

THE NEW VALUE FOR TOMORROW

SK chemicals
sustainability report 2014



About This Report

SK chemicals' sustainability report 2014 is the company's fourth sustainability report with its own characteristics included under the corporate mission of "promoting the health of the human race and protecting the earth's environment". With this aim, the report states the company's CSR strategy and concept of CSV in connection with company's business in detail. The report also deals with the materiality test and content by complying with the GRI G4 Guideline announced in 2013. In pursuit of realizing an Integrated Report, the report for 2014 under the three-year plan describes current and future value, while the report for 2016 aims to quantify non-financial performance into financial figures.

● Reporting period and cycle

The reporting period is from January 1, 2014 to December 31 of the same year. To compare trends, some items for 2012 and 2013 were included. The report includes activities and performances for sustainable management from 2012, and the most recent reporting date is May 2014.

● Reporting boundary

The reporting boundary targets SK chemicals' domestic business sites, including headquarters, research institute and four plants (Ulsan, Osan, Andong and Cheongju). If a reporting boundary is different, then cases are separately marked.

● Reporting principles

In writing this report, the company selected the core suitable type for the GRI (Global Reporting Initiative) G4 Guideline and conducted the materiality test for deciding the reporting content. The GRI Index is included on pages 68-69. Financial information was written in compliance with the K-IFRS (Korean version of International Financial Reporting Standard). Issues and pages regarding seven major issues of ISO26000 and ten major principles of the UN Global Compact can be identified on pages 92 and 93. In pursuit of realizing an Integrated Report, the report for 2014 under the three-year plan describes current and future value, while the report for 2016 aims to quantify non-financial performance into financial figures.

● Assurance

To enhance the accuracy of the content and data of this report and convey balanced reported content, assurance was conducted by DNV GL, an independent assurance institution. The scope, standard, and opinions of assessment can be identified in the assessment statement on pages 94 and 95.

● Inquiry

Sustainability Report and Environment Report

Website of SK chemicals	www.skchemicals.com
Website of Environmental Management	www.skeweb.com
Inquiry about sustainable management	SK chemicals Sustainable Management Team (+82-2-2006-2040)
E-mail	dbkim@sk.com
Design	Lucire, +82-2-542-6725

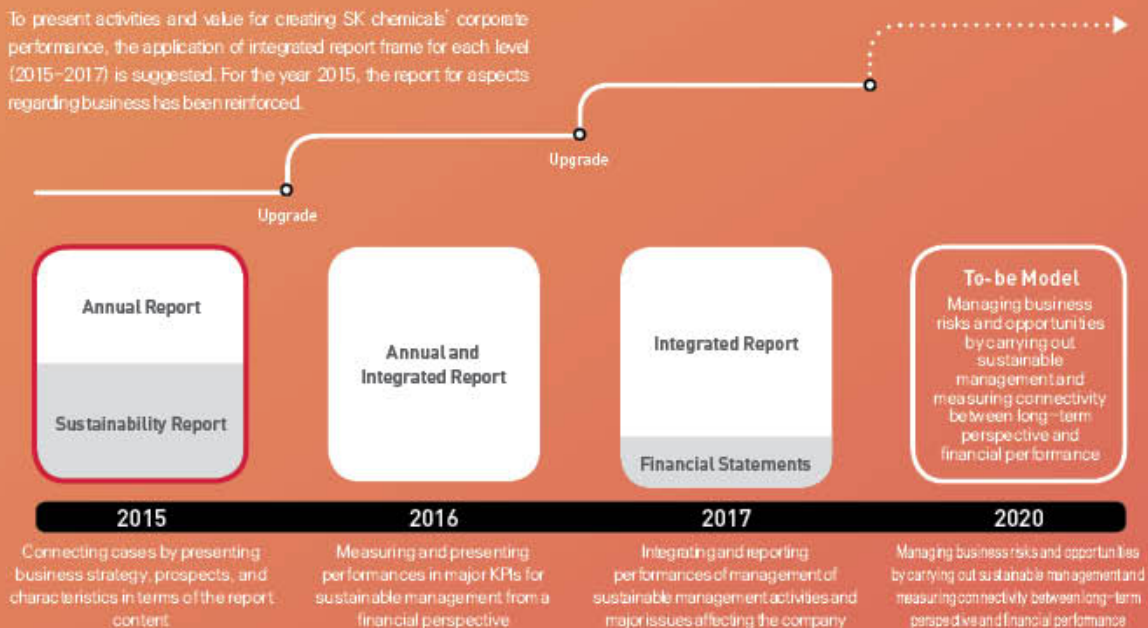
Cover description

This cover embodies SK chemicals' newness, value, and future based on the company's business and R&D. Three hexagons and the rising curve signify SK chemicals' sustainable chemical and life science business under the theme of "New", "Value", and "Tomorrow".



SK chemicals_IR Roadmap

To present activities and value for creating SK chemicals' corporate performance, the application of integrated report frame for each level (2015-2017) is suggested. For the year 2015, the report for aspects regarding business has been reinforced.



Connecting cases by presenting business strategy, prospects, and characteristics in terms of the report content.

Measuring and presenting performances in major KPIs for sustainable management from a financial perspective.

Integrating and reporting performances of management of sustainable management activities and major issues affecting the company.

Managing business risks and opportunities by carrying out sustainable management and measuring connectivity between long-term perspective and financial performance.

THE NEW VALUE FOR TOMORROW



CONTENTS

Overview

CEO Message	4
2014 Highlights	6
Creating Economic Performances and Sharing Performances with Stakeholders by SK chemical	8
Company Overview	10
Composition and Operation of the Board of Directors	14

Business Strategy and Value Creation for the future

Green Chemicals Business (GC)	16
Life Science Business (LS)	19
Research and Development	22
Value Creating Products & Services	28

Sustainability Management

Sustainable Management System	32
Stakeholder Engagement	38
Materiality Test	39

Material Issues

Safety at Business Offices and Health/	
Chemical Substances Management	44
Coping with Climate Change	52
Prevention of Environmental Pollution	60
Fostering and Developing the Talent	64
Engaging in and Developing Local Community	68

Appendix

Performances for Sustainable Management	74
Performance Data (Quantitative Data)	84
GRI Index	88
Summary of Financial Performance	90
ISO 26000 Index & Report on UNGC Performance	92
Independent Assurance Report	94
Greenhouse Gas Assurance Statement	96

CEO MESSAGE



SK chemical
Kim Cheol

Cheol KIM

Dear Stakeholders

I sincerely appreciate our stakeholders' unceasing support and care for SK chemicals. SK chemicals has published the fourth sustainability report with the aim of communicating with internal and external stakeholders and notifying them about the company's management activities.

We have intended to organize the current and future value, which is necessary for the company to enhance sustainability in the process of pursuing the company's mission and vision. I hope that this report fully conveys our sincerity in the mission, vision, and value pursued by SK chemicals to all our external stakeholders such as shareholders, customers, and business partners. SK chemicals' employees, who are our internal stakeholders, understand that every effort in their daily work is organically connected and materialized as activities for sustainable management, as well as activities that contribute to executing the company's mission and vision. In this sense, I would like to let you know that we've organized our sustainability report by separating current and future value into business and R&D in 2014 to enhance sustainability and realize our company's mission and vision.

First, SK chemicals operates business with the concept of creating socially shared value as part of the company's vision.

To achieve its mission of "promoting the health of the human race and protecting the earth's environment", SK chemicals has set its vision to achieve "a great leap forward as a global leading company providing solutions for eco-friendly materials and total healthcare" and aims to create value for stakeholders by developing suitable products. "Sustainable products" pursued by SK chemicals include "products with eco-friendly materials", which not only minimize resource consumption and waste but also reduce dependency on oil-based raw material and refrain from using hazardous materials, "total healthcare products" representing people's desire to lead long and healthy lives.

SK chemical
Park Mahn-hoon

Mahnhoon Park



Second, SK chemicals aims to enhance the company's future value by carrying out research and development activities.

The current value is a result of previous efforts, while the future value will be created from the efforts of today. The yardstick for current value is sales and profits, and that for future value is the R&D sector and investments. SK chemicals has expanded costs for R&D each year to work towards promoting the health of the human race and protecting the earth's environment. The company has also increased the ratio of R&D from 4.5% in 2012 to 5.4% in 2013 and 6.3% in 2014 compared to sales. Considering the current status of Korean society, where most companies have less than 2% in R&D expenses compared to sales, SK chemicals has made extensive efforts in creating future value.

Third, SK chemicals has evolved corporate culture and processes to become a sustainable organization.

The Green Point System, which launched in 2011, has allowed the company to raise awareness of the importance of voluntary work and environmental activities by conducting social contribution and environmental management activities while moving forward to realize a happy society.

The company has established a sustainable production system. For example, L HOUSE (vaccine plant) in Andong acquired LEED (Leadership in Energy and Environmental Data) Gold, a first for a pharmaceutical plant, while the Ulsan Plant completed the "Ulsan Steam Highway" project, which contributes to reducing national GHG emissions and energy, and realizes economic effects by using biomass and providing residue steam to external companies.

As a leading company in the chemical/pharmaceutical industry, SK chemicals will always take various social issues, such as environmental issues, local community issues, and issues of bipolarization, to heart, and commit our utmost efforts to present solutions as a company.

We sincerely hope that our efforts help to make a happier society. We also wish that all of you reading this report will continue to give SK chemicals your support and care as we walk on the path to a happy society together.

Thank you.

2014 HIGHLIGHTS

In 2014, the Green Chemicals Business by SK chemicals completed establishment of the PPS business, a component of super-engineering plastic with high temperature and chemical resistance, which led the way in creating an eco-friendly industrial environment and developing materials. The Life Science Business has focused on developing products under the goal of achieving "a great leap forward as a global leading company by providing total healthcare solutions." SK chemicals will not waver in a rapidly changing management environment as it goes forward to achieve even bigger dreams.

Green Chemicals Business



1 World's only PPS technology

Carry out super-engineering plastic business

Initz, a joint venture company with the Japanese company Teijin, signed a contract to supply super-engineering plastic to A. Schulman, a global chemical company, and conducted joint marketing. As a component of super-engineering plastic with high temperature resistance, PPS* developed by SK chemicals is the world's first PPS without chlorine as the company does not use solvent that is used in existing processes.

*PPS: Poly phenylene sulfide



1 World's first bio-copolyester

Focus on developing new uses for ECOZEN[®], eco-friendly materials

SK chemicals has led the green movement in the domestic materials market thanks to its ECOZEN[®] eco-friendly materials. As a bio-copolyester* that does not discharge environmental hormone, ECOZEN[®] is an eco-friendly material which is made by using a monomer extracted from corn.

*Copolyester: A material made by combining other raw materials with existing polyester resin materials



77,500 *kl*

Win an order for the supply amount of bio heavy oil

In March 2014, SK chemicals started its bio heavy oil business by winning a bid for Korea Midland Power. Based on its competitiveness as the top in domestic biodiesel market share, the company has supplied 77,500kl of bio heavy oil to Korea Midland Power, achieving a successful first business year.



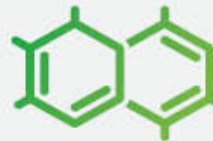
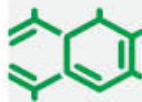
Life Science Business

1 Global No.1 vaccine company

Sign a contract for joint development of next-generation pneumococcus vaccine

On March 19, 2014, SK chemicals signed a joint contract with Sanofi Pasteur to develop and sell next-generation pneumococcus vaccines. These products are expected to be marketed after 2020 after conducting further clinical research and licensing.

To implement clinical research and development for the new typhoid vaccine, which is being jointly developed with the International Vaccine Institute (IVI), the company received funds of USD 4.9 million (about KRW 5.4 billion) from the Bill & Melinda Gates Foundation.



3 World's third commercialization

Acquire approval for SKYCELLFLU® pre-filled syringes

SK chemicals acquired approval for "SKYCELLFLU® pre-filled syringes" using cell cultures for developing influenza vaccines for the first time in Korea from the Ministry of Food and Drug Safety. This is the world's third commercialization, following global companies such as Novartis and Baxter.



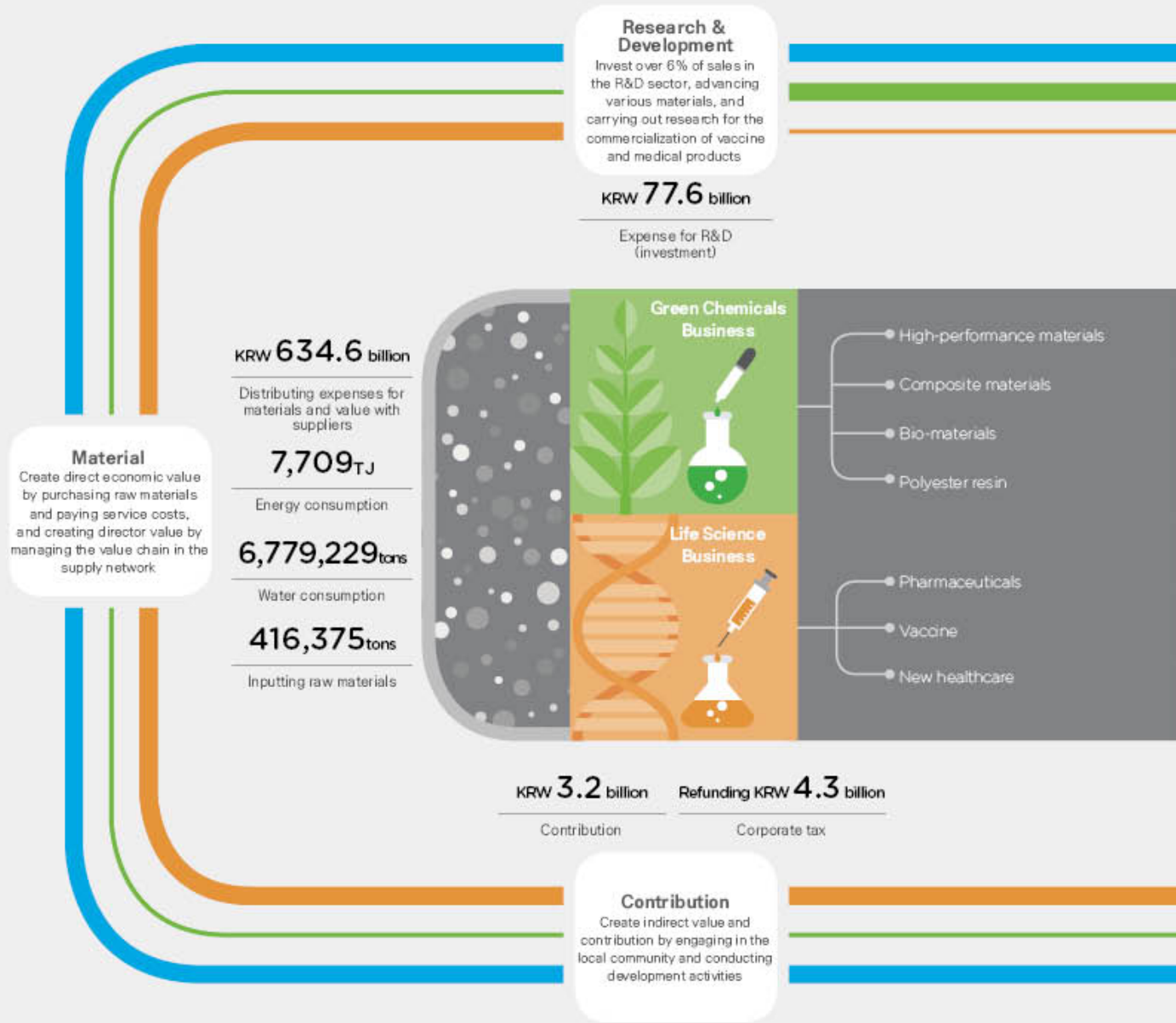
KGMP approval for 140 million doses

KGMP approval for qualification

SK chemicals- SK chemicals LHOUSE (Andong) acquired KGMP approval for qualification with the advanced vaccine plant from the Korea Food & Drug Administration. LHOUSE, with its global-level facilities, can conduct commercial production at any time, thanks to the acquisition of Korea Good Manufacturing Practice (KGMP). From 2015, the plant will produce cell culture influenza vaccines at the production facility with the production capacity of 140 million doses a year.



CREATING ECONOMIC PERFORMANCES AND SHARING PERFORMANCES WITH STAKEHOLDERS BY SK CHEMICAL



Customers

Individual customers

SK chemicals makes great efforts to develop customer-oriented products to satisfy and bring joy to each and every customer by selecting the products they want and enhancing trust in the company and its products.

Corporate customers

Corporate customers are not only customers purchasing SK chemical's products, but they are also the company's representatives in that they use those purchased products to produce new products. Products from corporate customers are created to achieve the company's goal to "promote health of the human race and protect the Earth's environment" and contribute to ensuring sustainable win-win growth for each other.

Employees

Employees

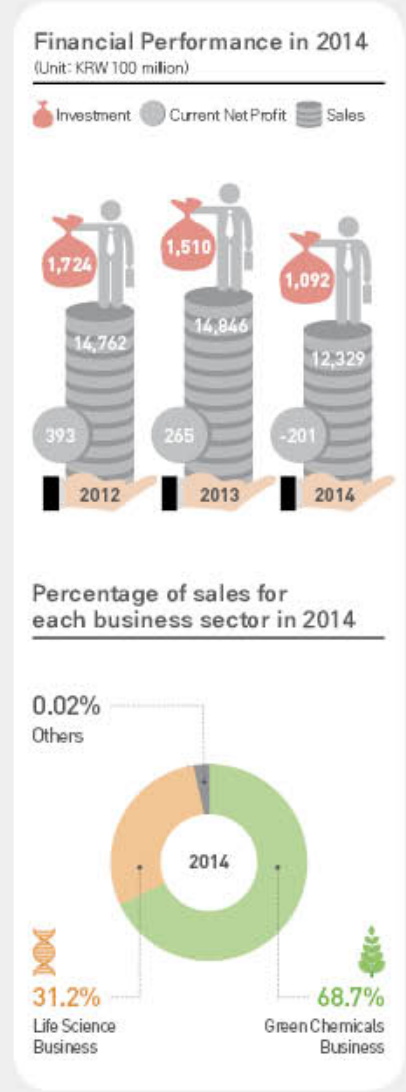
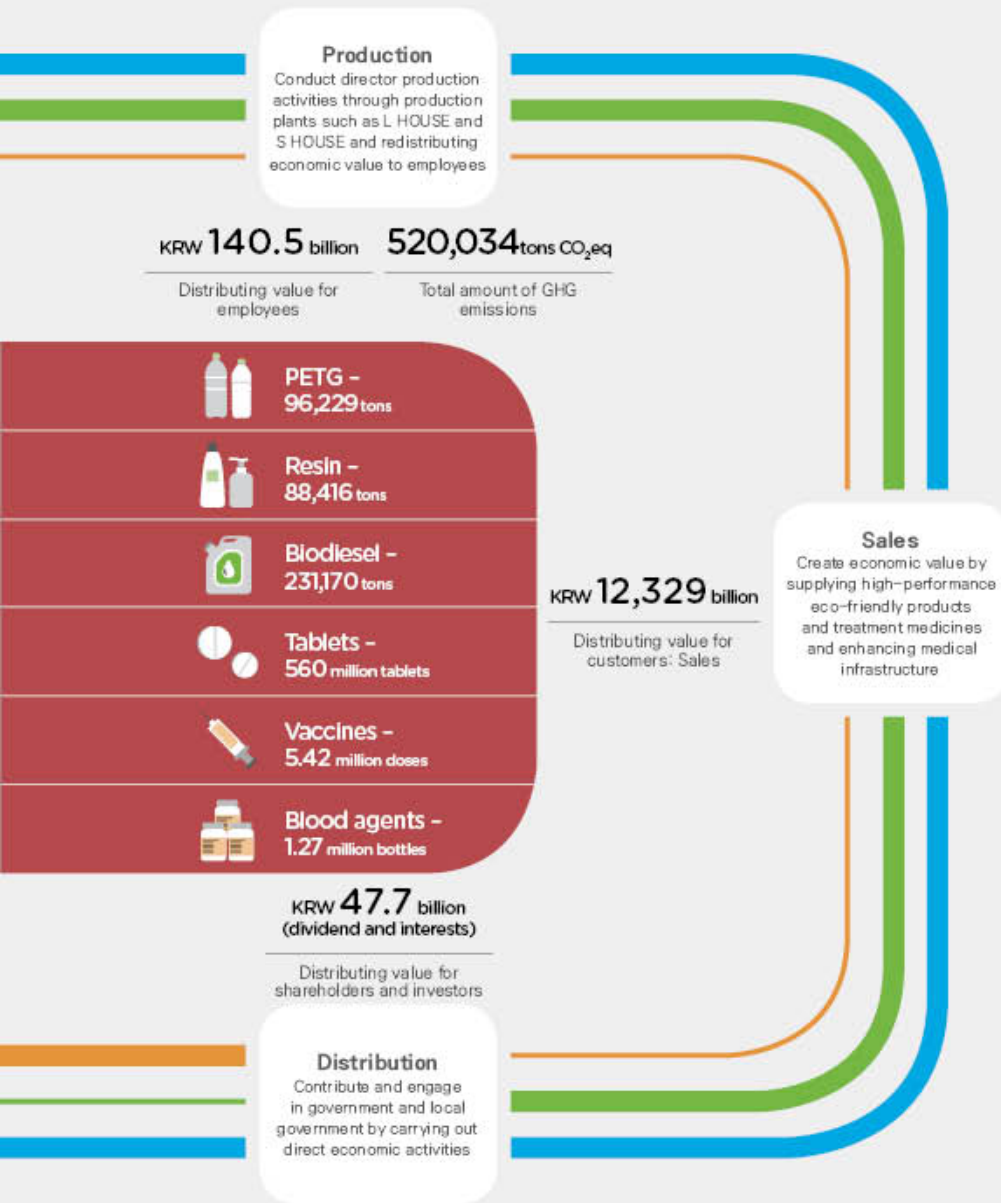
SK Group stipulates that employees should pursue continued happiness for themselves by proactively working to realize stakeholders' happiness. Based on this, SK chemicals provides a favorable workplace for employees can voluntarily do their best work.

*Refund of corporate tax reflects tax exemption for R&D investment.

SK chemicals also intends to promote public health by providing medical products and protecting the environment by supplying eco-friendly products. In terms of each level for creating economic performances, the company strives to share financial and non-financial performances with relevant stakeholders.

Customers Employees Shareholders & Other stakeholders

* The thickness of the line signifies the level of relevance.



Shareholders & Other stakeholders

Partners

Partners are SK chemical's business partners that grow together with the company. SK chemicals provides support for capacity building, technology development, and socially responsible activities of its partners for the win-win growth, and the partners, in turn, provide value needed by SK chemical.

Local community

Sustainable growth in the local community directly leads to the sustainable growth of SK chemical. The company aims to ensure a sustainable win-win relationship with the local community by identifying their needs and providing both desired and corporate value.

Shareholders and investors

SK chemicals strives to ensure satisfaction from shareholders and investors, and raise trust by enhancing corporate value and creating profits. To achieve this goal more effectively, the company conducts various activities for sustainable management in the economic sector, as well as the environmental and social sector.

