone/mail/ e-mail/interview

STEP ❷ Categorize Reports
Determine the subject of investigation based on the position of the subject and the gravity of the matter

STEP ❸ Investigate
Involve related departments if necessary

STEP ❹ Report on Results
Review the results of the survey, report/approve of opinions, and investigate further if insufficient

STEP ❺ Follow-up Measures
Provide feedbacks on the results when requested, request disciplinary action when a reason for disciplinary action occurs

Protection of Informants

The identity of the informant is carefully protected, and all information received through SK Chemical's complaint processing channel is processed in a fair and transparent manner. In the event of an issue, we have separate measures for victims and perpetrators, particularly in the case of human rights issues. Furthermore, strict protections are implemented to safeguard the informant from any personal disadvantage or discrimination in working conditions that might result from reporting.

Informant Protection Policy

❶ Informants are not subject to personal disadvantage or discrimination for reasons of legitimate information.
❷ In the event of a disposition of disadvantages due to a report, the correction and protection can be requested to the department in charge, and the department in charge will take all measures to minimize the disadvantages.
❸ The identity and information of the informant are strictly confidential so that they are not disclosed against their will.
❹ In the process of confirming the facts of the report, the company equally protects those who cooperated in the investigation by means of statements and data provision.
❺ If the informant were to participate in an unethical or illegal act but voluntarily report the fact, the informant may be exempted from sanctions.

Encouraging Diversity and Prohibiting Discrimination

Approach to Diversity and Inclusivity

SK chemicals does not discriminate against employees on the grounds of gender, religion, social status, nationality, or disability without a reasonable justification and pursues an organizational culture that guarantees diversity under the Constitution and Labor Standards Act. In particular, we recognize the importance of gender equality and provides equal pay to both male and female employees as part of its efforts to eradicate discrimination between men and women.

Prevention of Sexual Harassment

In an effort to prevent sexual harassment in the workplace, SK chemicals promotes employees' awareness of their rights and provides sexual harassment prevention education. Once a year, online sexual harassment prevention education is required for both new and experienced employees. Also, if a report of sexual harassment is received through the ethics management reporting channel, the HR and Compliance teams conduct a thorough investigation and strictly address internal issues, including the dismissal, reduction, suspension, or departmental relocation of suspected perpetrators.

Equal Pay Ratio for Men and Women

SK chemicals recognizes the importance of gender equality and provides equal pay to male and female employees as part of its efforts to root out gender discrimination. Within the same position, the level of acknowledgement is determined according to the performance of the organization and individuals, and men and women are equally treated. The detailed performance review of equal pay for men and women can be found on page 124 of this report.

Fair Evaluation and Compensation

SK chemicals strives to grow with its employees through fair and reasonable performance evaluation. Regular performance evaluation is conducted for regular employees every year, and 95% of employees received regular performance evaluation in 2023. At the beginning of each year, employees set goals related to the organization and business by establishing Management by Objectives (MBO)-based KPIs. Through a total of four regular performance check-ins per year, the company shares individual performance and progress with our leaders and provide feedback to achieve our goals. In particular, we strive to operate a data-based performance management process through regular feedback. Once a year, middle or higher-level managers identify strengths and complements through multisource assessment. Based on this, we conduct competency development activities for leadership and others.

IMPLEMENTATION OF A SAFE WORKPLACE

3

Key Agenda

1. Establishment of a safety management system
2. Spreading a culture of safety
3. Enhancement of safety accident management

2023 Key Performances

1. • Selection and implementation of 10 SHE Upgrade tasks and sub-improvement work
2. • Revision of safety and health management policy
3. • Achievement of zero Lost-Time Injuries Rate (LTIR) for all workplaces

Mid to Long-Term Plan

1 2
- 100% certification of domestic workplace safety and health management (ISO 45001)
- Continuance of SK Discovery Assessment A level at domestic Business sites
- Establishment of SHE management system and level system of overseas subsidiaries

3
- Achievement of Lost-Time Injuries Rate (LTIR) of below 0.05 by 2030

Principles and System of Safety and Health

SHE Operational System

Under the human-centered management principle, SK chemicals considers safety, health, and the environment, which are core elements of its business, as its top management values. In order to achieve this goal, three essential elements are : desirable values, operation principles, and SHE policy. The company revised its safety and health management policy in 2024, and it is approved at the board of directors' meeting in February of 2024. We issued a Reminder at the partner council to use the revised safety and health management policy to raise SHE awareness among stakeholders. The policy will be posted on the PR monitors in the workplaces.

SHE Management System

Recognize people and the environment as key values and create a safe and clean environment.

Actively protect and implement safety, health, and the environment through SHE management, and implement sustainable management by meeting the needs of various stakeholders.

SK chemicals Safety and Health Management System

SK chemicals recognizes that SHE management is a basic element based on human-oriented management principles and strives to achieve the SHE Targets with the ultimate goal of achieving the SHE Mission and creating a safe and clean environment for companies.

SHE Mission

Recognize humans and the environment as core values and pursue the happiness of stakeholders by making decisions that put SHE first.

"Zero" Accidents	• Pursue SHE management above the legal level • Substantial activities of employees • Maintain transparency in accidents	Environe-mental Preserva-tion	• Comply with environmental laws, agreements and regulations • Reduce pollutant emissions • Efficient use of resources and energy
Promoting the health of employees	• Strengthen activities to prevent diseases and promote health • Ensure safety in handling harmful factors • Improve working conditions	Top Tier in Korea	• Establish a domestic top-tier level SHE management system • Shared growth through co-prosperity of partner companies • Secure balance of form and content

Ahn Jae-hyun, CEO of SK chemicals

SHE Management System

SK chemicals recognizes environment, safety, and health as its core values and implements SHE management. As a result, the Cheongju plant and the Ulsan plant obtained ISO 45001 certification. Moreover, SK bioscience Andong plant, a SK chemicals subsidiary, was also certified for ISO 45001, and 92% of its business sites were certified for ISO 45001. Meanwhile, in order to prevent safety accidents of employees that may occur during work, the safety and health management system of SK multi utility, another SK chemicals subsidiary, is under establishment, and on-site execution capabilities are being strengthened. In addition, we aim to acquire ISO 45001 certification by 2024 through recommending it for SK multi utility.

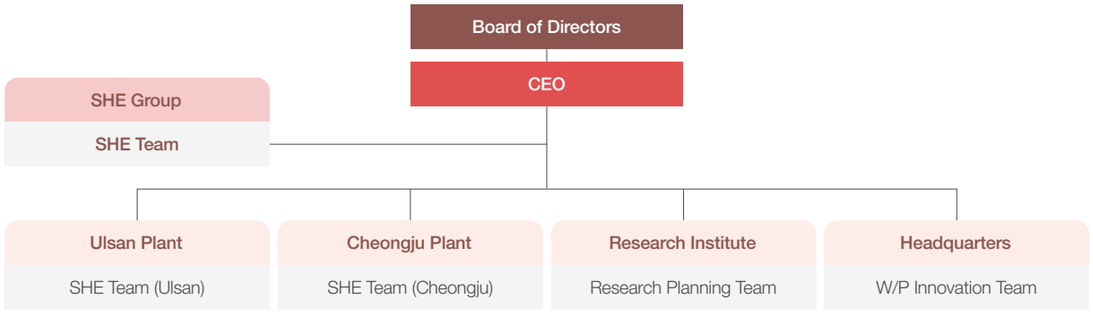
8 SHE Codes of Conduct

01 Employees recognize safety as the principle of priority and must comply with SHE regulations/procedures.
02 Employees take action on their own with a sense of ownership of all unsafe conditions and actions in the field.
03 Leaders lead SHE and thoroughly supervise employee training and field management.
04 Safety measures such as risk assessment, installation of protective devices, inspection of equipment, and wearing protective equipment during construction/work shall be thoroughly observed.
05 Prevent accidents in advance through continuous/repeated site monitoring (DCS monitoring/site patrol).
06 Report incidents and SHE issues immediately, disclosing them in the most transparent manner and taking appropriate follow-up measures.
07 Compliance with regulations/procedures, safety education, and on-site management supervision are thoroughly conducted to strengthen SHE management of partners.
08 Any SHE-related improvements in the field are requested at any time, and the company takes immediate action.

SHE Roadmap

2024	Maintain level A for SHE target at domestic workplaces and establish SHE management system for overseas subsidiaries (Overseas targets : Yentai/Shantou plant)
2025	Maintain SHE target level A at domestic workplaces and enhance the infrastructure and operation capabilities of overseas subsidiaries
2026	Maintain SHE target level A at domestic workplaces and operate SHE across overseas subsidiaries (become a local model workplace)

SHE Governance



10 Major SHE Tasks in 2023

6 Existing Tasks	Respond to changing regulations	• Acquire license for regulations	Redefine internal SHE system	• Build SHE systems • Strengthen disciplinary action on accidents, strengthen management of SGC, and implement heavy humidity
	Build SHE capacity	• Training for each segment	Manage risks in construction/ processing	• Risk assessment for all operations in the plant
	Secure facility soundness	• Apply major equipment diagnosis and DT system	Establish emergency response system	• Forecast damage range in case of major chemical leakage • Emergency response training
4 New Tasks	Manage SHE based on site	• Expand SHE KPI for manufacturing team leaders	Improve chemical material management	• Secure the soundness of chemical facilities/Prevent leakage of harmful chemicals • Strengthen risk management while handling chemicals
	Safety measures for construction/ site	• Manage risk factors • Strengthen the management standards of business partners (regular evaluation system – reward/penalty)	Improve health management	• Manage people with occupational diseases (noise-induced hearing loss) • Manage individuals with personal diseases

SHE Governance

The SHE Office, an exclusive SHE management organization, is operated by SK chemicals to rigorously promote SHE management. The SHE Office functions as the company's SHE control tower, setting standards and procedures related to SHE, and supporting on-site supervision and accident prevention at workplaces. In 2023, the Ulsan plant directly dispatched/supported SHE team personnel to the production team, and the headquarters and research institute operate separately to enhance the field-oriented safety management execution capability.

We intend to increase the number of SHE staff at each workplace in the future to comply with laws and identify and resolve workplace issues. In the meantime, the annual safety and health plan was approved by the board of directors in February 2023 and March 2024. SK chemicals plans to integrate the objective of establishing a top-tier SHE management system in Korea into the OKR to enhance member safety awareness, promote SK Discovery assessment, manage partners, and construct SHE infrastructure in overseas workplaces.

Operating the Industrial Safety and Health Committee

SK chemicals operates the Industrial Safety and Health Committee to collect opinions from employees and seek improvement measures. The Industrial Safety Committee of each workplace (Ulsan plant, Cheongju plant, Research Institute), consisting of both labor and management, held a total of 15 meetings in 2023. The Ulsan and Cheongju plants hold the SHE committee every quarter and the Research Institute every month. In particular, the Ulsan and Cheongju plants have voluntarily expressed and discussed their opinions on safety and health activities with the participation of the labor union since 2023. Additionally, the Institute plans to discuss and enhance the possibility of specific implementation of SHE tasks, core safety rules, and experimental permit system through the SHE committee.

Occupational Safety and Health Commission Operation Status in 4Q 2023

Business Site	Participants	Major Agenda
Ulsan Plant	Total of 10 people - Worker : 5 including the union leader - User : 5 people including head of plant	- Introduce the case of exercising the right to stop working (November, Facility Management Team 1) - Joint safety inspection results of petrochemical complex by Ministry of Interior and Safety - SHE Upgrade Progress and Plan (1st Road Map ~ 2023/2nd Road Map 2024 ~ 2026) - Revise the work permit system (change the format and subjects of issuance) - Implement the Golden Bell for the Second Half of 2023 - Conduct joint safety campaigns between labor and management - Share the results of the work environment measurement for the second half of 2023 - Collective training for management supervisors in the second half of 2023
Cheongju Plant	Total of 14 people - Worker : 7 people including the president of the union - User : 7 people including head of plant	- Install AI CCTV in non-habitant areas and blind spots for workers - Clarify R&R among supervisors (execute TBM in production lines, etc.)
Research Institute	Total of 12 people - Research Institute's SHE Committee* (*Research team leader/PL and safety officers)	- Create a safety management organization for Research Institute and SHE Task Guidelines for 2023 - Establish standards for organizing laboratories and discuss on implementation plans - Improve laboratory environment (Improve a high-risk laboratory layout) - Revise laboratory safety management regulations - Change safety training process for new subscribers - On-site inspection during the relevant period (Ministry of Science and ICT/Ministry of Employment and Labor/Ministry of Environment/fire stations)

Safety and Accident Prevention Activities

Safety Diagnosis and Prevention of Environmental Accidents

SK chemicals establishes and implements SHE Upgrade tasks every year to prevent accidents related to safety and health environment (SHE). In 2023, 10 SHE Upgrade tasks were selected according to the 1st SHE Upgrade Master Plan, and sub-tasks were also delivered to each workplace to promote improvement.

Moreover, the "SHE Situation Room" was established at the Eco Lab and Ulsan plant to enable real-time response in the event of an emergency. Legal and professional education are provided to employees and partners, and inspection evaluation and emergency response training are regularly conducted based on prevention systems such as emergency management plans and process safety management (PSM). By doing so, we continue to strengthen comprehensive information management on safety and health environments and facilities by controlling dangerous situations in case of emergency. To prevent accidents, the number of internal and external/institutional diagnoses and inspections has increased from 13 in 2022 to 27 in 2023, and the ability to respond to risks has also improved.

SHE Training Program

SK chemicals plans to give SHE employees reasonable responsibilities and roles for the smooth development and expand the participation of all employees in SHE activities by reflecting detailed SHE tasks in KPI as essential. In addition, various educational activities are being conducted to respond to the changing SHE management and regulations. The Ulsan plant discusses ways to improve the safety environment and shares best practices among the workplaces through meetings with SHE managers, PSM (process safety management) manager workshops, and long-term plant workshops. The workshop plays a role in ensuring safety within the process by discussing the best practices and improvements of each department. It is improving safety by applying cases such as preventing heavy-quality accidents, installing stair-slip boards, improving process monitoring CCTV, and improving wastewater identification management. Moreover, company-wide training is conducted for new employees to enhance understanding of the SHE management system. Unlike manufacturing and research groups, office job groups that may lack awareness of SHE are provided with guidelines on how to prepare for epidemic diseases and natural disasters.

Emergency Response System

SK chemicals Ulsan plant is conducting emergency response training in line with the SHE Situation Room, and the progress of the training is evaluated based on the integrated control tower and 24-hour monitoring system. In addition, an emergency response plan was established by organizing emergency response scenarios for each training group by each situation based on the emergency organizational map.

Safety Diagnosis and Prevention of Environmental Accidents

Safety and Environmental Risk Diagnosis	Safety Inspection	Safety Due Diligence	Safety/Health/ Environmental Performance Evaluation	Safety Green Card Policy	Safety 7 Rules
Establish a company-wide SHE management system and conduct a diagnosis plan for each workplace twice a year to check the degree of implementation in order to diagnose whether the relevant laws and regulations are being complied	Inspect construction sites and hazardous processing activities daily to prevent safety accidents	Regular self-audit on ISO and PSM	Clarify the company's KPI guidelines and conduct a fair evaluation based on objectified data to evaluate the performance of the workplace SHE	The Ulsan plant uses Green, Red, and Yellow cards according to the level of safety management and applies to regular maintenance and companies related to construction sites.	Apply seven safety rules for eliminating safety accidents to the workers at the Ulsan plant before entering and leaving the plant

SK Discovery SHE Assessment

	2022	2023
Ulsan Plant	A Level (Decent, 80.6 points)	A Level (Decent, 86.3 points) - Achieve A grade in all fields (common/safety/ health/environment) - On-site safety improvement, such as risk assessment/safety
Cheongju Plant	C Level (Serious, 56.4 points)	B+ Level (Average, 75.2 points) - Improve the field of vision for the previous year - Legal appointment consignment agent/partner management
Research Institute	Not Applicable	B+ Level (Average, 70.1points, new diagnosis) - Good compliance with laboratory safety laws - Risk assessment procedure/SHE responsibility and scope are to be improved.

Risk Assessment

SK chemicals identifies risk factors in the workplace and inspects the implementation status of risk assessment. To this end, a risk assessment procedure has been established that reflects the risk rating, evaluation timing, target, and final multiplier, and the "SHE IT system" is used to improve and unify the evaluation form. In the case of the Ulsan plant, we are conducting risk assessment for the entire work and the R&D is conduct for high risk experiment. In addition, Cheongju plant conduct risk assessment by focusing on processes that do not apply the experiment permit system and PSM.

Improvement of SK Discovery SHE Assessment Results

Since 2022, SK chemicals and other affiliates under SK Discovery have been conducting SHE level diagnosis once a year based on common SHE indicators. By doing so, we are lowering SHE risks and continuously improving the SHE operation level of the workplace. In 2024, all workplaces will strive to achieve A grade or higher in SHE assessment.

Safety Activities with Partners

SK chemicals is expanding its safety activities throughout the value chain, including its partners. In the case of the Ulsan plant, we are developing various safety and health programs such as risk assessment education and joint safety inspection with seven internal partners and 30 external partners.

Conducting an Inspection on the Status of Eligible Recipients' Evaluation | In accordance with the SHE management procedure of business partners, SK chemicals conducts self-assessment of seven items from safety and health and select business partners. Since 2023, We have conducted inspections and guidance on 29 detailed items such as SHE system/operation/inspection/education for a total of 19 subcontractors/construction companies. In 2024, the company plans to review/implement the application of the "Three Strikes System" for companies that do not meet the evaluation criteria.

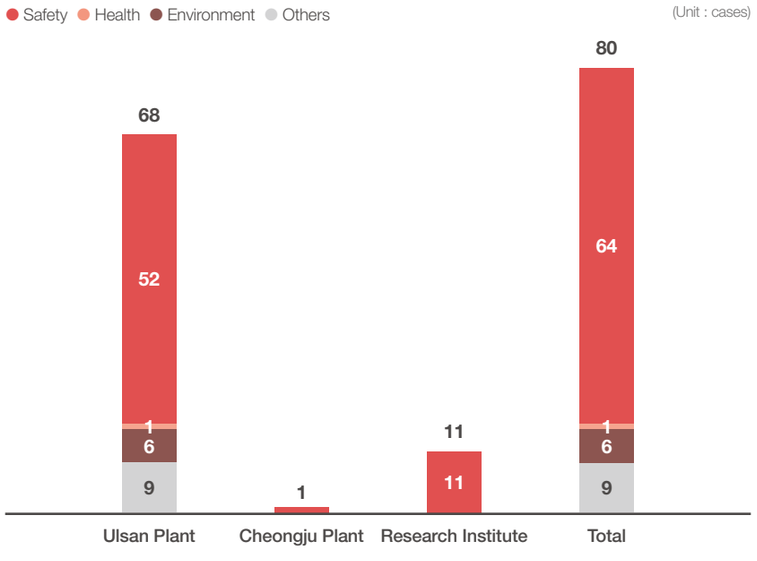
Execution of Safety Management Expenses | If the construction cost of partners exceeds KRW 20 million, SK chemicals checks whether they properly execute safety management expenses. In 2023, a total of five partners were trained in charge of separate inspection and management methods. From 2024, the company will regularize the inspection by using the checklist.

Safety Complaints | SK chemicals operates a safety reporting channel to intently listen to the opinions of the employees including partners and to communicate more smoothly. Employees can freely express their opinions on safety and health through their personal smartphones without being constrained by time/space. By doing so, we are working hard to revitalize the system by discovering unsafe elements in the workplace.

Identifying and Improving Workplace Risks of Partners | SK chemicals discovered a total of 178 risk factors, including the risk factors at its business partners' workplaces and the risk of musculoskeletal diseases from workers' loading the products and solved 145 risk factors, or 81% of them. In the future, the company plans to expand the number of participating partners and gradually increase the ratio of solutions to risk factors.

Colleague Protection Policy | The so-called 'Habit to Protect Colleagues' Safety System is a program to raise awareness on safety and encourages employees to participate and perform safe tasks. In order to establish mutual cooperation in securing safety, the company closely observes colleagues to praise safe behaviors and encourage them to improve themselves through dialogue. A total of 1,275 cases of the "Habit" system were conducted in 2023, and the company plans to further enhance the safety awareness of its employees.

Safety Complaint Implementation Status



* 80 out of a total of 98 opinions were implemented.

Discovery and Improvement of Workplace Risks

Risk Factor	Mitigation Measure
Risk of musculoskeletal diseases during product loading operations	Installed Air Type hoist
Possible risk of collision and injury due to lack of compartmentalization of the vehicle/worker's passageway in the product warehouse	Established worker passage compartments
Risk of collision in facilities in forklifts and vehicle traffic areas	Installed safety Bar

Health Management Program

Employees' Health Management Program

Health Promotion Program | SK chemicals operates programs to help employees quit smoking, walk more, overcome obesity, etc. to promote their health and supports physical strength and prevention of various diseases. SK chemicals plans to increase the participation of its employees by introducing various health promotion programs for each workplace.

Health Checkups | For the healthy lifestyle of its employees, SK chemicals regularly conducts health checkups for all employees, including contract workers, and conducts special health checkups specifically on harmful chemicals to prevent safety accidents and diseases. Moreover, regular inspection of noise level during processing and the management of those who show symptoms at the Ulsan plant are reported to the board of directors once a year. Furthermore, by operating a health management office for each workplace, we manage stress and harmful chemicals for safeguarding health and safety in the workplace and supports the healthy life of its employees by changing jobs and roles if necessary.

Improving Partners' Welfare Facilities | The space improvement project was carried out to improve the welfare of workers from the partner companies working at the Ulsan plant. By retrofitting the outdated facilities such as offices, rest areas, restrooms, and shower booths, we were able to reduce fatigue among workers and provide a healthier working environment.

QUALITY MANAGEMENT & CUSTOMER SATISFACTION

4

Key Agenda	❶ Certification-based product quality management	❷ Management of customer satisfaction
2023 Key Performances	❶ • Continuance of key quality certification	❷ • Execution of customer satisfaction survey for three consecutive years
Mid to Long-Term Plan	❶ • Advancement of product quality control	❷ • Improvement of customer satisfaction indicators

Green Chemicals Quality Management

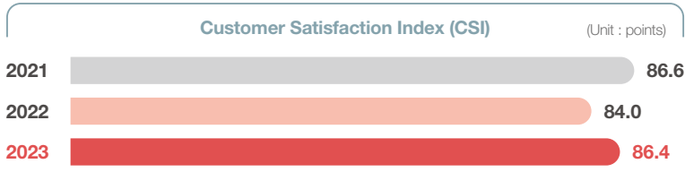
GC Business Quality Management Policy and Performance

In October 2018, SK chemicals created the QA Team to improve quality management capabilities through integrating the management of quality certification and processing throughout the entire facilities and establish related procedures and systems. The quality management process at the Ulsan plant has been systematically re-established and operative since 2019, under the leadership of the QA Team, while maintaining the quality management system (ISO 9001, certified in 1994 and renewed in 2021). Also, we resolve customer complaints by employing automatic shipping system and barcode system to monitor and manage its products, as well as for quality and process management. Quality management is being improved at the Ulsan plant with the objective of achieving a 'zero cases of Claim & Complaint'.

GC Business Customer Satisfaction Management System and Performance

SK chemicals is conducting regular quality evaluation sessions with customers to improve quality management and develop improvement directions for customer satisfaction. Furthermore, the production system has been implemented and enhanced. The process of producing and providing products and services is simplified through digital transformation (DT), which is also a method of quality management. Moreover, we regularly conduct customer satisfaction surveys to analyze satisfaction by consumer type for products and services, utilizes them for improvement and development of products and services, and creates new customer value.

Customer Satisfaction Survey | In order to diagnose and improve the service level of the Green Chemicals business, a customer satisfaction survey has been conducted every year since 2022 by KMAC, a specialized research institute. The customer satisfaction survey is conducted on companies in the top 70% of sales, and its total satisfaction score is 86.4 points out of 100. We aim to enhance customer satisfaction by incorporating this into the KPI of the business leader and promoting/managing it as a task for the entire business.



Life Science Quality Management

LS Business Quality Management Policy and Performance

SK chemicals Cheongju Plant (S HOUSE), which is responsible for pharmaceutical production, has been in compliance with GMP (Good Manufacturing and Quality Management Standards) since 2015. In addition to meeting GMP requirements, we strictly manage the entire product manufacturing process by conducting internal and external audits, nonconformity management, periodic product review and out-of-specification management, customer complaint response, and non-compliance management. A quality management system is established to consider the product's life cycle. Furthermore, we gather all safety information regarding regulations and products and reports it to regulatory authorities and partners through the Safety Information Reporting System (SIRS), which was implemented in June 2021. After the completion of the L HOUSE vaccine plant in Andong, Gyeongsangbuk-do, SK bioscience received GMP eligibility approval from the Ministry of Food and Drug Safety in September 2014. In 2021, we obtained the EU-GMP (European Medicines Agency's drug manufacturing and quality management standards) to establish a foundation for entering the European market.