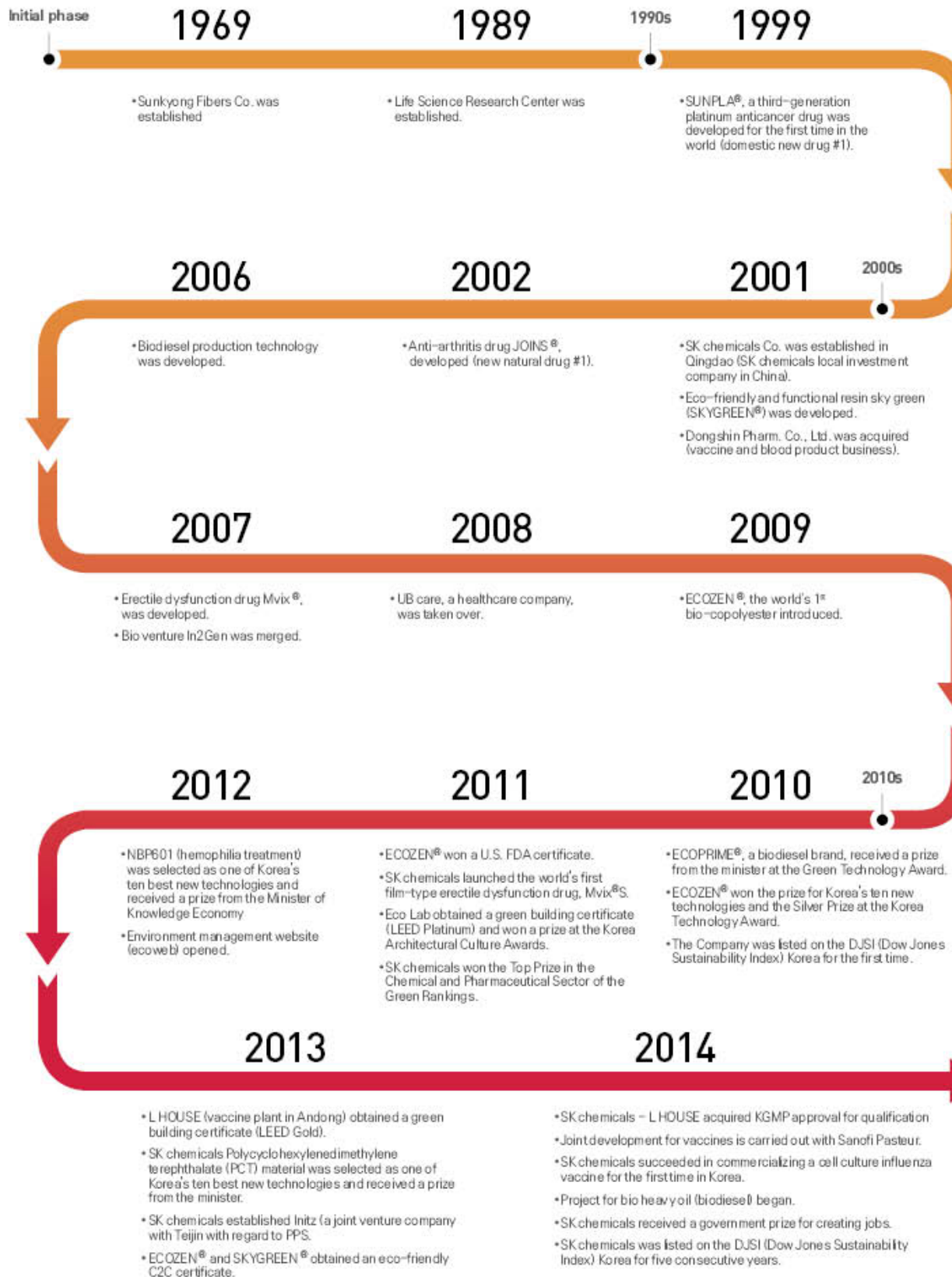
COMPANY OVERVIEW

Mission and Vision System

SK chemicals established the company's mission and vision in 2011 and has applied them in management activities. Our mission statement, "We promote the health of the human race and protect the earth's environment", defines the company's concept of corporate social responsibility (CSR). Our vision of realizing "A great leap forward as a global leading company providing solutions for eco-friendly materials and total healthcare" expresses the company's drive to take the lead in creating shared value (CSV) through sustainable management. For the past four years, SK chemicals has strived to achieve its vision with a sense of duty, and will continuously strive to ensure sustainable growth.



Company History



Global Network

SK chemicals operates its headquarters and five production plants (Ulsan, Osan, Cheongju (S HOUSE), and Andong (L HOUSE)) in Korea. While the Ulsan Plant produces chemical products (Green Chemicals Business), plants in Osan, Cheongju (S HOUSE) and Andong (LHOUSE) produce medical products for disease prevention and treatment (Life Science Business). The company also operates production plants in Suzhou and Qingdao, China and local offices in Germany, Singapore, and the U.S.

Current basic status

- Company name	SK chemicals
- Address (Headquarters)	310, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do
- Business type	Chemical business, Pharmaceuticals
- Number of employees	1,858 persons

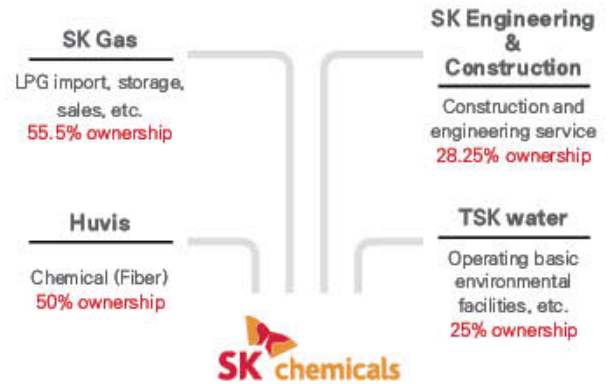
(As of December 31, 2014)



- Headquarters, Plants** in Korea Ulsan Plant, Osan Plant, Cheongju Plant (S HOUSE), Andong Plant (L HOUSE)
- Business office** Frankfurt, Singapore, Beijing, Guangzhou, Shanghai, Tokyo, Irvine, New York
- Plant** Qingdao, Suzhou

※ The Ansan Plant was taken over by CTCBIO in July 2014, and the Osan Plant was separated to form the company named SK Plasma in March 2015.

Current Status of Subsidiaries and Invested Firms



Domestic

ENTIS
Ultraviolet hardening resin, powder coating, Polyester resin
50% ownership

SK Syntec
Management consulting, etc.
100% ownership

Initz
PPS materials
66% ownership

SKCA
SKYGREEN®, ECOZEN®
100% ownership

SK Petrochemical
Producing and selling DMT, raw materials for fiber, film, and PET
100% ownership

Domestic

UB care
EMR Solution, medical equipment distribution, pharmaceutical marketing solution, E-commerce
44% ownership

Overseas

SK chemicals (Qingdao)
Prepreg
100% ownership

SK chemicals (Suzhou)
Adhesive polyester, small PETG packaging
100% ownership

ST Green Energy
Biodiesel raw materials, biomaterials trading, etc.
50% ownership

Overseas

SK Pharma Beijing
SK Pharma Beijing, TRAST®, SK Albumin®
100% ownership

SK chemicals GmbH
Pharmaceuticals, etc.
100% ownership



COMPOSITION AND OPERATION OF THE BOARD OF DIRECTORS

Composition and Operating System of the Board of Directors

● Corporate Governance Structure

SK chemicals undertakes great efforts with the management system based on the Board of Directors with the goal of maximizing the profits of shareholders and investors, protecting the rights of all stakeholders, and achieving long-term growth for the company. The company operates its Management Committee, Audit Committee, and Non-executive Director Nomination Committee under the Board of Directors and secures professionalism and independence by inviting experts in the social and economic sectors as non-executive directors.

● Current Status of the Board of Directors

SK chemical' Board of Directors is composed of four non-executive directors and three executive directors. As non-executive directors account for the majority of the BOD, the company carries out decision-making and corporate management based on independence and transparency. In addition to the Management Committee, Audit Committee, and Non-executive Director Nomination Committee, the company forms other committees such as the Financial Committee and Personnel Committee to help corporate management.

Composition of the Board of Directors

As of May 2015

Executive Directors



Vice Chairman Chey Chang-won
Recommended by the Board of Directors
CEO and Vice Chairman
Largest shareholder



President Kim Cheol
Recommended by the Board of Directors
CEO (Green Chemicals Business)
Management Committee/Non-executive
Director Nomination Committee



CEO Han Byeong-ro
Recommended by the Board of Directors
CEO (Life Science Business)
Management Committee

Non-executive Directors



Director Ahn Deok-geun
Recommended by Non-executive Director
Nomination Committee
Non-executive Director Nomination
Committee/Audit Committee



Director Choi Jeong-hwan
Recommended by Non-executive Director
Nomination Committee
Non-executive Director Nomination
Committee/Audit Committee



Director Kim Hui-jip
Recommended by Non-executive Director
Nomination Committee
Non-executive Director Nomination
Committee/Audit Committee



Director Park Sang-gyu
Recommended by Non-executive
Director Nomination Committee

● Operating System of the Board of Directors

For non-executive directors, the Non-executive Director Nomination Committee recommends final candidates at the general shareholders' meeting by screening their qualifications. If recommended, the appointment of non-executive director candidates and executive directors is determined at the meeting. In selecting directors to secure independence, director candidates who are appointed at the general shareholders' meeting are selected by the Board of Directors (executive directors) and Non-executive Director Nomination Committee (non-executive directors), which decides on a bill submitted to the meeting. The Non-executive Director Nomination Committee (three non-executive directors and one executive director) considers candidates' careers and professional experience in the economic, environmental, and social sectors to enable a balanced decision-making process and supervision on management. The committee then recommends the final candidates at the general shareholders' meeting after identifying whether candidates have any disqualifications stipulated in the relevant regulations such as the Commercial Act and Enforcement Ordinance of Commercial Act. SK chemicals also operates the Audit Committee, which is composed of all members as non-executive directors; this not only emphasizes the independence of the BOD, but also secures external transparency and prevents legal violations by the company.

SK chemicals takes measures to allow the Board of Directors to identify performances in each sector, such as the economic, environmental, and social sector, in a timely and accurate manner. To collect opinions from shareholders and employees, the company also upholds its principle to hold the BOD once a month or more, gathers agendas and announcements to discuss at the BOD, and notifies information such as date, address and agendas for holding the BOD to each director through the BOD Secretariat five days before holding the BOD. When the BOD is held, a minute book for the process and resolution for determined matters is written and stored. When there is an announcement, it is directly notified after completing the BOD. In 2014, the BOD was held 11 times in total. Important bills were resolved through thorough verification and discussion, and directors discussed measures by receiving reports on the current status of the global economy and domestic conditions. The attendance rate of seven directors at the BOD in 2014 was 86.3% (The attendance rate of each non-executive director and whether agendas were agreed or disagreed are detailed in the business report).

● Operation of the BOD and Internal Committee for Practical Bill Review by Non-executive Directors

SK chemicals conducts presentations and discussions on bills prior to holding meetings of the BOD or internal committees in order to enable non-executive directors' practical review of the bills which will be proposed to the BOD and internal committees. Through the above procedure, each non-executive director has sufficient prior review time before making a decision on each bill in the meeting. Through this process, the company aims to reinforce responsible activities for making decisions, providing sufficient prior explanation in making decisions on bills for the BOD and conducting Q&A sessions. This process signifies SK chemical's willingness to strengthen responsible decision-making activities through sufficient prior explanation and Q&A.

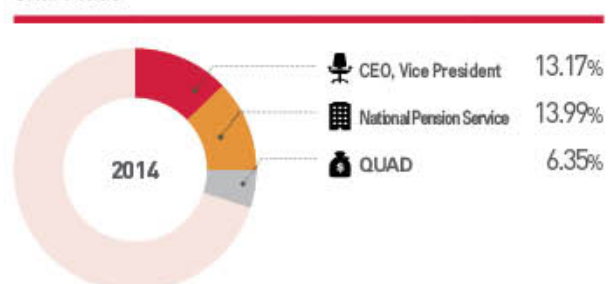
● Composition of Shareholders

The general shareholders' meeting is a core communication channel, and it is held each year to allow the CEO to report the current status of management to shareholders and to listen to opinions regarding major decision-making processes and management. Shareholders' opinions presented at the meeting are reflected in the overall management through the in-depth review process by the management and BOD. Major management matters regarding investors' profits are announced through the Data Analysis, Retrieval, and Transfer System of the Financial Supervisory Service, Korea Exchange, and SK chemical's website.

Distribution of shareholders (ordinary shares as of March 15, 2015)

Shareholder name	Chey Chang-won	National Pension Service	QUAD
Number of owned shares	2,745,761	2,791,256	1,323,298

Share ratio

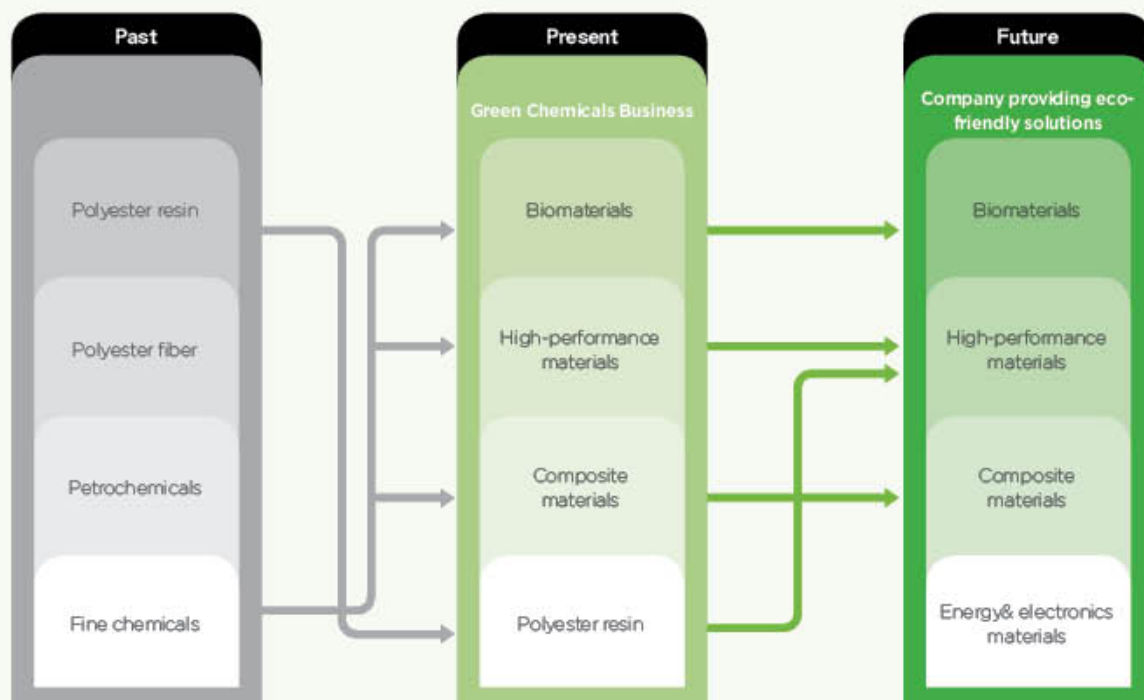


BUSINESS MODELS



SK chemicals has set "becoming a solution provider for eco-friendly materials" as its vision for Green Chemicals Business and focused capability in the entire chemicals sector. Eco-friendly materials are produced by using a small amount of fossil fuels to minimize environmental impacts in the entire production process, from raw materials to disuse of waste, or materials from nature. To concentrate on eco-friendly materials, the company has resolutely restructured existing business sectors such as the polyester fiber business and petrochemical business and reshuffled the business structure into polyester resins and fine chemicals business. Currently, the company is busy developing products by selecting composite materials, high-performance materials, and biomaterials as major sectors for development in the fine chemicals business along with polyester resin in the concept of eco-friendliness. In the future, we will integrate polyester resin into high-performance materials and diversify it, forming four major business sectors by adding IT materials.

Evolution of SK chemical's Chemical Businesses



Prospect for the Market Condition in 2015



Due to various economic changes such as the continuous economic recession in the Euro Zone, slow economic growth in emerging markets, and decreased growth rate of Korea's economy (3.5% in 2014 → 3.0% in 2015, Korea Development Institute), demands for chemical products have fallen. As the influence of products from the Middle East has continuously expanded in the Asian market, and with the enhanced supply rate by the Chinese market, it is expected that excess supply conditions will continue for some time. The opportunity to improve profitability still exists, thanks to reduced raw materials prices for low oil price (expected to have USD 50/ton on average in 2015, as of Dubai crude oil). Although the bio-energy business has the opportunity to expand the market for increasing the standard for RFS* (2.0% → 2.5%), it is expected that improvement in profits is limited due to the decreased price of soybean oil, the raw materials for rival products.

*RFS (Renewable Fuel Standards): A mandatory system for the combination of new renewable fuels. A ratio of combination of biodiesel in diesel

Strategic Direction and Goals for 2015



To achieve its goals for 2015, SK chemicals has implemented two strategic tasks, "raising competitiveness for existing business" and "making successful new business." To secure stable profits in existing businesses, the company targets the market based on differentiated products (eco-friendly/high-performance), leads development for new use, and maximizes efficiency in the operation of production facilities. We are developing new uses and maximizing initial sales to succeed in our existing invested new business i.e. super-engineering plastic PPS.

Activities and Performances for 2014



In 2014, the bio-energy business in SK chemical's Green Chemicals Business established a new growth sector by expanding into the bio heavy oil sector.

Supply 77,500kl of bio heavy oil by participating in the bidding by Korea Midland Power

Engage in the national initiative of developing the head lamp for auto weight lightening

Sign a joint marketing contract to supply PPS with A. Schulman, a global compounding company

Overview of Green Chemical

Biomaterials Sector

Biomaterials fuel, plastic, and chemical materials which are made of ingredients derived from biological sources. As a solution for sustainable society, biomaterials provide effective alternatives for petrochemical counterparts, and can thus help delay the depletion of petroleum. Climate change and the depletion of oil resources caused by the use of fossil fuels are directly related to the continuity of the chemical material industry, and a new business paradigm is desperately needed at this time. Recently, bio-materials have been enhanced in price and quality competitiveness compared to the petrochemical material business. Higher demand from consumers who favor eco-friendly products and governments' policies to promote renewable materials are expected to help the biomaterial market to grow 10% every year and finally reach around KRW 80 trillion in 2020.

Biodiesel is a methyl ester composite obtained by reacting natural animal or botanical fat with methanol. This eco-friendly option can be used in cars without modifying existing diesel engines. The fuel has been marketed in Europe, the United States, and the Southeast, while a pilot project to popularize biodiesel was launched in Korea in 2002. At the moment, SK chemicals is supplying diesel containing 2% biodiesel (BD2) with 77% or more of biodiesel dissolves in its natural state in just 28 days. This is a great fuel for ships, which can be discharged into the surrounding waters without causing any

pollution. The carbon dioxide that biodiesel emits is absorbed again by oil plants. An article in the Chemistry Journal published in June 2010 suggests that each ton of biodiesel reduces carbon dioxide emissions by 2.2 tons throughout the entire plant life cycle, from the plant's growth to its consumption as a fuel. SK chemicals has also developed an original manufacturing process that uses a by-product from palm oil manufacturing as an ingredient for the biodiesel ECOPRIME®. This new diesel has been in circulation in the Korean market since 2008 and has expanded into the biodiesel sector for generation. Thanks to the reliable supplies of the raw material from ST Green Energy, a Singapore-based subsidiary of SK chemical, the Company has been able to maintain competitive prices for ECOPRIME® and has made it the No. 1 biodiesel brand in Korea.

Bio-plastic and Bio-chemical Bio-plastics and bio-chemicals are plastic and chemical materials that are produced through chemical or biological processes by using biomass, which is a renewable material such as plant-oriented resources, as raw material. The bio-plastic and bio-chemical sector has a high possibility for application as these materials can develop products for various uses, substituting existing products based on petrochemical materials. SK chemicals has selected bio-plastic and bio-chemical products, which have remarkable eco-friendliness and are suitable for humans as candidates for future growth engines. The company is focused on developing and commercializing these products by utilizing its extensive experience and technical capability in the resin and fine chemical sector.

High-performance Materials

Use our brand name, not just the generic "PPS" resins, which SK chemicals has succeeded in developing based on its differentiated technology without the use of harmful substances, such as chlorine, form a super-engineering plastic that is light yet resistant to shock and heat. The demands for this material are increasing, especially for manufacturing electronics and automobiles. As chlorine has become controversial due to its hazardous characteristics, more manufacturers in the United States and Europe are pressured to find alternatives. SK chemicals has established Initz, a joint venture, with Teijin, a global chemical company, for sufficient production of PPS as the market for the product is expected to grow at an annual rate of 7% until 2020. The construction of the new plant that will be capable of producing 12,000 tons of PPS is scheduled for completion in 2015. The nation's first super engineering plastics PCT (Polycyclohexylene Dimethylene Terephthalate) is developed by SK chemical, and it can withstand heat temperature of 260°C or higher. In addition, PCT is used in reflectors for LEDs since it has strong thermal stability, reflectivity, and light resistance. Our PCT technology was duly recognized as SK chemicals received the Ministry of Commerce and Industry Prize at the "2013 Korea Technology Awards" and a "ten best new technologies" certificate. SKYTRA®, a compounding brand of SK chemicals, offers various solutions with products based on eco-friendly and high-performance resin produced by SK chemicals. Sales of SKYTRA® steadily grew thanks to its use in various business sectors such as automobiles, civil engineering, the electric and electronic sectors, and life and the environment.

ECOPRIME® Polyester Resin Containing Biomass SK chemicals launched ECOZEN®, a bio-based plastic, in 2009. ECOZEN® not only remedies the shortcomings of petrochemical-derived plastics, but also significantly reduces dependency on petrochemical ingredients and thereby helps to slash greenhouse gas emissions. Acrylic is a transparent material that is often too brittle. Polycarbonate may be durable, but it contains BPA (bisphenol-A), a harmful substance. PETG (Polyethylene Terephthalate Glycol) may be transparent and durable, but it cannot withstand much heat. ECOZEN® is transparent and durable and can withstand heat up to 110°C. It has a much wider range of applications, such as washers, microwavable containers, building materials, and more. It gives the impression that

the writer cannot think of any other applications, and more. ECOZEN® has thus been certified as a safe food contact notification (FCN) by the U.S. Food and Drug Administration, as "Bio-plastic No. 1" by the Korea Bio Material Packaging Association, and as a safe and hygienic plastic by the Japan Hygienic Olefin and Styrene Plastics Association. It was also recognized as one of Korea's "Highest Brands" in 2012.

Composite Materials

A composite material refers to a product that is made by combining two or more substances, often for the purpose of producing a much better and more durable product than using a single substance. Since 1986, SK chemicals has been producing Prepreg, a composite material made by mixing reinforced fiber and carbon fiber. Carbon fiber is lighter than aluminum, but stronger than reinforced steel. It is 10 times as strong as reinforced steel, with only 20% of the reinforced steel's weight. Carbon fiber is thus widely used as a key material for building space shuttles and aircrafts. It is now emerging as an effective alternative material for making automobiles, as automakers are seeking ways to lighten the weight of their products in response to stricter regulations on gas emissions. Carbon fiber is also increasingly being used to create lighter and more effective blades (wings) for wind energy generators. In 2012, SK chemicals signed an agreement with Mitsubishi Rayon for a strategic partnership to supply materials. The Company is planning to increase composite material sales, including Prepreg, to KRW 200 billion by 2018. Among SK chemicals' products, materials for pixels for displays, electrolytes for ultra-high capacity capacitors, and polyester resin for adhesives are classified as composite materials.

IT Materials

High-purity solvents, which are used in the industry for equipment analysis, synthesizing super fine chemical products, and the electronic and bio-technology industry, have been developed based on a technical partnership with Honeywell, U.S. and independent technology from SK chemicals. They have expanded to all over the world, including not only Korea but also the U.S. and China. The company has also carried out the development of materials for displays based on organic composite technology, such as OLED pixel materials, LDC, and PDP, as well as precursors for semiconductor.

Product Line-up

High-performance materials



SKYGREEN®



SKYTRA®



ECOZEN®



ECOTRAN®

Bio-materials



Biodiesel



ECOPRIME® tank body

Composite materials



Carbon fiber



Composite components



LIFE SCIENCE BUSINESS (LS)

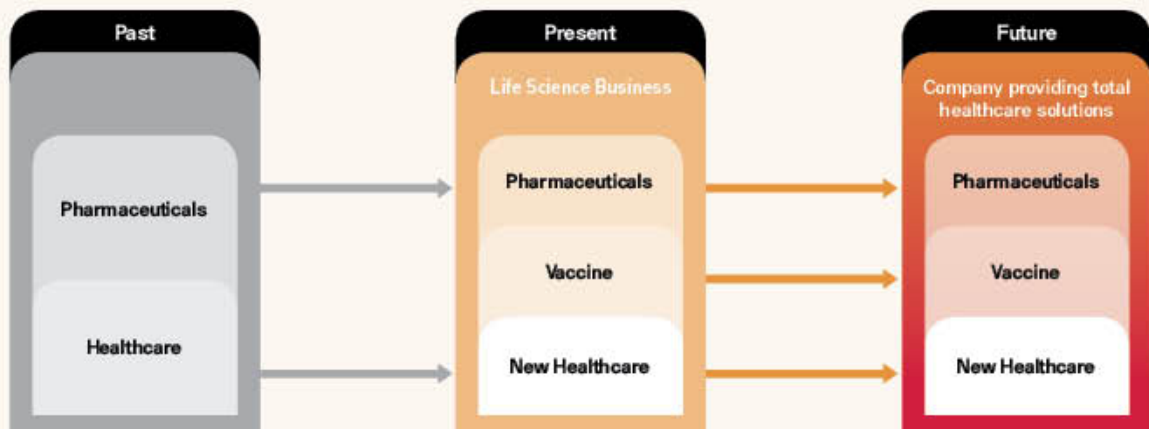
To realize its vision of becoming a “Global Total Healthcare Solution Provider,” SK chemical’s Life Science Business has developed three new medicines since developing Korea’s first new medicine, “SUNPLA®,” in 1999 and has focused on R&D and investment in sectors such as synthetic drugs, vaccines, blood agents, and new healthcare business. The company’s synthetic drug and natural medicine sector accounts for a large amount of market share in sectors with products such as an independently developed film-type erectile dysfunction drug and natural medicine for arthritis. The company also exports technology for hemophilia medicine as well as a patch-type medicine for dementia based on its remarkable R&D capability. SK chemicals has selected vaccines as our next-generation growth engine, and has maintained the top position in the domestic market share after pioneering the vaccine market in 2006. As we intensively invested in the R&D sector for developing independent vaccines and established a cutting-edge vaccine production plant, the company succeeded in commercializing an influenza vaccine by cell culture, which is next-generation technology, in 2014 for the third time in the world and acquired sales permission from Korea’s Ministry of Food and Drug Safety for the first time in Korea. By reinforcing the pipeline for independently developed vaccines, the company has strengthened its foundation to maintain its top position in the domestic market share. The company also signed a joint research and development agreement with a global vaccine company for next-generation pneumococcus vaccines, demonstrating the company’s world renown R&D capability. Based on its existing synthetic drug foundation, SK chemicals has not only expanded the business into vaccine-based bio-medicine and blood product sector, but has also reinforced investment in the new healthcare sector, providing solutions for customized disease treatment and prevention.

A place playing a role as “light” and “salt”, which are imperative to the life and health of the human race
 A place producing best medicines which are necessary for our healthy life
 A place contributing to ensuring an energetic life for the human race with enhanced quality

Vaccine and blood agent plant at Ansong Composite medicine plant at Cheongju

L HOUSE S HOUSE

Evolution of SK chemical’s Life Science Businesses



Prospect for the Market Condition in 2015



In 2015, the pharmaceutical industry is expected to continue its policy regulations (policy on low medicine price and double-punishment/two-out system for rebate) and low growth trend. Due to the amended version of the National Health Insurance Act which took effect in July 2014, compliance with legislations and ethical management by each company have been strengthened. Accordingly, large-sized companies reduce marketing activities, which leads to decreasing sales, while sales of small and mid-sized companies grow. However, as the Patent-Permission Linkage System* was implemented in March 2015, it is expected that large companies will enjoy a more favorable business environment than small and mid-sized companies. In 2015, large-sized companies with R&D capabilities are expected to reinforce research for developing new medicines and also proactively pioneer the overseas market due to limitations in the domestic market. According to the record for import and export of pharmaceutical products in 2014, which was released by the Korea Pharmaceutical Traders Association, the amount of medicine exports was USD 2,772.3 million, which increased by 10% compared to the previous year. The year of 2015 will be an important year for the overall industry to aim for the global market by developing differentiated new products and innovative new medicines.

*Patent-Permission Linkage System: Under this system, if a pharmaceutical company applies for permission for generic products (copied medicines), then the company notifies its application to a patent holder. When the patent holder raises an objection, the manufacturing and marketing of generic products is suspended until that patent conflict is addressed. Even if the patent holder files a lawsuit, the procedure for permission is automatically suspended for one year (sales limitation system). Additionally, the system for providing permission for priority product sales will be introduced.

Strategic Direction and Goals for 2015



The year of 2015 is expected to be a year of unstable market conditions. SK chemicals' Life Science sector plans to use this year to maximize global capabilities by reinforcing basic business to secure sustainability so that continued investment can be made in R&D and production. The company will carry out major activities to establish a foundation for the global market by successful launching products as 2015 is the first year it will begin commercial sales of cell culture influenza vaccine, the first product in the vaccine R&D sector in which it intensively invested since 2006.

Activities and Performances for 2014



In 2014, SK chemicals focused on raising the stability of its basic businesses by conducting preemptive responses for market risks, and implementing activities for the vaccine R&D sector and global market.

Acquire permission to sell Korea's first cell culture influenza vaccine by the Ministry of Food and Drug Safety.

Sign a joint agreement to research and develop next-generation pneumonia vaccine

Complete establishment of a new advanced vaccine plant with the capability to produce 140 doses a year

Achieve exports worth 30 billion of patch products for treating dementia

Overview of Life Science

Pharmaceutical Division

Synthetic Drugs In the hundred plus year history of Korea's pharmaceutical industry, SK chemicals opened a new chapter in the synthetic drug field in 1999 by the successful production of SUNPLA[®], Korea's first new drug that earned international recognition. Through continuous R&D and investment, the company went on to launch Mvix[®], the most effective erectile dysfunction treatment in the world, and Mvix[®] S, the first film-type erectile dysfunction treatment in the world. With its advanced research workforce and continued investments in R&D, SK chemicals continues activities for the development of new medicines to treat diseases such as fibrous tumors and endometriosis.

Natural Drug Natural drugs refer to pharmaceutical products made from standardized composites by researching medicinal herbs and other natural materials including plants, animals, minerals, microbes, and metabolites. Through continuous research in the natural drug sector, SK chemicals developed and launched GINEXIN-F[®], a drug for enhancing blood circulation, in 1991 as well as JOINS[®], Korea's first natural drug, in 2002. After the launch,

GINEXIN-F[®] has maintained its top rank in the domestic market share as the company's representative brand. As the product is exported to the Middle Eastern market under the company's unique brand, it has displayed its superior status and has established its position in the market as an effective drug for enhancing blood circulation. As a natural drug, JOINS[®] treats arthritis with its mechanism of inhibiting cartilage destruction and effect of reducing pain and anti-inflammation, and has been ranked at the top in sales in the domestic market among relevant products.

DDS Technology In developing medicines, DDS (Drug Delivery System) technology refers to a system for effectively conveying the necessary amount of drugs to minimize the side effects of existing drugs and maximize their efficacy and effectiveness at the same time. SK chemicals launched TRAST[®], a popular patch-type treatment for arthritic knee pain, and developed the product as Korea's representative brand. This treatment product applies remarkable drug conveyance technology: it includes a function for releasing rate control, which continuously discharges the same concentration level, with a penetration enhancer to help the medicine effectively penetrate the skin. The company has also created various performances based on best DDS technology. For example, OMED[®], an innovative gastric

ulcer treatment, has been the first Korean complete drug formula exported to the European Union since 1999, while SID710, the world's first patch-type dementia treatment, acquired permission for sales in the European market and expanded its countries for export.

Vaccine Division (Bio)

In the bio-medicine sector, which is expected to enjoy continuous growth thanks to the development of medicine and science technology, SK chemicals has made continuous investment in research for premium vaccines, blood agents, and recombinant pharmaceutical products. Along with its change in the purpose of medicine from alleviating symptoms and treatment to preventive and customized medicine, the company entered the vaccine market in 2006 and commenced intensive investments from 2008 to develop premium vaccines and establish vaccine production facilities. We also produce and sell vaccines necessary for public health in cooperation with multi-national pharmaceutical companies. As for investment performances, the company acquired sales permission for its next-generation technology, the cell culture influenza vaccine, from the Ministry of Food and Drug Safety for the first time in Korea. We also proved our technical superiority by signing a joint research and development agreement for a next-generation pneumonia vaccine with Sanofi Pasteur, a top sales company in the global vaccine business. In 2014, SK chemicals established an advanced cell culture vaccine plant in Andong to produce 140 million doses a year, the third to do so in the world, and will start commercial production from 2015. With the commercialization of premium vaccines including the cell culture influenza vaccine, SK chemicals will contribute to developing the national medical industry and establishing sovereignty. To expand the blood agent business, the company signed an investment agreement with the Andong Government for establishing a second bio plant, and began construction of a bio plant (blood agents) in the

Gyeongbuk Bio Industrial Complex. As we took over IN2GEN, a domestic bio venture company, in 2008, the company has secured the sector based on bio technology such as gene research and protein engineering; we also succeeded in being the first to license out genetic-reengineering treatment NBP601 for hemophilia and at the largest scale in Korea in 2009. Currently, the product has completed Clinical Phase 3 for the global market with sales permission in progress.

New Healthcare

As science technology has rapidly developed, our society in the future will have converged and combined advanced technologies such as Nanotechnology, Biotechnology, and Information Technology. To lead and prepare for this future with mid and long-term strategies, SK chemicals has begun new healthcare businesses in the medical IT, dielectric, and diagnosis sectors. In 2008, the company laid the foundation for U-Healthcare by taking over UB care, a leading medical IT company. To prepare for analysis dielectrics at the center of customized medicine, we also signed a business agreement with DNA Link, a company that analyzes dielectrics, and launched DNAGPS, a service for analyzing personal dielectrics and providing service at medical institutions. Personal dielectric analysis service provides assessment materials for customized medicine and healthcare by analyzing sequence listing and identifying personal hereditary characteristics such as disease, sensitivity, and drug metabolism. In the diagnosis sector, the company has applied technology for blood fingerprinting, developed by the National Cancer Center, and has started a venture for cancer screening examinations for colorectal cancer and breast cancer. Beyond disease treatment, the new healthcare sector has created value in new sectors such as diagnosis, healthcare, and improvement of medial infrastructure, and has developed into a sector to help SK chemicals to grow into a total healthcare solution provider, enhancing the quality of life for human beings.

Product Line-up

Vaccine & Blood agents



DPT Tr®
Pediatric Vaccines



LIV-GAMMA INJ SN®
Human Immunoglobulin



ALBUMIN®
Human Serum Albumin (HSA)



SKYCELLFLU®
Independent production
of influenza vaccine



TETABULIN SN®
Tetanus Drug



ANTITHROMBIN III®
Human Antithrombin

Pharmaceuticals



MVIX-S®
Mirodenafil ODF
(Oral Disintegrating Film)
Erectile Dysfunction Drug



GINEXIN®
Ginkgo Biloba Ext.
Blood Circulation Improvement



SUNPLA®
Carcinostatic Drug



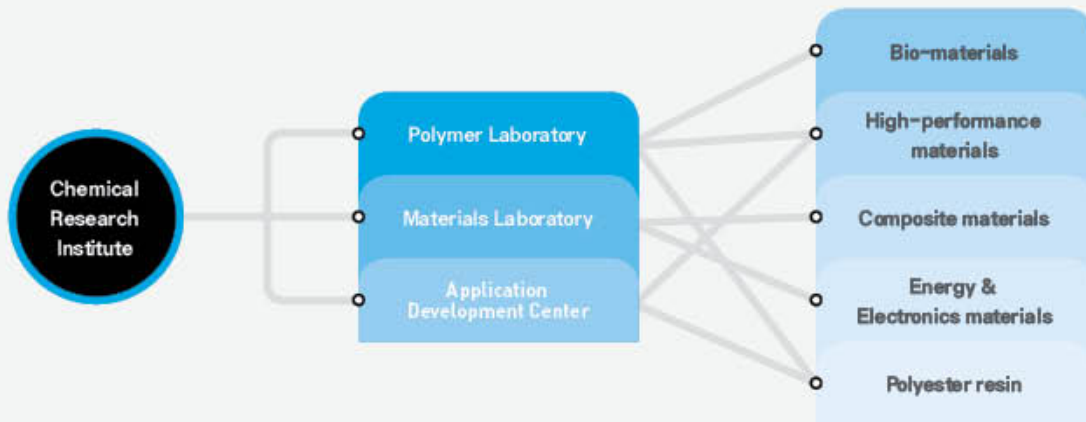
JOINS®
Korea's First New All-Natural
Drug for Osteoarthritis and
Rheumatoid Arthritis



SK chemicals has applied various efforts to meet the expectations and needs of various stakeholders including customers and develop innovative products. The company also aims to fulfill its social and environmental responsibilities by striving to reinforce responsible activities for products, such as securing product safety and managing customer grievances.

● Strategies and Performances for R&D in Each Business Sector

To achieve its mission of "promoting health of the human race and protecting the environment" and vision of "becoming a global leading company," SK chemicals has made continuous efforts in securing R&D competitiveness and has implemented R&D strategies through the Research Planning Team and Strategy Planning Team. The company also conducts various tasks based on its R&D capabilities with the aim of pioneering the global market. To achieve this goal, we have continuously invested 5% and more compared to the sales in each year.



*As the Chemical Research Institute focuses on which functions are included in products, the institute carries out technical development by focusing on products' functions in consideration of post-operation use.



*The Life Science Research Institute is a one-to-one matching-typed research institute that produces preventive pharmaceutical products and medicines targeting specific diseases.

● R&D Strategy for Green Chemical

Resin Business Division

The resin business division has focused on R&D to complete its portfolio based on copolyester high value-added products and has secured competitiveness with the quality necessary to expand the copolyester market. In 2014, the company succeeded in developing copolyester (Shrink Film), a special film offering a new quality, by utilizing differentiated raw materials and employing excellent processing technology. We have also satisfied customers with proactive development of its use by operating the ADC (Application Development Center). As the world's first bio copolyester featuring high eco-friendliness and properties, ECOZEN® is focused on expanding the development of use in cosmetics and food containers, as well as developing new products.

Bio Materials Division

To reinforce the market competitiveness of the company's representative biodiesel brand, ECOFRIME®, SK chemicals has developed processing technology for various raw materials by utilizing separation facilities. The company also succeeded in making business for heavy oil by developing biodiesel, which was limited for use in transport, into generation. As this product has superior combustibility and eco-friendliness compared to existing Burker-C, it is expected that the product will be increasingly used due to impacts such as the RPS* policy. To raise competitiveness in the biodiesel business, we will carry out research for the development of new processes to utilize various raw materials and focus on R&D to secure new bio materials.

*RPS (Renewable energy Portfolio Standard): RPS (Renewable energy Portfolio Standard): Mandatory provision of new renewable energy. It is a system where it is mandatory to supply a certain percentage of new, renewable energy in the total generation amount by business operators who have facilities with over 500MW.

High-performance Material Business Division

High-performance Material Business HQ To ensure sustainable growth in the coating/adhesive business, SK chemicals focuses on developing eco-friendly/high-performance products. With the aim of coping with stricter worldwide regulations on Bisphenol A, the company has developed an internally coated polyester resin to substitute epoxy resin and is developing eco-friendly and aqueous high-performance resin by reflecting customer needs. To expand the high-performance resin business, we have continuously developed new PCT products and will focus on developing new uses. Based on the polyester resin owned by SK chemical, we aim to begin engineering plastic business by developing compounding products, which can be applied to auto parts, electric and electronic parts, and leisure products, and will more proactively concentrate on developing uses based on the work of the ADC (Application Development Center).

Composite Material Business HQ To overcome intensified competition and secure opportunities for growth in the composite material business, SK chemicals has developed differentiated Prepreg, completed performance assessment and customer certification for composite materials in shipping/marine-use parts, and has strived to research and develop high value-added materials such as composite materials

for industries, wind power technology, and automobiles.

Establishment of the Pipeline for New Growth

The Chemical Research Institute conducts R&D to find new growth engines. The institute performance researches semiconductor materials and electrolytes for secondary battery by utilizing the company's organic synthetic technology and will proactively establish a platform for bio-refineries to develop new materials utilizing bio technology.

● R&D Strategy for Life Science

Under its mission of "promoting the health of the human race," SK chemicals' Life Science Research Institute aims to continuously hone our competitive edge in the R&D sector as a global leading company, and carries out global licensing for new revised medicines by developing new medicines and utilizing patent pharmaceutical technology in pursuit of pioneering the global market based on the company's R&D capabilities. Since the company succeeded in developing Korea's first new medicine, "SUNPLA®," in 1999, the company has developed three new medicines. We have continuously invested over 50% of total investments for R&D four sectors—vaccines, revised new medicines, new composite medicines, and natural drugs—by reinforcing the development of products meeting global needs. Thanks to these efforts, the company concluded an agreement for licensing out technology for hemophilia treatment by reorganizing into a multi-national pharmaceutical company in 2009, as well as completing clinical tests around the world. We have also shown great performances in expanding our export countries by beginning with sales permission for SID710, a patch-type generic medicine for dementia, in Europe. Since the company entered the vaccine sector in 2006, the company has led the sector by acquiring permission for the cell culture influenza vaccine for the first time in Korea in 2014. SK chemicals will establish a wide product portfolio by making continuous investments in the premium vaccine, blood agents, and reorganizing medicine sectors, which will be a pivotal growth engine in the future life science business.

● Major Performances for R&D

- Acquiring permission for Korea's first cell culture influenza vaccine (SKYCELLFLU®): With the R&D results in this premium vaccine from 2008, the company acquired Korea's first permission with next-generation technology to produce vaccines by using animal cell culture, unlike existing vaccines that use fertile eggs.
- Approving ND for Clinical Phase 3 in developing quadrivalent influenza vaccine: The company is carrying out Clinical Phase 3 for the vaccine, which allows only for one inoculation to provide immunity for four types of influenza viruses. Influenza vaccines, which are currently distributed in the market, help to develop immunity for three types of viruses as trivalent vaccines.
- Signing a joint research and development agreement for next-generation pneumonia vaccine: The company concluded a joint R&D agreement for next-generation pneumonia vaccine with Sanofi Pasteur, a global leading company in vaccine sales.

R&D Task

Category	Task name	Application	Development stage	Notes
Bio	NBP601	Medicine for hemophilia	Clinical Phase 3	Exporting technology
	NBP606	Preventing pneumococcus	Clinical Phase 3	
	NBP607	Preventing influenza	Completed to give permission	Applying cell culture technology for the first time in Korea
	NBP607-QIV	Preventing influenza	Clinical Phase 3	
	NBP608	Preventing shingles	Licensing	
	NBP602	Preventing and medicine for hepatitis B	Licensing	
	NBP613	Preventing pediatric enteritis	Clinical Phase 1	
	NBP615	Preventing cervical cancer	Clinical Phase 1	
	NBP604	Medicine for hemophilia	Pre-clinical	
Compound	YKP10811	Medicine for irritable bowel syndrome	Clinical Phase 2	
	THVD201	Medicine for irritable bladder syndrome	Clinical Phase 3	
	NCE403	Medicine for endometriosis	Clinical Phase 1	
	NCE406	Medicine for diabetes	Pre-clinical	
	SID123	Medicine for erectile dysfunction and premature ejaculation	Clinical Phase 1	
	SID710	Medicine for dementia	Sale	Launching the first generic in Europe Completing technology export in the U.S. (in development)
Natural ingredients	HMP301	Medicine for asthma	Clinical Phase 3	
	SID132	Medicine for articular diseases	Clinical Phase 3	
	SID142	Medicine for chronic total occlusions	Clinical Phase 1	

R&D Investment and Economic Performance

To achieve a sales target of KRW 2.4 trillion by 2020, SK chemicals has invested nearly KRW 75.7 billion in the R&D sector on an average for the past three years. Thanks to its proactive R&D activities, the company applied for 181 patent cases and registered 80 patents in 2014 to continuously secure intellectual rights. To become an eco-friendly chemical and total healthcare company with global competitiveness, SK chemicals focus its business capabilities on "Green Products", which are eco-friendly and human-friendly. We also proactively utilize open innovations such as launching excellent external technology and establishing a

cooperation system with clients to create R&D performances, and we lay new foundations to compete with globally leading companies through out extensive R&D efforts.

Reinforcing Activities with Responsibility for Products

The R&D sector at SK chemicals has made active contributions with a sense of responsibility. The company's Chemical Research Institute deals with customer grievances or needs after selling products with R&D personnel based on the work of the ADC (Application Development Center), and dutifully handles aftersales by not only addressing technical issues alone, but also by engaging

Current Status of R&D Expenses

(Unit: KRW 1,000)

	2012	2013	2014	2015 (As of budget)
Sales	1,495,217,028	1,484,282,266	1,232,555,277	1,302,069,129
R&D expenses	66,607,363	80,623,581	79,991,907	85,708,241
Ratio of R&D expenses compared to sales	4.5%	5.4%	6.5%	6.6%

Current Status of Patent Application/Registration by Chemical Research Institute in 2014

	Domestic	Overseas	Total
Application	41	79	120
Registration	21	26	47
Total	62	105	167

Current Status of Patent Application/Registration by Life Science Research Institute in 2014

	Domestic	Overseas	Total
Application	16	45	61
Registration	9	24	33
Total	25	69	94

in post-process issues and providing solutions. The company has acquired certificates such as ECOZEN Implant® (U.S.), ECOZEN® (EU), ECOPLAN® (U.S., EU), and SKYPURA (U.S.) FDA in 2014 to ensure that customers can trust its products. SK chemicals also proactively earns certificates for food containers and packaging of medicines by external institutions to make sure that products comply with laws and regulations in each country. SK chemicals' Life Science Research Institute received the standard for production management of best medicine (GMP, Good Manufacturing Practice), which guarantees the safety and effectiveness of medicines as well as quality in terms of reinforced product management, from the Ministry of Food and Drug Safety. With the beginning of the export of OMED® in 1999, the company has acquired not only domestic certificates but also the European standard for production management, EU GMP. Through continuous improvement, we have proven our world-renowned capability for quality management by acquiring EU GMP for SID710, a patch-type product, in 2013. As a vaccine production plant cGMP (standard for production management of best medicine in the U.S.) level was completed in Andong in 2014 and SK chemicals intends to supply better products through advanced quality management.