Pharma Business Quality Management Policy and Performance

The SK chemicals Life Science division is striving to materialize customer satisfaction by reflecting customer complaints about products in actual quality improvement. Through the customer counseling office, we accept opinions on difficult parts and drug abnormalities in use by customers in real time and operates a VOC process based on the complaint handling guidelines to reasonably resolve customer complaints. Also, we thoroughly record and manage all customer's counseling contents and complaint reception and processing details in the database, reporting details to marketing, production, research institute, quality management managers, and the CEO according to the monthly statistical reporting system. By doing so, we actively improve the management of formulation improvement, the quality of package and other changes.

RESPONSIBLE SUPPLY CHAIN MANAGEMENT

5

Key Agenda

❶ Establishment of a due diligence system for supply chain ESG

2023 Key Performances

❶
- Reflection of ESG factors as a supply chain evaluation items
- Expanded and improved supply chain ESG evaluation

Mid to Long-Term Plan

❶
- 2023 : Expansion and improvement of supply chain ESG evaluation
- 2024 : Verification of supply chain ESG policy performance

Supply Chain ESG Management Policy and System

Supply Chain ESG Policy

Establishing ESG Policy in Supply Chain

SK chemicals has implemented a supply chain ESG policy to facilitate the implementation of sustainable projects in collaboration with partners who can assist in addressing environmental issues. The ESG management policies included in the supply chain ESG policy are as follows : ESG screening, business partners' code of conduct, supply chain ESG management roadmap, and ESG evaluation timeline. In particular, the process has been established to make sure that business partners are aware of and agree to the standards in the fields of labor/human rights, environmental, ethics, and safety/health prior to contracting by distributing the business partners' code of conduct annually and receiving the written agreement. SK chemicals also conducts regular education with SK Group to enhance its internal expertise in business partners' ESG, and makes decisions on key agendas such as the promotion of business partners' ESG and joint growth centered on the ESG committee.

Mid to long-term Supply Chain ESG Management and Roadmap

SK chemicals acknowledges the importance of managing supply chain ESG in order to maintain and improve its competitiveness. It not only updates its mid to long-term strategy every three years to establish an ESG risk management plan for its partners, it also endorses the adoption of supply chain ESG policies and self-diagnosis. We intend to broaden the scope of diagnosis and evaluation and assist the enhancement of ESG performance in the supply chain as the EU Supply Chain Due Diligence Act will take effect in near future. Also, SK chemicals sets roles and responsibilities among divisions, such as the purchasing division, to systematically manage supply chain ESG. We also promote supply network ESG with the ESG committee at the forefront. Furthermore, we are enhancing the education of affiliated departments, including purchasing and ESG departments, in response to changes in the external environment.

SK chemicals Supply Chain ESG System

Supply chain ESG policy / Sustainable purchase → Partner ESG risk screening → Evaluation and due diligence → Improvement and capability-building → Shared growth program

SK chemicals Supply Chain ESG Roadmap

	STEP ❶ Establish policy	STEP ❷ Diagnose and assess	STEP ❸ Improve and support	
2023 **Expand and improve supply chain ESG evaluation**	**Established and disclosed supply chain ESG policies** - Advanced the Code of Conduct for Partners - Added biodiversity and conflict mineral management areas	Diagnose and evaluate key management companies for the year (providing ESG guidelines, training, and diagnostic support)	**Establish improvement activities based on diagnosis results**	- Establish a high-risk BP improvement plan and request for an improvement plan
			Establish supply chain ESG activation plan	- ESG reflective purchasing process design - Develop a program to support improvement of excellent evaluation companies and high-risk groups - ESG Pledge of Agreement for Implementation
2024 **Verification of supply chain ESG policy performance verification**	**Establish and disclose supply chain ESG policies** - Preemptive and periodic evaluation of business partners to verify the performance of ESG capabilities - Advance ESG evaluation indicators considering industrial characteristics - Establish an overseas supply chain evaluation plan		**Diagnostic result-based improvement activities**	- Support and monitor the improvement of primary focus management companies
			Implement supply chain ESG activation plan	- Expand ESG reflection purchasing process - Validate the effectiveness of the improvement support program for high-risk groups - Implement support programs for excellent ESG companies
2025 **Establish mid-to-long term management plan**	**Establish and disclose supply chain ESG policies** - Analyze road map performance and establish mid to long-term plans for the supply network management for 2022-2024 (three years)		**Improvement activities based on diagnosis results**	- Secure and share best practices
			Implementation of supply chain ESG activities based on diagnosis results	- Expand ESG-reflected purchasing process - Expand improvement support program - Expand support programs for excellent ESG companies

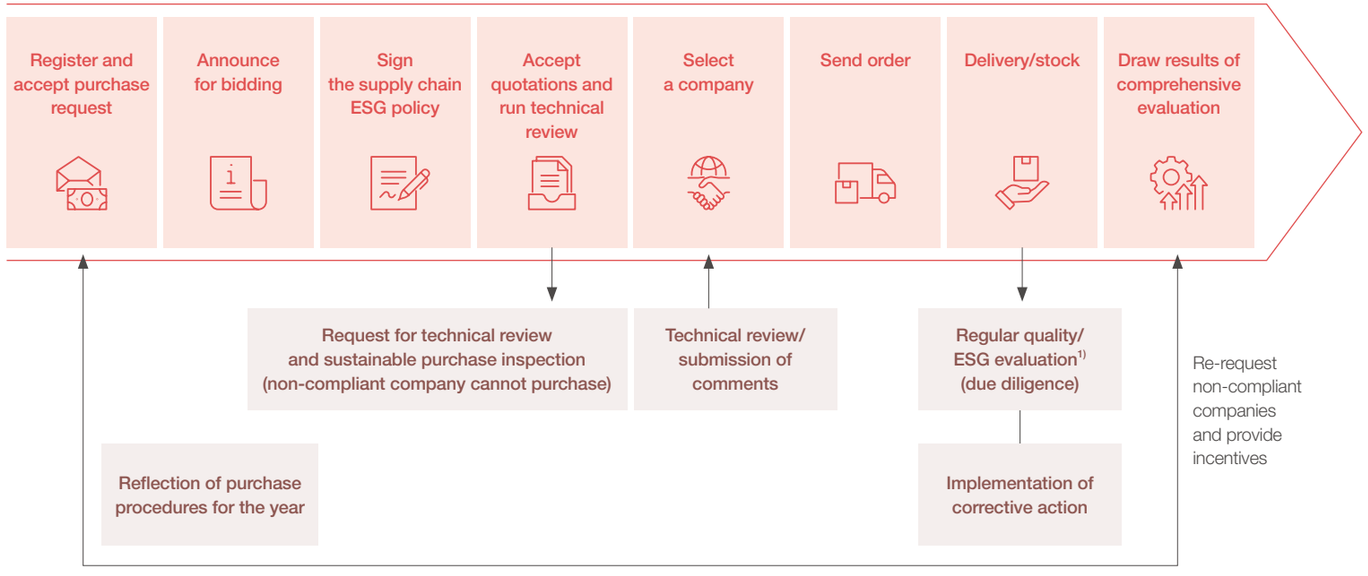
Sustainable Purchase

Sustainable Purchasing Policy

SK chemicals is pursuing a purchasing contract by evaluating the level of each area of E/S/G at the purchasing stage of raw materials. We have selected excellent ESG partners among suppliers who have been recognized for their efforts to improve quality and service through supplier evaluation since 2021 and provided various incentives to strengthen cooperation. Moreover, we are actively promoting eco-friendly purchasing activities and partnerships to enhance the competitiveness of our products.

Furthermore, based on the ESG management policy, we review ESG risks such as human rights, environment, and ethics of its partners, reflect them in the purchasing process and qualification requirements, and exclude them from purchasing if there are significant legal risks. (There are a total of four companies that have been temporarily or permanently excluded from contract.)

In 2023, SK chemicals signed a new contract with 150 companies, and all partners in 2023 signed the ESG Code of Conduct.



1) Periodic evaluation : limited to critical management companies

Purchase Status and Analysis

The total number of business partners for SK chemicals in 2023 was 990, and the total amount of purchase was KRW 765 billion. Among them, 74 companies were selected as significant suppliers considering the standard of purchasing more than KRW 200 million for two consecutive years and level of commitment to ESG. The company conducts an in-depth examination of the level of ESG for key management partners in accordance with the management policy and continuously monitors support activities and improvements to improve its capabilities. The amount of purchase of key management partners was 76% out of the total amount of purchase.

Supplier Status

Item	Unit	2021	2022	2023
Total number of partners	units	1,477	1,297	990
Number of distributorships		333	313	258
Number of other companies		1,144	984	732
Amount of purchase[1]	KRW 100million	7,658	6,738	7,650
Amount of purchase from distributorships[1]		1,281	1,014	904
Amount of purchase from other companies[1]		6,378	5,724	6,746

1) Based on the amount purchased through the corporation and place of business located in Korea

Significant suppliers[1]

Category	Item	Unit	2023
Tier 1 (initial partner)	Total number of significant suppliers	units	74
	Purchase amount of significant suppliers	KRW 100 million	5,848
	Amount of purchase	%	76

1) There is no non Tier-1 in significant suppliers

Supply Chain ESG Risk Screening, Monitoring, and Evaluation

Supply Chain ESG Screening Methods and Procedures

SK chemicals manages the scope of major ESG risks by dividing them into environment, human rights/labor, governance, ethics, regional/production activities, and production risks. Also, the headquarters and core workplaces is monitoring national risks, chemical and pharmaceutical industry-related risks, and raw material risks, including minerals under conflict, based on the supply network located in Korea.

Most of the business partners are located in Korea, where SK chemicals' major business sites are located, and some items such as raw materials are located overseas. Therefore, we plan to expand the risk inspection targets by supporting multilingual ESG evaluation in the future. Some of them consist of SMEs, and the risk to human rights and labor, ethics and governance is relatively high.

Supply Chain ESG Evaluation Performance Status

In order to build a competitive supply network, We have selected business partners with large transactions and high ESG importance since 2021 to conduct an ESG evaluation. The minimum standards to be observed by each member of the supply network are established. Based on these, SK chemicals evaluates the ESG suitability of business partners. A partner company conducts self-assessment primarily through the system and is undergoing verification by an independent third-party evaluation agency to secure objectivity, reliability, and fairness in the evaluation. Since then, we have derived a diagnostic report including an improvement roadmap to manage the ESG capabilities of the supply network. Also, on-site inspections were conducted on the basis of diagnosis results and the importance of the company. The evaluation consists of 23 categories and 66 detailed indicators that require intensive management based on global institutions' (RBA, EcoVadis, etc.) standards and domestic legal systems and guidelines and 60 evaluation indicators and 6 Controversial indicators that judge cases of violation of laws. In order to increase the accuracy of the evaluation in 2023, we introduced specialized indicators for each industry according to the global categorization, exception indicators for each workplace, and customized indicators by the size of each company. Through the 2023 ESG evaluation, two cases of violations of laws (one case of Clean Air Conservation Act and one case of the Labor Standards Act) were identified and warned against. Considering the importance and risk of each indicator, it was confirmed that intensive improvement is necessary in four items of "governance."

Supply Chain ESG Assessment Implementation Status

Partner Category	2023		Goal in 2023 (%)	Number of business partners Categorized as High Risk	Ratio of business partners Categorized as High Risk to Total business partners
	Number of partners	Purchase Rate			
Number of companies that conducted self assessments	51	37.5%	53	22	2.2%
Number of significant suppliers among conducted self assessments	51	37.5%	53		

Pre-screening Items for Partners

Category	ESG Risk	National Risk	Raw Material Risk	Product Risk
Identi-fication Method	• Legal sanctions in human rights and labor, environment, ethics and governance, etc.	• Located in a country of conflict, such as human rights repression and war	• Use of disputed minerals	• Use of materials that affect the environment and human body
Status	• There is no partner that has violated the Labor Standards Act, labor practices, and pollutant discharge laws. • Ethical and governance management systems need to be supplemented for small and medium-sized enterprises and quasi-governmental enterprises.	• Most business sites of partner companies are located in Korea and are located in overseas business sites without some risks.	• No partner that use disputed minerals	• No use of materials that have a significant impact on the environment and the human body

Detailed Inspection Results (Based on Middle Classification)

Area	Detailed Area	Risk Level	Major Issue
Environ-ment	Environmental management	Moderate	Manage environmental policy, performance monitoring, certification, and history of violations of laws
	Eco-friendly products	High	Develop/manage eco-friendly products and services
	Energy	Moderate	Measure energy use and level of renewable energy use
	Greenhouse gas	Moderate	Measure greenhouse gas emissions and reduction activities
	Waste	Moderate	Reduce waste and expand recycling
	Hazardous chemicals	Moderate	Manage and monitor safety and measure emission throughout the process
	Air pollutants	Low	Operate air pollution reduction facility and measure emission
	Biodiversity	High	Put in efforts to conserve biodiversity
	Raw and subsidiary materials	Medium High	Efficiency in using raw materials and measuring usage
	Water resources	Moderate	Reduce water usage, control water pollution and management facilities

Area	Detailed Area	Risk Level	Major Issue
Social	Privacy protection	High	Establish information protection policies, monitoring, and regulatory violations
	Human rights	Low	Establish human rights policies and labor contracts and prohibit discrimination against women/people with disabilities, etc.
	Safety and health	Low	Establish policy, operate exclusive organization, education and training, accident prevention, accident rate, etc.
	Labor	Low	History of violation of the Labor Standards Act and the Labor Union Act, turnover rate, legal wage, etc.
	Working environment	Low	Complaint handling procedures, employee training, welfare, policy operation, etc.
	Fair trade	Medium High	Establish fair trade policy, violation of laws
	Social contribution	High	Social contribution operation plan, operation of program
Gover-nance	Disclosure	Medium High	Disclose business activities and results and ESG management information
	Management system	High	Organization and reporting system dedicated to risk identification and ESG
	Audit	Medium High	Independent audit organization/reporting system, internal audit
	Ethical management	Medium High	Ethical management policies, reports on unethical activities, violations of laws, etc.

* Risk Level : Low < Moderate < Medium High < High

Improvement Measures and Capacity-Building

Improvement Measures and Incentives

SK chemicals will assess high-risk companies by analyzing the results of the assessment after the supply chain ESG evaluation. This will be done in order to establish improvement measures and to pursue compensation measures for exceptional companies. We will receive an improvement plan and verify its implementation if a partner identifies an issue following an inspection and due diligence evaluation. The implementation action plan will be received based on the documents. For practical improvement activities, we intend to include the decision to implement improvements to the monitoring items of the original building from 2024.

Partners who have conducted ESG evaluations are awarded certificates and prizes by the organization for each evaluation outcome. Furthermore, the company will offer incentives to exceptional ESG evaluation partners in order to foster their interest in ESG and encourage them to enhance their ESG capabilities. In the meantime, the company intends to implement corrective action plans by imposing contractual restrictions on partners who fail to adhere to the minimum ESG standards and providing one-on-one consulting assistance.

Program to Support Supply Chain Improvement Measures

Environmental	Social	Governance
• Environmental improvement consulting support • Support for energy and greenhouse gas management measures • Support for waste management implementation plans, etc.	• Safety level inspection and support for safety facilities • Support for establishing safety and health management regulations • Support for revision and enactment of employment rules, etc.	• Advice on process enactment related to raw and subsidiary materials • Guidelines for establishing business ethics code and policy, etc.

Supply Chain Capacity-Building Program

SK chemicals is aiming to establish a supply network that is both fair and secure by prioritizing the satisfaction of its stakeholders. In order to achieve this objective, we are developing a system to enhance the ESG performance of the supply chain and bolstering financial support for the ESG performance of its partners, including the operation of the SK Shared Growth Cooperation Fund. Furthermore, we offer training on supply chain ESG programs, including the CEO seminar course conducted by its partners and support advisors for each company following the ESG evaluation to assist the partners in enhancing their awareness and comprehension of ESG. Also, we are developing a capability enhancement program to improve the ESG performance of our partners. SK chemicals will continue its efforts to foster a corporate culture of ethical management and to achieve joint development with its partners.

Supply Chain Risk Identification and Analysis Results

Category	Partner	2023
2023 supply chain risk identification and analysis results	Number of business partners assessed with real/potential negative impact	22 companies
	Corrective action/improvement plan establishment company ratio	41%
	Percentage of business partners with significant substantial/potential negative impact terminated	18%
Identification and analysis of risk corrective actions and support	Number of business partners supported by implementation of corrective action plans	22 companies
	Percentage of business partners supported by implementation of corrective action plan	100%

Status of Supply Chain Capability Enhancement Program

Supply Chain Category	2023	2023 Target
Number of business partners participating in the capacity building program	35 companies	37 companies
Percentage of business partners participating in capacity building programs	95%	100%

Shared Growth Cooperation Fund Management

Supply Chain Category	Unit	2021	2022	2023
Total amount of loan for partner companies	KRW 100 million	21.1	16.3	22.3
Number of partner companies that borrowed	units	7	6	8

Partner Support Program

SK Shared Growth Cooperation Fund | SK chemicals has funded and operated the SK Shared Growth Cooperation Fund since 2013 to support the stable management of its partners. By doing so, SK partners can more easily secure the necessary financial resources for operation and facilities at a lower interest rate than the market. In 2023, the SK chemicals provided about KRW 2.2 billion to eight partners and plans to continue investing for joint growth with partners in the future.

Subcontract Payment | SK chemicals will minimize instability in the management of its partners' funds by implementing the shortest payment of the plating amount. We support our partners to have smooth management activities through cash payment within 10 days of tax invoice issuance.

Advance Payment and Intermediate Payment | SK chemicals operates an advanced payment system and intermediate payments to minimize instability in the management of funds of its partners. In particular, companies that apply for advanced payment and intermediate payments among the equipment materials/construction cooperation companies are supported through cash settlement, so that their partners do not experience difficulties in delivery and construction. By doing so, we are trying to lay the foundation for coexistence with its partners and maintain stable cooperative relationships.

Creating an Environment for Coexistence Among Businesses | SK chemicals is taking the lead in establishing cooperative relationships with SMEs for the competitiveness and sustainable growth of companies. For example, by supplying steam to SMEs near the Ulsan plant at a lower cost than the manufacturing cost paid by each company, we help them to reduce the cost of facility maintenance, manpower, and material resources, and solve investment and maintenance issues. Moreover, we are seeking mutual benefits to reduce maintenance by selling surplus steam only to companies that have been agreed upon. In the future, we will share and utilize the resources and technologies owned by SK chemicals with our partner companies to create economic benefits and social value at the same time.

Resolving Complaints from Partners | SK chemicals is striving to identify and improve difficulties through continuous communication with business partners. A shared growth cooperation meeting (monthly) and a meeting of representatives of business partners are held quarterly to confirm difficulties. In 2023, three improvements, such as providing rest areas, have been found through the human rights impact assessment of business partners and are in progress.

REALIZATION OF SOCIAL VALUES

6

Key Agenda

1 Engagement in local communities and development

2023 Key Performances

1
- Expansion of employees' participation in social contribution (996 employees)
- Promoted participation in Biz-linked social contribution programs

Mid to Long-Term Plan

1
- Allocation of 3% of operating profit to social contribution

Directions for Social Contribution and Engagement in Community

Engagement in Community and Development

In line with its corporate mission to "protect the environment of the earth and promote human health," SK chemicals is conducting social contribution activities that focus on the underprivileged, health, and win-win cooperation. SK chemicals is committed to the sustainable development of the international community in accordance with the UN Sustainable Development Goals (UN SDGs) and has established a target of allocating 3% of its anticipated operating profit to social contributions beginning in 2022. SK chemicals is collaborating with local community organizations to create a program that will assist in the comprehension of the requirements of the local community and the development of a healthy member of the community for children and youth from low-income families. Furthermore, local education agencies and educational social enterprises are collaborating to advance education development and progress in the field of environmental education.

In order to promote employee participation, SK chemicals developed independent and interesting volunteer activities in cooperation with volunteer organizations and operates online and in-person volunteer programs to help employees participate without restrictions in time and space. In addition, social enterprises are conducting social contribution programs to reduce the learning gap by providing online volunteer activities and online learning mentoring programs.

SK chemicals Volunteer Group

SK chemicals formed the SK Chemical Volunteer Group in 2004 and has been actively participating in community service. In 2023, the annual number of volunteers was 996, the number of participants 2,578, and the total number of volunteer work hours amounted to 5,982 hours. The volunteer group is composed of headquarters, Ulsan, Cheongju, and Andong plants, and the CEO serves as the head of the volunteer group. Moreover, the Social Contribution Secretariat provides directions for volunteer activities, develops volunteer programs for all companies, and cooperates with external organizations. In 2023, we conducted volunteer activities that will help solve social issues such as making eco-friendly kit, family volunteer activities, blood donation campaigns, and environmental instructor activities with social enterprises. In 2024, we plan to establish a local humanities complex cultural space called "Jigwanseoga" to provide various programs for boosting liberal arts knowledge and mental health.

Social Contribution Policy

Mission	Realize a sustainable society through cooperation between Green, Health, Vulnerable People, and Cooperation for Shared Growth			
Policy	**Green** Contribute to healthy and safe eco-friendly living in the community through environmental management practices	**Health** Establish community safety nets such as disease prevention through social contribution activities	**Vulnerable People** Support vulnerable people in the community to grow into healthy employees of society	**Cooperation for Shared Growth** Lead shared growth cooperation through establishment of shared growth partnership between large companies and SMEs
Key Business	• Realize a PET Environmentally Friendly Circulation Economy • Happy Green School	• Cognition improvement program for dementia patients • Support for rare intractable diseases • Jigwanseoga (library)	• Hope Maker • Internalize ESG (member volunteer activities) • Community support (scholarship foundation, welfare organization support)	• Welfare support for partner company's employees

Major Social Contribution Programs

Green Program

Happy Green School | SK chemicals has been promoting environmental education projects since 2012 to spread awareness of environmental protection. Among them, Happy Green School, a children's environmental education program, is a social contribution project in which employees and external professional instructors volunteer as daily teachers to provide eco-friendly education at nearby elementary schools. There are 186 employees who have worked as "eco-friendly teachers" through in-house teacher training courses, and more than 20,682 elementary school students in Seongnam, Ulsan, Cheongju, and Andong have received highly positive response from the participants.

Moreover, SK Chemical employees have developed textbooks tailored to children's eye level to convey an easy and fun understanding of environmental protection. In case online education is needed due to the COVID-19 circumstances, SK chemicals has developed online and offline textbooks and mobile games to support children to receive environmental education anytime and anywhere. It is also contributing to job creation by training external female workers on career breaks as professional environmental education instructors. This program will be operated as 180 classes in 3 regions in 2024.

Happy Green School

Mid to Long-Term Goals for Community Participation

Local Community Engagement Program		Local Community	2023 (Performance)	2024 (Goal)	2025 (Goal)	2026 (Goal)
Green	Happy Green School	Elementary schools nearby Seongnam, Ulsan, Cheongju, Andong site	Implemented on 180 classes	Provide education for 180 classes	Provide education for 180 classes	Provide education for 180 classes
Health	Cognition Improvement Program for Dementia Patients	Day and night care centers nearby Seongnam, Ulsan, Cheongju, Andong site	Distribution to 50 centers (new/redistributed)	Additional distribution to 40 centers (new/redistributed)	Maintain and manage supply equipment (136 units)	Maintain and manage social value measurement of supply equipment (136 units)
	Jigwanseoga (Library)	Suwon	Regional survey	1 open	1 operated	1 operated
Vulnerable People	Hope Maker	Support for low-income children/ youth associations in the community centered on the workplace (Seongnam, Ulsan, Cheongju, Andong)	75% participation rate	80% participation rate	85% participation rate	85% participation rate

Producing Upcycling Products to Support Circulation

SK chemicals has collaborated with SK Group employees, including SK Plasma and SK bioscience, to produce and donate environmentally responsible products. SK chemicals has collaborated with five social enterprises and social ventures to create eco-friendly kits, including a block potting and character cushioning made from recycled PET, an insect repellent garland made from waste, a sock-neck doorbell/massage stick, and a leather tray. These kits have been donated to social welfare facilities and children's centers. In 2023, a total of six volunteer activities were conducted, and 1,843 employees and their families participated. They supported the underprivileged and engaged in environmental protection through resource circulation. employees of SK chemicals are awarded points for their participation in volunteer activities, which they can redeem for gift certificates or donate to the less fortunate. The purpose of our fourth volunteer activity will be bolstered to produce eco-friendly products, and the company intends to continue a variety of activities in collaboration with SK Group's affiliates.

Health Program

Cognition Improvement Program for Dementia Patients | SK chemicals is carrying out a project to distribute AI-based IT cognitive improvement programs to prevent dementia, which is a serious social issue. Starting with the first support program in 2022, We have distributed tablet PCs equipped with cognitive improvement programs to 134 day and night care centers located in Seongnam, Ulsan, Cheongju, and Andong. In 2023, the company measured the cognitive abilities of 874 participants; as a result, there was an average increase of 5.9 points after the implementation of the program, which is equivalent to an increase of 3.8 points in MMSE (Simple Cognitive Disability Test). SK chemicals plans to select new target institutions in southern metropolitan cities (Daegu, Busan, Gwangju) in 2024 and distribute the programs and plans to increase the effectiveness of the program by continuously managing devices that were previously distributed to day and night care centers.

Rare and Intractable Disease Support Program | SK chemicals provides various programs to support the healthy daily life of hemophilia patients. Following 2022, in 2023, the company cooperated with the GRC Foundation to support creation of domestic/foreign exchange networks and publication of newsletters for the most up-to-date information. In addition, for the daily health management of hemophilia patients with a high risk of osteoarthritis, we planned and supported the "Smart Life" program, which provides expert advice after monitoring lifestyle patterns using IT devices.

Support Project for the Vulnerables

Hope Maker | SK chemicals is running a social contribution program called Hope Maker, which started in 2012. Through this program, we are supporting a total of 134 low-income children and teenagers by working with nine community welfare centers.

SK chemicals provides practical support for daily life, such as regular donations and holiday gifts, Summer Hope Kit, support for high school graduates, and year-end gifts and helps them grow into proper employees of the society. In addition, since 2018, we have been conducting career mentoring called Hope Maker School through college student mentoring and developed programs with community welfare centers annually to reflect the needs of students.

Hope Maker School is helping students improve their learning and career development. Through this, the scale of social support among participating students increased by 78.5% (Jungtap, Ulsan Nam-gu Welfare Center), and self-efficacy improved by 75% (Ulsan Nam-gu Welfare Center). In 2023, 100% of high school seniors were successfully admitted to colleges. As such, SK chemicals continues to contribute to the community through Hope Maker.

Supporting Social Companies

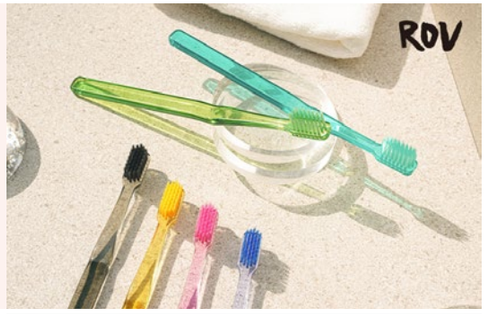
The recycled plastic circulation ecosystem business platform 'EUUM' has been implemented by SK chemicals for the first time in Korea. This platform facilitates the online connection between producers, partners, and brands. The company offers SMEs customized solutions throughout the entire production stage through the 'EUUM' platform. We are also collaborating with social enterprises to assist them in the conversion of environmentally favorable materials.

Collaboration with Social Companies Through the EUUM Green Empowering Program

In order to assist SMEs in transitioning to environmentally friendly materials, SK chemicals and Naver conducted a green empowerment program. We have identified three SMEs that are utilizing the Sustainable Packaging Solution, and it is actively supporting the transition to eco-friendly materials. More than 500 companies submitted applications for the program. Furthermore, we intend to mitigate environmental impacts throughout the value chain and reduce pollution produced during the distribution and consumption of products, including promotion support and education, through Naver Shopping Mall.

Launching Eco-Friendly Material KNK 6 Degrees Celsius Eco-Toothbrush

The initial accomplishment of Green Empowering is the creation of environmentally responsible toothbrushes. K&K, with the assistance of the program, launched an eco-toothbrush named '6 degrees Celsius'. Society Generale de Surveillance (SGS), an accredited certification authority, ensured product safety by surviving harmful ingredient tests, and the use of petroleum raw material plastics was reduced by 32% through the use of recycled materials certified for toothbrushes and toothbrushes. Additionally, in order to mitigate the environmental impact, packaging materials were manufactured with FSC (Forest Stewardship Council) certification.



Launching Probiotic Beverage "Bitsal" in Eco-Friendly Packaging

The second accomplishment of Green Empowering is the development of an environmentally friendly container that is constructed from environmentally friendly materials. Bitsal, a social enterprise that participated in the program, introduced a lactobacillus beverage in an environmentally responsible container. Bitsal introduced a recycling PET container for large-capacity products (bottle standards excluding cap), while SK chemicals provided SKYPET CR 99% Resin, a recycling facility, and supported container development. We intend to foster the integration of recycled materials into commonplace products and implement a variety of collaborative initiatives.

GOVERNANCE

Context

Transparent corporate governance impacts not only financial performance but also non-financial performance. Therefore, it is necessary to strengthen the responsibilities of the ESG committee and strive to establish sustainable management by building an integrated company-wide risk management system. Furthermore, in order to fulfill Corporate Social Responsibilities and build trust among various stakeholders, it is required to raise the awareness of employees with high standards on ethical management and the need to manage it through the Board of Directors. This report describes SK chemicals' efforts to establish responsible governance.

Approach

SK chemicals strengthens the authority of the ESG committee by aligning ESG performance and KPIs. In order to improve the level of ethical management within the organization, we conduct ethics/compliance/fair trade training programs and also operate the compliance program. The results of the compliance inspection are reported to the Board of Directors. For the company's sustainable management, we have established an integrated company-wide risk management system for preemptive risk management, established an annual risk management scheme for each organization, and strengthened our risk management capabilities by reporting and responding to the Board of Directors.

Responsible Governance

Risk Management

Ethical Management

Information Protection

Research & Development

2023 Achievement & Progress

Key Area	Key Agenda	2023 Goals	Key Achievements in 2023	Mid to Long-Term Plan	page
Responsible Governance	❶ Reinforce the role of ESG committee	• Major management decisions related to ESG to be reviewed by the ESG Committee	• Major investment decisions were reviewed by the ESG Risk Board in advance. • Reviewed/approved major climate change agendas - Introduction of Renewable Energy (approved) - Implementation of an internal carbon pricing system (reported)	• Strengthen approval/review system of ESG-related agendas including climate change, environment, human rights, and supply chains	95-97
	❷ Align ESG performance and reward	• Align ESG performance with CEO and executive evaluation and compensation	• Established the CEO and executives' KPI ESG tasks	• Strengthen the ESG performance-compensation linkage system	96
	❸ Implement shareholder-friendly management	• Implement of shareholder return policy	• Implemented interim dividends (July 2023)	• Expand and solidify shareholder return policies	98
Risk Management	❶ Strengthen risk governance	• Manage the risks through the operation of the risk management secretariat	• Company risk management annual performance and targets reported to the board	• Company risk management and internalization at the board level	99
	❷ Establish risk management strategies		• Established status of annual management tasks by risk management organization		100
Ethical Management	❶ Establish ethical management system	• Get certified for Anti-Corruption Management System (ISO 37001)	• Acquired ISO 37001 certificate for anti-corruption management system • Reported to the Board of Directors of Compliance Support Activities • Established a plan to improve the level of ethical management and reporting it to the board of directors	• Achieve the leader level of the ethical management level measurement system • Perform systematic audit work in line with the mid-term audit plan	100
	❷ Upgrade ethical management level		• Regular audits and performance audits (twice a year) • Inspected the calibration system • Completed internal reception and construction of ethics violations (three effective measures out of a total of 10 cases have been completed)		104
Information Protection	❶ Define privacy protection system	• Get certified for information security management system (ISO 27001)	• Acquired certificate for information security management system (ISO 27001)	• Establish a global top-tier information protection system	106

RESPONSIBLE GOVERNANCE 1

Key Agenda

1. Reinforcement of the role of ESG Committee
2. Alignment of ESG performance with reward
3. Shareholder-friendly management

2023 Key Performances

1. • Major investment decisions reviewed by the ESG risk board in advance.
2. • Incorporation of ESG task into CEO and executive KPI
3. • Implementation of interim dividend

Mid to Long-Term Plan

1. • Reinforcement of the board's approval/ review system for ESG-related agendas, including climate change, environment, human rights, and supply chains
2. • Reinforcement of the ESG performance-compensation linkage system
3. • Expansion and implementation of shareholder return policies

Organization and Expertise of the Board of Directors

Board of Directors

The board of directors of SK chemicals is held to actively collect opinions from shareholders and stakeholders and reflect them in the management and decides on major agenda encompassing various areas such as social, environmental, and economy. As of March 2024, the board of directors consists of two inside directors, four outside directors, and one non-executive director. SK chemicals has separated the chairman of the board of directors and the CEO to strengthen the check-and-balance function of the board of directors on the management and has maintained more than half of the ratio of outside directors. Directors are restricted from holding more than one concurrent position under the Commercial Act and are barred from being employed by a company that has a conflict of interest. The evaluation of executive activities is the basis for the reelection of directors at the end of each term.

Expertise of the Board of Directors

SK chemicals recommends candidates by considering the experience and expertise of candidates when selecting directors. The qualification requirements, background of appointment, and independence requirements for directors are all disclosed, and outside directors are composed of experts in the industrial and economic fields to provide their opinions on their areas of expertise to help make rational decisions. SK chemicals has established and operated four committees under the board of directors : the Audit Committee, the outside director Nomination Committee, the ESG Committee, and the HR Committee to enhance the expertise of the board of directors. In addition, a new female outside director was appointed in March 2024, securing diversity in the board of directors.

Board Composition and Expertise

Category		Expertise	Major Experiences and Background	Committee within the Board
Inside directors	Kim Cheol (CEO)	Industry, Management	Joined SK Corporation, served as Head of SK Innovation Petroleum Development Division and Head of SK Chemical Suji Plant, and currently serving as CEO of SK chemicals. Has played a significant role in the business growth of each company, and based on extensive experience and abilities, is expected to greatly contribute to the execution of our new business ventures.	-
	Ahn Jae-hyun (CEO)	Industry, Management	Served as CEO of SK Discovery, CEO of SK D&D, Head of SK Gas Management Support Division and Chairman of New Growth Energy, and CEO of SK Eco Plant. Led various investments and M&As, particularly successfully executed the transition of SK Eco Plant's business structure to environmentally friendly and new energy. Based on this experience, is expected to contribute to the acceleration of our green material and bio-centered portfolio construction and ESG management.	ESG Committee
Non-executive Director	Jeon Kwang-hyun	Industry, Management	Joined SK chemicals, served as President of Life Science Business, and currently serving as CEO of SK chemicals. Made significant contributions to the performance improvement and growth of each business area.	HR Committee
Outside directors	Moon Sung-hwan (Board of Directors Chairman)	Industry, Management	As the CEO of Samyang[1] and Huvis[2] for over 10 years, an expert in corporate management with knowledge and rich experience in the chemical industry.	Audit Committee HR Committee (Chair)
	Jo Hong-hee	Finance/ Accounting	Performed tax tasks for over 30 years at the National Tax Service and other agencies, a tax field expert with knowledge and rich experience, and has been performing the role of outside director and audit committee member of listed companies for many years.	Audit Committee (Chair), Outside Director Nomination Committee, HR Committee
	Park Jung-soo	ESG	Currently a professor in the Department of Economics at Sogang University, and actively engaged in a wide range of activities such as policy advisory and evaluation committees for government agencies. In particular, established the nation's first ESG expert training program at the Graduate School of Economics, Sogang University.	Audit Committee, Outside Director Nomination Committee, ESG Committee (Chair)
	Choi Sun-mi	ESG	With a background as a professor in the Department of Business Administration at Yonsei University and diverse domestic and international activities, it is expected that she will contribute to the company's growth based on rich insights and experience. Also, it is anticipated that she will play a significant role in enhancing board diversity and ensuring transparency/independence of the audit committee.	Outside Director Nomination Committee (Chair), Audit Committee, ESG Committee

1) Samyang Corporation : Founded in 1924, it is in charge of chemical and food businesses. Major products in the chemical sector include engineering plastics, ion exchange resins, materials for touch panels, polymers, etc.
2) Huvis : Polyester Textile Manufacturing Company, Produces Industrial Materials and Raw Materials of Bottle and Film

Autonomy of the Board of Directors

Revising the Governance Charter

In 2022, SK chemicals revised the Governance Charter which was established in 2021. The text was entirely revised to align with the revision of SKMS management philosophy, as the Korea ESG Standards Institute's most stringent corporate governance standards were updated in August 2021 to align with the global trend. The primary revisions involve the following : the specification of the board of directors' roles and responsibilities, the addition of their roles, the appointment of directors at the general shareholders' meeting, the facilitation of communication with shareholders and stakeholders, the pursuit of member satisfaction, the management of the board of directors, and the establishment of a transparent governance.

Strengthening Autonomy and Diversity

As the autonomy and diversity of the board of directors become increasingly important, demands for the independence and diversity of the board of directors are increasing from evaluation and investment institutions such as DJSI and the National Pension Service. In response, SK chemicals has established guidelines to secure the independence of outside directors and the diversity of the board of directors. The guidelines for the independence of outside directors and reinforced recommendations are provided, while the guidelines for fostering outside directors include general diversity requirements and comprehensive professional standards, respectively. The established guidelines are disclosed on the company's website for shareholders. Furthermore, the candidates' careers and expertise are evaluated to determine whether they are disqualified under the relevant regulations, including the Commercial Act and the Enforcement Decree of the Commercial Act. Ultimately, the candidates are recommended to the general shareholders' meeting. In addition, SK chemicals appointed one new female director in 2024 to further strengthen the diversity and expertise of the board of directors. Recognizing that the independence and diversity of the board of directors contribute to the sustainable growth and innovation of the organization, the company will continue to form and operate a board consistent with global standards by incorporating talents with diverse backgrounds and expertise into the board of directors.

Outside director Appointment Process

- Request for a candidate
- Select candidates (screening)
- Candidate recommendation resolution by the Candidate Recommendation Committee
- Agenda resolution of the board of directors at the general shareholders' meeting
- Proceed with the resolution at the general shareholders' meeting

Fulfillment Status of Board Autonomy Requirements

Conditions for Board Autonomy	Moon Sung-hwan	Choi Sun-mi	Cho Hong-hee	Park Jung-soo
Outside directors must never have been employed by the company in the capacity of management under the CEO within the past five years.	●	●	●	●
Outside directors and their families must not have received more than $60,000 in any form from the company, parent company, or subsidiary within the past three years.	●	●	●	●
Outside directors and family employees must never have been appointed as executives of a company, parent company, or subsidiary within the past three years.	●	●	●	●
Outside directors must not be consultants, consultants, or senior management of the company, and must not have an alliance with the company.	●	●	●	●
Outside directors must not establish partnerships with major customers or partners of the company.	●	●	●	●
Outside directors must not enter into personal transaction and service contracts with the company or its senior management.	●	●	●	●
Outside directors must not engage in transactions or partnerships with non-profit organizations (NGOs), etc. that receive a substantial amount of donations from the company.	●	●	●	●
Outside directors must not have worked as partners or employees of the company's audit agency for the past three years.	●	●	●	●
Outside directors must meet the independence and other requirements set by the board of directors, and there must be no conflict of interest with the company.	●	●	●	●

Performance Evaluation and Compensation

Performance Evaluation and Compensation for the Board

Payment of directors, including the CEO, is executed through approval at the general shareholders' meeting and is made within the total director's payment limit. Payment for inside directors is paid according to the performance value of their duties, and payment for outside directors is determined according to the payment procedures for outside directors and paid equally. Performance remuneration is calculated by comprehensively evaluating metrics consisting of sales, operating profit, and pre-tax profit, as well as immeasurable indicators consisting of leadership, expertise, and other contributions. The board of directors' payment approved in 2023 was KRW 5 billion, and a total of KRW 3.4 billion was paid to seven registered directors, including one non-executive director who was appointed by the shareholders' meeting in March 2023. The average amount of payment per director is KRW 485 million. If the individual payment of directors and auditors exceeds KRW 500 million, they are reported in the half-year and business reports in accordance with the relevant laws and regulations.

Board of Directors (Including CEO) Performance Indicators

Financial performance
Sales, operating profit, pre-tax profit, net income, etc.

Non-financial performance
Strategic objectives achievement (ESG performance, etc.), leadership, etc.

2023 BOD Compensation (including CEO)

Category	Number of People	Total Amount of Payment (KRW 100,000)	Average Amount of Paymer per Person (KRW 100,000)
Registered director[1]	3	2,980	993
Outside director[2]	-	-	-
Audit Committee member	4	417	104
Audit	-	-	-

1) Excluding Outside directors and member of Audit Committee
2) Excluding member of Audit Committee

2023 CEO-Employee Compensation Ratio

Total Amount of Payment to CEO[1] (KRW 100,000)	Average Amount of Payment to Employees (KRW 100,000)	Ratio
1,090	88	12.4

1) In the case of CEO remuneration, the average remuneration of CEO Kim Cheol and CEO Ahn Jae-hyun is calculated, which is the same as the information disclosed in the business report

Efficient Operation of the Board

Operation of the Board of Directors' Committee

SK chemicals has established and operates four committees under the board of directors, including the Audit Committee, the outside director Nomination Committee, the ESG Committee, and the HR Committee, in order to enhance the efficiency and expertise of the board of directors' operation. Through the risk management framework, the board of directors identifies risks and opportunities in the business sector and reviews strategies to respond to financial and non-financial risks and opportunities. In addition, the ESG committee sets ESG-related activity goals in consideration of environmental management and socially responsible management policies and reviews detailed action plans. In order to revitalize the ESG committee, the regulations of the Investment Deliberation Committee were created in 2022 to add a procedure for reviewing the 'ESG Review Results Report' when deliberating on investment agendas. Accordingly, the regulations stipulate that the ESG risk must be reviewed when deliberating on investment and that measures to reduce environmental/social risks in accordance with the ESG review results report are to minimize the negative impact of investment projects on the environment and society. In 2023, the ESG committee deliberated on the environmental/social risks of the proposal to establish Shuye-SK chemicals (Shantou) Co., Ltd., and the proposal to introduce renewable energy for the implementation of RE100 was finalized. In addition, SK chemicals is required to report major ESG matters for overall management to the ESG committee.

Operation Status of the Board of Directors' Committee

Category	Chairman	Major Role	Major Agenda
Audit Committee	Jo Hong-hee	• Request for reporting on the business of the audit director on the performance of the duties of the audit committee director	• Prior review of internal transaction approval • Review the finalization of the audit report • Operate and evaluate the internal accounting management system • Report on internal audit/ethics management activities
Outside director Nomination Committee	Choi Sun-mi	• Matters necessary for the recommendation of candidates for outside directors and other candidates for outside directors to be appointed by the general shareholders' meeting, and matters delegated by the board of directors	• Nominate outside directors candidate
ESG Committee	Park Jung-soo	• Consultation and review by the board of directors on management strategies and ESG directions for sustainable growth of the company by discovering and identifying various topics and issues related to ESG operation, etc.	• Prior review of major ESG matters across management • ESG Severity Assessment • ESG performance and activity plan
HR Committee	Moon Sung-hwan	• Review the evaluation and retention of the CEO, the adequacy of the in-house directors' compensation, and the evaluation and settlement of remuneration of major executives	• CEO KPI review • Review of remuneration of CEO and key executives • Report on the CEO's retention and executive evaluation

Effectiveness of the Board of Directors

SK chemicals conducted 14 board meetings in 2023, during which each agenda item was considered and resolved in light of the global market status. The board of directors' average attendance rate is 99.0%, and they are responsible for resolving matters that are prescribed by Acts and subordinate statutes or articles of association, matters that are delegated by the general shareholders' meeting, basic policies of company management, and important matters concerning the execution of duties. Furthermore, the board of directors' activities are assessed annually for outside directors in terms of the board's composition, responsibilities, and duties. The 2023 evaluation yielded 4.7 points out of 5 points (2024.1). The evaluation results are reported and debated as the board of directors' agenda, and the matters that require improvement are actively considered.

Results of the Evaluation of the Activities of the Board of Directors (Unit : points)

Board evaluation	4.7	Board management	4.7
Board role	4.6	Board composition	4.6
Board responsibility	4.8	Committee role/operation	4.8

Supporting Outside director' Expertise

SK chemicals operates a support organization and training so that outside directors can perform their professional duties in the board of directors and in-house committees. Also, the company provides materials in advance so that the contents of the agenda can be fully reviewed before the board of directors and committees are held. Separate briefing sessions are held if necessary.

Support Activities for Outside director' Expertise

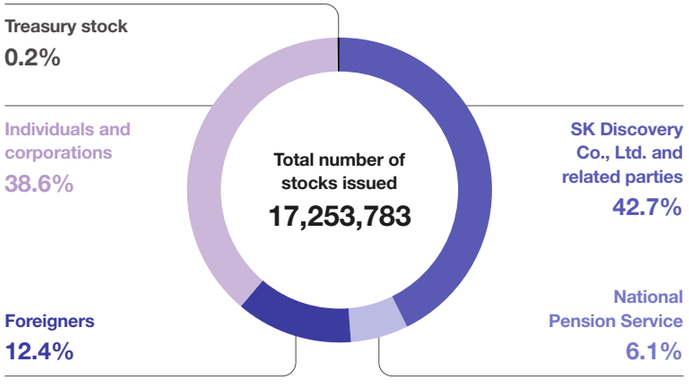
Category	Key Detail
Operate a supportive committee	• Operate the board of directors secretariat to support the performance of outside directors' duties
Operate training	• Training to improve understanding of major pending issues and businesses of SK chemicals • 4 training sessions in 2023 (Board-centered management, corporate value, understanding of SK Growth Biz., etc.)

Promoting Shareholder-Friendly Management

Expanding Shareholder Return

SK chemicals has been actively pursuing shareholder return according to the increase in profits since the corporate split-up in 2017. In October 2021, the mid-term dividend policy was announced to materialize the shareholder return policy and to enhance the predictability of the scale of investor's shareholder return. In addition, we are trying to establish a shareholder-friendly environment by setting the policy duration to three years and reviewing this policy after this period. At the regular general shareholders' meeting in March 2022, the basis for the interim dividend system was established in the articles of incorporation as part of the shareholder return policy. Subsequently, interim dividends were decided and paid in July, and treasury stocks equivalent to 2% of non-controlling shares were eliminated in September. Furthermore, through the settlement board of directors in February 2023, We have already reviewed and implemented various policies to return shareholders, such as paying dividends that exceed the announced dividend propensity (30% of current net income excluding the non-current profits and losses).

Shareholder Status



Name of Shareholder	Number of Stocks Owned	Share (%)
SK Discovery Co., Ltd. and related parties	7,361,072	42.7
National Pension Service	1,052,651	6.1
Foreigners	2,140,442	12.4
Individuals and corporations	6,668,761	38.6
Treasury stock	30,857	0.2
Total number of stocks issued	17,253,783	100.0

Date : Dec 31, 2023 : shares owned are based on ordinary shares.

Dividends and Dividend Rate

Category	Stock Type	2021	2022	2023
Dividend per share (KRW))	Common stock	3,000	1,500	650
	Preferred stock	3,050	1,550	700
Dividend stock	Common stock	17,589,923	17,222,926	17,222,926
	Preferred stock	1,967,296	1,967,296	1,967,296
Return on cash dividends (%)	Common stock	2.0	1.9	1.0
	Preferred stock	3.3	3.9	2.3

Shareholding of CEO and Executives

SK chemicals grants management the option to purchase shares following approval from the general shareholders' meeting for long-term corporate value enhancement and responsible management of management. Moreover, shares can be paid in a performance-linked manner linked to management performance targets, and details such as the option to purchase other shares are disclosed through the government office. As of the end of December 2023, registered executives, including the CEO, held a total of 3,775 shares.

Management's Shareholding Status

Shareholder		Number of Stocks Owned	Share (%)
Registered executive		3,775	0.02
Inside directors	Kim Cheol (CEO)	3,000	-
	Ahn Jae-hyun (CEO)	0	-
Non-executive Director	Jeon Kwang-hyun	775	-
Outside directors	Moon Sung-hwan (Board of Directors Chairman)	0	-
	Ahn Yang-ho	0	-
	Jo Hong-hee	0	-
	Park Jung-soo	0	-

Transparent Disclosure

In order to protect the rights and interests of shareholders, SK Chemical conducts an annual general shareholders' meeting to gather feedback on the company's future direction and management by disclosing its management status. The board of directors will promptly disclose and distribute significant management decisions to stakeholders, including shareholders. In particular, the Korea Exchange, the Financial Supervisory Service's electronic disclosure system, and the SK chemicals website all provide transparent disclosures regarding significant matters that are closely associated with investor interests.