● Efforts to Secure Product Safety

Fulfilling its responsibility for product safety, SK chemicals conducts post-marketing surveillance and Pharmacovigilance. For the Green Chemicals Business, the company supplies trustworthy products by shipping only products whose safety and quality are verified, and strives to improve the packaging process to prevent external foreign substances. For the Life Science Business, the company asks for inspections by hospitals/clinics after selling new medicines in accordance with the "standard for reexamination of new medicines," stipulated by the Ministry of Food and Drug Safety. The company also collects information on 600-3,000 cases of real life experiences by many non-specific patients for about four to six years. Based on the examination results, the company identifies/verifies safety and effectiveness, going above and beyond any standard process for developing new medicines. We also carry out constant monitoring of medicines to prevent side effects by collecting details of hazardous cases in existing medicines, and analyzing cases based on severity and cause-and-effect relationships.



Vaccine production process at the Andong Plant

[GC] QA/QC Strategy and System



SHEQ System Since the Ulsan Plant acquired the ISO 9001 (quality management system) certificate with regard to quality in 1994, the plant has acquired ISO 14001 (environmental management system) and OHSAS/KOSHA 18001 (health and safety management system) and has operated the SHEQ (Safety Health Environment Quality) system. By identifying and removing hazardous and risky elements related to product quality in advance, the company strives to minimize the damage caused by products, and achieve the zero level of defect rate by setting the quality level requested by customers.

CRM System Rain Business HA for Green Chemicals Business operates a CRM (Customer Relationship Management) system. This system, which began with the aim of accumulating information on the development of customer uses, helps the company to provide products meeting customer needs by enabling smooth communication among marketing, production, and R&D organizations, and global staff members. It also reflects information on products, rival companies, and markets in business strategies.

Certificate for Eco-friendly Products To protect the earth's environment and enhance the health of human beings, SK chemicals develops eco-friendly products. By developing plastic that can be recycled without discharging environmental hormones, the company has made products considering both the Earth and human race and continues to focus on developing eco-friendly materials. ECOZEN® and SKYGREEN® products, eco-friendly resins, acquired the best level (Gold Level) from C 2C® (Cradle to Cradle), a certificate institution in the U.S.

*C 2C: C 2C is a new environmental paradigm aiming to realize the concept of "cradle to cradle", going beyond "cradle to grave." This idea strives for a "cradle as a symbol of rebirth, rather than followed by death in the grave" by wasting used products.

[LS] QA/QC in terms of Quality Design

Life Science Business by SK chemicals conducts integrated management for the process of QA (Quality Assurance) and QC (Quality Control) by combining three business sites: L HOUSE, S HOUSE, and Osan Plant. Following the guideline, which is integrated by reviewing regular regulations on GMP (Good Manufacturing Practice), the company establishes a consistent policy on education, grievances, deviation, change, corrective actions and preventive actions (CAPA), return, and recall. In terms of performance management regarding responsibility for products, we also analyze product characteristics and changes statistically through an annual quality assessment for each product, and check consistency in quality by tracking and surveying product management in the management standard.

● [LS] Efforts to Secure Product Safety (Clinical Test)

Product management by SK chemical's Life Science Business focuses on the entire company-wide production process under our philosophy of considering the quality of medicines beyond simple tasks with the GMP certificate. With a virtuous cycle of "CAPA-Deviation Management-Product Quality Review-Process Review-Change Control," product management has continuously improved. The company also conducts regular internal audits to efficiently deal with external audits and can offer top-tier quality products by managing product deviation and inadequate products, and improving and handling customer grievances. For more systemic product management, SK chemicals has established performance indicators for all production processes including the management of customer grievances to manage and improve conditions. To realize sustainability through product management, a company should analyze customer needs accurately and develop its management system. With this in mind, SK chemical aims to develop products meeting customer needs by continuously managing and reviewing the entire process of production on a regular basis. To improve product quality and secure safety, the company cooperates with domestic and overseas clinical test institutions and thoroughly verifies effectiveness. Even for one product, the company strives to respect the rights of all stakeholders regarding the product and reflects their opinions proactively, and also carries out continuous research on measures to minimize negative impacts on the environment.

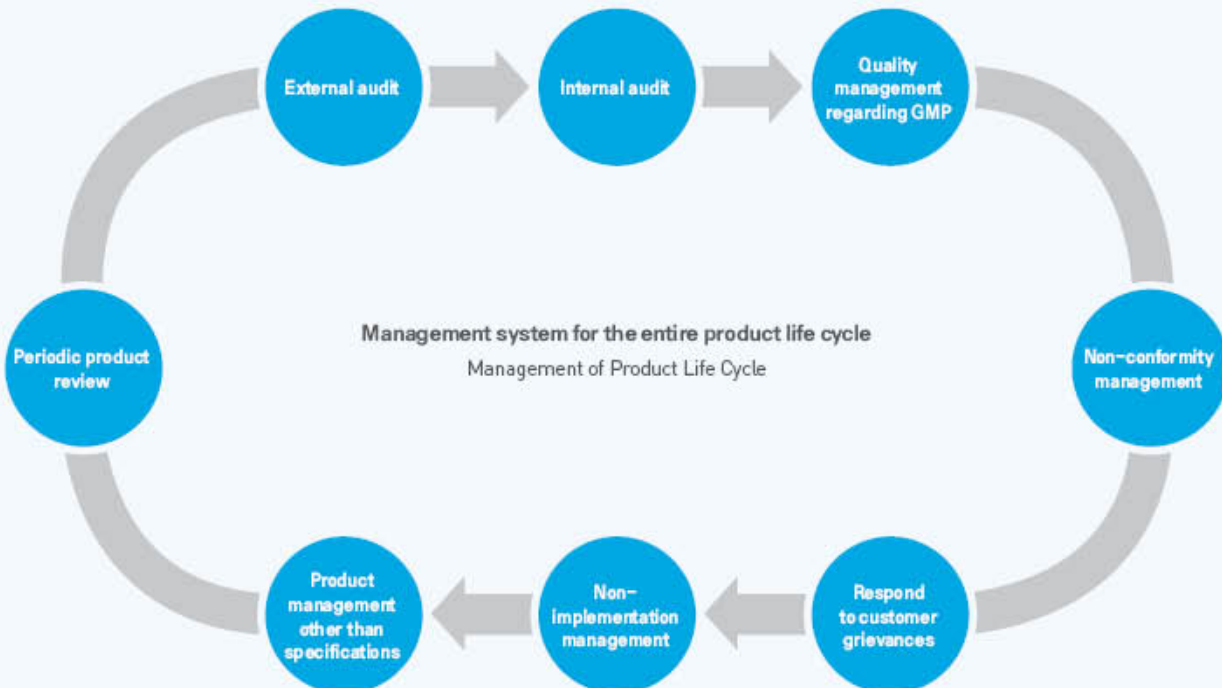
Developing Responsible Products through Clinical Tests

SK chemicals proactively conducts clinical tests and constantly considers measures to enhance product safety and effectiveness. To conduct more efficient clinical tests, the company cooperates with domestic and overseas clinical test institutions and contract research organizations (CRO). We also comply with legislation and regulations at home and abroad, such as the IND (Investigational New Drug) application system in Korea, and develop safe and efficient products by implementing responsible clinical tests.

Current Status and Result of Clinical Tests

SK chemicals implements various clinical tests to develop more effective and safer medicines for various diseases. Based on its experience to successfully develop new medicines with current technology, the company has secured materials with a remarkable level of safety and conducted clinical tests for medicines for irritable bowel syndrome, irritable bladder syndrome, and articular diseases. Through our constant efforts, we developed Korea's first cell culture influenza vaccine and acquired permission from the Ministry of Food and Drug Safety, as well as secured advanced technical competitiveness compared to other companies by developing vaccines for shingles and pneumococcus. SK chemicals makes great efforts to enhance the quality of life and health for people by developing various medicines in a safer manner.

● Product Management System



Ethical Clinic Test

SK chemicals carefully manages the risks that may occur in the course of clinical testing at each level. In terms of legal compliance, we have raised the level of clinical testing with top-level domestic personnel in clinical tests, and we have strived to improve the safety of our products by observing the laws and regulations at home and abroad. With the introduction of the Pharmacovigilance System, the company now has a system to collect and analyze various hazardous elements of drugs that might appear after they are marketed.

We also do our best to solve ethical problems arising from animal tests by continuous education regarding the conduct of these tests and by thoroughly complying with relevant legislations to minimize the pain and use of animals in clinic tests. With regard to these efforts, SK chemical's Life Science Research Institute has launched the Ethics Committee of Animal Testing, which consists of two external members and three internal members. The committee reviews the year's plan for animal testing by dividing tests into the first and second half of the year to minimize the use and suffering of animals and reports statements regarding animal tests to the Ministry of Food and Drug Safety and Quarantine Service. In 2014, the company was assessed and was judged as faithfully complying with regulations in the on-site inspection by the Ministry of Food and Drug Safety.

Minimizing Environmental Impacts in the Process of Product Development

SK chemicals minimizes byproducts and waste generated in the entire process of product development and handles them in a safe way as much as possible. For this activity, the company has applied the DOE (Design of Experiment) to plan effective experiments and has introduced measures to minimize byproducts and waste. These byproducts and waste need to be reused and recycled in principle, but if it is impossible, the company handles waste through strict self-waste processing facilities and discharges or disposes them by processing these materials in ways that surpass the legal standards.

Abolition and Processing of Unused Medicines

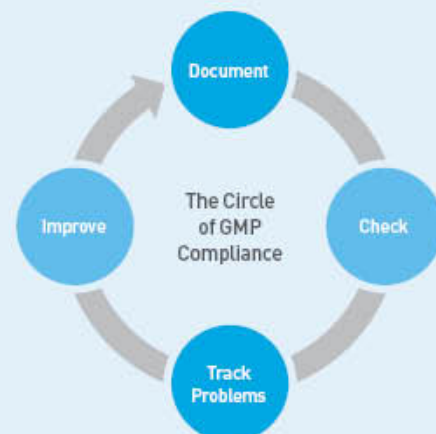
SK chemicals follows strict rules to dispose or manage unused medicines. Generally, we entrust the disposal work to a professional disposal company licensed by the government to minimize the environmental impact of the chemicals. From the collection till disposal, each person in charge checks at each phase under government guidelines.



Researchers handling rats and rabbits to conduct animal clinical tests

Performances for 2014 and Plans for 2015

In 2014, SK chemicals emphasized safety and effectiveness in clinical tests to enhance the quality of medicines and to produce safer products. The company has also made great efforts for GMP certificate facilities and item permissions at L HOUSE (Andong). In 2015, the company will establish a quality system for quality design at L HOUSE, S HOUSE, and Osan Plant to fulfill its responsibility for products and enhance the GMP mindset from the critical product attribute (CPA) perspective. Through analyzing differences in the GMP activity sector at each business site, we will apply legal compliance and focus on building trust and improving products by carrying out a more thorough and swift response to customer grievances.



VALUE CREATING PRODUCTS & SERVICES

Green Chemical CSV

Green Chemicals Business

Case Study 1

ECOZEN®

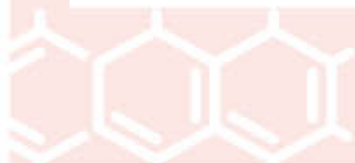


Case Study 2

ECOTRAN®



*Caloric components can cause malfunctions in electric and electronic parts



Life Science CSV

Life Science Business

Case Study 3

VACCINE



Stakeholders' needs	Liberation from diseases
Phenomenon	Treatment after having a disease Prevention before having a disease
Tasks for solution and measures	Develop vaccines for diseases
Result of creating value	Under development of seven types of vaccines through processes that are more remarkable than the existing vaccine production method (Reducing production period, and no risk of avian influenza)

Case Study 4

BLOOD AGENT



Stakeholders' needs	Increase the treatment rate for severe diseases and opportunities for treatment
Phenomenon	Few opportunities to administer medicine (blood agents)
Tasks for solution and measures	Develop blood agents with a high treatment rate and better productivity
Result of creating value	Develop improved* medicine (medicine for hemophilia) (More than double administration period and quadruple productivity than for the existing medicine)

*Improved: Securing high treatment rate and productivity



HEALTHCARE & EARTHCARE

SK chemicals aims to help human beings coexist with nature and live sustainable lives through chemistry by considering the environment and using science to protect life. The company's management philosophy, which is concretely materialized under the single slogan of "Healthcare & Eathcare," is based on the company's spirit of respecting life and loving nature.





Sustainability Management

SUSTAINABLE MANAGEMENT SYSTEM

Sustainable Management System

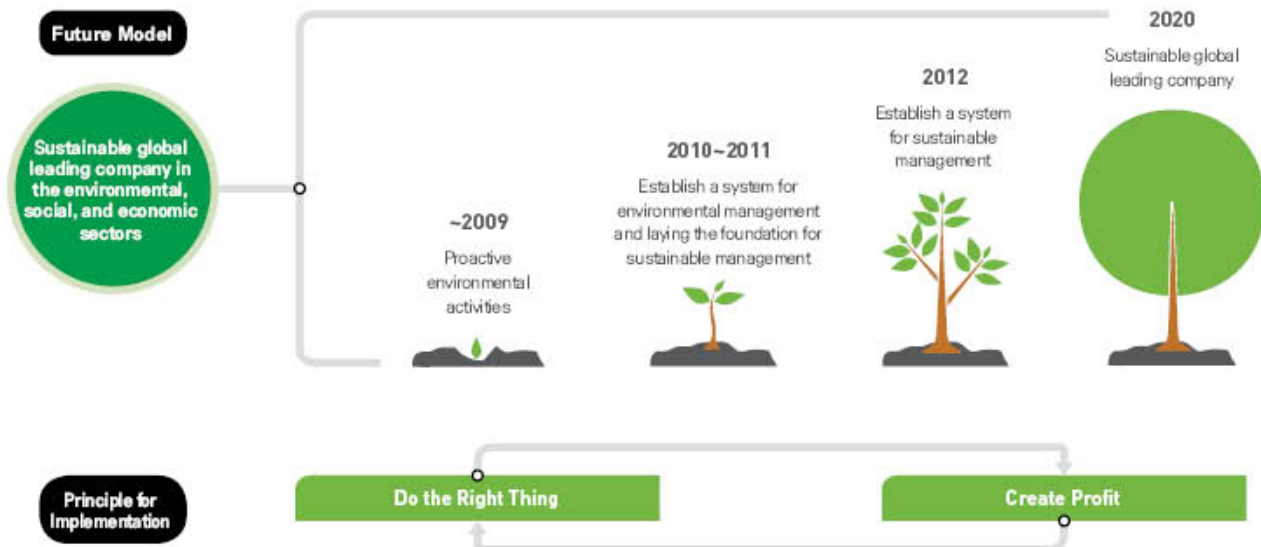
SK chemical's management is based on SKMS (SK Management System), the company's unique management system. SKMS's corporate value is that "A company should permanently exist and grow by realizing continuous stability and growth. Through these efforts, the company needs to play a core role in ensuring social and economic development by creating value for customers, employees, and shareholders, and contribute to happiness for the human race." SK chemical's mission of "promoting health of the human race and protecting the earth's environment" shares the same horizon as its corporate value in terms of sustainable management. SK chemicals seeks to become a global leader in sustainable management considering environmental, social, and economic aspects through a virtuous business cycle that generates profits by carrying out business activities creating common value.

● Strategy and Current Status of Sustainable Management

SK chemical firmly believes that a sustainable society can be realized through individuals with remarkable capabilities and personalities, the kind of individuals that form happy families and operate excellent companies. The foundation for a sustainable society begins with good individuals, and in order to secure corporate sustainability, environmental issues caused by industrialization and social polarization first need to be addressed. To resolve issues regarding human health and earth's environment, three strategic directions for sustainable management have been set by including eco-friendliness of humans and the Earth's environment in the term of "Green." This is how we develop sustainable products (Green Product) based on our corporate culture (Green Culture) and system (Green Process). SK chemicals has organized relevant groups to conduct sustainable management in the economic, environmental, and social sectors, and has enhanced executive ability by selecting core issues in each sector and checking performances continuously. Following 2013, the company improved and developed the sustainable management system and discussed future tasks by conducting interviews with hands-on departments with regard to 14 sustainable management sectors in 2014. Based on these performances, the company will establish its KPI (Key Performance Indicators) Monitoring System in 2015. To develop sustainable management further, we will newly establish the Sustainable Management Team in the Corporate Culture Office in 2015 so that the company has more power to implement sustainable management activities.

● Roadmap for Sustainable Management

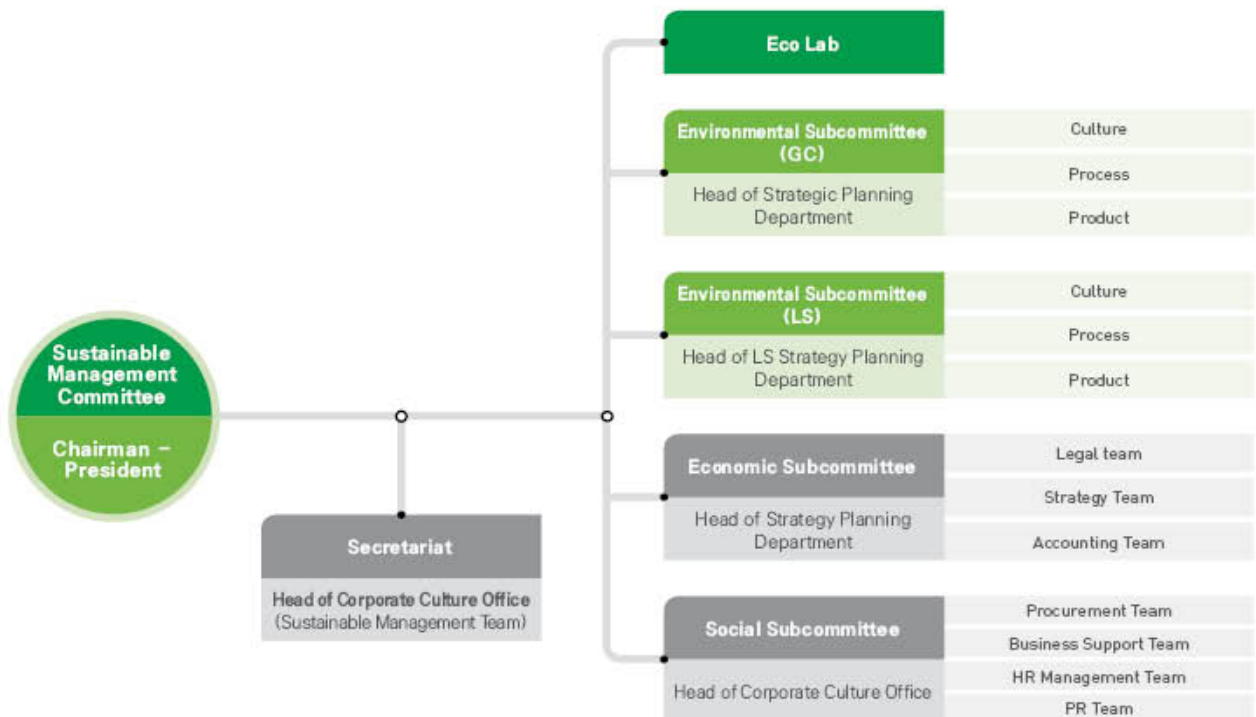
"Seek virtue first and profit later." SK chemicals will have the opportunity to "create the profit" by "doing the right thing." In other words, the company secures sustainability by fulfilling its social responsibility and seeking business opportunities. We have conducted management activities by complying with the principle of "Seek virtue first and profit later" to fulfill our corporate social responsibility. Since the company first proclaimed sustainable management in 2012, SK chemicals has faithfully conducted plans each year to become a sustainable global leading company by 2020.



Sustainable Management Governance

SK chemicals began to expand its Environmental Management Committee, which was operated from 2010, into the Sustainable Management Committee with the CEO as its chairperson since January 2012. The company has managed sustainable management activities in each sector by organizing the secretariat as a group under the committee, shared relevant content, checked performances, and supplemented measures by holding a quarterly meeting for the Environmental Subcommittee under the Sustainable Management Committee. The Sustainable Management Division in the Safety and Environmental TF operated the secretariat until December 2014, and the Sustainable Management team began to manage the secretariat from January 2015. Managers and staff members, who are appointed at five business sites (Ulsan, Osan, Cheongju (S HOUSE), and Andong (L HOUSE)), play the role of managing sustainable management activities at each business site. Company-wide planning and implementation regarding Green Culture are managed by the secretariat, while Green Processes and Green Products are organized by each relevant department at the business sites.

Organization Map of Sustainable Management Committee



*Departments in each business site: Safety and Environment Team at Ulsan Plant / Operation Support Team at Osan Plant / - Operation Support Team at Cheongju Plant (S HOUSE) / Operation Support Team at Andong Plant (L HOUSE) / Sustainable Management Team at the headquarters

*Staff members in charge of sustainable management at Secretariat: Sustainable Management Team

Education and Performances for Sustainable Management

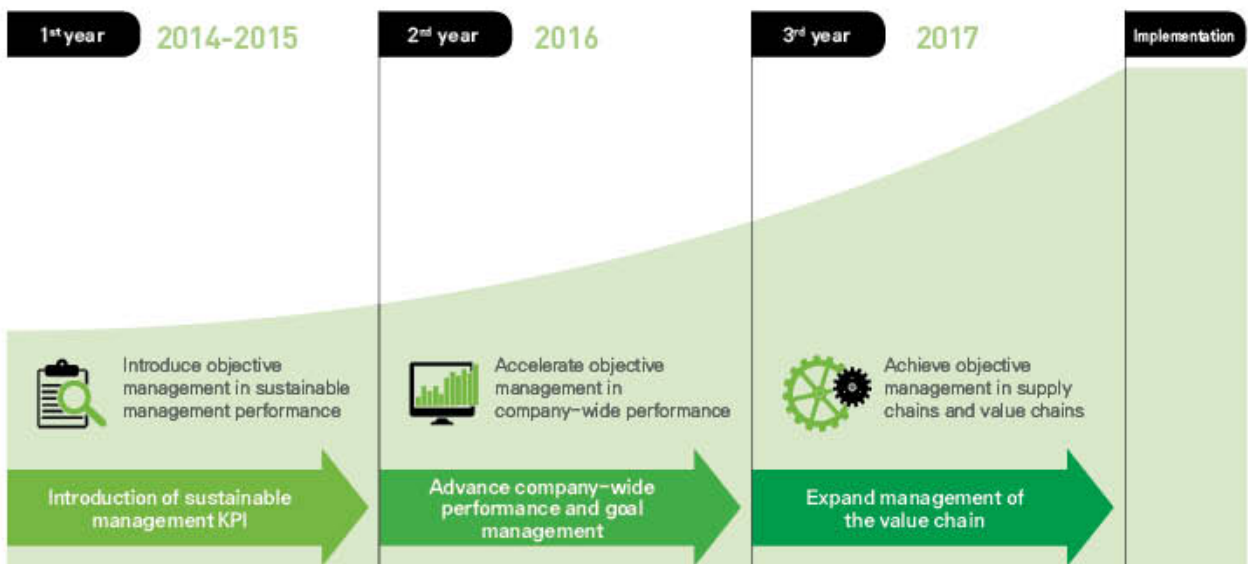
In an effort to raise employees' awareness of sustainability and environmental management and help them develop their capabilities, SK chemicals provides training and education programs. These programs are mainly divided into three levels—introductory, regular, and level-up (advanced). Introductory courses educate new and experienced employees on the basic concepts, requirements, and major performances for sustainable management. Regular courses are provided to build company-wide consensus on special issues of sustainable and environmental management, and encourage communication and participation. Level-up courses help employees of specific ranks and with specific jobs become internal specialists through workshops. These systematic courses help SK chemical's members internalize the green culture and improve their capabilities in realizing green processes and products. These programs drive employees to engage in voluntary participation in sustainable and environmental management.