RISK MANAGEMENT

2

Key Agenda

1. Reinforcement of risk governance
2. Establishment of risk management strategy

2023 Key Performances

1. • Integrated management of company risk through the operation of the risk management secretariat

Mid to Long-Term Plan

1. • Board-level risk management and internalization

Risk Management System

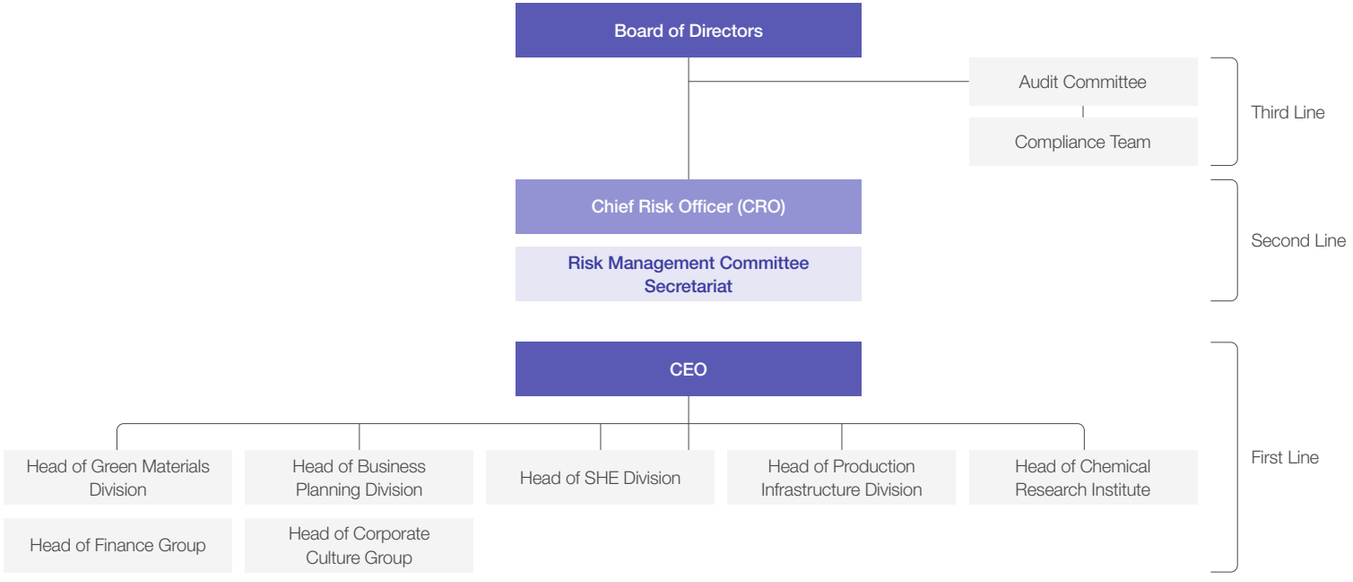
Establishment of an Integrated Risk Management System

SK chemicals established the Risk Management Committee in December 2022 to implement an Integrated Company-wide Risk Management System. By integrating the risk management functions distributed throughout the company and performing financial and non-financial risk management at the board level, we intend to identify/prevent risks that may affect the achievement of corporate goals in advance and minimize volatility in corporate value due to uncertainties.

Risk Management Governance

SK chemicals operates a risk management governance system to systematically manage and respond to possible financial and non-financial risks. In order to prevent conflicts of interest-related issues that may arise from business priorities and to independently manage risks during the risk management process, we operate a risk management organization that is structurally separated from the business organization. Also, the degree of risk exposure is monitored once a year through the risk management organization, and the CRO reports the progress of key risk tasks to the CEO and the board of directors through independent reporting lines.

Company-wide Risk Management Line Organizational Map



Risk Management Strategy

SK chemicals has established and operates a management system to identify and respond to financial and non-financial risks that may affect business operations and management activities in advance. In addition, financial and non-financial risks are evaluated, and response strategies are established and systematically implemented for high-priority risks.

Company-Wide Integrated Risk Management Process

Risk Management System	Risk Management Operation Plan	Expected Outcome
1. Risk identification and analysis • Analyze and identify key factors that can hinder the achievement of the company's goals • Establish identification risk tasks and objectives by considering potential non-financial risks that may affect strategy/business objectives	• Identify risk using OKR workshops and interviews (quarterly)	**Company-wide integration risk management** • Identify risks managed at the field organization level
2. Risk assessment • Assess risks based on impact and likelihood-based risk assessment and derive key risks subject to intensive management	• Create a company risk map and select key risks • Select key risk considering risk preference and risk acceptance level	**Differentiate management based on risk importance** • Determine the level of management through risk assessment and manage key risks that require intensive response.
3. Risk response • Establish and implement risk response measures	• Understand management risk preferences and limitations through OKR workshops • Derivation and implementation of key risk response measures • Monitor risk response status • Review of risk re-evaluation and maintenance of key risks (once a quarter)	**Strengthen monitoring of risk response status** • Strengthen monitoring to ensure that key risks are managed in line with the management system in the business line
4. Report on risk results • Annual risk management performance board report (at least once a year)	• Risk identification/response status regularly reported to the CRO/CEO • Report to the board of directors in the event of risk management performance and critical risks	**Risk management at the board level** • Discuss at the board level for significant key risks

Risk Priorities and Preferences Evaluation

Risk Type	Detail	Likelyhood	Impact
Capital flow	• Lack of operating funds and risk of possible losses in the process of financing	○	●
Logistics	• Increased delay in maritime freight and delivery of products/materials due to external environments (war, COVID-19 pandemic, Houthi rebellions in Red Sea, etc.)	◐	●
Climate change	• Risk of increased financial impact from climate change response, and risk of lack of infrastructure for implementation of the net zero plan	◐	●
Potable water	• Water scarcity, water availability, and water quality issues	○	●
Safety accidents	• Possible risks of safety, health and environmental aspects throughout management activities	○	●
Human rights	• Legal issues and corporate image damage in the event of gender issues such as workplace bullying, discrimination, etc. and gender issues such as gender discrimination	○	◐

Key Risk Response Strategy

Logistical Risk	Risk Overview	• Risks such as maritime cargo bottlenecks, strikes, and port closures are occurring around the world due to external conditions such as the COVID-19 pandemic and the ongoing war. This has disrupted the export and raw material import schedules of global customer-oriented products and has affected profits due to increased freight rates. In early 2024, logistics routes in Europe and the Americas were altered due to the Houthi rebellions, resulting in increased freight rates and logistics disruptions.
	Risk Analysis and Assessment	• Delivery delays and freight increases were caused by the port bottleneck during the COVID-19 pandemic. Although the risk of rising freight rates has gradually eased since the endemic, the risk of rising freight rates continues to occur irregularly due to the ongoing war. The impact was highly evaluated as it directly affects sales and profits. The effect of rising freight rates is selected and managed as a key risk when forecasting that the effect of profit or loss is above the internal set standard.
	Response to Risk	• Logistics risk is a factor that has a normal risk preference, but has an immediate impact on the business, and the risk limit is set low and managed tightly. • In the event of an incident that affects logistics, we immediately check the impact of the delivery schedule of raw materials/products and establish a response strategy with logistics companies. In addition, maritime freight indicators are set and monitored periodically with KRI, and risk transfer strategies within the value chain are taken to minimize fluctuations in profits and losses caused by rising freight rates.
Climate Change Risk	Risk Overview	• In order to respond to climate change, it is necessary to invest in facilities to reduce carbon and increase the ratio of renewable energy/hydrogen fuel use. If eco-friendly regulations such as carbon tax are introduced in the future, it may act as an opportunity, but the increase in investment and operating costs may affect product costs.
	Risk Analysis and Assessment	• CAPEX is expected to increase due to facility investment to respond to climate change, and the financial impact of rising production costs due to the use of renewable energy/hydrogen fuels is also highly evaluated. The likelihood is above the normal level as the government aims to implement Net Zero plan as the demand for response to climate change is intensifying socially.
	Response to Risk	• Risk preferences are high in response to market demands for low-carbon products and Net Zero transition, and risk limits are set and managed as factors that immediately affect the business. • SK chemicals is systematically monitoring the performance of greenhouse gas reduction and various activities to reduce greenhouse gas emissions, such as expanding the use of renewable energy and converting eco-friendly fuels. In addition, based on the SBTi goal, we have established reduction strategies in Scope 1&2 and 3 and are carrying out activities to achieve the Net Zero goal throughout the company.

Defining and managing potential risks

SK chemicals defines potential risks that are expected to have a significant impact on management and is pursuing continuous monitoring and response activities. We are minimizing the impact on business operations in the mid to long-term by identifying and proactively responding to potential risks that may arise in terms of technology, economy, society, and the environment.

Risk Factor	Financial Impact	Impact Level	Risk Response and Management Plan
Natural Resource Crisis	• Increased global consumption, intensified production, and lack of natural resources are expected to further trigger a shortage of resources such as chemicals, food, natural resources, and water. • The ongoing Russia-Ukraine war since 2022 has raised tensions between many countries under conflict around the world, and, combined with geopolitical risks surrounding the resource zone, has shown that this scarcity of resources can become serious economic issue. • The mid to long-term natural resource crisis, coupled with the collapse of supply chain disruptions caused by the Russia-Ukraine war, temporarily increased the price of copolyester raw materials (PTA), the main ingredient in SK chemicals products, last year. • Mid to long-term increase in natural resource prices and product price instability may affect the supply and demand of the company's raw materials and supply chain stability, which may serve as uncertainty in the company's ability to generate profits in the mid to long-term.	High	• SK chemical is taking measures to respond to changes in raw material prices such as PTA and MEG caused by the natural resource crisis and to minimize financial losses. • We are diversifying and mitigating raw material risks through continuous monitoring of raw materials, securing foreign currency, and implementing continuous business diversification in the short term, while making fundamental diversification efforts such as diversification of manufacturing and chemical manufacturing processes and development of alternative products in the long term.
Competition for Recycled Materials	• Competition for securing recycled materials is expected to intensify as regulations on recycled materials are strengthened, demand is increased, and production efficiency is increased, which could have a financial impact. • Increased demand and supply of recycled materials can increase volatility in raw material prices, which is expected to have a direct impact on production costs and operating profit margins. • In addition, rising raw material prices may affect the pricing of final products, which may negatively affect SK chemicals' market competitiveness and profitability. • The supply chain of plastic recycling materials may be vulnerable to external factors such as geopolitical risks and changes in environmental regulations. This is expected to increase the risk of supply chain chain collapse and affect stable business operations.	High	• SK chemical is striving to diversify its supply chain of raw materials and expand usable raw materials through technological innovation in order to minimize risks caused by intensifying competition to secure recycled materials. • We are preparing for the volatility of raw material prices and securing the stability of the supply chain by strengthening cooperation with various supply sources and signing long-term supply contracts. • Furthermore, through the development of its own technology, it improves the quality and yield of recycled raw materials, and improves cost reduction and resource efficiency.

ETHICAL MANAGEMENT

3

Key Agenda

❶ Establishment of an ethical management system

❷ Advancement of ethical management level

2023 Key Performances

❶
- Acquisition of ISO 37001 certification of anti-corruption management system
- Report to the Board of Directors of Compliance Support Activities
- Establishment of a plan to improve the level of ethical management and reporting it to the board of directors

❷
- Regular audits and performance audits (twice a year)
- Inspection of the calibration system
- Completion of internal reception and construction of ethics violations (Three effective measures out of a total of 10 cases have been completed.)

Mid to Long-Term Plan

❶❷
- Achievement of the leader level of the ethical management level measurement system
- Number of systematic audits in line with the mid-term audit plan

Ethical Management Principles and Systems

Ethical Management Principles

SK chemicals is practicing company-wide ethics and compliance management to become a company trusted by all stakeholders. We are striving to build an exemplary ethics system and culture based on SKMS (SK Management System), ethics rules, and guidelines for the practice of ethical norms. In addition, the guidelines for the practice of ethical norms and standards, which are the standards for ethical judgment and practice of SK chemicals employees, were established by reflecting the basic management principles of SKMS, SK's management philosophy and principle of conduct.

Ethical management system

To promote systematic ethics and law-abiding management, SK chemicals has established and operated a compliance department specialized in the Green Chemicals and Pharma business. In order to practice fair and transparent management and to establish standards for judgment on decision-making and behavior, the guidelines for the practice of ethical norms have been reorganized. By doing so, we are implementing prevention, detection and response activities to practice more systematic ethical management. Also, by acquiring ISO 37001 Anti-Corruption Management System Certification in the first half of 2023, we have further strengthened the culture of anti-corruption and ethical management. Through this, we have laid the foundation for enhancing corporate reliability and securing international trust.

Ethical Management Activities

Ethical Management Process

STEP ❶	STEP ❷	STEP ❸
Prevention	**Identification**	**Follow-up Management**
Provide policies and guides, training of executives and employees, understanding regulatory trends, etc.	Inspect, report and investigate, respond to issues, etc.	Analyze and evaluate results, establishment of measures to prevent recurrence, and measures to take violations of executives and employees, etc.

Ethical Culture Expansion Activities

SK chemicals promotes a culture of ethical and law-abiding culture. Every year, it conducts an ethics practice survey to identify the current status of ethical management and vulnerable areas and reports the results to the top management and audit committee. In addition, in order to improve the level of ethical management practice of all employees, ethics education and leader-centered ethics practice workshops are conducted every year. In 2023, each workshop was conducted once, respectively.

In addition, in an effort to spread the ethical management culture, the company sends a letter to business partners every year to guide on SK Chemical's ethical management policy, request signing of BP Ethics Management Practice Agreement, and implement ESG education programs including ethical management to strengthen the capabilities of major partners.

Furthermore, the company requests a pledge of ethical management practice for all employees of the district, disseminates guidelines for the practice of ethical norms, and implements policies to share/spread ethical management programs for subsidiaries.

Ethics/Legal Education

SK chemicals conducts ethics education every year to foster the will of all employees to practice ethics management and improve the level of practice. Ethics education is conducted through online education for all employees, including part-time workers and contract workers, and a leader-centered in-depth discussion education and ethics management practice

Target and Scope of Report

❶ Corruption and abuse of power to partners (BP)
Bribery, inappropriate entertainment, private requests, equity investment, unfair instructions, verbal abuse, etc.

❷ Conflict of interest
Side business, excessive private business, employee cash loan, investment using internal information, transactions with related parties, etc.

❸ Damage to social values
Failure to comply with environmental, safety, health and quality regulations, neglect of social disadvantages, leakage of customer information, and provision of false information to customers

❹ Lack of respect for the employees
Violent language, assault, sexual harassment, bullying, exclusion from work, personal abuse of power, etc.

❺ Improper handling of business
False reports, fraudulent operations, improper use of costs and assets, information leakage, etc.

Each of the following was conducted once in 2023 : online ethics management education and ethics management practice seminars. All employees were provided with case education on topics such as bullying in the workplace, neglect of work, arbitrary use of budget, misuse of power to BP, and false reporting through online ethics management education. During the ethics management practice workshop, employees were afforded the chance to engage in a discussion regarding a variety of cases that pertain to the primary subjects of ethical management and anti-corruption. We selected two autonomous topics, "reliability improvement measures for information channels," and "abuse in the workplace such as verbal abuse," which were derived as issues of interest through an ethics management survey. The discussion was conducted under the supervision of a leader (executive). The ethics management practice workshop maintains a 100% participation rate for each organization. The Pharma project consistently provides differentiated education based on job category regarding pharmaceutical-specific content. Training on the laws and regulations that marketing employees are required to adhere to is necessary twice annually. Furthermore, four additional training sessions were conducted in 2023, and special training was conducted when new employees were recruited or related laws were changed.

Operating the reporting system

SK chemicals receives reports on ethics and conformance through a variety of channels, including the SK Ethics Management website, the company website and intranet, email, phone, and mail, in order to fortify ethical management practices. The Compliance Team is responsible for the Green Chemics project, the CP Team is responsible for the Pharma project, and the HR team is responsible for investigating the HR issue, according to the report. Serious disciplinary action may be taken by the punishment committee in the event of workplace sexual harassment, acquisition of private profits, multiple/repeated workplace harassment, fair trade violations, fraudulent reports, information leakage, and non-profit of informants. The management and the audit committee of the board of directors are routinely informed of the results of the reported online report, and appropriate responses and proposals are implemented in accordance with the relevant procedures.

Report Target and Scope, and Informant Protection

All stakeholders, including SK Chemical's partners, customers, and other third parties, can report real or anonymous labor and human rights, environmental, anti-corruption, information protection, and sustainable supply chain issues. All informants can check the results of the report processing process through the online report system. In addition, the identity of the informant is thoroughly protected so as not to be disadvantaged or discriminated against by the report. In the event of disadvantage following the report, correction or protection measures can be requested from the organization in charge of ethical management, and the former member who commits an act of disadvantage to the informant will be subject to a serious punishment more than suspension from work.

Ethics risk audit and diagnosis

In order to enhance the quality of ethical management, SK chemicals implements internal audits that encompass performance audits, self-adjustment systems, information surveys, and routine audits. These audits are focused on specific organizations, such as compliance teams. Every year, performance inspections and audits are conducted by categorizing risks by function and organization. The establishment and regular inspection of a self-adjustment system are implemented in areas with significant risk occurrences. We are conducting a report investigation within the specified period for the information that is regularly received. During this process, the anonymity of the informants is safeguarded, and the investigation and processing of the received information are conducted in a transparent and fair manner to ensure the trust of employees in the internal audit.

Internal Audit[1] Operation Status

Regular audit
Regular inspection of risks by organization and function (twice a year)

Implementation audit
Inspect implementation of recommendations for improvement of audit (twice a year)

Self-improvement system
Self-inspection according to the company's risk area inspection guidelines (on a yearly basis)

Investigation on reports
Conduct investigations on reports that require investigation among received reports

1) Internal audit is conducted for all workplaces

Number of Violations Reported in 2023

Corruption or Bribery
1 case

Discrimination or Harassment
2 cases

Customer Privacy Data
0 case

Conflicts of Interest
0 case

Money Laundering or Insider Trading
0 case

Ethical Management Process

STEP 1 — Receive reports
Website/phone/e-mail/mail/interview

STEP 2 — Categorize reports
Determine the subject of investigation based on the position of the subject and the gravity of the matter

STEP 3 — Investigate
Participate in related departments if necessary

STEP 4 — Report on the results
Review the results of the survey, reporting/approval of action opinions, and complementary investigation if insufficient

STEP 5 — Follow-up Measures
Feedback on results (when requested) and request disciplinary action in case of grounds for disciplinary action

Identifying Ethical Risks and Implementing Improvement Measures

SK chemicals conducts an internal audit such as regular audit and performance audit, as well as an investigation into the information received at all times. In addition to closely investigating and determining whether a violation has occurred, it is transparent and fair in accordance with the procedures.

The internal audit will be conducted every three years according to the mid-term audit plan, including domestic and foreign subsidiaries, and the scope of the audit will be set based on the risk pool derived from the risk factors across the entire scope.

All audit plans and results are reported to the Audit Committee. In 2023, 7 and 6 cases were confirmed respectively through two regular audits conducted in the previous year. In addition, the company conducted a company management diagnosis with the SK Group's Management Diagnosis Team, and the relevant department is implementing improvement recommendations and taking follow-up measures. In 2023, 23 reports were received through the report channel, and 10 reports requiring detailed investigation were investigated. As a result, two reports related to workplace harassment and one report related to the reception of employees were confirmed to be true, and a total of three internal disciplinary measures were implemented.

Ethical risk management system inspection and improvement

SK chemicals is conducting its own autonomous system inspection to respond quickly to changes in internal and external laws and social needs. In accordance with the internal inspection guide, we conduct autonomous system inspection in six areas : cost management, purchase, BP, HR, sales, bonds, investment, and unique risk management. As a result of conducting autonomous system inspection in six areas in 2023, we have recommended the implementation of one improvement.

Fair Trade

Fair Trade Compliance Program

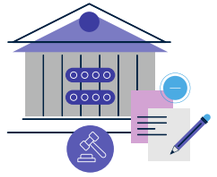
SK chemicals have been conducting the Fair Trade Compliance Program since 2006. By doing so, we are striving to comply with the competitive order and implement the Fair Trade Act in all corporate activities.

Under the supervision of the Fair Trade Compliance Manager, working-level officials of each department conduct regular inspections through the list, and we effectively operate an internal inspection and audit system by consulting with specialized departments within the company to review matters that are likely to violate the law in advance.

SK chemicals' Pharma business is directly correlated with the public's health and necessitates a high degree of ethical behavior and impartiality. This business sector necessitates professional management due to numerous regulations and constraints that are contingent upon the industry's characteristics. As a result, we established the Compliance Organization for Pharma in 2016 and established the CP Rules for Specialized Fair Trade in the Business Sector. We continue to apply updates to reflect the current status of the pharmaceutical industry in order to implement CP with fair trade that reflects the industry's distinctive characteristics. It also designates an individual to oversee CP among executives who are not involved in marketing. This individual is tasked with the authority and responsibility of operating, inspecting, improving, and correcting in-house fair trade compliance program.

Fair Trade Risk Inspection

SK chemicals is striving to create a fair trade environment through constant checklist-based inspection and compliance audit. SK chemicals is conducting a systematic compliance audit according to its annual plan including the Compliance Act and fair trade. By doing so, we prevent fair trade-related risks in advance and promotes the spread of a fair trade culture.



Establishing Fair Trade Culture

In order to establish a fair trade culture, SK chemicals established and shared the "Code of Compliance Conduct," which contains legal and ethical standards that employees must comply with. In addition, it published and distributed the "Compliance Handbook," which covers domestic laws including the Fair Trade Act and overseas corruption prevention laws such as the U.S. Foreign Corruption Prevention Act and the U.K. Bribery Act. Moreover, in order to encourage voluntary compliance and to help employees understand the re-issuance and amendments to related laws and regulations, education on the Fair Trade Act and the Chemical Substances Management Act is provided every year. In particular, the Ulsan plant has been conducting a fact-finding inspection and training on subcontractors. By doing so, we have seen achievements in improving the ethics and working environment of subcontractors. In addition, through continuous fair trade education, we prevent unfair trade practices such as monopoly and other violations of laws and regulations.

In order to boost employees' willingness to comply with fair trade, the CEO of SK chemicals Pharma business announces his willingness to comply with fair trade every year. Fair competition training has been regularly organized twice a year to prevent any possibility of violations of the law in transactions with internal and external stakeholders. In 2023, a total of six fair trade-related training sessions were conducted, including training for newcomers and regular training on changes in laws. In all of the approximately 50,000 marketing activities that take place annually, the Compliance Team is required to carry out pre- and post-inspection, thereby preemptively preventing the promotion of fair trade.

INFORMATION PROTECTION 4

Key Agenda

❶ Establishment of an information security system

2023 Key Performances

❶
- Acquisition of information protection management system certification (ISO 27001)
- Conducted security-intensive diagnosis and improvement activities by the group security council

Mid to Long-Term Plan

❶
- Establishment of a world-leading information protection system

Information Protection Management System

Information Protection System

To prevent the leakage of confidential data, as well as customers and companies, SK chemicals implemented an anomalous symptom monitoring system. We guarantee the secure management and protection of precious information assets. The Zero Trust strategy was employed to implement the Cloud Access Security Broker (CASB), Security Web Gateway (SWG), and Centralized Management Platform Environment in order to prevent threats in the working environment. In addition, we are implementing a systematic response system to effectively safeguard the company's information assets by periodically revising the information security policy (SK Chemical Security Management Regulations). Additionally, in 2023, we achieved the International Standard Information Security Management System Certification (ISO/IEC 27001) and advanced its global information security system.

Certification of Information Protection Management System (ISO 27001)

In order to upgrade the information security management system in accordance with global standards, SK chemicals acquired ISO 27001 certification, an international standard for the information protection management system, in 2023. In addition, we plan to systematically inspect and continuously upgrade the IT infrastructure and the information security management system by regularly performing external verification through post-examination (on a yearly basis) and renewal (on a three-year basis) of ISO 27001 in the future.

Information Protection Management Organization

According to the Chapter 3 of the SK chemicals Security Management Regulations, which was revised for the eighth time in May 2023, Security Organization is not only the roles and responsibilities of the security-related employees but also the CEO designates the Digital Innovation Center as the CISO and provides management (budget, manpower) for the security organization. Accordingly, we are making special efforts to prevent accidents related to information security by improving the information protection management system every year centered on the CISO and working-level security organization.