Category	Period	Training hours	Details
Introductory education	New/Experienced employees Education for sustainable management	6 hr.	<ul style="list-style-type: none"> Sustainability education in the first and second half in the group education for new employees Conduct education for experienced employees in "education for in-house new employees"
Regular education (Separate intensive education for managers and staff members)	Education in Q1	4 hr.	<ul style="list-style-type: none"> Train to cope with the greenhouse gas and energy target managementsystem Education for utilizing the integrated management system for environmental information
	Education in Q2	6 hr.	<ul style="list-style-type: none"> Recent issues on global sustainability Agendas on sustainable management Education for writing a sustainability report New system and strategies for response
	Education in Q3	2 hr.	<ul style="list-style-type: none"> Conduct regular maintenance of plant training and online education in summer vacation Share the current status of operating the Green Point and major issues
Level-up education (Workshop for managers and staff members)	Education in Q4	8 hr.	<ul style="list-style-type: none"> Review tasks for sustainability in 2013, and work plan for 2014 R&R for dealing with new environmental laws in 2015 Demonstrate the integrated management system for environmental information Education for dealing with the greenhouse gas trading system Open and review Green Point System

KPI Monitoring System for Sustainable Management

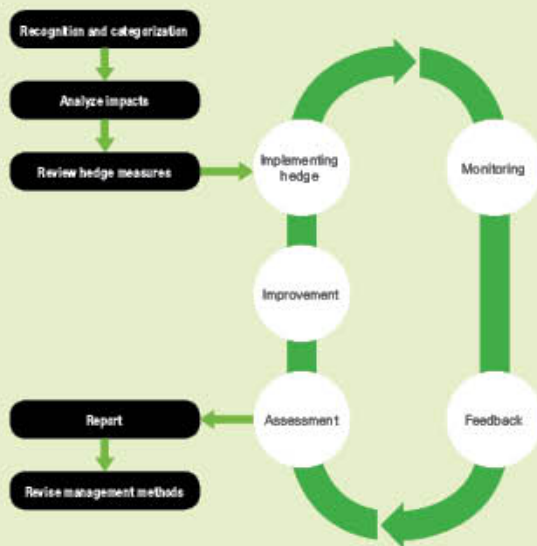
SK chemicals aims to make the KPI monitoring system based on on-site department directors (team leaders) to check sustainability and improve directions and tasks for sustainable management. KPI by team leaders is very important because they perform tasks in connection with company-wide KPI as a collective group with KPI by team members. To establish the KPI monitoring system, the company has selected indicators for sustainability by conducting various activities such as reviewing KPIs by on-site department directors, conducting interviews with team leaders and members and benchmarking KPI at advanced companies for two months from November 2011. Through consultations with on-site directors, we made decisions regarding monitoring KPI for 2015. A total of 13 departments participated in activities to draw 104 KPIs in 19 sectors; in 2015, 13 KPIs and 30 non-KPIs were selected. As the year of 2015 is the introductory phase for performances and goal management for sustainable management, the company will adopt and monitorsustainable KPIs in 2015, while we will enhance company-wide performance goal management in 2016 and expand management of the value chain in 2017. Through these efforts, SK chemicals ultimately aims to expand the scope of application and management of sustainable management for partners and suppliers.



Risk Management

As SK chemicals considers risk management in a rapidly changing management environment to be important for securing sustainability, the company has established and managed a company-wide risk management system. Relevant departments for each theme manage risks by analyzing macroeconomics and the relevant industrial environment and considering strategic operation. These departments then report and make decisions based on the stipulated reporting system, and reflect the result in management activities. The company conducted self-inspection for five major items for examination in accordance with the plan for checking the company-wide risk management system. The five major items include "Follow-up system for report and investment cases by the Board of Directors," "RM (Risk Management) system for new business at overseas subsidiaries," "System for preventing false new business and processing transactions," "Current status of seal management and system," and "Appropriateness in the cost/purchase management system." The results of the examination were as follows: "The risk management system has been properly established and operated, but some detailed practical procedures need to be stipulated and included in the regulation." Based on this result, the company is reviewing the process to categorize tasks that need to be stipulated in the practical procedure and conduct document tasks. SK chemicals has selected ten major risk elements in the economic, environmental, and social sectors (as of 2012), and has designated relevant departments to cope with risks. Relevant organizations in charge of managing each risk analyze these elements independently, establish response strategies, report cases based on the reporting system, and follow the decision-making process.

Crisis Management Process



Scope of Crisis Management

Category	Section	Expected impact	Response measures
Economy	Exchange rate /Raw material cost	●	<ul style="list-style-type: none"> Exchange rate to hedge Investment in securing raw materials Develop alternative raw materials Prospect the market accurately Prepare response strategy
	Governance structure	●	
	Business structure	●	
Environment	Regulations	●	<ul style="list-style-type: none"> Improve products/procedure Introduce facilities for energy efficiency Conduct in-company campaign Develop eco-friendly products
	Physical elements (Climate change)	●	
	Changes in the market	●	
Society	Safety accidents	●	<ul style="list-style-type: none"> Install safety equipment Education for emergency Self-purification education Agreement for confidentiality Apply a system for document security Media/PR
	Request (Corruption)	●	
	Security	●	
	Stakeholders	●	

● High ● Slightly high ● Average ● Slightly low ● Low

Case Examples of Risk Management

Legal response

Legislations which took effect in January 2015, including "Act on the Registration and Evaluation, etc. of Chemical Substances (Act on Chemical Substances)," "Chemicals Control Act," and "Act on Allocation and Trading of Greenhouse Gas Emissions Allowances (Emissions Trading System)," have led to increasing financial risks. For instance, it has been estimated that the Act on Chemical Substances raises the issue of expenses to register materials, worth KRW 10 million to 100 million per case. The Chemicals Control Act causes a fine of 5% of sales, and the Emissions Trading System leads to potential financial risks at a fine of several billion won a year. For these risks, a company needs to carry out proactive risk management by taking effective and appropriate options for taking measures.

Response to accidents (Safety/Health/Environment)

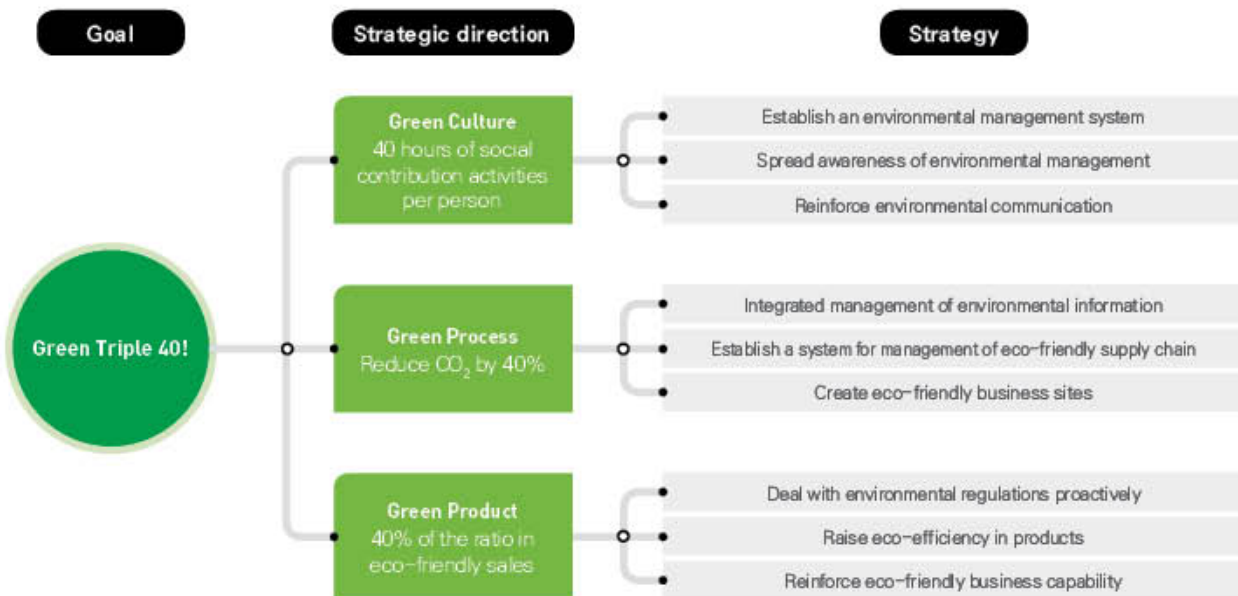
As a result of analyzing incidents regarding safety, health, and environment for the past ten years, the number of cases was low, but similar incidents happen within a certain period as part of a cycle. This result implies that actual efforts for practical prevention were insufficient, while the expression of "prevention of recurrence" was used every time. As prevention of recurrence should be realized by an organizational system, not individual capability, a system which is always evolving is necessary. In the group-wide context, SK chemicals will strive to give practical help by establishing the SHE (Safety/Health/Environment) system.

Environmental Management

To ensure a sustainable future society, we need to consider the sustainability of the earth's environment. SK chemicals has executed performances in the actual figures with the aim of achieving "Green Triple 40!" by 2020 for sustainability, and has operated the environmental committee (Environmental Subcommittee from 2010) from 2010 for practical and continuous environmental management.

● Goals and Strategic Direction for Environmental Management

SK chemicals has continuously aimed to achieve its environmental goal, "Green Triple 40!" by 2020 and managed performances in connection with three strategic directions for sustainable management, including Green Culture, Green Process, and Green Product, which were expanded into the concept of sustainable management. "Green Triple 40!" refers to SK chemical's goal and strategy for environmental management to achieve 40 hours in social contribution activities per person on average (Green Culture), reduce GHG emissions by over 40% compared to BAU (Business As Usual) (Green Process), and ensure that the percentage of eco-friendly product sales is over 40% (Green Product). In terms of culture, the company pursues enhancing awareness of environmental management and developing a green corporate culture, while in terms of process, the company focuses on creating eco-friendly business sites (Green Plant) by improving company-wide environmental management processes. As for products, we focus on reinforcing the capability of eco-friendly business by establishing strategies for eco-friendly business, striving to realize value desired by stakeholders, and developing new businesses. By achieving these goals, SK chemicals enhances the eco-friendliness of products, minimizes environmental burdens caused in the production process and by business activities, and conducts various activities for environmental protection to promote green growth and create new value. In particular, "40% percentage of eco-friendly products" for the strategic direction for Green Products has corporate sustainability by including stakeholder value and creating shared value (CSV, Creating Shared Value).



● Governance for Environmental Management

As a group under the Sustainable Management Committee, the Environmental Subcommittee in charge of environmental management operates the subcommittee by dividing it into the Green Chemicals Business and Life Science Business with the directors for the Strategy Planning Department and LS Strategy Planning Department serving as chairpersons, respectively. The Sustainable Management Team at the headquarters plays a role of company-wide PMO (Project Management Office, Secretariat), while managers and staff members appointed at each business site serve as the PMO of those sites. Each personnel member in charge (PMO at the headquarters, managers and staff members at business sites) shares major environmental issues and current status of each business site at the quarterly meeting, and carries out environmental management activities through proactive communication.

Roles of Each Sector at Environmental Subcommittee

Culture	Process	Product
Part Leader	Part Leader	Part Leader
<ul style="list-style-type: none"> Person in charge of internal and external promotion Encourage activities for environmental management (for executives) Supervise and manage social contribution activities 	<ul style="list-style-type: none"> Check responses for a system regarding process Establish inventory and certificate process Hold responsibility for reducing process data at business sites (Managing goals for greenhouse gas and energy consumption) 	<ul style="list-style-type: none"> Present strategic direction for new business regarding environment In-company communication on regulations and system regarding products
Manager	Manager	Manager
<ul style="list-style-type: none"> Conduct environmental management at each business site (Close cooperative relations with Sustainable Management Team) Promote environmentalism to the local community Conduct education for employees at business sites 	<ul style="list-style-type: none"> Respond to Framework the Act on Low Carbon, Green Growth Establish and verify greenhouse gas inventory Manage environmental performances at each business site 	<ul style="list-style-type: none"> Prepare materials for sites regarding carbon credit Deal with regulations on products Explore and share information on new business regarding environment

ecoweb (www.ecoweb.com)

In November 2012, SK chemicals launched a new website, ecoweb, on the environmental management website as part of its efforts to diversify communication with stakeholders. Through ecoweb, stakeholders can share the company's performances and goals for sustainable management and environmental management. After one year, ecoweb was newly updated to encourage communication with people with disabilities. Its name is derived from a combination of the words environment ("eco") and website ("web"), and ecoweb is loaded with information on not only company-wide sustainability and environmental management goals and strategies, but also the results of environmental management at each business site.

Green Triple 40!

Progress and Plan for Environmental Management (Green Triple 40!)

40 Hours of Social Service per Person

(Unit: hr./Person)

	2012	2013	2014	2015	2017	2020
Goal	10	13	16	25.0	30.0	40.0
Performance	2	8	8.1	-	-	-
Strategy	Settlement of social contribution activities	Expansion/Vitalization of social contribution activities	Intensify social contribution programs	Settlement of team-based social contribution activities with family members	Social contribution activities with family members	Settlement of culture of monthly social contribution activities

*A plan to achieve hours for social contribution activities: Achieve the challenging goal by continuously developing programs

Reduction of CO₂ 40%

(Unit: tCO₂e, %)

	2012	2013	2014	2015	2017	2020
BAU emissions	520,000	545,000	620,000	689,000	692,000	722,000
Target reduction	7.2	12.6	15.2	22.5	24.2	40.0
Actual emissions	467,163	481,396	520,034	-	-	-
Actual reduction	11.9	13.2	16.1	-	-	-
Strategy	Additional use of liquefied and gasified biomass	Increase the amount of using liquefied, gasified and solid biomass	Increase the amount of using liquefied, gasified and solid biomass	Increase utilization of waste wood materials	Find biomass energy sources continuously	

*Standard for calculation of BAU emissions: The expected amount of increased CO₂ each year from 2010 and amount of emissions by new establishment and expansion planned by 2015 are summed up (Emissions will significantly increase due to energy sales business in 2015).

Percentage of eco-friendly sales: 40%

(Unit: %)

	2012	2013	2014	2015	2017	2020
Goal	17.0	19.0	22.0	25.0	30.0	40.0
Performance	17.6	26.7	32.7	-	-	-

*Issue in 2014: As the total sales reduced, the percentage of eco-friendly sales relatively increased. The company plans to produce eco-friendly products continuously each year and will begin to produce PPS, a type of super plastic, and open to produce vaccines commercially at Andong Plant in 2014. SK chemicals will produce premium vaccines in 2017.

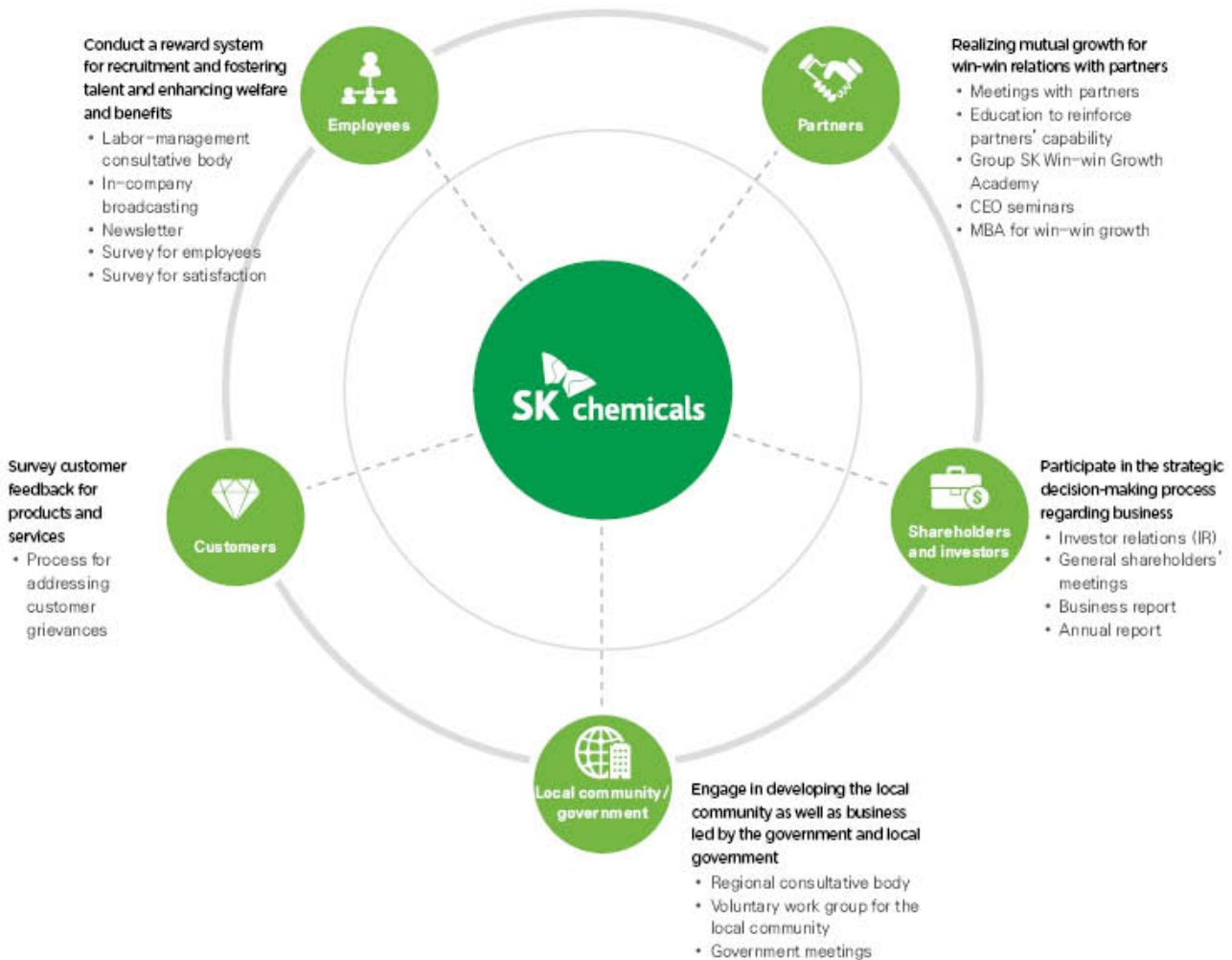
STAKEHOLDER ENGAGEMENT

Selection of Stakeholders and Communication Process

Transparent communication with stakeholders is one of the core elements for establishing and implementing goals for sustainable management. SK chemicals aims to carry out sustainable management based on proactive stakeholder engagement. The company has induced participation and communication with stakeholders by collecting stakeholder opinions on the environmental management website and conducting direct surveys, as well as managing and reporting collected opinions through various channels including the sustainability report.

● Communication with Stakeholders

SK chemicals defines major stakeholders in management activities as five major groups, including shareholders and investors, local community and government, customers, and partners. The communication channels for each stakeholder are operated on the basis of group characteristics and connection with the company.



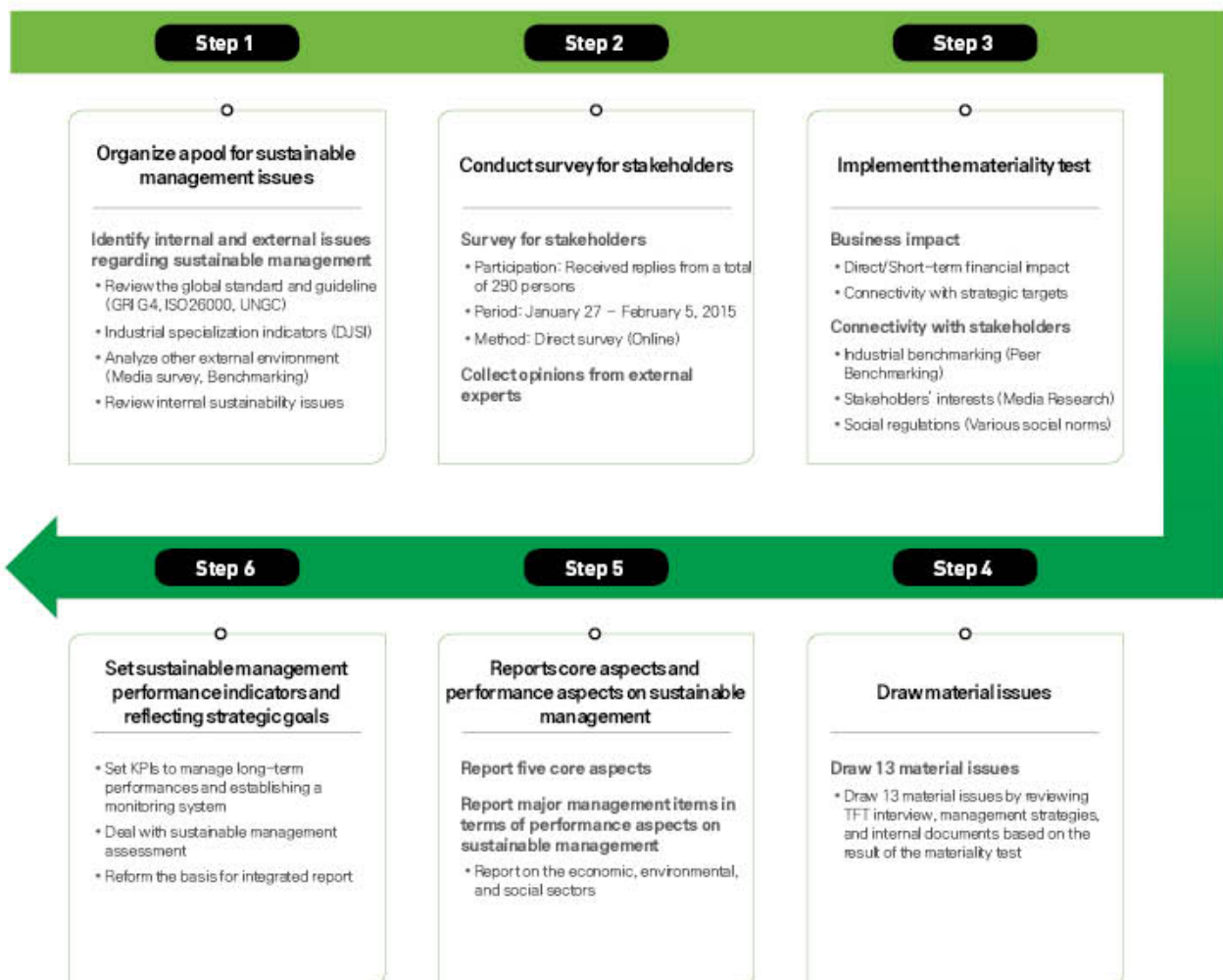
MATERIALITY TEST

Result of Materiality Test and Contents

Among core stakeholder issues drawn by the materiality test, the company expanded core sustainability issues in the economic, social, and environmental sectors into the scope of "aspect," presented by the GRI, and planned reporting for each selected "core aspect."