Security Incident Response Procedures

SK chemicals revised its security incident response procedures in May 2023 to supplement the prevention, response, and recovery procedures for information security accidents. In principle, the procedures for responding to and following security accidents are established and implemented step by step.

Security Committee Activities

SK chemicals conducted a SUPEX-seeking council in-depth security diagnosis as a member of the SK Group Security Council to derive improvements to protect company secrets and prepare for malicious attacks. In addition, we are conducting activities of the limited security working-level council to learn best practices among member companies and improve the level of information security.

Information Protection Management Organization Map

Digital Innovation Center Head

IT Security	Information Protection	Physical Security
• Person in charge of information protection (CISO) (Digital Innovation Center Head)	• Head of personal information protection for executives and employees of GC (Chief of Corporate Culture) • LS executive and employee personal information protection officer (Director of LS Management Support) • LS Customer Privacy Officer (Director of LS Management Support)	• Head of physical security at the headquarters (Chief of Corporate Culture) • Head of physical security at local workplaces (factory manager or managerial support manager)

Information Protection Incident Response Procedures

STEP ❶ Prepare before accident	Improve awareness by organizing a security incident response organization, establishing an emergency contact system, and training information protection
STEP ❷ Detect accident	Monitor information assets and detect and analyze anomalies
STEP ❸ Early response	Initial analysis, declaration of security incidents, definition and scope of security incidents
STEP ❹ Structuralize response strategy	Evidence data collection/protection, emergency measures by type of intrusion
STEP ❺ Investigate accident	All anomalies and traces of occurrence to be analyzed, and file or other information is collected and stored
STEP ❻ Draft Report	Record of matters for analysis, action, and reporting
STEP ❼ Resolution	Restore the damage caused by infringement to the previous state and establish measures to prevent recurrence

Information Protection Education and Inspection

Information Protection Education

In order to strengthen information security capabilities, including improving awareness of information security, SK chemicals regularly provides customized personal information protection and information security education to its employees and employees of partner companies that are renewed every year. We provide personal information education, and partner security education for our own employees and employees of partner companies.

Furthermore, We have established an online system to increase accessibility to education so that more employees can participate. From 2020, security education for SK employees and employees of partner companies has been replaced by online education through the distribution of educational materials. The completion rate of personal information protection education and security education for employees is 99%, and the completion rate of security education for partner companies was 100%.

Information Protection Roadmap

STEP 1 (2022) Implement priorities to enhance ID/device security and data leakage prevention	• Established a document security classification system and strengthening the management of document usage history • Strengthened user credentials and security of business devices
STEP 2 (2023) Automate intrusion detection and action on ID/device	• Automated document security and compliance management • Automated threat detection and response
STEP 3 (2024) Integrate the authentication system and advancement of detection of internal information leakage	• Automatically detect attempts to leak internal information • Implement a Modern Authentication-based authentication system

Information Protection Training Program

Information Protection Training
Personal information protection compliance, minimum processing of personal information, guaranteeing the right to choose the data subject, etc.

Information Protection Training
Trends and cases, company information security status and process, etc.

Development Security Training
Web secure coding, component security, information leakage prevention, etc.

Information Protection Inspection Activities and Inspection Results

SK chemicals is not only securing the safety of business solutions by strengthening the security review process that is applied when introducing new solutions, but also establishing a safe and sustainable business system through regular diagnosis and management of vulnerabilities. Based on the customer information policy, it has focused on preventing theft and loss of data including personal information of customers and has recorded zero cases of difficulties and losses, continuing to achieve security goals.

In 2023, as part of the security awareness and information security inspection activities, a total of 17 information security campaigns were conducted, including two malicious mail simulation drills, two backup recovery drills, and the “Security Day” events were held to review the implementation status of practices and inspection items in accordance with internal standards. In addition to the replacement of the old system, offline inspections such as strengthening fire barriers in the system, monitoring the number of security releases and reasons for periodic security inspections will be strengthened to maintain the record of zero security-related violations. In addition, by 2024, we plan to establish an information security roadmap, integrate the authentication system, automate the detection of information security threats, and enhance the detection of information leakage.

RESEARCH & DEVELOPMENT

5

Key Agenda

1. Acquisition of eco-friendly and sustainable core technology capabilities
2. Establishment of a new drug development platform

2023 Key Performances

1. • 46% of green chemical eco-friendly product as research expenses
2. • Release of candidate substances using open innovation (non-alcoholic fatty liver disease, anti-cancer)

Mid to Long-Term Plan

1. • 50% of eco-friendly product as research expenses by 2028
2. • Expansion of pipelines using open innovation and joint research

Green Chemicals Business

Research and Development Strategy

In order to secure eco-friendly and sustainable core capabilities, SK Chemical Research Institute is pursuing research and development focusing on plastic recycling and new biological materials by avoiding existing petrochemical-based research.

We have made significant progress in the development of next-generation materials and products that have been successfully commercialized, including renewable materials manufactured from waste plastics, polyester that can be recycled from recycled materials or PETs, and biopolyol produced from bioalcohol, all of which are based on polyester polymerization/processing technology and new polymer development capabilities with over 50 years of history. The investment in the eco-transition field, which is characterized by the intervention of all research expenses and bio-materials, has increased considerably from 11% in 2020 to 29% in 2021 and 42% in 2022. This figure surpasses the original plan of 34% in 2022. Over the next five years, the organization intends to increase and preserve 50% of its research expenditures. We have established a goal of 50% of the total sales of the Green Chemicals business in 2025 and 100% in 2030 by making such an aggressive investment in eco-friendly materials. Additionally, we are focused on research and development. Furthermore, we are emphasizing the identification of critical external technology partners, the enhancement of leading technology, the development of 10 technology-based partners through the implementation of new business models, and the enhancement of research capabilities through strategic collaboration with domestic and foreign specialized research institutes in order to sustain and enhance its competitiveness in the sustainable market in the future.

Research and Development Achievements

SK chemicals provides products that contain recycled raw materials or can be recycled as PETs through the Sustainable Packaging Solution (SPS).

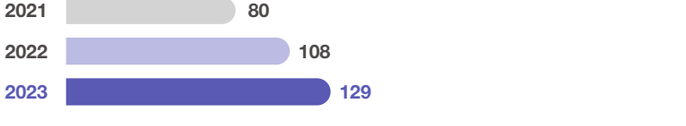
Through SK Shantou office, which was established after acquiring the recycling raw material business of Shuye, a Chinese company in 2023, SK chemicals is actively conducting research to stably produce the recycling raw material "r-BHET." In addition, SK chemicals continues to develop products that are easy to recycle in accordance with global plastic regulations and customer demands and increase the recycling content. We are expanding research on the reuse of hard-to-recycle raw materials such as film and fiber that are not suitable for existing mechanical recycling.

In 2022, we succeeded in commercializing PO3G, which is supplied with interior materials, fashion, and sports materials for automobiles, attracting attention as eco-friendly polyurethane materials. By replacing the petrochemical-based coating materials used in artificial leather with PO3G-based eco-friendly polyurethane coating materials, it has achieved excellent texture and eco-friendliness.

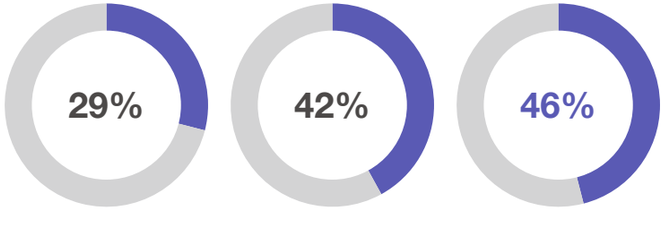
Research and Development Investment

Chemical Research Institute R&D Expenses (A) (Unit : KRW 100 million)

Eco-friendly Product R&D Expenses (B) (recycling, biomaterials) (Unit : KRW 100 million)



Share of eco-friendly product research expenses (B/A)



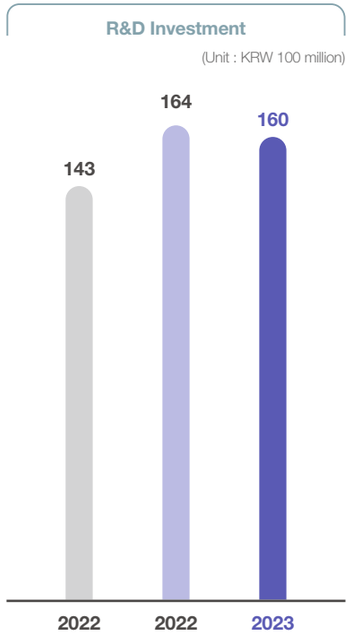
Pharma Business

Research and Development Strategy

The Pharma R&D Center is committed to ensuring that the pipeline is expanded in order to secure future value. This is achieved through ongoing investment in internal research resources and collaboration with external organizations. Due to the complexity and high cost of novel drug development, the pharmaceutical industry places a high value on collaboration with external organizations through open innovation. Consequently, we are investing in the effective utilization of external knowledge and technology, in addition to internal resources, by actively conducting research and development through open innovation. In this manner, the development period can be condensed, R&D costs can be reduced, and high-value-added products can be developed with a high likelihood of success. In addition, we will strive to identify novel drug candidates that are based on AI technology by conducting collaborative research with global AI companies. Additionally, we will aspire to reduce the current drug development timeline by screening effective compounds for drug effects and toxicity. SK chemicals intends to enhance the R&D capabilities of the Pharma business and make preparations for the development of novel drugs in the future.

Research and Development Achievements

In order to secure new pipelines, the Pharma R&D Center invested in a new drug development venture company in 2021 and started joint research. It has applied for and registered a number of new drug-related patents by discovering meaningful post-research materials in the early stages. Based on the derived candidate materials, we have entered the non-clinical efficacy evaluation test and are continuously discovering additional candidate materials based on artificial intelligence technology with external partners. Efforts were made to strengthen our portfolio through the development of competitive products. It has signed a CDMO contract with AstraZeneca, a global pharmaceutical company, to approve and release a new diabetes compound in Korea, and is currently producing and supplying drugs. In addition, approval reviews are underway in overseas countries to expand the global market. Also, we are preparing to release an arthritis treatment that improves the dosage and the application method of existing drugs at the end of 2023 and have conducted a domestic clinical study of Parkinson's treatment and published a paper in SCIE-level academic journals.



Strengthening Open Innovation Capacity

Pharma Research Institute has reorganized the Open Innovation Team, which was formed to strengthen its open innovation capabilities, into two teams. It is divided into an Open Innovation Team that conducts new drug development research based on AI technology and a Bio-Investment Team that invests and partners to secure new pipelines to strengthen expertise in each task.

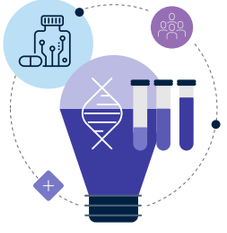
Moreover, based on the new drug development capabilities accumulated inside, we are discovering various hindrance materials and conducting joint research through partnerships with researchers and AI specialists. In the future, we plan to further strengthen the competitiveness of open innovation by strengthening the expertise of the two teams and creating mutual synergy through organic connections.

Open Innovation Achievements and Goals

Pharma Open Innovation Team is continuing joint research by focusing on the project as significant candidate substances have recently been derived from new drug development tasks such as anti-cancer and metabolic dysfunction fatty hepatitis.

A new AI-based drug developer, Standigm, has been conducting joint research since 2019 and plans to confirm the efficacy of candidate substances for metabolic dysfunction fatty hepatitis treatment in animal models. As the results of this task become more visible, additional resources and resources will be invested to accelerate. We have also added a new incurable disease treatment task, which is in the stage of screening candidate substances.

In addition, with Oncobix, an innovative new drug development company, we invested in equity in 2021 and kicked off joint research in 2022 to discover new drug candidates based on medical chemistry. We are currently undergoing efficacy evaluation tests in animal models and plans to confirm the efficacy of animal models and complete non-clinical toxicity verification within the year.



Strengthening Research Ethics

Animal Protection Policy

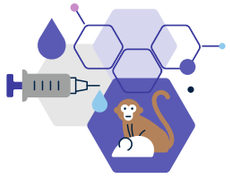
Pharmaceuticals | SK chemicals Pharma Research and Development Center adheres to the ethics of animal testing by reducing the number of animals used in the preclinical stage to evaluate the efficacy of drugs before and after clinical trials, as well as by minimizing the pain of animals, through regular education and compliance with relevant laws.

Open Innovation Team introduced the insilico screening method using AI into the new drug development process, making it possible to predict the drug efficacy, toxicity, and pharmacokinetic information of the new drug candidate through the AI program, thereby increasing the accuracy of the selection of candidate substances. This enables us to minimize animal testing compared to the traditional drug development method.

Vaccine | SK bioscience conducts animal testing to verify the safety and efficacy of commercially produced products, including COVID-19 vaccines, and conducts non-clinical to clinical trials. Furthermore, we aim to implement a management system for ethical management during animal experimentation and provide corresponding training to increase the ethical awareness of those responsible for participating in the experiment.

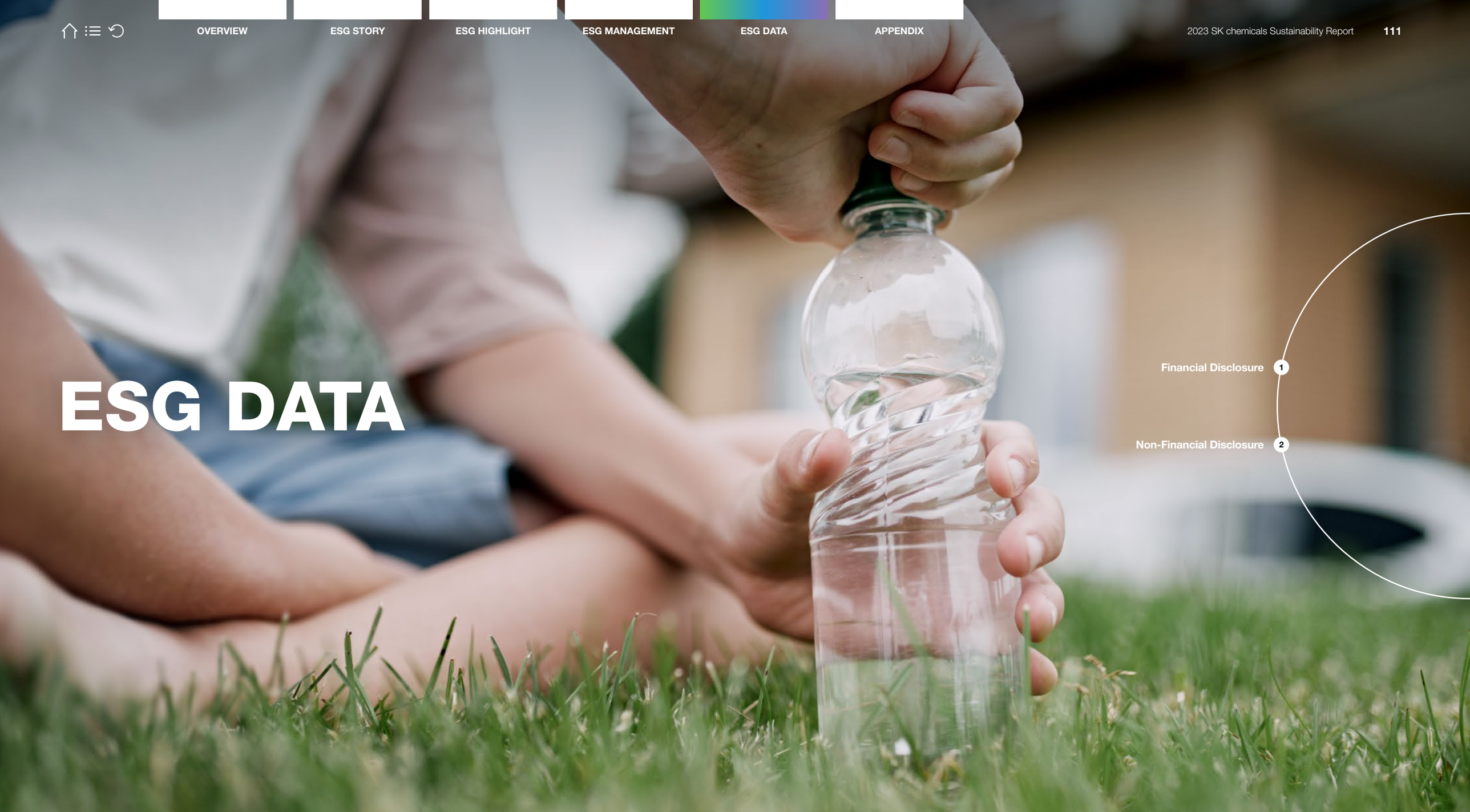
In order to ensure the ethical and reliable conduct of animal experiments, the Animal Experiment Ethics Committee is established in accordance with the standardized operation guidelines of the Institutional Animal Care and Use Committee (IACUC) as established by the Ministry of Food and Drug Safety. The Animal Protection Act and the Act on Experimental Animals are also observed. The IACUC conducts regular meetings twice a year to evaluate the process of using and managing experimental animals, seeks necessary advice, and supplements the management system's deficiencies through consultation after reviewing the standard operating procedure (SOP) and the implementation of related laws.

The Animal Experiment Ethics Committee supervises related education and training and deliberates on the ethical and scientific feasibility of animal experiments or guides through on-site visits. Photographic data is employed to conduct remote inspections in cases where it is impossible to conduct a physical inspection as a result of COVID-19. The Animal Experiment Ethics Committee is in the process of deliberating on an animal experiment plan in accordance with the 3R (Replacement, Reduction, and Reflection) principle. The committee is approving an animal experiment plan that prioritizes methods of replacing animal experiments, thereby respecting the dignity of animal life. IACUC monitors the animal experiment process with researchers through Post-Approval Monitoring (PAM) to ensure the reliability and transparency of the experiment results, as well as the promotion of animal welfare. By regulating legal education on the handling of experimental animals and ethical content for those involved in animal experiments, as well as by participating in periodic human resources education, the significance of animal experiment ethics management is acknowledged.



Compliance with International Standards

The SK chemicals Research and Development Center is committed to the establishment of a global compliance system that prioritizes the practice of research ethics, equitable competition, and responsible marketing, in addition to quality and safety management. For instance, in 2022, we implemented Data Integrity (DI) to enhance the quality and reliability assurance system for pharmaceuticals. The initial implementation was finalized in 2023. Data completeness is a fundamental requirement of a drug quality system that ensures the integrity of drugs. Its purpose is to prevent manipulation by transparently managing data. Also, we are trying to systematically manage research outputs and digitize all data from the time of research commencement to the time of completion by introducing the Electronic Research Note (ELN). We are currently operating by appointing a manager to oversee the research institute. We intend to enhance research ethics by conducting research activities in compliance with DI regulations and reinforcing management measures.



ESG DATA

Financial Disclosure

Economic Value

Category			Unit	2021	2022	2023	Comment
Production volume	Green Chemical Business	Copolyester resin, DMT, etc.	ton	366,469	376,686	331,000	
		BON		13,058	10,758	11,000	
	Life Science Business	Vaccines	Batch	179	110	269	
		Tablets	Tablet	605,863,519	730,204,575	652,702,736	
		Patches	Patch	38,730,028	41,112,323	39,374,373	
Sales by business sector	Green Chemical Business	Copolyester resin, DMT, etc.	KRW 100 million	10,371	14,019	12,401	
	Life Science Business	Pharma		3,002	3,139	2,060	
		Vaccines		9,290	4,567	1,085	
	Other	Internal transactions (consolidation adjustment)		-1,766	-3,434	-2,661	
		Total Sales		20,896	18,292	12,884	
R&D investment	Green Chemical Business	Number of R&D employees	Person	122	119	119	
		R&D investment	KRW 100 million	243	258	281	
		Sales to R&D investment ratio	%	2.3	1.8	2.3	
		R&D investment in clean tech	KRW 100 million	80	108	129	
	Life Science Business (Pharma)	Number of R&D employees	Person	50	64	73	
		R&D investment	KRW 100 million	143	164	160	
		Sales to R&D investment ratio	%	4.8	5.2	7.8	
	Life Science Business (Vaccines)	Number of R&D employees	Person	208	289	319	
		R&D investment	KRW 100 million	474	591	857	
		Sales to R&D investment ratio	%	10.7	12.9	79.1	
Intellectual property rights	Applied	Patent-Domestic	Number	28	29	36	
		Patent-Overseas		79	54	84	
		Trademark-Domestic		10	18	3	
		Trademark-Overseas		14	-	2	
	Registered	Patent-Domestic		13	23	30	
		Patent-Overseas		47	65	77	
		Trademark-Domestic		8	2	21	
		Trademark-Overseas		15	3	-	

Summary of Consolidated Financial Information

Category		Unit	2021	2022	2023	Comment
Financial	[Current assets]	KRW 1 million	2,784,059	2,518,694	2,204,427	
	- Quick assets		2,434,759	2,035,941	1,827,509	
	- Inventories		349,299	482,753	376,918	
	[Non-current assets]		1,171,574	1,426,989	1,954,348	
	- Investments in associates and joint ventures		16,328	13,309	10,418	
	- Tangible properties		999,246	1,193,131	1,601,634	
	- Intangible assets		44,422	51,777	54,204	
	- Other non-current assets		111,577	168,772	288,093	
	Total assets		3,955,632	3,945,683	4,158,775	
	[Current liabilities]		1,086,649	1,058,819	830,211	
	[Non-current liabilities]		302,246	177,958	652,790	
	Total liabilities		1,388,895	1,236,777	1,483,001	
	[Equity attributable to owners of the parent]		2,053,542	2,146,699	2,118,704	
	- Issued capital		98,681	98,794	98,794	
	- Consolidated capital surplus		1,192,769	1,199,035	1,212,422	
	- Consolidated other capital items		(21,346)	(21,645)	(21,645)	
	- Consolidated accumulated other comprehensive loss		2,937	1,918	(37,378)	
	- Consolidated retained earnings		780,501	868,597	866,511	
	[Non-controlling interests]		513,196	562,207	557,070	
	Total equity		2,566,737	2,708,906	2,675,774	
	Total liability and equity		3,955,632	3,945,683	4,158,775	
	Number of companies included in the consolidation		9	10	11	
Profit & Loss	Sales		2,089,632	1,829,191	1,748,778	
	Operating income (Loss)		555,186	230,481	83,302	
	Net income (loss) before income taxes		538,622	236,701	52,419	
	Consolidated net profit (loss) for the year		268,743	231,476	47,838	
	Attribution of consolidated net profit (loss) for the year					
	Owners of parent		168,140	191,266	39,864	
	Non-controlling interests		100,604	40,210	7,974	
	Earnings per share attributable to owners of the parent					
	Earnings per share for common stock (unit: KRW)		8,586	9,910	2,072	
	Diluted earnings per share for common stock (unit: KRW)		8,636	9,960	2,071	
	Earnings per share for preferred stock (unit: KRW)		13,921	9,870	2,122	

Non-Financial Disclosure

* The reporting scope of non-financial performance is based on the headquarters and research institute (Eco Lab), Ulsan, and Cheongju (S House) business sites operated by SK chemicals Co., Ltd., In some cases, information from major domestic subsidiaries, SK bioscience and SK multi utility, is included and in this case, it is indicated separately.