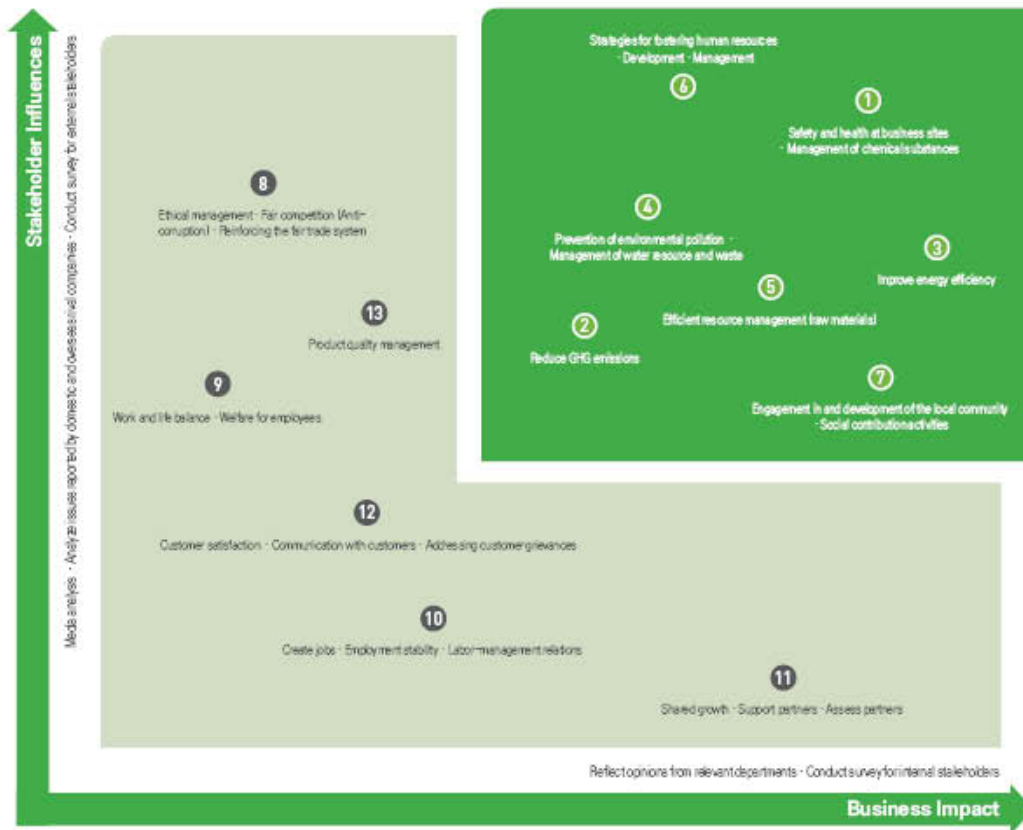
● Materiality Test Process

SK chemicals' core aspects and material issues regarding sustainable management were drawn through the materiality test process. Based on review of the global standard and guideline and analysis of other external environment, the company considered management issues, which are discussed in the company, and organized a pool for sustainability issues. In accordance with the AA1000SES, the global standard for stakeholder engagement, we conducted a survey for employees, went through the process for collecting opinions from experts, and implemented the materiality test by reviewing connectivity between business impacts and stakeholders. Based on these selected material issues, the company presented SK chemicals' goals, visions, roles, and responsibilities for issues selected as the most important core aspects for 2014.



● **Result of the Materiality Test**

Among issues that have an impact on SK chemicals' management activities, 13 issues were drawn as major issues. Among them, five core issues—including management of safety, health, and chemical substances, engagement and development of the local community, and fostering and developing human resources—were selected. As for core issues, SK chemicals' management approaches and management KPIs are reported through reporting materiality issues, and other major issues are reported through the sector for sustainable management performances as continuously managed issues.



Aspect	No.	Reporting issues	Reporting content	Reporting
Industrial safety and health, Water, Wastewater, and waste	1	"Safety and health at business sites / Chemical substances management"	Safety and health at business sites	44-50
			Chemical substances management	44, 51
Energy, Greenhouse gas, Emissions	2	Reducing GHG emissions	Coping with climate change	52-59
	3	Improving energy efficiency		
Wastewater and waste, Water, Raw materials	4	"Preventing environmental pollution / Managing water resource and waste"	Preventing environmental pollution	60-63
	5	Efficient resource management (Raw materials)		
Training and education	6	Strategy / Development / Management for fostering the talent	Fostering and developing the talent	64-67
Local communities, Indirect economic effects	7	"Engagement in and development of the local community / Social contribution activities"	Engagement in and development of the local community	68-71
Practice interrupting competition	8	"Ethical management / Fair competition (Anti-corruption) / Reinforcing the fair trade system"	Ethics and integrity	74-75
Ethics and integrity			Anti-corruption and fair competition	76
Practice interrupting competition	9	Work-life balance / Welfare for employees	Work-life balance, Welfare and benefits	77-79
Employment, Labor-management relations, Freedom of association, and collective bargaining	10	"Creating jobs / Employment stability / Cooperative labor-management relations"	Labor-management relations	79-81
Practice interrupting competition	11	Shared growth / Supporting suppliers / Assessing suppliers	Shared growth and supporting suppliers	81-82
Product service labeling, Protection of customer personal information, Marketing communication	12	"Customer satisfaction / Communication with customers / Addressing customer grievances"	Customer satisfaction	82-83
	13	Product quality control	Research and development (Product innovation, Responsibility for products)	22-27

Responses by SK chemicals to material issues

	Issue	Risk	Response	Major stakeholder
1	 Safety and health at business sites	<ul style="list-style-type: none"> Human/Physical damage on the company Undermining trust in the company 	<ul style="list-style-type: none"> Operate Safety Green Card System Establish a system for responding to emergencies Operate SHE examination program 	Employees, Customers, Partners, Local community and Government/Local Government
	 Management of chemical substances	<ul style="list-style-type: none"> Leaking harmful substances Violating relevant legislation 	<ul style="list-style-type: none"> Establish SHEQ System Provide self-prevention programs Appoint staff members in charge of response to comply with the Chemicals Control Act 	Employees, Customers, Partners, Local community and Government/Local Government
2	 Reducing GHG emissions and saving energy	<ul style="list-style-type: none"> Direct environmental damage Imposing sanctions on relevant legislation 	<ul style="list-style-type: none"> Prepare carbon neutral roadmap Establish greenhouse inventory system Operate integrated management system for environmental information 	Employees, Partners, Local community and Government/Local Government
3	 Waste management	<ul style="list-style-type: none"> Soil contamination Imposing sanctions on/Violating relevant legislation 	<ul style="list-style-type: none"> Comply with International Basel Convention and domestic waste management act Improve the method to deal with wastewater sludge 	Employees, Local community and Government/Local Government
4	 Water management	<ul style="list-style-type: none"> Water pollution Wasted water resource 	<ul style="list-style-type: none"> Operate wastewater treatment plant and sewage treatment plant Establish a water recycling system Participate in CDP Water 	Employees, Local community and Government/Local Government
5	 Efficient utilization of resources	<ul style="list-style-type: none"> Excessive consumption of resources 	<ul style="list-style-type: none"> Apply the Single Use System Prepare a resource circulation system 	Employees, Local community and Government/Local Government
6	 Developing human resources	<ul style="list-style-type: none"> Draining best talents Demoralizing employees 	<ul style="list-style-type: none"> Create "favorable workplace to work" Establish a program to foster talent Operate the PECS assessment system 	Employees, Customers
7	 Social contribution	<ul style="list-style-type: none"> Undermining corporate reputation Reducing trust 	<ul style="list-style-type: none"> Prepare "eco-friendly" strategies (environmental education, etc.) Prepare "social welfare" strategies (Hope Maker, etc.) Prepare "spreading happiness" strategies (Probono by SK chemicals, etc.) 	Employees, Local community and Government/Local Government



Material Issues



HEALTHCARE & EARTHCARE

To become a sustainable company in a sustainable society, a company has "a lot of things to do".

The important thing that a company must do is to establish a culture with an awareness that leads to the realization of sustainable human beings and nature.

SK chemicals pledges to make a "sustainable world" where everyone can live happily and healthily.

WHY? THIS IS IMPORTANT!



Number of issuing a red card in the Safety Green Card System

0 case

Number of having accidents

1 case

How We Manage

As management of safety, health, and environment differs, depending on completeness of systems, SK chemicals assesses and manages the level of management by establishing a manual and complying with in-company regulations.

How We Measure

SK chemicals aggregates the annual number of accidents and level of damage (expenses from damage by accidents, days of damage) and calculates and assesses cases based on the internally stipulated standard. The company also measures preventive efforts by conducting self-examination of the performance level.

Our Performance Data

In terms of reinforcing safety and health in 2014, SK chemicals had one accident, which decreased by two cases compared to 2013. The company aims to establish the SHE (Safety/Health/Environment) management system in the future. We have reformed the organization and strengthened the management system to comply with legislation on the management of chemical substances.

SAFETY AT BUSINESS OFFICES AND HEALTH · CHEMICAL SUBSTANCES MANAGEMENT

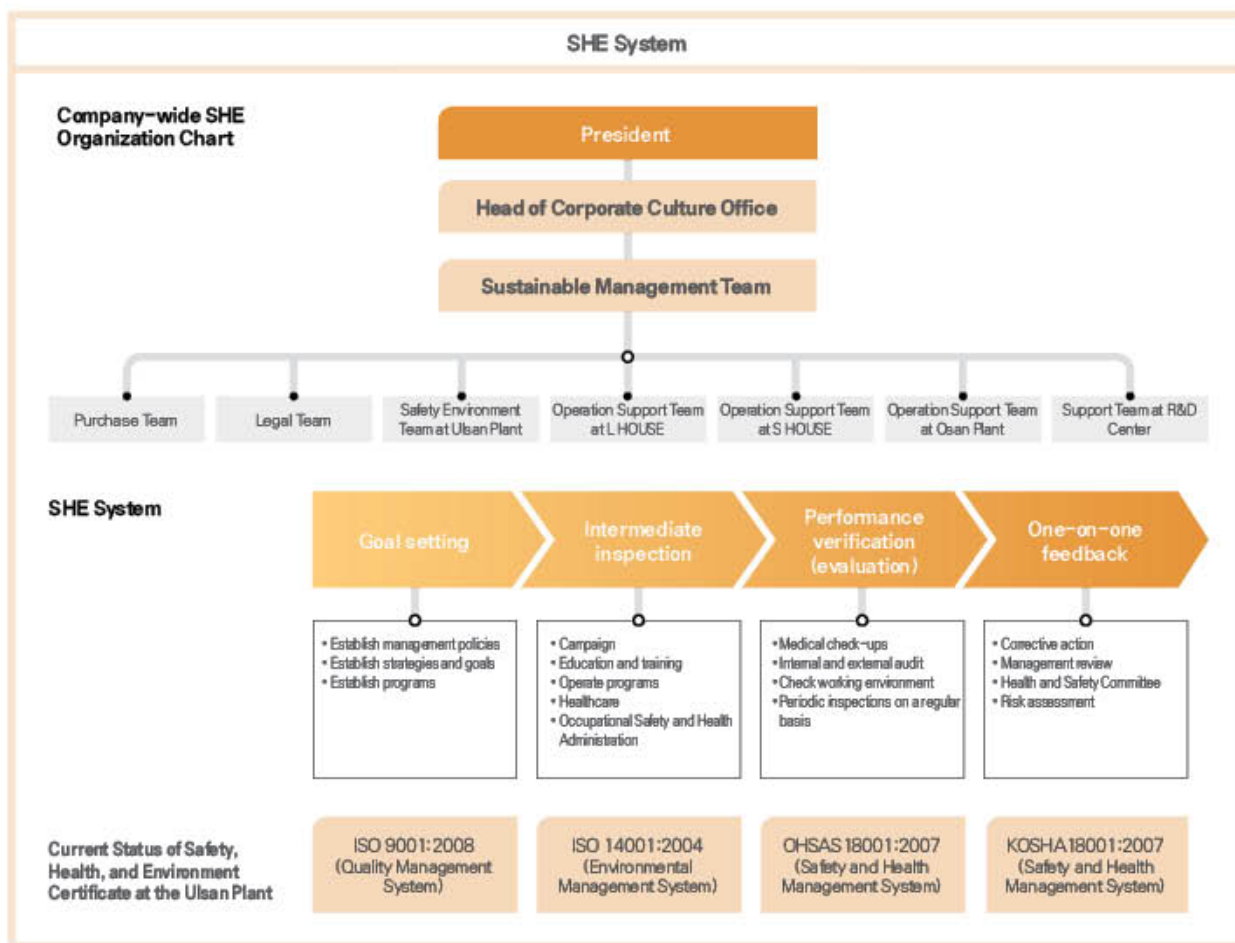
Safety and Health at Business Sites

Industrial safety and health accidents not only cause human and material damage, but also threaten the corporate sustainability. To prevent accidents in advance, SK chemicals regularly conducts inspection, improvement, education, and assessment, and enhances employees' awareness of safety. The company makes various efforts to deal with external standards and regulations more proactively. The Ulsan Plant has established a system based on OHSAS18001, a standard for safety and health management, while the plants in Andong, Osan, and Cheongju are operated in compliance with the standard for production quality management of best medicines (GMP). As the Korea Occupational Safety and Health Agency conducts safety and health diagnosis once a year, the company enhances the effect and transparency in the system.

To improve the safety and health of the company's employees, we operate the Safety and Health Committee and provide support such as medical check-ups each year.

● SHE System and Organization Structure

When it comes to safety and health, a director in charge of managing safety/environment in the Sustainable Management Team, which was launched in 2015, plays a role as a control tower for company-wide safety to realize a healthy environment. For the overall company, SK Group is planning the SHE System; SK chemicals also plans to complete SHE System suitable for its business characteristics by the end of 2016 to establish a system equivalent to those employed in global leading companies.



● Safety and Health Management System

In response to the rise in social requests for safety, health, and environment, and needs for advancing an internal management system, SK chemicals has established and operated systems with regard to safety, health, and environment.

Safety Green Card System

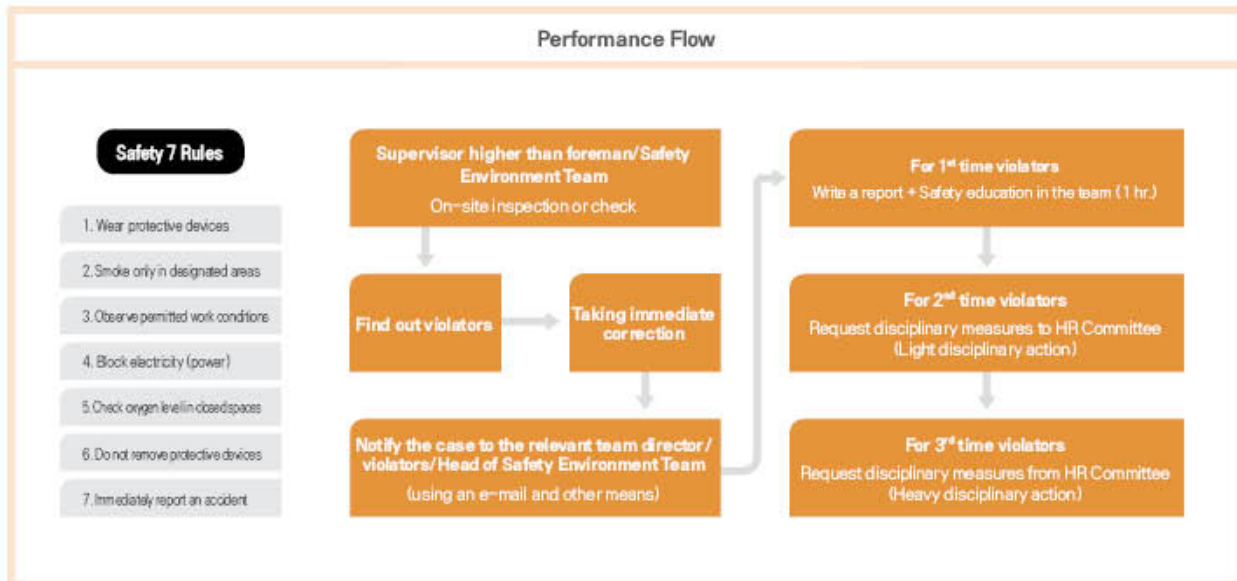
The Safety Green Card System, which started implementation in May 2013, is a safety management system for companies regarding regular repair and construction sites at Ulsan Plant. The system is divided into Green Card (best employees for safety management), Red Card (One Strike Out, violators of four major elements), and Yellow Card (violators from among 20 major management items), and it includes a reinforced management standard by specifying prize and punishment. In 2014, there were no Green Card or Red Card cases, but five Yellow Card cases happened due to inappropriate use of ladders and taking insufficient measures to prevent fire from scattering when dealing with flammable objects.

Safety 7 Rules

Safety 7 Rules, which were enacted in October 2013, are seven rules on safety to root out potential safety accidents at plants for all employees (including employees at partner companies) entering into Ulsan Plant, which plays a pivotal role in realizing a safety culture to help employees to internalize the Safety 7 Rules. The company has also reinforced the function of monitoring by departments in charge of safety management, including on-site inspection and examination, to supervise compliance and takes strict measures for violators. As there was only one case that infringes on work-permitted conditions in 2014, the culture of safety has been gradually settled.

Safety Green Card System

Category	Act to apply
Green Card	<ul style="list-style-type: none"> <input type="checkbox"/> Safety environment rule exemplary observers
One Strike Out (Red Card)	<ul style="list-style-type: none"> <input type="checkbox"/> Not wearing personal protective devices <input type="checkbox"/> Drunkenness (blood alcohol content: 0.05% or higher) or violence <input type="checkbox"/> Not completing safety education <input type="checkbox"/> Smoking outside of designated areas
Yellow Card	<ul style="list-style-type: none"> <input type="checkbox"/> Inappropriate use or unsuitable ladders <input type="checkbox"/> Inappropriate use or unsuitable conventional or manual tools <input type="checkbox"/> Inappropriate use or unsuitable grounding electric tools <input type="checkbox"/> Insufficient spark prevention devices <input type="checkbox"/> Insufficient fire prevention measures <input type="checkbox"/> Removal of protective device without permission <input type="checkbox"/> Life line not installed <input type="checkbox"/> Unsuitable handling of heavy materials <input type="checkbox"/> Unlicensed work for safety <input type="checkbox"/> Unlicensed access to prohibited places <input type="checkbox"/> Insufficient falling prevention devices <input type="checkbox"/> Insufficient protections against falling materials <input type="checkbox"/> Signal man not positioned <input type="checkbox"/> Insufficient handling or managing of dangerous substances <input type="checkbox"/> Insufficient handling or managing of high-pressure vessels <input type="checkbox"/> Closing up work that was not performed <input type="checkbox"/> Grounding not performed <input type="checkbox"/> Illegal waste dumping <input type="checkbox"/> Flowing out wastewater into a common drain <input type="checkbox"/> Other unsuitable acts that may lead to accidents



● **Assessment of Level to Strengthen Safety and Health**

To conduct level assessment for safety, health, and environment at business sites, SK chemicals has made a clear company-wide KPI guideline and conducted fair estimation based on objectified data. The company also gives score through objectified items and quantified calculation formulas for SHE management based on each condition at business sites in assessing KPI by each production department.