Environmental I General Environment

Environmental Investment

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)		KRW 100 million	62.8	118.5	105.5	
SK chemicals (Only)	Total		59.6	116.0	102.1	
	Improvement of air/water quality emission facilities, etc.		7.3	47.9	30.7	
	Building solar power generators, etc.		0	20.3	1.1	
	Other		52.3	47.8	70.3	
SK bioscience	Total		3.2	2.5	3.4	

Violation of Environmental Laws and Regulations

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total Number of violations[1]	Number	0	0	0	
	Total amount of penalty and fine (Above $10,000)[1]	KRW 1 million	0	0	0	

1) Total number of violations and total amount of penalty and fine data for 2022 have been corrected for prior year disclosures due to adjustments to the calculation basis

Eco-friendly Vehicles[1]

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Number of eco-friendly vehicles	Number	2	8	10	
	Number of total vehicles		66	51	78	
	Percentage of eco-friendly vehicles	%	3.0	15.7	12.8	
SK chemicals (Only)	Number of eco-friendly vehicles	Number	1	5	6	
	Number of total vehicles		37	35	33	
	Percentage of eco-friendly vehicles	%	3	14	18	
SK bioscience	Number of eco-friendly vehicles	Number	1	3	3	
	Number of total vehicles		29	16	44	
	Percentage of eco-friendly vehicles	%	3	25	7	
SK multi utility	Number of eco-friendly vehicles	Number	0	0	1	
	Number of total vehicles		0	0	1	
	Percentage of eco-friendly vehicles	%	0	0	100	

1) Eco-friendly vehicles: based on electric, hydrogen, and hybrid vehicles

Environmental I Energy

Energy Consumption[1]

Business Site	Category	Unit	2021	2022	2023	Comment
Total[2] (Including subsidiaries)	Total energy use	TJ	7,846	7,497	6,974	
	Direct use of energy sources		5,380	4,851	4,576	
	Liquefied natural gas (LNG)		790	821	676	
	Propane		462	428	297	
	Gasoline		4	5	4	
	Diesel		5	12	18	
	Hydrogen		0	0	52	Added in 2023
	Other		4,119	3,585	3,529	
	Indirect use of energy sources		2,466	2,646	2,398	
	Electricity (based on regional infrastructure)		2,398	2,593	2,251	
	Steam		68	53	147	
	Other		0	0	0	
	Energy use intensity (Per KRW 100 million sales)[3]	TJ / KRW 100 million	0.4	0.4	0.4	
SK chemicals (Only)	Total energy use	TJ	5,232	4,852	4,104	
	Direct use of energy sources		1,696	1,393	1,161	
	Liquefied natural gas (LNG)		697	723	565	
	Propane		462	428	297	
	Gasoline		2	3	3	
	Diesel		2	2	6	
	Hydrogen		0	0	52	Added in 2023
	Other		533	237	238	
	Indirect use of energy sources		3,536	3,459	2,943	
	Electricity (based on regional infrastructure)		1,519	1,463	1,307	
	Steam		2,017	1,996	1,636	
	Other		0.	0	0	
	Energy use intensity (Per KRW 100 million sales)[3]	TJ / KRW 100 million	0.5	0.4	0.3	

1) SK chemicals' energy consumption data for 2021 and 2022 has been corrected for prior year disclosures due to adjustments to the calculation basis
2) Emissions overlapping between SK chemicals and its subsidiaries are excluded (SK bioscience for Scope 1 and SK bioscience and SK multi utility for Scope 2 are excluded)
3) Energy use intensity is calculated based on consolidated sales for the total company, and based on separate sales for SK chemicals, SK bioscience, and SK multi utility

Environmental I Energy

Energy Consumption[1)]

Business Site	Category	Unit	2021	2022	2023	Comment
SK bioscience	Total energy use	TJ	348	384	401	
	Direct use of energy sources		95	104	115	
	Liquefied natural gas (LNG)		93	99	114	
	Gasoline		2	2	1	
	Diesel		0	3	0	
	Other		0	0	0	
	Indirect use of energy sources		252	280	285	
	Electricity (based on regional infrastructure)		250	273	279	
	Steam		2	7	6	
	Other		0	0	0	
	Energy use intensity (Per KRW 100 million sales)[2)]	TJ / KRW 100 million	0.04	0.08	0.37	
SK multi utility	Total energy use	TJ	4,270	4,251	4,014	
	Direct use of energy sources		3,589	3,355	3,303	
	Liquefied natural gas (LNG)		0	0	0	
	Gasoline		0.000	0.016	0.016	
	Diesel		3	7	12	
	Other		3,586	3,349	3,290	
	Indirect use of energy sources		681	895	711	
	Electricity (based on regional infrastructure)		634	868	677	
	Steam		47	28	34	
	Other		0	0	0	
	Energy use intensity (Per KRW 100 million sales)[2)]	TJ / KRW 100 million	-	3.1	3.0	

1) SK chemicals' energy consumption data for 2021 and 2022 has been corrected for prior year disclosures due to adjustments to the calculation basis
2) Energy use intensity is calculated based on consolidated sales for the total company, and based on separate sales for SK chemicals, SK bioscience, and SK multi utility

Renewable Energy Generation

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total renewable energy use	MWh	8	9	1,361	
	Solar power		8.14	8.50	1,361	
	Proportion of renewable energy	%	0	0	1	

External Energy Sales

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Total external electricity sales	TJ	1,634	1,565	1,405	
	Total external heat sales		4,989	4,799	3,920	
	Total external energy sales		6,623	6,364	5,325	
SK chemicals (Only)	Total external energy sales		0	0	0	
	Electricity		0	0	0	
	Heat		0	0	0	
SK bioscience	Total external energy sales		0	0	0	
	Electricity		0	0	0	
	Heat		0	0	0	
SK multi utility	Total external energy sales		6,623	6,364	5,325	
	Electricity		1,634	1,565	1,405	
	Heat		4,989	4,799	3,920	

Environmental I Greenhouse Gas

GHG Emissions (Scope 1&2)

Business Site	Category	Unit	2021	2022	2023	Comment
Total[1] (Including subsidiaries)	Total GHG emissions (Scope 1&2)	tCO_2eq	512,554	497,977	477,747	
	Direct GHG emissions (Scope 1)		397,006	372,861	357,201	
	Indirect GHG emissions (Scope 2)		115,548	125,116	120,546	
	Total GHG emissions intensity (Per KRW 100 million sales)	tCO_2eq/KRW 100 million	24.5	27.2	27.3	
SK chemicals (Only)	Total GHG emissions (Scope 1&2)	tCO_2eq	266,423	266,898	236,332	
	Direct GHG emissions (Scope 1)		64,462	63,053	48,902	
	Indirect GHG emissions (Scope 2)		201,961	203,847	187,434	
	Total GHG emissions intensity (Per KRW 100 million sales)	tCO_2eq/KRW 100 million	24.4	21.2	19.2	
SK bioscience	Total GHG emissions (Scope 1&2)	tCO_2eq	16,927	18,491	19,615	
	Direct GHG emissions (Scope 1)		4,870	5,173	5,863	
	Indirect GHG emissions (Scope 2)		12,059	13,320	13,753	
	Total GHG emissions intensity (Per KRW 100 million sales)	tCO_2eq/KRW 100 million	1.8	4.0	18.1	
SK multi utility	Total GHG emissions (Scope 1&2)	tCO_2eq	358,057	346,243	334,853	
	Direct GHG emissions (Scope 1)		327,703	304,712	302,460	
	Indirect GHG emissions (Scope 2)		30,355	41,531	32,393	
	Total GHG emissions intensity (Per KRW 100 million sales)	tCO_2eq/KRW 100 million	3,254.3	248.7	246.6	

1) Excludes duplicated emissions between SK chemicals and its subsidiaries (Scope 1 : SK bioscience : excluding duplication, Scope 2 : SK bioscience, SK multi utility excluding duplication)

GHG Emissions (Scope 3)

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total GHG emissions (Scope 3)[1]	tCO_2eq	1,078,668	1,089,040	1,007,943	
	Purchased products and services		210,236	220,997	246,771	
	Capital goods		29,193	38,543	544	
	Fuel and energy use		21,763	9,381	41,382	
	Upstream transportation		4,143	4,732	14,999	
	Operational waste		31,348	4,403	7,393	
	Business trips		243	880	1,021	
	Commuting		2,636	1,468	1,295	
	Processing products		82,867	61,774	73,541	
	Product waste		421,235	514,718	380,224	
	Investment		275,004	232,144	240,775	

1) SK multi utility GHG emissions that are already included in Scope 2 of SK chemicals GHG emissions 128,501tCO_2eq in 2021 / 132,932tCO_2eq in 2022 / 112, 227tCO_2eq in 2023 are removed

Greenhouse Gas Reductions

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total GHG reductions	tCO_2eq	24,500	7,110	17,700	
	Using CHDM Off gas		0	810	2,100	
	Improving DMT process		24,500	6,300	12,600	
	DMT Boiler Hydrogen Mixing		-	-	3,000	

Environmental I Water Resources

Water Usage and Wastewater

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Water usage	ton	134,613,774	139,748,816	130,479,351	
	Total water intake	ton	4,778,364	4,654,520	3,920,478	
	Tap water and industrial water	ton	4,774,947	4,650,302	3,915,411	
	Groundwater	ton	3,417	4,218	5,067	
	Reuse and recycling[1]	ton	129,835,410	135,094,296	126,558,874	
	Water recycling rate	%	96.5	96.7	97.0	
	Water discharge	ton	1,447,470	1,547,103	1,207,415	
	Water intake intensity (Per KRW 100 million sales)	ton/KRW 100 million	229	254	224	
SK chemicals Headquarters (Eco Lab)	Water usage	ton	91,366	95,680	87,312	
	Total water intake	ton	69,813	70,728	66,735	Water intake source : Han River tap water
	Tap water and industrial water	ton	66,396	66,510	61,668	
	Groundwater	ton	3,417	4,218	5,067	
	Reuse and recycling	ton	21,553	24,952	20,577	
	Water recycling rate	%	24%	26%	24%	
	Water discharge	ton	29,733	32,614	33,592	
	Water intake intensity (Per KRW 100 million sales)	ton/KRW 100 million	-	-	-	
SK chemicals Ulsan Plant	Water usage	ton	134,304,356	139,425,061	130,137,267	Including SK multi utility
	Total water intake	ton	4,523,230	4,390,629	3,634,011	Water intake source : Nakdong River source water
	Tap water and industrial water	ton	4,523,230	4,390,629	3,634,011	
	Groundwater	ton	-	-	-	
	Reuse and recycling	ton	129,781,126	135,034,432	126,503,257	
	Water recycling rate	%	96.6%	96.9%	97.2%	
	Water discharge	ton	1,290,883	702,451	399,576	
	Water intake intensity (Per KRW 100 million sales)	ton/KRW 100 million	-	-	-	

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals Cheongju Plant	Water usage	ton	46,601	48,681	48,949	
	Total water intake	ton	46,601	48,681	48,949	Water intake source : Daecheong Lake Metropolitan tap water
	Tap water and industrial water	ton	46,601	48,681	48,949	
	Groundwater	ton	0	0	0	
	Reuse and recycling	ton	0	0	0	
	Water recycling rate	%	0	0	0	
	Water discharge	ton	23,935	27,714	29,022	
	Water intake intensity (Per KRW 100 million sales)	ton/KRW 100 million	0	0	0	
SK bioscience (Andong Plant)	Water usage	ton	171,451	179,394	205,823	
	Total water intake	ton	138,720	144,482	170,783	Water intake source : Andong Lake
	Tap water and industrial water	ton	138,720	144,482	170,783	
	Groundwater	ton	0	0	0	
	Reuse and recycling	ton	32,731	34,912	35,040	
	Water recycling rate	%	19.1	19.5	20.5	
	Water discharge	ton	100,917	99,946	121,542	
	Water intake intensity (Per KRW 100 million sales)	ton/KRW 100 million	15	32	157	
SK multi utility (Ulsan Plant)	Water usage	ton	0	0	0	
	Total water intake	ton	0	0	0	
	Tap water and industrial water	ton	-	-	-	
	Groundwater	ton	-	-	-	
	Reuse and recycling	ton	-	-	-	
	Water recycling rate	%	-	-	-	
	Water discharge	ton	2,002	684,378	623,683	
	Water intake intensity (Per KRW 100 million sales)	ton/KRW 100 million	0	0	0	

1) Water reuse and recycling is calculated by summing reused and recycled water from power and production

Environmental I Water Pollutant Emissions

Water Pollutant Emissions

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Water pollutant emissions	ton	84.6	67.7	48.0	
	BOD		34.9	23.5	14.2	
	COD		37.9	33.6	18.5	
	SS		11.3	10.2	6.4	
	TOC		-	19.1	8.8	
	Water pollutant emissions intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.004	0.004	0.003	
SK chemicals (Only)	Water pollutant emissions	ton	27.6	17.0	12.7	
	BOD		2.8	1.9	1.5	
	COD		20.4	12.0	6.4	
	SS		3.8	2.7	1.1	
	TOC		-	7.9	3.7	
	Water pollutant emissions intensity (Per KRW 100 million sales)[1]	ton/KRW 100 million	0.003	0.001	0.001	
SK bioscience[2]	Water pollutant emissions	ton	57.0	36.5	24.2	
	BOD		32.1	20.1	12	
	COD		17.5	10.4	7	
	SS		7.5	6.0	5	
	TOC		-	-	-	
	Water pollutant emissions intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.006	0.008	0.022	
SK multi utility	Water pollutant emissions	ton	0.038	14.1	6.0	
	BOD		0.0	1.4	0.6	
	COD		0.030	11.1	5.0	
	SS		0.0	1.5	0.3	
	TOC		-	11.3	5.1	
	Water pollutant emissions intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.0003	0.010	0.004	

1) Calculated based on the sum of SK chemicals headquarters and lab, Ulsan plant, and Cheongju plant
2) COD measurement is being managed by a separate inflow approval standard set by Andong City Hall

Concentration of Water Pollutants Emissions

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals HQ (Eco Lab)	BOD	ppm	6.4	5.7	8.5	
	COD		12.9	7.1	11.1	
	SS		13.9	5.7	4.8	
	TOC		-	9.4	15.7	
SK chemicals Ulsan Plant	BOD		1.8	2.1	1.6	
	COD		14.8	16.3	12.6	
	SS		2.0	2.3	0.8	
	TOC		-	1.7	8.2	
SK chemicals Cheongju Plant	BOD		14.0	11.5	6.8	
	COD		50.0	16.0	26.3	
	SS		42.0	49.7	28.6	
	TOC		31.2	16.0	13.6	
SK bioscience (Andong Plant)	BOD		317.9	201.4	99.4	
	COD		173.0	104.1	58.2	
	SS		74.0	59.8	41.4	
	TOC		-	-	-	
SK multi utility (Ulsan Plant)	BOD		1.8	2.1	1.6	
	COD		14.8	16.3	12.6	
	SS		2.0	2.3	0.8	
	TOC		-	10.6	8.2	

Environmental I Resource Use and Waste Management

Use of Raw Materials and Renewable Materials[1)]

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Total raw material use	ton	536,223	545,142	491,291	
	Renewable material use		72,027	76,729	69,903	
	Proportion of renewable material use	%	13	14	14	
SK chemicals (Only)	Total raw material use	ton	514,617	350,044	298,591	
	Renewable material use		64,612	10,726	5,651	In 2021, wood chip consumption is included
	Proportion of renewable material use	%	12.6	3.1	1.9	
SK bioscience	Total raw material use	ton	524	292	193	
	Renewable material use		0	0	0	
	Proportion of renewable material use	%	0	0	0	
SK multi utility	Total raw material use	ton	13,667	128,803	128,254	
	Renewable material use		7,415	66,004	64,253	
	Proportion of renewable material use	%	35	34	33	

1) Renewable raw material use and proportion of use data for 2021 and 2022 have been corrected for prior year disclosures due to adjustments to the calculation basis

Waste Generation and Recycling

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Total waste generation (General + Designated)	ton	39,086	37,442	34,455	
	Amount of general waste generated		27,017	25,370	24,494	
	Recycled or reused		23,499	23,732	23,340	
	Landfilled		3,169	1,282	821	
	Incinerated with energy recovery		219	187	177	
	Incinerated without energy recovery		130	169	155	
	Other methods of disposal		0	0	0	
	Amount of designated waste generated		12,069	12,072	9,961	
	Recycled or reused		8,780	9,204	5,995	
	Landfilled		451	513	11	
	Incinerated with energy recovery		1,688	1,070	1,848	
	Incinerated without energy recovery		1,143	1,281	2,107	
	Other methods of disposal		9	4	0	
	Waste generation intensity (Per KRW 100 million sales)	ton/KRW 100 million	1.9	2.0	2.0	
	Waste recycling volume	ton	32,279	32,936	29,335	
	Waste recycling rate	%	83	88	85	
SK chemicals (Only)	Total waste generation (General + Designated)	ton	19,331	17,316	14,149	
	Amount of general waste generated		7,314	5,289	4,271	
	Recycled or reused		5,799	4,235	3,636	
	Landfilled		1,374	882	480	
	Incinerated with energy recovery		11	4	0	
	Incinerated without energy recovery		130	169	155	
	Other methods of disposal		0	0	0	
	Amount of designated waste generated		12,016	12,027	9,878	
	Recycled or reused		8,780	9,204	5,995	
	Landfilled		434	513	11	
	Incinerated with energy recovery	ton	1,688	1,068	1,848	
	Incinerated without energy recovery		1,107	1,238	2,024	
	Other methods of disposal		9	4	0	
	Waste generation intensity (Per KRW 100 million sales)	ton/KRW 100 million	1.8	1.4	1.1	
	Waste recycling volume	ton	14,579	13,438	9,631	
	Waste recycling rate	%	75	78	68	

Environmental I Resource Use and Waste Management

Waste Generation and Recycling

Business Site	Category	Unit	2021	2022	2023	Comment
SK bioscience	Total waste generation (General + Designated)	ton	296	396	433	
	Amount of general waste generated		260	351	350	
	Recycled or reused		52	168	172	
	Landfilled		0	0	0	
	Incinerated with energy recovery		208	183	177	
	Incinerated without energy recovery		0	0	0	
	Other methods of disposal		0	0	0	
	Amount of designated waste generated		36	45	83	
	Recycled or reused		0	0	0	
	Landfilled		0	0	0	
	Incinerated with energy recovery		0	2	0	
	Incinerated without energy recovery		36	43	83	
	Other methods of disposal		0	0	0	
	Waste generation intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.0	0.1	0.4	
	Waste recycling volume	ton	52	168	172	
	Waste recycling rate	%	18	42	40	
SK multi utility	Total waste generation (General + Designated)	ton	19,459	19,730	19,873	
	Amount of general waste generated		19,442	19,730	19,873	
	Recycled or reused		17,648	19,330	19,532	
	Landfilled		1,794	400	341	
	Incinerated with energy recovery		0	0	0	
	Incinerated without energy recovery		0	0	0	
	Other methods of disposal		0	0	0	
	Amount of designated waste generated		17	0	0	
	Recycled or reused		0	0	0	
	Landfilled		17	0	0	
	Incinerated with energy recovery		0	0	0	
	Incinerated without energy recovery		0	0	0	
	Other methods of disposal		0	0	0	
	Waste generation intensity (Per KRW 100 million sales)	ton/KRW 100 million	177	14.2	14.6	
	Waste recycling volume	ton	17,648	19,330	19,532	
	Waste recycling rate	%	91	98	98	

Environmental I Air Pollutant Emissions

Air Pollutant Emissions[1)]

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Total dust emissions	ton	9.9	9.3	8.8	
	Emissions Intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.0005	0.0005	0.0005	
	Total sulfur oxides (SOx) emissions	ton	244.1	171.2	142.6	
	Emissions Intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.0117	0.0094	0.0082	
	Total nitrogen oxides (NOx) emissions	ton	356.2	266.3	209.1	
	Emissions Intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.0170	0.0146	0.0120	
	Total volatile organic compounds (VOCs) emissions	ton	6.0	6.9	4.2	
	Emissions Intensity (Per KRW 100 million sales)	ton/KRW 100 million	0.0003	0.0004	0.0002	
SK chemicals (Only)	Total dust emissions	ton	8.9	2.7	3.3	
	Total sulfur oxides (SOx) emissions		225.2	2.6	0.1	
	Total nitrogen oxides (NOx) emissions		326.5	66.0	35.0	
	Total volatile organic compounds (VOCs) emissions		6.0	6.9	4.2	
SK bioscience (Andong Plant)	Total dust emissions		0.06	0.06	0.06	
	Total sulfur oxides (SOx) emissions		0.0	0.0	0.0	
	Total nitrogen oxides (NOx) emissions		7.9	8.3	9.5	
	Total volatile organic compounds (VOCs) emissions		0.0	0.0	0.0	
SK multi utility (Ulsan Plant)	Total dust emissions		0.9	6.5	5.5	
	Total sulfur oxides (SOx) emissions		18.9	168.6	142.6	
	Total nitrogen oxides (NOx) emissions		21.8	191.9	164.6	
	Total volatile organic compounds (VOCs) emissions		0	0	0	

1) Total dust emissions and emissions intensity data for 2022 have been corrected for prior year disclosures due to a calculation error

Environmental I Air Pollutant Emissions

Concentration of Air Pollutants Emissions

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals HQ (Eco Lab)	Dust	mg/Sm^3	2.2	7.9	2.3	
	Sulfur oxides (SOx)	ppm	0.3	1.3	0.0	
	Nitrogen oxides (NOx)		30.2	16.3	30.3	
	Volatile organic compounds (VOCs)		0	0	0	
SK chemicals Ulsan Plant	Dust	mg/Sm^3	3.6	2.6	3.3	
	Sulfur oxides (SOx)	ppm	32.5	2.8	0.2	
	Nitrogen oxides (NOx)		43.3	40.0	29.1	
	Volatile organic compounds (VOCs)		0.5	0.2	0.2	
SK chemicals Cheongju Plant	Dust	mg/Sm^3	3.0	2.1	2.9	
	Sulfur oxides (SOx)	ppm	0	0	0	
	Nitrogen oxides (NOx)		30.5	23.7	24.4	
	Volatile organic compounds (VOCs)		61.5	73.4	43.7	
SK bioscience (Andong Plant)	Dust	mg/Sm^3	2.5	4.0	0.6	
	Sulfur oxides (SOx)	ppm	11.0	1.7	0.0	
	Nitrogen oxides (NOx)		38.3	38.0	35.0	
	Volatile organic compounds (VOCs)		0.0	0.0	0.0	
SK multi utility (Ulsan Plant)	Dust	mg/Sm^3	3.6	2.8	2.2	
	Sulfur oxides (SOx)	ppm	20.2	18.6	14.0	
	Nitrogen oxides (NOx)		40.8	37.2	29.7	
	Volatile organic compounds (VOCs)		0	0	0	

Social I Local Community

Social Value

Business Site	Category	Unit	2021	2022	2023	Comment
Indirect economic contributions	Employment	KRW 100 million	2,199	2,339	2,504	
	Dividend		588	289	126	
	Tax payment		2,180	446	113	
	Total		4,967	3,074	2,743	
Environmental performance	Products/ services		526	531	401	
	Environment (Process)		-408	-316	-326	
	Total		118	215	75	
Social performance	Quality of life		1,495	434	549	
	Labor		35	38	63	
	Win-win growth		13	17	18	
	Social contributions		67	96	77	
	Total		1,610	585	707	

Investment and Support for Social Contribution

Business Site	Category	Unit	2021	2022	2023	Comment
Total (Including subsidiaries)	Social contribution activity costs	KRW 100 million	45.6	70.1	54.4	
SK chemicals (Only)	Social contribution activity costs		20.5	18.5	19.4	
	Participating volunteers	Person	201	780	996	
	Volunteer hours per person	Hour	8.1	5.3	6.0	
	Number of Happy Green School environmental education sessions	Person	3,822	4,586	4,414	
	Hope Maker registrations	%	84	70	70	
SK bioscience	Social contribution activity costs	KRW 100 million	25.1	51.6	35.0	

Social I Health/Safety

General Health/Safety

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Process Safety Incidents Count (PSIC)	Number	6	2	0	
	Process Safety Total Incident Rate (PSTIR)	%	0.34	0.12	0	
	Process Safety Incident Severity Rate (PSISR)		2.59	1.18	0	
	Number of transport incidents	Number	0	0	0	

Work-related Diseases

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Number of occurrence of work-related diseases	Number	0	0	0	
SK bioscience	Number of occurrence of work-related diseases		0	0	0	
SK multi utility	Number of occurrence of work-related diseases		-	0	0	

Industrial Disasters

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total proportion of industrial disasters	%	0	0.11	0	
	Total number of serious accidents	Number	0	0	0	
SK chemicals (Only)_ Business partners	Total proportion of industrial disasters	%	0	0.26	0	
	Total number of serious accidents	Number	0	0	0	
SK bioscience	Total proportion of industrial disasters	%	0.10	0	0	
	Total number of serious accidents	Number	0	0	0	
SK multi utility	Total proportion of industrial disasters	%	-	0	0	
	Total number of serious accidents	Number	-	0	0	

Work-related Injuries

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Number of deaths	Person	0	0	0	
	Number of accidents	Number	6	9	5	
	Total Recordable Injury Rate (TRIR)	%	0.34	0.53	0	
	Lost-Time Injuries Rate (LTIR)		0.23	0.12	0	
SK chemicals (Only)_ Business partners	Number of deaths	Person	0	0	0	
	Number of accidents	Number	2	1	0	
	Total Recordable Injury Rate (TRIR)	%	0	0.27	0	
	Lost-Time Injuries Rate (LTIR)		0	0.27	0	
SK bioscience	Number of deaths	Person	0	0	0	
	Number of accidents	Number	1	0	0	
	Total Recordable Injury Rate (TRIR)	%	0.49	0.00	0.48	
	Lost-Time Injuries Rate (LTIR)		0.16	0	0	
SK multi utility	Number of deaths	Person	-	0	0	
	Number of accidents	Number	-	0	0	
	Total Recordable Injury Rate (TRIR)	%	-	0	0	
	Lost-Time Injuries Rate (LTIR)		-	0	0	