Fire Drill at Ulsan Plant



Emergency Drill at Ardong Plant

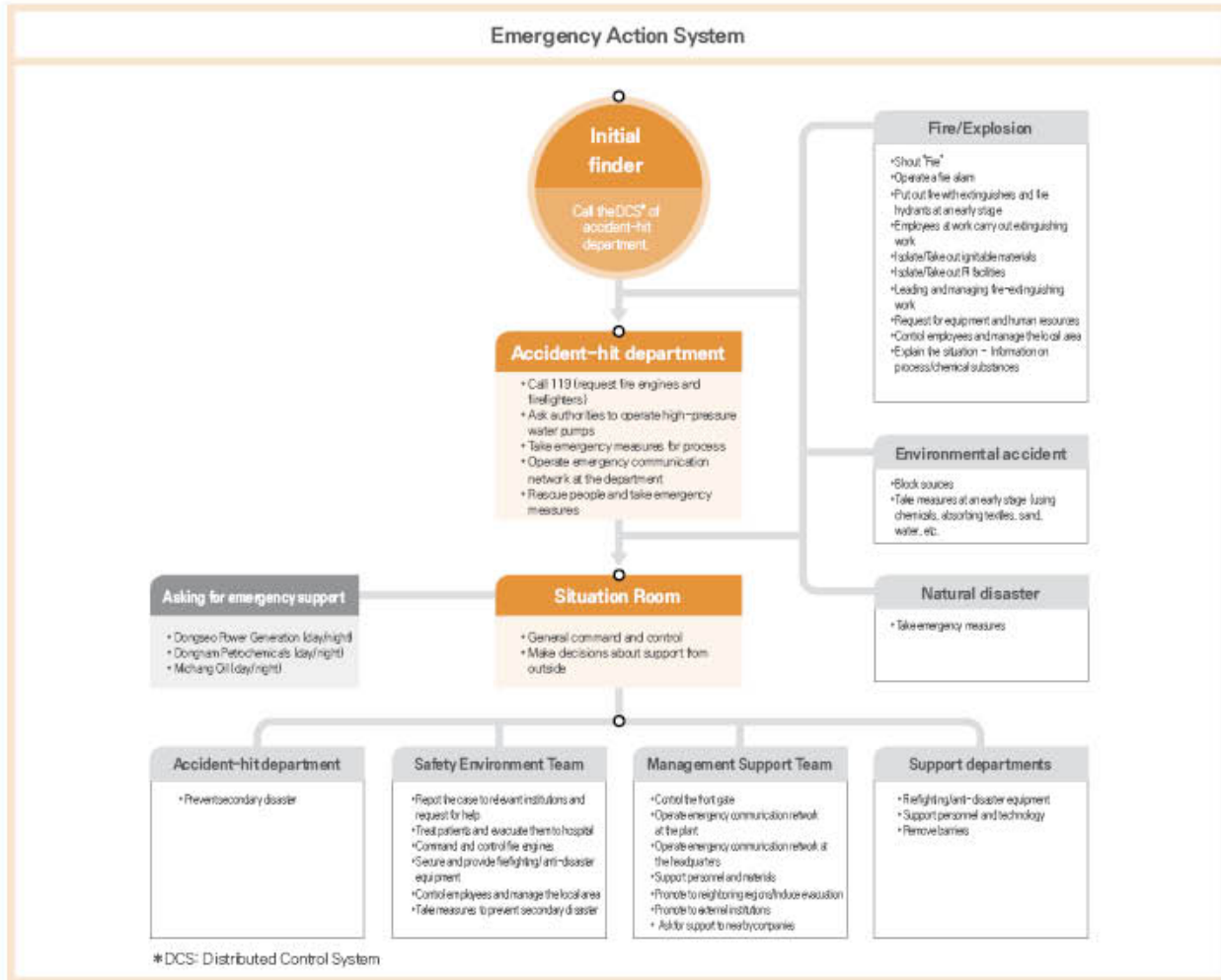


KPI	Guidelines																				
<p>Operation indicator</p>	<p>Quality control</p> <ul style="list-style-type: none"> • Define the items for quality control and level of spec-in in advance and set defect rate or 1-2 core conditions of spec-in as an indicator. <p>Safety and environment</p> <ul style="list-style-type: none"> • Points are deducted when a safety/environmental accident happens (based on Ulsan Plant) <ul style="list-style-type: none"> - 90 points when no safety/environmental accidents happen - Deducted points^① × 100/number of team members^② + Material loss (10points/KRW 10 million) <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #f4a460; color: white;"> <th style="width: 5%;">①</th> <th style="width: 20%;">Category</th> <th style="width: 15%;">Point deduction</th> <th style="width: 30%;">Safety</th> <th style="width: 30%;">Environment</th> </tr> </thead> <tbody> <tr> <td></td> <td>Minor accident</td> <td style="text-align: center;">5</td> <td>Labor loss equivalent to 1-7 days of labor</td> <td>Leaking accidents at the plant</td> </tr> <tr> <td></td> <td>Light accident</td> <td style="text-align: center;">15</td> <td>Labor loss equivalent to 8-14 days of labor</td> <td>Administrative penalty, fine</td> </tr> <tr> <td></td> <td>Severe accident</td> <td style="text-align: center;">30</td> <td>Labor loss equivalent to over 15 days of labor</td> <td>Media report, fine</td> </tr> </tbody> </table> <p>② Osan Plant, S HOUSE, and L HOUSE each set standards in accordance with the above criteria.</p> <ul style="list-style-type: none"> • To prevent safety/environmental accidents in advance, additional points are given in cases in which performances are achieved through special efforts. (Example: Receiving awards from an external institution, licenses related to safety/environment leading to management profits, upgrade in the environmental management system, developing/operating a standardized manual and education programs, etc.) 	①	Category	Point deduction	Safety	Environment		Minor accident	5	Labor loss equivalent to 1-7 days of labor	Leaking accidents at the plant		Light accident	15	Labor loss equivalent to 8-14 days of labor	Administrative penalty, fine		Severe accident	30	Labor loss equivalent to over 15 days of labor	Media report, fine
①	Category	Point deduction	Safety	Environment																	
	Minor accident	5	Labor loss equivalent to 1-7 days of labor	Leaking accidents at the plant																	
	Light accident	15	Labor loss equivalent to 8-14 days of labor	Administrative penalty, fine																	
	Severe accident	30	Labor loss equivalent to over 15 days of labor	Media report, fine																	

Emergency Response System

Each business site of SK chemicals has established and operated response groups and procedures to cope with potential emergency at an early stage. To minimize environmental impacts, damage to human beings, and property loss, the company has prepared the emergency action system and emergency contact list and

operated relevant systems so that swift responses can be ensured in the event of fire and explosion, environmental accidents, and other natural disasters. Employees in charge of managing the group's response learn the procedures they need to carry out through drill exercises



Self-audit and Inspection Programs

SHE Audit Program

The SHE Audit Program is a monitoring program for safety and health activities at business sites in accordance with regulations on internal audit. As the SHEQ internal audit team is organized at the business site, a self-audit is conducted two times a day, and a program for improving various matters is in operation.

Audit Program for Process Safety Report

With process experts serving as self-auditors pursuant to the standard for the self-audit on process safety management, the Audit Program for Process Safety Report reviews various sectors regarding process safety—from regular safety to technology—and finds and improves risk elements.

Safety and Health Education and Training

SK chemicals conducts various education and training courses to realize a corporate culture emphasizing safety and health, enhancing employees' awareness of safety. The Ulsan Plant conducts internal education in addition to the legally required education and implements various education courses from professional education before starting construction to regular education after the amendment of regulations through various channels. In addition, pharmaceutical plants such as Andong Plant implement safety and health education to improve employees' awareness of safety and prevent inappropriate practices as well as conducting emergency response drills in a systemic way by producing emergency scenarios for each potential accident type.

Activities for Checking and Improving Safety and Health SK chemicals' Andong Plant conducts regular safety checks for each process. The plant director and supervisor directly participate in the safety check for finding and improving risk elements, and they also implement risk assessment for each process to prevent safety accidents. To check safety before conducting all construction and work, the company operates a system of "Permit to Work" and provides all visitors and employees at partners with information on safety at business sites.

Safety Communication Channel for Labor-management Harmony As safety and health accidents should be dealt with enhanced safety awareness by all employees, the company strives to ensure smooth safety communication between the management and employees by holding the Industrial Safety and Health Committee on a quarterly basis to share the current status of safety and collect the company's proven improvements on safety and health and opinions from employees.

Safety and Health Programs for Coexistence and Cooperation To raise the level of safety and health management by partners, SK chemicals' Andong Plant contributes to preventing industrial accidents by providing various technical support on safety and health, such as conducting education risk assessment and joint safety check at business sites, and leading safety devices (gas measuring instrument, respiratory, and safety belt) for in-company partners (seven companies) and external partners (30 partners) to improve the safety and health conditions for partners.

Amount of Using Hazardous Chemical Substances (Unit: ton)

	2012	2013	2014
Amount of using hazardous chemical substances	30,238	33,637	36,998




Campaign for health promotion at Ulsan Plant

● **Preparing a Health Promotion Program for Employees**

To promote health and energetic work lives for employees, SK chemicals operates various programs for each business site and has employees with nurse certification reside at the Health Promotion Office at the Pangyo Business Site and Ulsan Plant. The Ulsan Plant has continuously operated the "9988 Health Promotion Program" with the aim of "leading a healthy life by the age of 99" and received the "certificate for the best business site for health promotion" from the Korea Occupational Safety and Health Agency in November 2013. Activities for health promotion in 2014 include smoking cessation, anti-obesity, and low-salt meal programs, and the nurses in charge of work at Ulsan Plant have completed the 18-hour "course for fostering health promotion leaders" at the Korea Occupational Safety and Health Agency Education Center to realize more efficient health promotion. As pharmaceutical plants, three Life Science Business plants manage employees' health through their own regulations on health management based on GMP regulations (standard for production medicines and quality control). These regulations stipulate the purposes and methods for conducting regular, special, and employment check-ups and manage health at a higher level than what is required by the business operator to manage health pursuant to the Occupational Safety and Health Act. SK chemicals conducts not only regular medical check-up for all employees, but also comprehensive check-ups for employees over the age of 40. The company also makes great efforts to manage employees' health through vaccinations for epidemic diseases and medical consultation for persons with potential symptoms. We also operate a health center, training center to promote sound bodies and minds, and yoga center and health management center (health room) at the company to help employees enjoy happy lives at the company and support their health promotion activities.

Health Promotion Programs




No-smoking Program

- No smoking inside the building since July 2013
- Decreasing outdoor smoking areas
- In-company non-smoking clinic

↓

15 out of 42 primary subscribers succeeded in quitting smoking (36%)
10 out of 32 secondary subscribers succeeded in quitting smoking (31%)




Anti-obesity Program

- Exercise and instruction on diet
- Regular monitoring
- Selecting and awarding Diet King

↓

Select nine final survivors among 44 subscribers after passing the three month weight-loss period and three month maintenance period



Low-salt Meal Program

- Reduce the amount of sodium in soup and seasoning by stage

↓

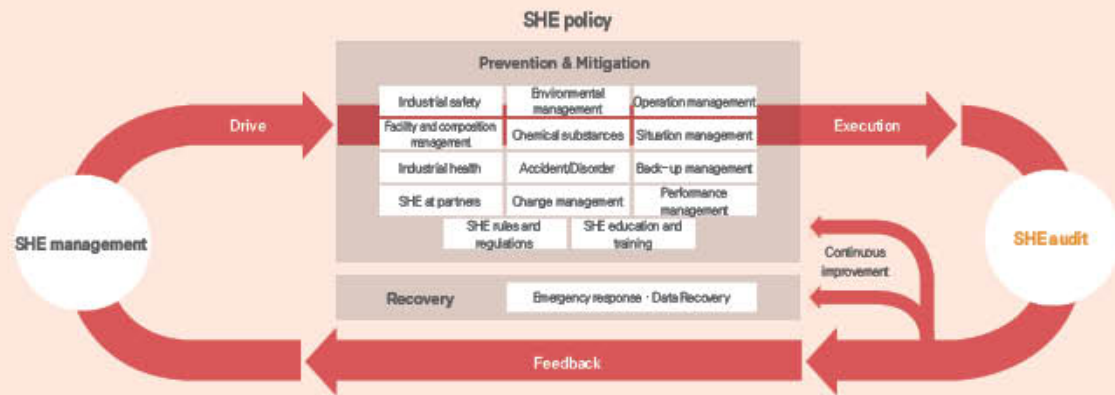
Maintain salinity in soup at a level of 0.7%
Maintaining the amount of sodium per meal at a level of 1,300~1,500mg

EFFORTS TO PREVENT AND DEAL WITH SAFETY ACCIDENTS

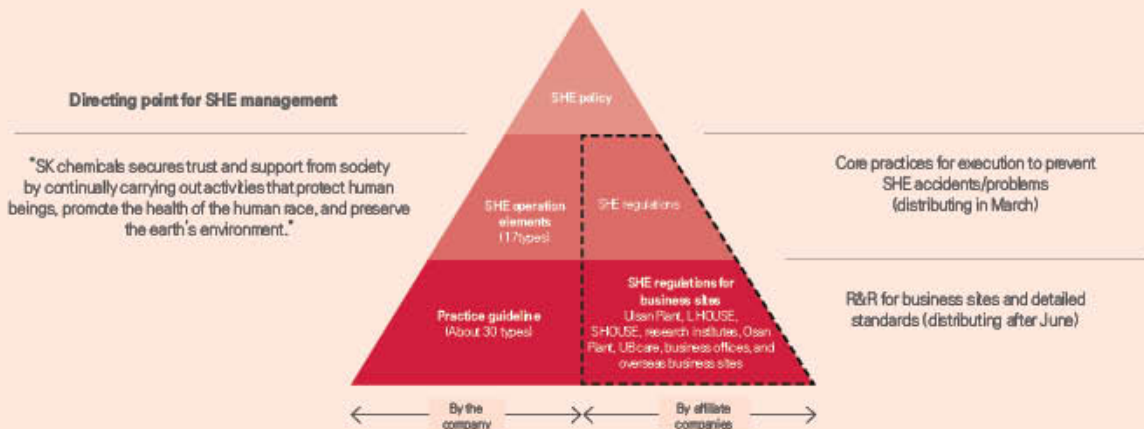
At about 6:20 p.m. on May 8, 2014, Ulsan Plant suffered an accident that resulted while three workers, who were found to have been poisoned due to cleaning agents (methylene chloride), were cleaning the interior of the FUT-1 Tank, a solvent storage tank, to change its use. It was identified that the direct causes for this were "work by a construction company without permission," "not wearing appropriate protective gear (not wearing air-supplied respirator)," "not taking safety measures for entering into closed spaces," and "insufficient implementation of risk assessment." As a self-rescue team came in accordance with the procedure of responding to emergency accidents and rescued victims, and the 119 rescue team, who arrived upon report, evacuated them to the hospital, three workers left the hospital on May 19, the next day from the accident, and returned to their daily lives. To prevent recurrence, the company received safety diagnosis for safety and health from the Korea Occupational Safety and Health Agency and took measures such as amending regulations on safety and health/standard for permission of safety work and improving facilities regarding closed space. Diagnosis for procedure safety/mechanical facilities/company facilities was conducted by the Korea Gas Safety Corporation to identify and improve problems in facilities. To identify and improve problems continuously, SK chemicals aims to establish and operate the SHE Management System.* This system is prepared by SK Group with the aim of setting a standard for prevention and response to accidents equivalent to global leading companies. In addition, the SHE Management System includes all materials such as an existing organization, R&R, and process, and specifies actions to take in a manual for preventing and dealing with accidents and helps employees internalize this system. This system will be completed externally by the end of 2016, and the company temporarily aims to achieve internalization for employees by 2020.

*SHE Management System: A combination of guidelines, regulations, and policies including measures for preventing and dealing with accidents for "Safety, Health, and Environment"

Flow of SHE Operation System



SHE Operation System



Chemical Substances Management

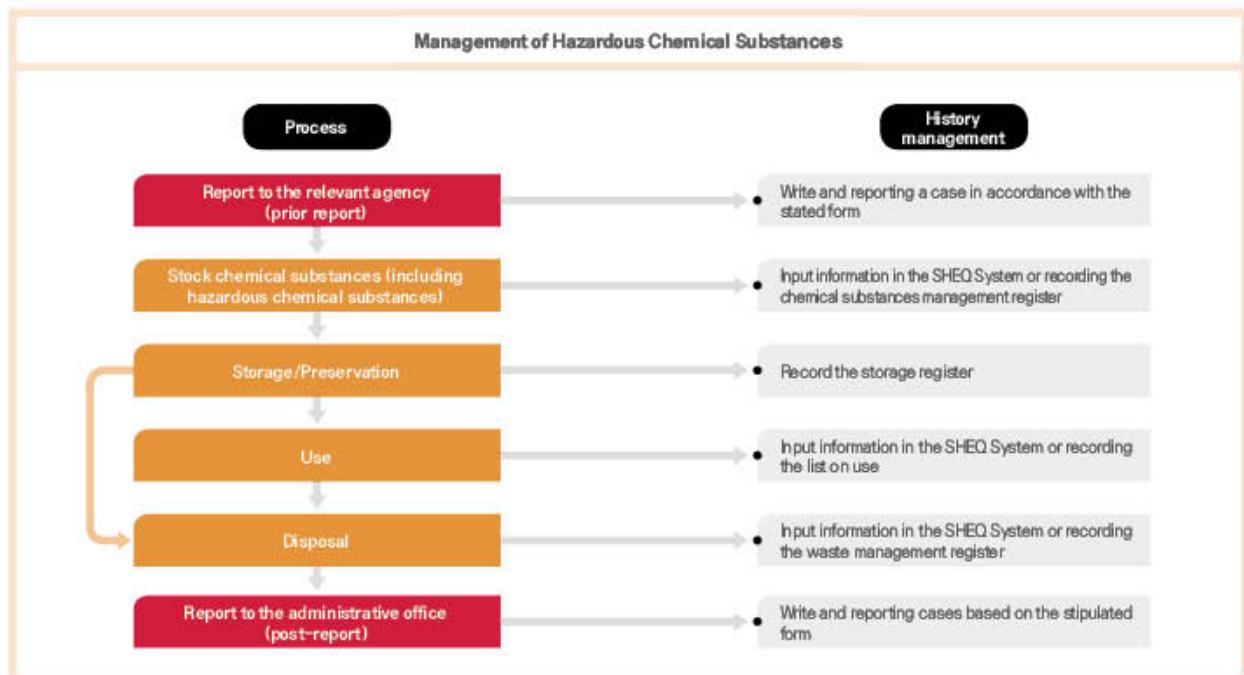
● Current Status of Hazardous Chemical Substances Management

SK chemicals has operated the Safety, Health, and Environment Quality Integrated Information System (SHEQ) from 2005 with the aim of managing hazardous chemical substances in a systemic way. The company is preparing regulations on management of chemical substances, and managing various indicators regarding safety, health, and environment such as current status of accident, environmental impacts, and education and training in an integrated way. The hazardous chemicals used by SK chemicals, to name a few, include methyl alcohol, sodium hydroxide, ethyl acetate, toluene, chloroform, and xylene. Such chemicals are used for the purpose of mixing with another substance, making a reagent, or pH control. Each relevant sector manages these hazardous chemicals with responsibility and authority under the standard for a hazardous chemicals storage facility. For stricter control and management, we appoint more administrators than the legal standard to reinforce management and give instructions to check the facility and equipment once a week. We have also established and observed the laboratory waste treatment regulations to prevent environmental contamination and to ensure the safety of the testers or those in the lab. Chemicals for reagents are discarded after being used, and cleansing water is treated at our wastewater treatment facility. The company has established a plan for self-prevention of accidents caused by substances and notified local residents near business sites about this plan to minimize damage from chemical accidents. To deal with chemical substance leak accidents, we have reviewed the establishment of emergency

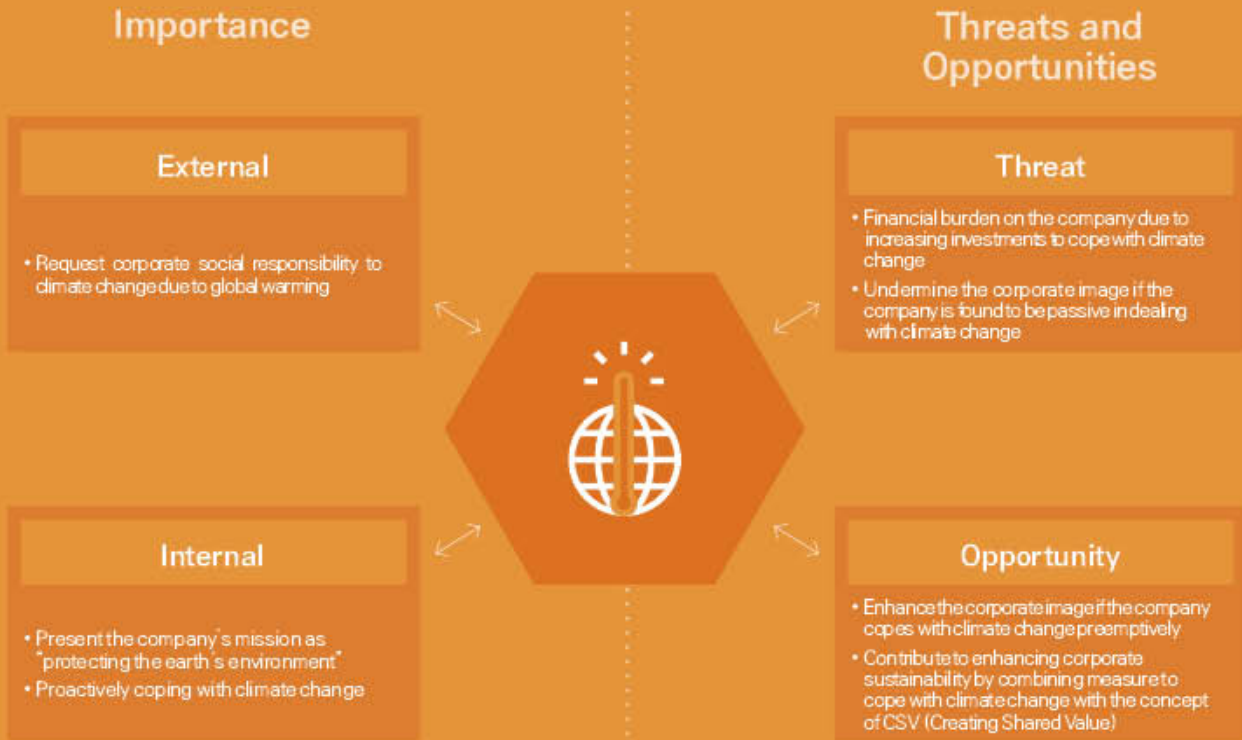


Checking hazardous chemical substance facilities

retaining facilities at the end of regular drains and will establish the new plan in 2015. The amount of hazard chemical substances we used in 2014 was 36,998 tons, a slight increase from the previous year, and no accidents occurred in 2014 from hazardous chemicals in any of the plants run by SK chemicals. The Andong Plant operates separate storage and preservation facilities in each department to manage hazardous chemical substances and minimizes exposure in using them by utilizing exhaust facilities. The plant measures the level of exposure by each hazardous substance by conducting measurement for work environment twice a year. In case of risks related to hazardous substances, managers are designated and facilities for protection and prevention are regularly operated to brace for the leakage of chemical substances. In addition to internal chemical substances management, the managers in charge of dealing with new legislation at all business sites including the headquarters, take measures to respond to the Chemicals Control Act, which was implemented since January 1, 2015, more proactively and make legal compliance smooth from the point of legal implementation.



WHY? THIS IS IMPORTANT!



Ratio of using biomass among energy sources

50.7%

Amount of GHG emissions due to methane gas

7,919 tCO₂ eq

How We Manage

Companies have partially caused climate change by using fossil fuels for management activities. As global warming has accelerated, SK chemicals feels full responsible for climate change due to the use of fossil fuels, and therefore prevents its use and strives to address climate change.

How We Measure

To estimate the efforts of reducing the use of fossil fuels in number form, SK chemicals estimates the level of management compared to the goal for GHG Emissions (compared to BAU) by checking the amount of energy usage. Other than production activities, the company assesses the efforts to reduce and offset carbon emissions in the overall activities by employees through the identification of carbon neutrality.

Our Performance Data

For reducing GHG emissions and enhancing efficiency in 2014, SK chemicals achieved the performance of enhancing carbon neutrality by 9% compared to 2013. The company has also strived to use mixed firing from coconut bark to cope with climate change. The Eco Lab utilizes 101 technologies that are applied to buildings and achieved enhanced energy saving and improved reduction of GHG emissions.