Social I Labor Status

Employees

Business Site	Category		Unit	2021	2022	2023	Comment
SK chemicals (Only)	Workforce composition		Person	1,439	1,425	1,418	
	Gender	Male		1,145	1,112	1,087	
		Female		294	313	331	
	Employment type[1]	Permanent employee		1,351	1,343	1,344	
		Contract employee		88	82	74	
	Age	Under 30		172	183	189	
		30 to 49 years old		985	1,002	1,017	
		50 and above		282	240	212	
	Diversity	Disabled		44	43	50	
		Veterans		26	26	25	
		Foreigners		1	1	1	
	Hiring			128	197	143	
	Gender	Male		99	125	82	
		Female		29	72	61	
	Age	Under 30		49	73	74	
		30 to 49 years old		61	111	63	
		50 and above		18	13	6	
	Position	Executives		0	4	1	
		Middle managers (PL, team leaders, commissioners)		1	1	6	
		Non-managers		127	192	136	
	Percentage of open position filled by internal candidates		%	2	1	2	
	Employee Turnover		Person	280	160	130	
	Gender	Male		233	110	91	
		Female		47	50	39	
	Age	Under 30		28	33	35	
		30 to 49 years old		125	79	59	
		50 and above		127	48	36	

Business Site	Category		Unit	2021	2022	2023	Comment
SK chemicals (Only)	Position	Executives	Person	3	3	2	
		Middle managers (PL, team leaders, commissioners)		11	5	3	
		Non-managers		266	152	125	
	Turnover rate	Total	%	19	11	9	
		Voluntary[2]		17.9	10.3	7.7	
SK bioscience	Workforce composition		Person	1,007	1,079	1,101	
	Gender	Male		636	660	669	
		Female		371	419	432	
	Employment type	Permanent employee		675	900	971	
		Contract employee		332	179	130	
	Age	Under 30		546	464	349	
		30 to 49 years old		422	565	697	
		50 and above		39	50	55	
	Diversity	Disabled		43	36	36	
		Veterans		1	1	1	
	Hiring			603	249	158	
	Gender	Male		363	130	103	
		Female		240	119	55	
	Age	Under 30		272	80	46	
		30 to 49 years old		310	158	110	
		50 and above		21	11	2	
SK multi utility	Workforce composition			70	81	89	
	Gender	Male		67	78	86	
		Female		3	3	3	
	Employment type	Permanent employee		63	70	76	
		Contract employee		7	11	13	

1) Permanent employee and contract employee data for 2022 has been corrected for prior year disclosures due to adjustments to the calculation basis
2) Voluntary turnover rate(= Voluntary retirees/ Total employees)

Social I Labor Status

Employees

Business Site	Category		Unit	2021	2022	2023	Comment
SK multi utility	Age	Under 30	Person	6	8	10	
		30 to 49 years old		33	41	44	
		50 and above		31	32	35	
	Diversity	Disabled		1	1	1	
		Veterans		0	0	0	
		Foreigners		0	0	0	
	Hiring			70	13	12	
	Gender	Male		67	13	11	
		Female		3	0	1	
	Age	Under 30		6	4	7	
		30 to 49 years old		33	8	4	
		50 and above		31	1	1	
	Position	Executives		1	0	0	
		Middle managers (PL, team leaders, commissioners)		4	0	0	
		Non-managers		65	13	12	
	Percentage of open position filled by internal candidates		%	96	0	8	
	Employee Turnover		Person	0	2	5	
	Gender	Male		0	2	4	
		Female		0	0	1	
	Age	Under 30		0	0	2	
		30 to 49 years old		0	2	2	
		50 and above		0	0	1	
	Position	Executives		0	0	0	
		Middle managers (PL, team leaders, commissioners)		0	0	0	
		Non-managers		0	2	5	
	Turnover rate	Total	%	0	2.5	5.6	
		Voluntary[1]		0	2.5	4.6	

1) Voluntary turnover rate(= Voluntary retirees/ Total employees)

Female Talents

Business Site	Category		Unit	2021	2022	2023	Comment
SK chemicals (Only)	Executives	Number of female executives	Person	0	1	2	
		Proportion of female executives	%	0	4	6	
	Managers (PL, Team leaders, commissioners)	Number of female managers	Person	118	122	123	
		Proportion of female managers	%	9	13	15	
	Non-managers	Number of female junior managers	Person	285	300	314	
		Proportion of female junior managers	%	22	24	25	
	STEM members (Members of R&D department)	Number of female employees	Person	62	72	78	
		Proportion of female employees	%	41	49	54	
	Managers in revenue-generating departments (Marketing department PL, team leaders, commissioners)	Number of female employees	Person	18	19	25	
		Proportion of female employees	%	6	6	7	
SK bioscience	Executives	Number of female executives	Person	6	8	7	
		Proportion of female executives	%	19	21	18	
	Managers (PL, Team leaders, commissioners)	Number of female managers	Person	20	27	24	
		Proportion of female managers	%	21	23	18	
	Non-managers	Number of female junior managers	Person	345	384	401	
		Proportion of female junior managers	%	39	42	43	
	STEM members (Members of R&D department)	Number of female employees	Person	9	12	10	
		Proportion of female employees	%	31	32	31	
	Managers in revenue-generating departments (Marketing department PL, team leaders, commissioners)	Number of female employees	Person	3	27	20	
		Proportion of female employees	%	50	39	28	
SK multi utility	Executives	Number of female executives	Person	0	0	0	
		Proportion of female executives	%	0	0	0	
	Managers (PL, Team leaders, commissioners)	Number of female managers	Person	0	0	0	
		Proportion of female managers	%	0	0	0	
	Non-managers	Number of female junior managers	Person	3	3	0	
		Proportion of female junior managers	%	5	4	0	
	STEM members (Members of R&D department)	Number of female employees	Person	0	0	0	
		Proportion of female employees	%	0	0	0	
	Managers in revenue-generating departments (Marketing department PL, team leaders, commissioners)	Number of female employees	Person	1	1	1	
		Proportion of female employees	%	2	2	2	

Social I Welfare Benefits

Childcare Leave

Business Site	Category		Unit	2021	2022	2023	Comment
SK chemicals (Only)	Number of childcare leave users	Male	Person	4	12	8	
		Female		17	25	25	
		Total		21	37	33	
	Number of returnees after childcare leave	Male		6	7	6	
		Female		7	14	16	
		Total		13	21	22	
	Number of returnees who have worked for more than 12 months	Male		4	6	3	
		Female		5	8	4	
		Total		9	14	7	
	Percentage of returnees who have worked for more than 12 months	Male		67	86	50	
		Female		71	57	25	
		Total		69	71	38	

Pay

Business Site	Category		Unit	2021	2022	2023	Comment
SK chemicals (Only)	Gender pay ratio (Basic salary)	Executives	%	-	13	75	Ratio of average base salary for women to average base salary for men
		Managers		97	103	90	
		Non-mangers		78	79	75	
		Total		71	69	70	
SK bioscience	Gender pay ratio (Basic salary)	Executives		92	110	99	
		Managers		98	99	103	
		Non-mangers		100	100	102	
		Total		90	90	88	
SK multi utility	Gender pay ratio (Basic salary)	Executives		-	-	-	
		Managers		-	-	-	
		Non-mangers		37	43	48	
		Total		37	43	48	

Retirement Pension

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Retirement pension operation amount (DB, defined benefit type)	KRW 100 million	1,078	1,237	1,375	
	Number of retirement pension subscribers (DB, defined benefit type)	Person	1,182	1,072	1,283	
SK bioscience	Retirement pension operation amount (DB, defined benefit type)	KRW 100 million	208	396	600	
	Number of retirement pension subscribers (DB, defined benefit type)	Person	301	713	1,072	
SK multi utility	Retirement pension operation amount (DB, defined benefit type)	KRW 100 million	43	58	72	
	Number of retirement pension subscribers (DB, defined benefit type)	Person	66	77	86	

Social I Education and Evaluation

Education Hours

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total education hours	Hour	76,659	82,134	108,930	
	Education hours per person		53	58	77	
SK bioscience	Total education hours		5,537	44,283	68,694	
	Education hours per person		6	43	70	

Education Costs

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Total education costs	KRW 1 million	2,053	2,799	3,443	
	Education costs per person		1.4	2.0	2.4	
SK bioscience	Total education costs		982.9	688	816	
	Education costs per person		1.1	0.7	0.8	

Percentage of Performance Evaluation Review

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Percentage of employees subject to evaluation based on goals agreed with immediate supervisor	%	93	97	95	
	Percentage of employees subject to 360-degree feedback		94	94	94	
	Percentage of employees subject to relative evaluation		86	92	93	

Social I Customer Satisfaction

Customer Satisfaction Survey

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Annual customer complains Number of reports and processes	Number	60	83	70	
	Customer satisfaction score	Score	86.6	84.0	86.4	

Social I Human Rights and Labor

Human Rights Risk Management

Scope	Total percentage assessed in the last 3 years (%)	Percentage of sites assessed where risks were identified (%)	Percentage of identified mitigation/remediation action processes applied (%)	Comment
In-house management activities	100	37.5	100	
Contractors and Tier 1 suppliers	64	2.2	41	

Application Ratio of Union Collective Agreement

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Application ratio of collective agreement	%	100	100	100	
SK bioscience	Application ratio of collective agreement		100	100	100	
SK multi utility	Application ratio of collective agreement		100	100	100	

Social I Information Security

Establishment and Incorporation of Information Security System

Business Site	Category	Unit	2021	2022	2023	Comment
SK chemicals (Only)	Participation rate in information security training	%	99	99	99	
	Number of personal information leaks	Number	0	0	5[1]	
	Total financial damage from violating information security	KRW 100 million	0	0	0.01	
	Investment and operation costs for information security		12	21	18	
	Proportion of information security certification	%	0	0	67	

1) Number of SK chemicals personal information leaks included in the SK Careers personal information leak incident

Governance I Ethical Management

Ethical Management System

Business Site	Category			Unit	2021	2022	2023	Comment
SK chemicals (Only)	Official ethics management channel reports	Number of reports		Number	5	9	10	
		Number of processing cases			5	9	10	
		Proportion of complaints resolved		%	100	100	100	
	Unfair trade practices and other violations of laws	Number of violations		Number	0	0	0	
		Number of non-monetary sanctions			0	0	0	
		Number of lawsuits (Defeated)			0	0	0	
	Participation rate in ethics training			Number	100	100	100	
	Proportion of employees that have signed the Code of Conduct	Employees			100	100	100	
		Business partners			88	100	100	
		Subsidiaries			100	100	100	
		Joint ventures			100	100	100	
	Proportion of business sites that have gone through corruption risk inspections				100	100	100	

Governance I Management of BOD

Management and Remuneration

Category			Unit	2021	2022	2023	Comment
Management of BOD	Number of meetings	Regular BOD meetings	Number	17	16	14	
	Agenda	Registered agenda		35	26	14	
		Approved agenda		35	26	14	
	Attendance rate	Inside directors	%	97	100	97	
		Non-executive directors		-	91	100	
		Outside directors		100	100	100	
Board Remuneration	Inside directors	Total amount paid	KRW 1 million	25,66	3,154	2,980	
		Number	Person	2	3	3	
		Avg. remuneration per person	KRW 1 million	1,283	1,051	993	
	Outside directors	Total amount paid		294	380	417	
		Number	Person	4	4	4	
		Avg. remuneration per person	KRW 1 million	74	95	104	

Governance I Shareholders and Dividends

Composition of Shareholders and Dividends

Category			Unit	2021	2022	2023	Comment
Composition of shareholders	Stocks held and share ratio	SK discovery Co., Ltd.	Number of shares	6,137,781	7,056,899	7,056,899	
			%	31.10	36.43	36.4	
		Chey Chang-won and related people	Number of shares	383,273	382,109	382,109	
			%	1.94	1.97	2	
		Shareholders with 5% or more (National Pension Service)	Number of shares	1,430,519	1,128,319	1,078,744	
			%	7.25	5.83	6	
		Treasury stocks	Number of shares	178,990	178,990	178,990	
			%	0.91	0.92	1	
		Minority shareholders	Number of shares	11,605,646	10,622,895	10,672,470	
			%	58.80	54.84	55	
		Total	Number of shares	19,736,209	19,369,212	19,369,212	
			%	100	100	100	
Dividend Status	Common stock	Share dividend	KRW/Share	3,000	1,500	650	
		Number of dividend shares	Share	17,589,923	17,222,926	17,222,926	
		Cash dividend yield	%	2.0	1.9	1.0	
	Preferred stock	Share dividend	KRW/Share	3,050	1,550	700	
		Number of dividend shares	Share	1,967,296	1,967,296	1,967,296	
		Cash dividend yield	%	3.3	3.9	2.3	

APPENDIX

Stakeholder Engagement

Stakeholder Engagement and Communications

Stakeholder Engagement

SK chemicals defines its key stakeholders as customers, shareholders, investors, financial institutions, employees, government and associations, business partners, and local communities. In 2020, we added the pursuit of happiness for each stakeholder into our articles of incorporation. In March 2021, SK chemicals established a Corporate Governance Charter, demonstrating a clear commitment to stakeholder management with approval from the BOD. At the 2022 Annual General Meeting, we unveiled a financial story centered around the transition to the "Green Materials" business, generating trust and empathy from shareholders and other stakeholders.

SK chemicals considers SKMS as the foundation of our management, aiming to create value for various stakeholders through sustainable business practices. We play a vital role in the social and economic development, while striving for corporate management that contributes to human happiness. To achieve this, SK chemicals engages in diverse forms of communication, gathering stakeholders' opinions, understanding key issues, and incorporating them into our business activities. We aim to freely share opinions, damages, and instances of social responsibility violations with stakeholders, working together to address relevant issues related to our overall business operations.

Stakeholder Participating Channels

Category	Major Issues	Communication Channels
All Stakeholders	• Awareness of the transition to green materials and eco-friendly consumption • Requiring pharmaceuticals & bio business and health information • Introduction to SK chemicals and hiring information • ESG management activities	• Stakeholder survey – once a year • SK chemicals YouTube channel – all times
Customers	• Feedback on products and services • Product quality control and safety	• Customer sentiment survey (Green Chemicals business)– once a year • Customer counseling (Pharma business) – all times • Voices of Customer on the SK chemicals website – all times • Visits to customer companies – all times
Shareholders and Investors	• Stock price and dividend fluctuation issues • Changes in business environment and performance, management strategies • Transparent disclosure of corporate information	• Annual reports / quarterly, half term reports • Disclosure at all times / autonomous disclosure • Regular/temporary shareholders' meetings • Quarterly performance announcements and NDR – once per quarter • Operation of Contact IR board – all times
Employees	• Changes in the business environment • Employment and fostering system • Fair evaluation and rewards · Better welfare benefits	• Town Hall Meeting – once a quarter • G+ / L+ meeting – once a quarter • Happiness Executive Workshop – twice a year • Labor-Management meeting • Company broadcasting and newspaper • Member satisfaction survey / Culture survey – once a year • SK Ethical Management reporting channel – all times
Government and Associations	• Regulations and policies • Business opportunities and risks	• Policy-related meetings with the local government – all times
Business Partners	• Fair contracts, unfair transactions • Win-win growth, cooperation	• Build an ESG management system for business partners • SK Group Shared Growth Academy • Visits to business partners – all times • Win-win cooperation meeting with business partners – once a month • Meetings with CEOs of business partners- once a quarter • Safety manager seminar with business partners – once a month • Organize safety report system – all times
Community	• Community engagement and development • Cooperative social contribution activities	• Jointly develop and organize programs with the local community • Local community volunteer group

Active Local Community Engagement

Community Engagement and Communication Channels

SK chemicals operates various channels to strengthen local community engagement and communication. We regularly hold forums with community members to discuss and address local issues together. Additionally, we maintain ongoing communication through online consultation/support channels to provide information and support.

We actively promote various social contribution activities to support community development, helping us understand local issues and establish a foundation for mutual growth. SK chemicals will continue to diversify and enhance engagement and communication activities to build trust-based relationships and foster an environment for mutual growth with the local community.

Community Impact Assessment

SK chemicals conducts impact assessments to identify and mitigate potential negative effects on the local community from its operations. We identify biodiversity risks near our sites and undertake mitigation and conservation efforts. In human rights impact assessments, we involve community members to continuously address potential risks. Additionally, we measure the environmental, social, and economic impacts of our activities, striving to create tangible social value within the community.

Local Community Impact Assessment[1)]

Category		Assessment Content	Report page
Environment	Biodiversity impact assessment	• Assess impacts using global methodologies like TNFD, identifying and mitigating risks in our sites and adjacent areas, including upstream and downstream activities	60
Social	Human rights impact assessment	• Define community groups and conduct human rights impact assessments to identify and improve potential negative impacts on human rights during business operations	77
Economic	Social value creation performance assessment	• Conduct assessments to measure the social value of economic, environmental, and social contributions created through business and management activities	29

1) Assessment is conducted for all business sites.

Local Community Communication Channels

Online
www.skchemicals.co.kr

Social contribution
Community Volunteering

Participation in Global Initiatives

UNGC Communication on Progress

Category	Principles	Major Activities	Page
Human Rights	Principle ① Businesses should support and respect the protection of internationally proclaimed human rights; and	• Make Declaration on Human Rights and Human Rights Management Guidelines • Launch a Human Rights Management Committee • Conduct human rights audits • Comply with labor principles and laws	75 ~ 80
	Principle ② make sure that they are not complicit in human rights abuses.		
Labor	Principle ③ Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	• Comply with the Labor Standards Act • Operate a fair performance management system • Have Labor-Management meetings	79 ~ 80
	Principle ④ the elimination of all forms of forced and compulsory labour;		
	Principle ⑤ the effective abolition of child labour; and		
	Principle ⑥ the elimination of discrimination in respect of employment and occupation.		
Environment	Principle ⑦ Businesses should support a precautionary approach to environmental challenges;	• Establish measures to reduce GHG pathways and 2040 Net Zero Roadmap based on SBTi • Reduce GHG with process optimization, fuel conversion, and solar power generation • Expand business focusing on green materials (recycle, bio-based materials)	42 ~ 58
	Principle ⑧ undertake initiatives to promote greater environmental responsibility; and		
	Principle ⑨ encourage the development and diffusion of environmentally friendly technologies.		
Anti-Corruption	Principle ⑩ Businesses should work against corruption in all its forms, including extortion and bribery.	• Establish ethical management and anti-corruption policies • Organize a dedicated organization for ethical management and establish a reporting/counseling system • Implement ethics management and anti-corruption education • Obtain a compliance management certification (ISO 37001)	102 ~ 105

UN SDGs

Category	Target		Activities
1. No poverty	1.3	Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	• Free meal support for the local community • Kimchi sharing for vulnerable groups and heating cost support • Blood donation campaign for employees
3. Good health and well-being	3.3	By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.	• Contribute to fighting diseases with the vaccine business
	3.4	Noncommunicable diseases and mental health: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	• Contribute to treating diseases with the pharmaceutical business • Provide treatment support for incurable disease patients • Develop and support programs to enhance cognitive skills for dementia patients
4. Quality education	4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	• Support obtaining degrees and certifications related to job responsibilities • Implement personal information protection and security education • Support safety training and education for employees of the company and business partners • Support enhancing competitiveness through education for business partners
6. Clean water and sanitation	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	• Reduce wastewater with eco-friendly processes and business sites
7. Affordable and clean energy	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	• Support the use of energy by distributing cookstoves to Myanmar
	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix.	• Transition to high-energy fuel and increase the share of renewable energy
	7.3	By 2030, double the global rate of improvement in energy efficiency.	• Build eco-friendly business sites and operate the sites to enhance energy efficiency
8. Decent work and economic growth	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.	• Create high-quality jobs through institutional and policy support • Support for the growth of business partners through financial assistance programs • Welfare support for employees of business partners

Category	Target		Activities
9. Industry, innovation and infrastructure	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.	• Upgrade R&D investment to protect the earth's environment • Upgrade R&D investment to promote people's health
10. Reduced inequalities	10.2	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.	• Alleviate inequalities with human rights protection systems
12. Responsible consumption and production	12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.	• Make efforts to reuse wastewater and waste that appears from the production process
13. Climate action	13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.	• Establish a dedicated management organization for climate change risks • Set and implement targets for greenhouse gas reduction and development of bio-materials • Make efforts to reduce greenhouse gas emissions by using waste resources
	13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.	• Implement eco-friendly environmental management with PET eco-friendly circular economy and cleaning the environment
14. Life below water	14.2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.	• Efforts to reduce marine pollution risks by developing eco-friendly plastics • Volunteer activities to clean streams
17. Partnership for the goals	17.16	Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.	• Support for diagnosing and systematizing the ESG management status of business partners • Establish comprehensive solutions based on diverse infrastructure and partnership networks • Promote global partnership activities for sustainable management

TCFD

TCFD Recommended Disclosure	Report Page	CDP Link
Governance		
a. Describe the board's oversight of climate-related risks and opportunities	39, 50, 99	CDP_C1.1
b. Describe management's role in assessing and managing risks and opportunities	39, 50, 99	CDP_C1.2
Strategy		
a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	52 ~ 53	CDP_C2.1, C2.2a, C2.3a, C2.4a
b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	52 ~ 53	CDP_C2.3a, C2.4a
c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	51 ~ 53	CDP_C3.2a
Risk Management		
a. Describe the organization's processes for identifying and assessing climate-related risks	50 ~ 51	CDP_C1.2a, C2.2
b. Describe the organization's processes for managing climate-related risks	50 ~ 51	CDP_C2.2
c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	50 ~ 51	CDP_C2.2
Metrics and Targets		
a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	55 ~ 56	CDP_C4.1a
b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	55 ~ 56	CDP_C6.1, C6.3, C6.5
c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	55 ~ 56	CDP_C4.1a

SASB I Chemicals

Category	SASB code	Accounting Metric		Unit	Report Page	Contents
SUSTAINABILITY DISCLOSURE TOPICS & ACCOUNTING METRICS						
GHG Emissions	RT-CH-110a.1	Scope 1 Emissions		Metric tons (t)CO_2eq	115	48,902
		Scope 1 Percentage covered under emissions limiting regulations			-	100
	RT-CH-110a.2	Scope 1 Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets		%	56	In order to achieve Net Zero by 2040, we have submitted SBTi membership and targets for 2023
Air Quality	RT-CH-120a.1	Air emissions for the following pollutants	NOx (excluding N_2O)	Metric tons (t)	119	35.0
			SOx	Metric tons (t)		0.1
			Volatile Organic Compounds (VOCs)	Metric tons (t)		4.2
			Hazardous Air Pollutants (HAPs)	Metric tons (t)		0
Energy Management	RT-CH-130a.1	Total energy consumed		Gigajoules (GJ)	113 ~ 114	4,103,973
		Percentage grid electricity		%		-
		Percentage renewable		%		-
		Total self-generated energy		Gigajoules (GJ)		-
Water Management	RT-CH-140a.1	Total water withdrawn		Thousand cubic meters (m^3)	116	3,749,695
		Total water consumed		Thousand cubic meters (m^3)		3,749,695
		Percentage of water withdrawn in regions with High or Extremely High Baseline Water Stress		%	62	0
		Percentage of water consumed in regions with High or Extremely High Baseline Water Stress		%		0
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations		Number	113	0
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks			62	Establish water risk management and monitoring system
Hazardous Waste Management	RT-CH-150a.1	Hazardous Waste	Amount generated	Metric tons(t)	118 ~ 119	9,898
			Percentage recycled	%		60.8
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests			90 ~ 92	Conduct activities based on social contribution policies and mid-to long-term goals

SASB I Chemicals

Category	SASB code	Accounting Metric		Unit	Report Page	Contents
SUSTAINABILITY DISCLOSURE TOPICS & ACCOUNTING METRICS						
Workforce Health & Safety	RT-CH-320a.1	Total recordable incident rate (TRIR)	Direct employees	Rate	121	0
			Contract employees	Rate		0
		Fatality rate	Direct employees	Rate		0
			Contract employees	Rate		0
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks			83	Discover and improve the workspace risk factors preliminary, provide health management programs
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency			-	-
Safety & Environmental Stewardship of Chemicals	RT-CH-410b.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		Percentage (%) by revenue	-	-
		Percentage of such products that have undergone a hazard assessment		%	-	-
	RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact			47 ~ 48	Enhanced hazardous chemical management and replacing hazardous chemicals
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)		Percentage (%) by revenue	-	0
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			-	-
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1	Process Safety Incidents Count (PSIC)		Number	121	0
		Process Safety Total Incident Rate (PSTIR)		Rate		0
		Process Safety Incident Severity Rate (PSISR)		Rate		0
	RT-CH-540a.2	Number of transport incidents		Number	-	0
ACTIVITY METRICS						
	RT-CH-000.A	Production by reportable segment	Copolyester, DMT	Metric tons (t)	-	331,000
			BON	Metric tons (t)	-	11,000
			Tablets	Tablet	-	652,702,000
			Patch	Patch	-	39,374,000

GRI Standards Index

Statement of Use	Reporting Organization: SK chemicals reports the information by applying the GRI standards when reporting the contents of sustainability management during the period from January 1, 2023 to December 31, 2023.
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standards	As of June 2024, when SK chemicals publishes the report, there are no applicable GRI Sector Standards.

GRI Standards	Disclosure	Report Page	Note
General disclosures			
GRI 2: General Disclosures 2021	2-1 Organizational details	5	
	2-2 Entities included in the organization's sustainability reporting	2	
	2-3 Reporting period, frequency and contact point	2	
	2-4 Restatements of information	Changes are noted in footnotes	
	2-5 External assurance	138 ~ 139	
	2-6 Activities, value chain and other business relationships	7 ~ 13	
	2-7 Employees	122 ~ 123	
	2-8 Workers who are not employees	Business Report 295	
	2-9 Governance structure and composition	95	
	2-10 Nomination and selection of the highest governance body	96	
	2-11 Chair of the highest governance body	95	
	2-12 Role of the highest governance body in overseeing the management of impacts	97	
	2-13 Delegation of responsibility for managing impacts	97	
	2-14 Role of the highest governance body in sustainability reporting	97	
	2-15 Conflicts of interest	96	
	2-16 Communication of critical concerns	100, Business Report 268 ~ 281	
	2-17 Collective knowledge of the highest governance body	97	
	2-18 Evaluation of the performance of the highest governance body	96	
	2-19 Remuneration policies	96, Business Report 295 ~ 303	
	2-20 Process to determine remuneration	96	
	2-21 Annual total compensation ratio	96	
	2-22 Statement on sustainable development strategy	5	
	2-23 Policy commitments	75	
	2-24 Embedding policy commitments	75 ~ 80	
	2-25 Processes to remediate negative impacts	100	
	2-26 Mechanisms for seeking advice and raising concerns	103	
	2-27 Compliance with laws and regulations	113, 125 ~ 126	
	2-28 Membership associations	137	
	2-29 Approach to stakeholder engagement	128 ~ 129	
	2-30 Collective bargaining agreements	125	
Material Topics			
GRI 3: Material Topics 2021	3-1 Process to determine material topics	30	
	3-2 List of material topics	31	
Material Issue 1. Expansion of green business development and investment			
GRI 3: Material Topics 2021	3-3 Management of material topics	42 ~ 48	
GRI 301: Materials	301-1 Materials used by weight or volume	118	
	301-2 Recycled input materials used	118	
Material Issue 2. Climate change response			
GRI 3: Material Topics 2021	3-3 Management of material topics	50 ~ 58	
GRI 201: Economic Performance	201-2 Financial implications and other risks and opportunities due to climate change	52 ~ 54	
GRI 302: Energy	302-1 Energy consumption within the organization	113	
	302-2 Energy consumption outside of the organization	113	
	302-3 Energy intensity	113	
	302-4 Reduction of energy consumption	57 ~ 58	
	302-5 Reductions in energy requirements of products and services	Website FY 2023 SK chemicals GRI Contents Table 302-5	
GRI 305: Emissions	305-1 Direct (Scope 1) GHG emissions	115	
	305-2 Energy indirect (Scope 2) GHG emissions	115	
	305-3 Other indirect (Scope 3) GHG emissions	115	
	305-4 GHG emissions intensity	115	
	305-5 Reduction of GHG emissions	57 ~ 58	
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	119	
Material Issue 3. LCA-based product management (environmental, social) and product responsibility			
GRI 3: Material Topics 2021	3-3 Management of material topics	49	
Non-GRI	No relevant GRI Topic Standards	-	

GRI Standards	Disclosure	Report Page	Note
Material Issue 4. Working environment improvement and talent development			
GRI 3: Material Topics 2021	3-3 Management of material topics	69 ~ 74	
GRI 401: Employment	401-1 New employee hires and employee turnover	122 ~ 123	
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	74	
	401-3 Parental leave	124	
GRI 404: Training and Education	404-1 Average hours of training per year per employee	125	
	404-2 Programs for upgrading employee skills and transition assistance programs	70 ~ 73	
	404-3 Percentage of employees receiving regular performance and career development reviews	125	
GRI 405: Diversity and Equal Opportunity	405-1 Diversity of governance bodies and employees	126	
	405-2 Ratio of basic salary and remuneration of women to men	124	
GRI 406: Non-discrimination	406-1 Incidents of discrimination and corrective actions taken	104	
Material Issue 5. Ethical management (anti-corruption, anti-competition, fair trade)			
GRI 3: Material Topics 2021	3-3 Management of material topics	102 ~ 105	
GRI 205: Anti-corruption	205-1 Operations assessed for risks related to corruption	104	
	205-2 Communication and training about anti-corruption policies and procedures	103	
	205-3 Confirmed incidents of corruption and actions taken	104	
GRI 206: Anti-competitive Behavior	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Website FY 2023 SK chemicals GRI Contents Table 206-1	
Material Issue 6. Waste reduction and increased recycling rate			
GRI 3: Material Topics 2021	3-3 Management of material topics	65 ~ 66	
GRI 306: Waste	306-1 Waste generation and significant waste-related impacts	65 ~ 66	
	306-2 Management of significant waste-related impacts	65 ~ 66	
	306-3 Waste generated	118 ~ 119	
	306-4 Waste diverted from disposal	118 ~ 119	
	306-5 Waste directed to disposal	118 ~ 119	
Material Issue 7. Community contribution			
GRI 3: Material Topics 2021	3-3 Management of material topics	90 ~ 92	
GRI 203: Indirect Economic Impacts	203-1 Infrastructure investments and services supported	90 ~ 92	
	203-2 Significant indirect economic impacts	29	
GRI 413: Local Communities	413-1 Operations with local community engagement, impact assessments, and development programs	90 ~ 92	
	413-2 Operations with significant actual and potential negative impacts on local communities	Website FY 2023 SK chemicals GRI Contents Table 413-2	
Material Issue 8. Safety and health management			
GRI 3: Material Topics 2021	3-3 Management of material topics	81~ 84	

GRI Standards	Disclosure	Report Page	Note
GRI 403: Occupational Health and Safety	403-1 Occupational health and safety management system	81	
	403-2 Hazard identification, risk assessment, and incident investigation	83	
	403-3 Occupational health services	84	
	403-4 Worker participation, consultation, and communication on occupational health and safety	84	
	403-5 Worker training on occupational health and safety	83	
	403-6 Promotion of worker health	84	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	84	
	403-8 Workers covered by an occupational health and safety management system	81	
	403-9 Work-related injuries	121	
	403-10 Work-related ill health	121	
Other GRI Index			
GRI 201: Economic Performance	201-1 Direct economic value generated and distributed	112	
	201-3 Defined benefit plan obligations and other retirement plans	124	
GRI 202: Market Presence	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Website FY 2023 SK chemicals GRI Contents Table 202-1	
GRI 204: Procurement Practices	204-1 Proportion of spending on local suppliers	87	
GRI 207: Tax	207-1 Approach to tax	Website FY 2023 SK chemicals GRI Contents Table 207-1	
	207-2 Tax governance, control, and risk management	99	
	207-4 Country-by-country reporting	Website FY 2023 SK chemicals GRI Contents Table 207-4	
GRI 303: Water and Effluents	303-1 Interactions with water as a shared resource	62 ~ 63	
	303-2 Management of water discharge-related impacts	62 ~ 63	
	303-3 Water withdrawal	116	
	303-4 Water discharge	116	
	303-5 Water consumption	116	
GRI 304: Biodiversity	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	59	
	304-2 Significant impacts of activities, products and services on biodiversity	60	
	304-3 Habitats protected or restored	Website FY 2023 SK chemicals GRI Contents Table 304-3	
GRI 308: Supplier Environmental Assessment	308-1 New suppliers that were screened using environmental criteria	88	
	308-2 Negative environmental impacts in the supply chain and actions taken	89	
GRI 407: Freedom of Association and Collective Bargaining	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Website FY 2023 SK chemicals GRI Contents Table 407-1	

Participating Associations and Organizations

Gyeonggi-do Nurses Association	Korean Hospital Association	Korea Industrial Safety Association Seongnam Branch	Korea Industrial Safety Association Ulsan Branch
Ulsan District Env. Pre. Association	Korea Enterprises Federation	Korea Customs Logistics Association	Korea International Trade Association
Korean Association for Radiation Application	Korea Industrial Technology Association	Korea Listed Companies Association	Korea Pharmaceutical Traders Association
The Korean Medical Library Association	Korea Pharmaceutical and Bio-Pharma Manufacturers Association	Korean Association of Occupational Health Nurses	Gyeonggi Enterprises Federation
Association of Heads of General Affairs of Large Enterprises	Korea Hospital Association Council of the Future Medical Industry	Ulsan Association of Environmental Engineers	Environmental Protection Council
Ulsan Nurses Association	Seoul Pharmaceutical Industry Development Council	Yongyeon Yong Jam Complex Factory Managers' Council	Ulsan Metropolitan City Factory Manager Council
Ulsan Regional Industrial Complex Management Council	Ulsan Yeocheon Safety Council	Ulsan General Affairs Department Heads Council	Chungcheongbuk-do Environmental Conservation Association
Korea Fire Safety Institute	Korea Pharmaceutical Association	Korea Electric Engineers Association	

Independent Assurance Opinion Statement

To : The Stakeholders of SK chemicals CO., LTD.

Overview

BSI (British Standards Institution) Group Korea (hereinafter referred to as the "Assurer") was requested to verify "2023 SK chemical Sustainability Report" (hereinafter referred to as the "Report"). The Assurer is independent of the SK chemicals and has no major operational financial interest other than the assurance. This assurance opinion statement is intended to provide information related to the assurance of the SK chemicals report relating to the environment, social and governance (ESG) to the relevant stakeholders and may not be used for any purpose other than the purpose of publication. This assurance opinion statement was prepared based on the information presented by the SK chemicals and the assurance was carried out under the assumption that presented the information and data were complete and accurate.

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

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

Scope

The scope of engagement agreed upon with SK chemicals includes the following:

- Reporting contents during the period from January 1st to December 31st 2023 included in the report, some data included half of 2024.
- SK chemicals FY2023 GRI Contents Table in website
- Major assertion included in the Report, such as sustainability management policies and strategies, goals, projects, and performance, and the Report contents related to material issues determined as a result of materiality assessment.
- Appropriateness and consistency of processes and systems for data collection, analysis and review.
- In Accordance with the four principles of AA1000 AccountAbility in the Report, based on the type of Sustainability Assurance based on AA1000AS v3 and if applicable, the reliability of the sustainability performance information contained in the Report.

The following contents were not included in the scope of assurance.

- Financial information in Appendix.
- Index items related to other international standards and initiatives other than the GRI.
- Other related additional information such as the website, business annual report.

Assurance Level and Type

The assurance levels and types are as follows;

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

Description and sources of disclosures covered

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

[Universal Standards]

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

[Topic Standards]

201-1~3, 202-1, 204-1, 203-1~2, 205-1~3, 206-1, 207-1~2, 207-4, 301-1~2, 302-1~5, 303-1~5, 304-1~3, 305-1~5, 305-7, 306-1~5, 308-1~2, 401-1~3, 403-1~10, 404-1~3, 405-1~2, 406-1, 407-1, 413-1~2

Methodology

As a part of its independent assurance, the Assurer has used the methodology developed for relevant evidence collection in order to comply with the verification criteria and to reduce errors in reporting. The Assurer has performed the following activities;

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

Limitations and approach used to mitigate limitations

The Assurer performed limited verification for a limited period based on the data provided by the reporting organization. It implies that no significant errors were found during the verification process, and that there are limitations related to the inevitable risks that may exist. The Assurer does not provide assurance for possible future impacts that cannot be predicted or verified during the verification process and any additional aspects related thereto.

Competency and Independence

BSI (British Standards Institution) is a leading global standards and assessment body founded in 1901. BSI is an independent professional institution that specializes in quality, health, safety, social and environmental management with almost 120 years history in providing independent assurance services globally. No member of the assurance team has a business relationship with SK chemicals. The Assurer has conducted this verification independently, and there has been no conflict of interest. All assurers who participated in the assurance have qualifications as an AA1000AS assurer, have a lot of assurance experience, and have in-depth understanding of the BSI Group's assurance standard methodology.

Opinion Statement

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

On the basis of our methodology and the activities described above, it is our opinion that the information and data included in the Report are accurate and reliable and the Assurer cannot point out any substantial aspects of material with mistake or misstatement. We believe that the economic, social and environment performance indicators are accurate and are supported by robust internal control processes.

Conclusions

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

Inclusivity

SK chemicals defined customers, shareholders/investors, members, governments/associations, business partners and local communities as a Key Stakeholder Groups. In order to collect opinions by each stakeholder groups in the context of sustainability, operated the stakeholder engagement process. SK chemicals conducted a review of the stakeholder engagement process at the governance level in order to reflect the major issues derived through the stakeholder engagement process in sustainability strategy and goals. SK chemicals disclosed the results related to the process in the Report.

Materiality

SK chemicals implemented its own materiality assessment process in consideration of the major business and operational characteristics to derive important reporting issues related to sustainability. SK chemicals conducted benchmarking and media analysis of similar companies and institutions globally, identified financial impact and social/environmental impact, and determined key issues for the reporting year. SK chemicals derived 8 material issues through the relevant process, and disclosed GRI topic standards disclosures related to material issues in the Report.

Responsiveness

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

Impact

SK chemicals identified the scope and extent of the impacts to the organization and key stakeholders in the context of the sustainability of the material issues reported. SK chemicals established sustainability strategies and objectives based on the analysis results of major impacts, including risks and opportunities for key issues, disclosed mid- to long-term plans and strategic system in the Report.

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

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

- GRI Topic Standards : 201-1~2, 202-1, 203-1~2, 204-1, 205-1~3, 206-1, 301-1~2, 302-1~5, 303-3~5, 304-1~3, 305-1~5, 305-7, 306-1~5, 308-1~2, 401-1~3, 403-1~10, 404-1~3, 405-1~2, 406-1, 413-1~2

Recommendations and Opportunity for improvement

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

- It may be helpful to ensure a balance of reporting by Depending on the key business characteristics, specifying mid- to long-term sustainability strategies and detailed objectives that reflect key sustainability issues such as product safety, and transparent disclosure of annual performance.
- Considering the sustainability issues and characteristics of the Green Chemical and Life Science business units, It may be effective to specify the sustainability objectives, targets and strategies of each unit.
- It may be helpful to advance the sustainability management system by managing sustainability performance indicators of consolidated subsidiaries, including overseas subsidiaries, such as establishing a system for calculating sustainability performance indicators and establishing internal control procedures.

GRI-reporting

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

Issue Date : 25/06/2024
For and on behalf of BSI (British Standards Institution) :
BSI representative

AA1000 Licensed Report 000-4/V3-XPFXZ

Jungwoo Lee, Lead Assurer/ACSAP

Seonghwan Lim, Managing Director of BSI Korea

BSI Group Korea Limited : 29, Insa-dong 5-gil, Jongno-gu, Seoul, South Korea
Hold Statement Number : SRA 809638

Greenhouse Gas Verification Statement

SK chemicals I Scope 1&2

GV-24213

Verification Opinion Statement

GHG Emissions | **SK chemicals**

Verification Target
Korean Foundation for Quality (hereinafter 'KFQ') has conducted a verification of Greenhouse Gas Emissions (hereinafter 'GHG Inventory') of SK chemicals (hereinafter 'Company') for 2023.

Verification Scope
KFQ's verification covered on all facilities and emission sources under the operational control and organizational boundary of SK chemicals during 2023.

Verification Criteria
The verification process was based on [Rule for emission reporting and certification of greenhouse gas emission trading Scheme[1]], [Rules for verification of operating the greenhouse gas emission trading scheme[2]] and 'ISO14064-3' for every applicable part.
1) Notification No. 2023-221 of Ministry of Environment 2) Notification No. 2021-112 of Ministry of Environment

Level of Assurance
The Verification has been planned and conducted as the 'Rules for verification of operating the greenhouse gas emission trading scheme', and the level of assurance for verification shall be satisfied as reasonable level of assurance. And it was confirmed through an internal review whether the process before the verification was conducted effectively.

Verification Limitation
The verification shall contain the potential inherent limitation in the process of application of the verification criteria and methodology.

Verification Opinions
Regarding to the data of the Greenhouse Gas Emission Consumption from the report through the verification, KFQ provides our verification opinions as below;
1) The Inventory Report has been stated in accordance with "Rule for emission reporting and certification of greenhouse gas emission trading Scheme" and "ISO 14064-1".
2) The result of material discrepancy satisfied the criteria for an organization that emits less than 500,000tCO_2-eq shall not exceed 5% from total emission as per "Rules for verification of operating the greenhouse gas emission trading scheme".
3) Thus, KFQ concludes that the Greenhouse Gas Emissions of Company in 2023 is correctly calculated and stated in accordance with "Rule for emission reporting and certification of greenhouse gas emission trading Scheme".

Unit : tCO_2eq

Scope 1	Scope 2	Total
46,239.463	174,605.917	220,841

* The totals in this verification statement do not match the totals in emission trading scheme because the total emissions of each facility are calculated by truncating to integer units

June 14th, 2024

Ji Young Song

IAF National Institute of Environmental Research

CEO Ji-Young Song
Korean Foundation for Quality

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SK chemicals I Scope 3

GI-24233

Verification Opinion Statement

GHG Emissions | **SK chemicals Co., Ltd.**

Verification Target
Korean Foundation for Quality (hereinafter 'KFQ') has conducted a verification of Scope 3 Greenhouse Gas Emissions (hereinafter 'GHG emissions') SK chemicals Co., Ltd.(hereinafter 'Company') for 2023.

Verification Scope
The verification Scope covered the emission categories selected by the company and the emissions between January 1st, 2023 to December 31st, 2023.

Verification Criteria
The following criteria and coefficients used by the company were applied.
• Criteria
- WBCSD/WRI, Corporate Value Chain (Scope 3) Accounting and Reporting Standard
- ISO14064-1:2018, ISO 14064-3:2019
- GHG Protocol Corporate Standard
- Rule for emission reporting and certification of greenhouse gas emission trading Scheme[1)]
  1) Notification No. 2023-221 of Ministry of Environment
• Coefficient
- Environmental Product Declaration evaluation coefficient (2021)
- Ecoinvent database 3.9.1

Level of Assurance
The verification was performed in accordance with the procedures specified in ISO14064-3 and the assurance level of the verification was performed to satisfy the limited assurance level.

Verification Limitation
GHG emissions verification involves inherent limitations that may arise depending on the organization's data characteristics, calculations and estimates, sampling method, and limited assurance level. Additionally, this verification does not include responsibility for the accuracy of the original data provided by the company.

Verification Opinions
Through the verification process according to the 'ISO14064-3:2006' KFQ could obtain reasonable basis to express following conclusion on the Greenhouse Gas Emission Report.
1) GHG emissions for 2023 of Company were properly calculated according to the verification standards.
2) For GHG emissions, no material errors or omissions were found, except for emissions information not considered within the selected category range.
3) The criteria and process established or estimated/assumed by the company to calculate GHG emissions were transparently reflected in the internal calculation process.

Appendix A. Summary of Scope 3 GHG Emission Results

May 14th, 2024

Ji Young Song

IAF National Institute of Environmental Research

CEO Ji-Young Song
Korean Foundation for Quality

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GI-24233

Appendix A. Summary of Scope 3 GHG Emission Results

Organization
SK chemicals Co., Ltd.

Emission calculation period
The emission calculation period is from January 1st to December 31st, 2023.

Company Scope 3 Emissions verification Results

Unit : tCO_2eq

	Category	Scope 3 Emissions
1	Purchased goods & services	246,771
2	Capital goods	544
3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	41,382
4	Upstream Transportation and Distribution	14,999
5	Waste Generated in Operations	7,393
6	Business Travel	1,021
7	Employee Commuting	1,295
10	Processing of Sold Products	73,541
12	End of Life Treatment of Sold Products	380,224
15	Investments	240,775
	Total	1,007,943

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13F, Woolim Lion's Valley B Bldg, 168, Gasan digital 1-ro, Geumcheon-gu, Seoul, Korea

SK chemicals Yantai Co., Ltd. I Scope 1&2

Format:TR030048R0(2307)

CNAS 中国认可 环境信息 ENVIRONMENTAL INFORMATION CNAS VV001-EI

中国船级社质量认证有限公司
CHINA CLASSIFICATION SOCIETY CERTIFICATION CO., LTD.

GHG VERIFICATION OPINION

No: CCSC202401040102019

This is to certify that,

SK CHEMICALS (YANTAI) CO., LTD.

Address: No.10, Xi'an Road, Economic development Zone Yantai,

Shandong, P.R. China

China Classification Society Certification Co., Ltd. (CCSC) as a third-party validation and verification body verifies the GHG statement and issues this verification opinion according to verification criteria and related procedures.

By verification, CCSC confirms that,

1.The GHG statement of this organization is prepared in accordance with the related requirement of ISO14064-1: 2018 on quantification and reporting of GHG emissions and removals.

2. The GHG statement of the organization covers the period of 01/01/2023- 31/12/2023, during which the GHG emissions and removals are as follows:

Category 1: Direct GHG emissions and removals (tCO_2e)	Category 2: Indirect GHG emissions from imported energy (tCO_2e)	Category 3: Indirect GHG emissions from transportation (tCO_2e)	Category 4: Indirect GHG emissions from products used by an organization (tCO_2e)	Category 5: Indirect GHG emissions associated with the use of products from the organization (tCO_2e)	Category 6: Indirect GHG emissions from other sources (tCO_2e)	Total emissions (tCO_2e)
2663.34	12827.70	0	0	0	0	15491.04

3.The reasonable level of assurance provided by the verification is consistent with the agreed verification objectives, criteria and scope.

4. The material misstatements in the GHG statement of this organization is 5%.

5. The conclusion is unconditional.

More details in Appendix.

Issued by: CCSC Signed by:

Issued at: Beijing Issued on: 14/03/2024

中国船级社质量认证有限公司 证书专用章 Seal for Certificate (00-04) CHINA CLASSIFICATION SOCIETY CERTIFICATION CO., LTD.

1. This opinion is based on an approved project report. Any modifications require resubmission to CCSC for approval. The appendix must accompany this opinion to be valid. Any reproduction of this opinion (including appendix) must be stamped by CCSC for validity. Unauthorized extracts of the opinion is prohibited. Parties with concerns about authenticity may consult CCSC directly.
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№ A 00090245

Page 1 of 2

Format:TR030048R0(2307)

APPENDIX TO GHG VERIFICATION OPINION

No: CCSC202401040102019

The objective(s), criteria, scope and level of assurance of this verification are based on the agreement between client and CCSC.

1. Verification objective:
Evaluate whether the GHG statement is conform to the applicable verification criteria, including the relevant standards or the principles and requirements of the GHG programme.

2. Verification criteria:
- ISO 14064-1: 2018 Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- ISO 14064-3: 2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

3. Verification scope:

Organizational boundary	This organization accounts for GHG emissions and removals from facilities over which it has operational control. This organization accounts for its portion of GHG emissions and removals from respective facilities. The addresses include: No.10, Xi'an Road, Economic development Zone Yantai, Shandong, P.R.China Room 1001, 10th Floor, No.118 Bada Street, Suzhou Industrial Park, Suzhou, Jiangsu, P.R.China
Reporting boundary	GHG emissions and removals associated with the organization's operational activity, including Category 1: Direct GHG emissions and removals; Category 2: Indirect GHG emissions from imported energy; Category 3: Indirect GHG emissions from transportation; Category 4: Indirect GHG emissions from products used by an organization; Category 5: Indirect GHG emissions associated with the use of products from the organization; Category 6: Indirect GHG emissions from other sources. Category 3 to Category 6 are not reported by the organization during this reporting period.
GHG types	Include 7 types of GHG i.e. CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3
Time period(s)	01/01/2023- 31/12/2023
Base year	This is the first verification, i.e. base year verification.

4. Level of assurance: Reasonable level of assurance

5. Others: The evidences and information claimed by the organization are reasonable assumptions, predictions and / or historical facts.

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Note: The APPENDIX is valid only when used together with the opinion.

№ A 00090246

Page 2 of 2

SK chemicals