COPING WITH CLIMATE CHANGE

Reducing GHG Emissions and Saving Energy Use

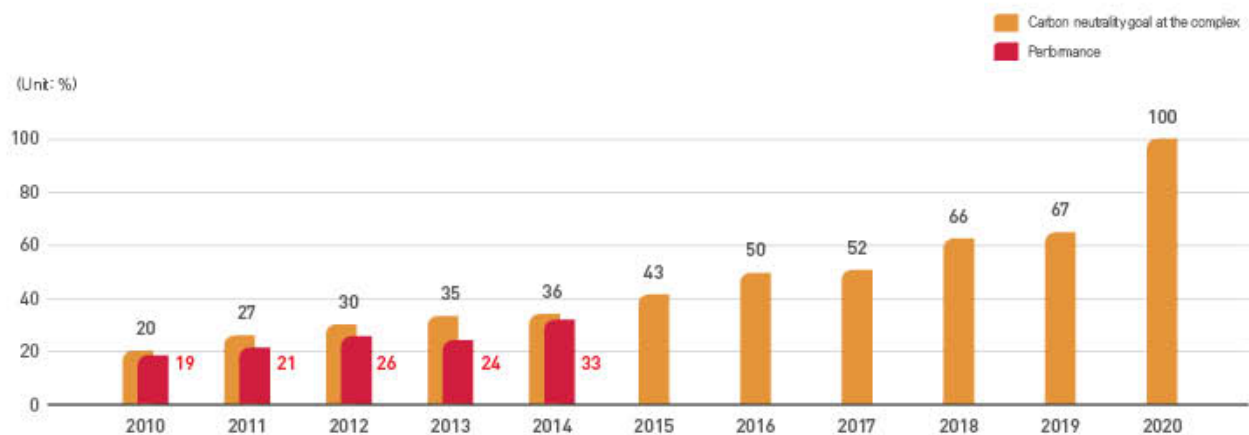
To cope with environmental issues caused by climate change, SK chemicals makes extensive efforts to build trust in the local community by proactively implementing reduction of GHG emissions and energy use. To reduce GHG emissions, the company has introduced the concept of carbon neutrality in 2009 and established eco-friendly business sites, as well as enhances energy efficiency by upgrading facilities to use input fuels.

● Management Measures and Future Plan for Carbon Neutrality

To cope with climate change, SK chemicals has launched the concept of ultimately not emitting greenhouse gas or offsetting GHG emissions through other activities and reflected this concept to management activities. This is called "carbon neutrality," which refers to the zero amount of carbon, which is additionally emitted due to economic activities. Carbon neutrality is realized through three ways: reducing GHG emissions directly, reducing GHG emissions indirectly through contribution of funds for offset, and achieving carbon neutrality

by purchasing products for reduction products. Of these, SK chemicals has selected the first option to shift into non-fossil fuel energy source and announced and executed achievement of carbon neutrality by 2020. As a plant that produces over 90% of all SK chemicals' products (based on weight) and supplies self-produced steam to the company at SK chemicals' Ulsan Complex, the Ulsan Plant plans to complete a carbon neutrality energy system which is operated only by alternative energy by achieving 100% of carbon neutrality by 2020. Although the amount of energy use to supply has externally increased, the company made investment in facilities to burn waste wood materials into a carbon boiler in 2014 to achieve 100% of the ratio of carbon neutrality. SK chemicals will also find additional biogas and expand the Eco Green Boiler by 2015. As a company pursues continuous growth, the amount of production and GHG emissions increases naturally. SK chemicals will offset the amount of generating GHG emissions, which increase along with production, by using alternative energy and connect the effect to five companies at SK chemicals Ulsan Complex to help cope with climate change.

Goal to Achieve Carbon Neutrality at SK chemicals Complex for Each Year



* Carbon neutrality: Carbon neutrality refers to the state of not generating additional carbon emissions due to economic activities. Carbon emissions from fossil fuels are blocked, or they are offset through forestation. SK chemicals is adopting new ways to substitute fossil fuels by adopting new renewable energy.

$$\text{Carbon neutrality (\%)} = \frac{\text{Amount of GHG emissions by biomass}}{\text{Total amount of GHG emissions at the Ulsan Complex}} \times 100 \%$$

* Five companies at SK chemicals Ulsan Complex: Five companies that receive steam and electricity from SK chemicals (SK chemicals, HJVIS, SK petrochemical, ENTIS, EPKL (Eastman Fiber Korea Limited)).

● **Current Status of Realization of Carbon Neutrality (Performance of GHG Emissions Reduction)**

Performance at 2014 and Reduction Plan in 2015

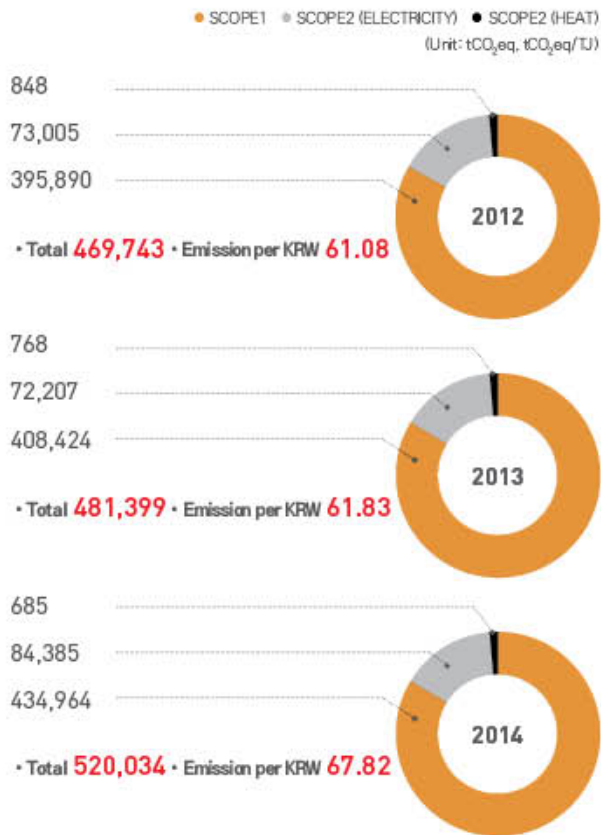
In 2014, SK chemicals established a performance-oriented management plan in which the company will employ two ways to achieve carbon neutrality at the SK chemicals Ulsan Complex and SK chemicals, and SK chemicals will enhance the executive level of the carbon neutrality map in the initial plan for Ulsan Complex (2009). Since 2013, the company has expanded and advanced the carbon neutrality map to the entire Ulsan Complex. For this goal, we have analyzed carbon neutrality in 2014 by considering the performance of previous years and the current situation, and then set goals for each year to reduce the amount of fossil fuel use. We also improved management methods to raise the executive ability in the roadmap. In 2014, the company achieved 33% ratio for carbon neutrality, an increase of 9% compared to 2013. This result was caused by an increase in the use of refined oil, which is bio fuel, instead of Bunker-C when oil boilers were operated due to the regular repair of coal boilers. As the amount of fossil fuel use increased due to the Steam Highway Project to supply heat to SK Energy, the company fell 3% short of the goal for 2014 (36%). Other than business sites, the company supports employees in a systemic way to encourage them to participate in saving energy in daily life. To encourage commuting by walking and bicycling, SK chemicals has installed bicycle storage centers and user checking systems at the headquarters and business sites and operated a system to acknowledge the performance of green commuting by awarding Green Points in connection with personal KPI. Employees can apply for Green Points by uploading the screenshot of the relevant application as evidence about their commute (by walking and bicycling) at the Green Point website. This app is available to employees as both a PC version and mobile version.

Current Status of Management of the Carbon Neutrality Roadmap at Ulsan Plant

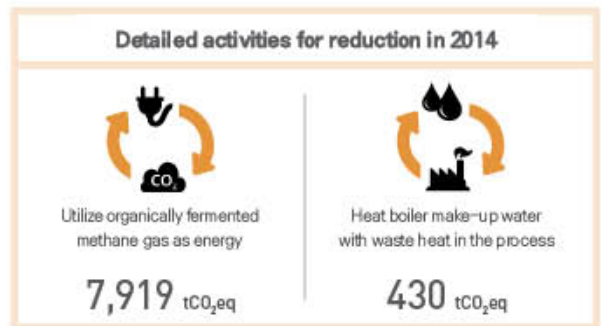
Accounting for 95% of GHG emissions and producing over 90% of all products based on weight, the Ulsan Plant implements more concrete and continuous monitoring activities for greenhouse gas flow than any other business site. After the 2000s, the BAU for GHG emissions has continuously increased due to increased output. The plant thus reduced the emissions by about 16% compared to emissions in 2002 by conducting energy-saving activities and introducing eco-friendly energy (operating waste wood materials boilers, utilizing bio liquefied oil and gas in wastewater treatment plants, etc.). Since 2009, the plant has also offset the increased amount of GHG emissions due to external sales of steam by utilizing biomass alternative energy. As it was expected to increase GHG emissions based on the massive steam sales through the Steam Highway Project from 2013, Ulsan Plant has continuously sought strategies to reduce emissions, and it aims to meet the assigned amount of trading in the carbon trading system, which was implemented in 2015, through various activities.

*BAU (Business As Usual): Expected amount of GHG emissions due to product output when there are no other activities for reduction

Change in the Amount of GHG Emissions



*GHG emissions and total amount of energy use significant figures in the statement, which are reported in the "Greenhouse Gas Energy Target Management System", and may have different totals due to the handling of decimal points.



● **Preparing the Carbon Neutrality Roadmap**

As business sites expand the ratio of non-fossil fuels by using a variety of biomass as fuels, the Eco Lab—where the headquarters and research institutes are located—has a new renewable energy (solar power, geothermal power) generation system and reduces the amount of GHG emissions by continuously increasing the amount of generation and substituting fossil fuels.

Utilizing Biomass (Waste Wood Materials, Biogas, Bio Liquefied Oil)

Recycling biogas in the process of waste treatment as fuel has a double effect of not only reducing GHG emissions by substituting fossil fuels, but also immediately removing methane gas in the process. In 2014, SK chemicals collected biogas which is emitted in anaerobic wastewater treatment facilities (amount of biogas: 150Nm³/hr. content of methane: 65%), sold 152.99 tons of biogas to SK petrochemical in SK chemicals Ulsan Complex, and utilized part of the gas as boiler fuel at SK chemicals. Through these efforts, the company substituted 194.338Nm³ of LNG (Liquefied Natural Gas) for a year and reduced 430tCO₂eq of GHG emissions. We also use methane gas, which is emitted from the Yongyeon sewage treatment plant in Ulsan, as fuels for B-C boilers. As the company with biggest domestic market share of biodiesel, SK chemicals uses bio liquefied oil (so-called refined fuel oil), a by-product in the process of producing biodiesel, as a substitute for fossil fuels for boilers in the plant to achieve reduction of waste and GHG emissions. In 2014, the company used a total of 5,910 tons of bio liquefied oil and reduced 11,952tCO₂eq of greenhouse gas compared to diesel. SK chemicals has replaced existing bituminous coal boilers with Eco Green Boilers. From 2013, the company changed the operation fuel, which is re-operated after suspension, with bio liquefied fuel (biomass fuel). With this change, we additionally reduced 809 tons of the amount of diesel and 2,117 tons of GHG emissions for a year in 2014.

Performance of Energy Use at Osan Plant

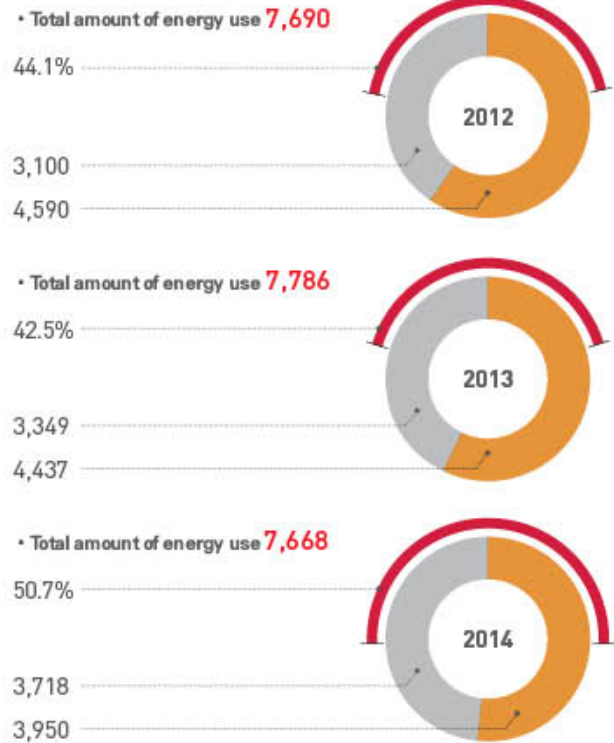
The Osan Plant organizes materials for using energy from electricity, fuel cost, and cars in each month and identifies the amount of energy use on a regular basis. As the plant resolved the problem of unnecessary pipes to reduce fuel cost in 2014, it saved about 167,000m³ of fuel use compared to 2013, saved KRW 100 million in the budget, and reduced GHG emissions.

Improvement of Energy Efficiency

SK chemicals has long strived to ensure energy efficiency, achieving remarkable efficiency at business sites and earning recognition from the government. For its energy-saving efforts, the company has received one presidential citation, one prime minister citation, two minister citation cases, one Bronze Tower Order of Industrial Service Merit, and one Iron Tower Order of Industrial Service Merit. These efforts to achieve better energy efficiency have contributed to improving energy efficiency by advancing fuel input facilities and reducing the amount of fuel input, going beyond just saving fuel. For example, the Eco lab (residing from 2010) and L HOUSE (residing from 2013)—where research institutes are located—have energy efficiency facilities. In terms of design capability, the Eco Lab has the ability to save energy by 33%, while L HOUSE can save energy by 11% compared to other buildings.

Percentage of Using Biomass Compared to the Amount of Energy Use at Ulsan Plant

■ Amount of use by SK chemicals ■ Percentage of biomass in external steam sales ■ Percentage of biomass (Unit: T.J)



*Percentage of biomass is the ratio compared to the amount of use by SK chemicals, except for external sales performance

$$\text{Percentage of Biomass(\%)} = \frac{\text{Consumption of Biomass}}{\text{Total Energy Consumption by SK chemical}} \times 100\%$$

● **Integrated Environmental Information Management System**

Stakeholders have recently increased their requests for opening environmental information, while the government officially requests companies to disclose environmental information through a system. As concern is being raised over the credibility of such data provided by companies, the necessity for center-focused and integrated management has increased. SK chemicals established the Integrated Environmental Information Management System, a company-wide integrated management system, in 2013. Through this system, the company inputs all data regarding environment, such as raw and subsidiary materials, air pollutants, water pollutants, energy, greenhouse gas, safety, health, and eco-friendly purchases, early each year. We also effectively deal with various assessment and lending tasks through a single channel, including the sustainability report, DJSI (Dow Jones Sustainability Index), CDP (Carbon Disclosure Project), and environmental information disclosure system.

구분	단위	2010	2011	2012	2013	2014
전기부하량	kWh	163,296,998	153,131,119	176,575,146	174,907,939	165,917,687
전기부하량	tCO2e	1,209	1,388	1,602	1,487	1,713
열량부하량	tJ	1,511	16,436	26,389	26,787	18,389
배출가스(총량) 전기		5,915	6,525	6,783	6,685	6,736
공급가스(총량) 전기		65,912	71,491	72,698	72,287	69,585
공급가스(총량) 열	tCO2e	982	982	9,192	881	939
공급가스(총량) 고온연료		435,552	402,161	389,036	408,347	435,016
배출물질(수질) 총량		799	908	994	349	939
공급가스(총량) 열, 고온연료	tCO2e	-	-	4,912	9	9
공급가스(총량) 열		101	101	101	9	101
총 배출가스(총량)	tCO2e	1,209	1,388	1,602	1,487	1,713
총 공급가스(총량)	tCO2e	671,596	695,207	698,117	682,294	725,912

Integrated Environmental Information Management System

● **Climate Change Data Management System Greenhouse Gas Management System**

To identify and manage the current status of GHG emissions from business sites, SK chemicals has established an IT-based greenhouse inventory system to not only efficiently manage energy, but also to prepare a response basis for government-led legislation (Framework Act on Low Carbon, Green Growth and its enforcement ordinance). The Ulsan Plant gas operated the greenhouse inventory system from 2009 and began to manage an integrated system with business sites in Cheongju (S HOUSE), Ansan, and Osan, which are in charge of producing Life Science Business products, since 2011. As GHG emission sources and calculation methods at Andong Plant (L HOUSE) were identified in 2013, all emissions sources have been registered to manage greenhouse gas upon production of vaccine products after completion of construction in 2014 and complete the company-wide system. SK chemicals deals with the carbon trading system, which was implemented in 2015.



Screen for the Greenhouse Inventory System

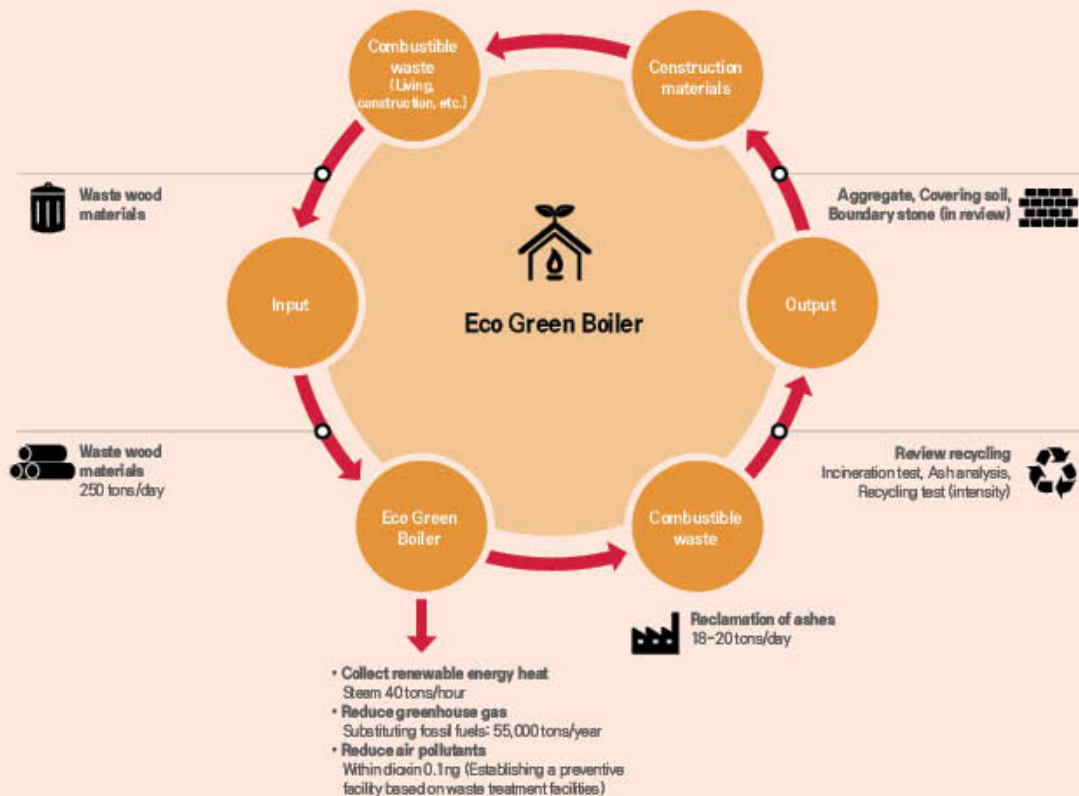
EGB (Eco Green Boiler)

SK chemicals made the decision to invest in the Eco Green Boiler in 2008, well before the Framework Act on Low Carbon, Green Growth was proclaimed. The Eco Green Boiler completed its construction in 2010 and began normal operation in 2011. It is a good example of a voluntary and leading case to reduce GHG emissions beyond just responding to the government regulations. As Korea's first boiler that produces steam by using only waste wood materials, it is a very significant case: it serves as a growth engine and is a significant step forward in establishing Green Plant, which minimizes pollutants by not using fossil fuels. Other than using waste wood materials as fuel, Eco Green Boiler will expand the scope of fuel to include coconut shells, which are wasted after collecting oil. This activity has the same purpose as using waste wood materials as fuel. As bark and covering from trees and fruit are decomposed in the land in a natural state, they emit another greenhouse gas, methane gas. In this sense, we can reduce potential GHG emissions by incinerating discarded waste wood materials, coconut shells, and other plant byproducts. At Ulsan Plant, Eco Green Boiler (EGB) steam is produced by burning waste wood materials, reducing about 440 tons of air pollutants and 55,000 tons of greenhouse gas a year.



Building Declaration Ceremony for Eco Green Boiler

Operation Flow and Effects of Eco Green Boiler



Eco Lab

Eco-friendly Technology Applying to EcoLab: 101 Kinds of Eco-friendly Technologies



Eco Lab has become a benchmark for excellence in the eco-friendly building sector because it was built to reflect many eco-friendly elements and received domestic and overseas certificates for its performance. The Eco Lab's construction was designed by considering eco-friendly elements from the planning step, and eco-friendly materials and technologies were applied as much as possible. Representative examples of 101 kinds of eco-friendly technologies that were incorporated are as follows: Solar power facilities, Rainwater/Heavy water system, Green wall, Three-layered glass curtain wall, Green rooftop, Biotop, Natural ventilation and lighting system, Automatic light connection roll screen, Automatic interior environmental control system, VAV (Valuable Air Volume)

system for each zone, Floor air-conditioning system, LED light, Illumination intensity connected dimming system, Radiation air-conditioning and heating system, Geothermal heat pump system, Variable air volume air-conditioning system, Natural light system, Water-saving non-water urinal, BEWMS (Building Energy Water Management System), Ice thermal storage system, High-efficiency refrigerator/boiler/transformer, Eco-friendly lagging, High-performance insulation/sound-absorbing materials, etc.

Performance in 2014

The Eco Lab, the Pangyo building to which SK chemicals moved in November 2010, has become a landmark in Pangyo in terms of eco-friendly buildings and has achieved the company's mission of "Healthcare and Earthcare". The Eco Lab received the first-rank certificate for energy efficiency from the Korea Energy Management Corporation, a first time for a domestic business building, and acquired the best level by receiving the highest score in the assessment for Green Building Certification Criteria (GBCC) from the Korea Green Building Council. It also acquired Platinum Level, the highest level in the eco-friendly certificate assessment, from LEED® (Leadership in Energy and Environmental Design) held by the USGBC (U. S. Green Building Council), a first for a domestic residential building. The Eco Lab also won the "Korea Architecture Award," the best award in Korea's architecture sector. To promote understanding of eco-friendly buildings and educate about their utility, SK chemicals operates the Eco Lab tour program for external stakeholders: 4,033 persons in domestic and overseas government institutions and companies participated in the program from November 2010 (month of first actual move-ins) until now (as of late December 2014). The Eco Lab was designed to save 44% of energy use, 63% of water use, and 33% of GHG emissions compared to regular buildings. To identify whether it was constructed according to the initial design and operated as planned, SK chemicals conducted joint verification with the Korea Institute of Civil Engineering and Building Technology. Since the performance of reduction was shown in 2011, including reducing energy by 44%, water resource by 63%, and GHG emissions by 31%, the company has verified the actual effects of improvement through annual monitoring. In 2014, the Eco Lab achieved the effect of reducing energy by 35%, water by 15%, and GHG emissions by 29%. With its own generation system using solar power and geothermal power, the Eco Lab supplies a portion of its own electricity. In 2014, it produced 7.74MWh and 6.82Gcal of solar power and geothermal power, respectively.

* LEED: Eco-friendly certificate system that was enacted by U.S. Green Building Council, a civic expert group in the U.S., in 1998.

It is one of the world's three major eco-friendly certificate systems along with Building Research Establishment Environmental Assessment Method (UK) and Comprehensive Assessment System for Built Environment Efficiency (Japan).



Number of Participants in Eco Lab Tour



Environmental Performance of Eco Lab

	Electricity reduction rate	Water resource reduction rate	Greenhouse gas reduction rate	Solar power generation (Mwh)	Geothermal power (Gcal)
2012	32%	26%	21%	7.54	31.74
2013	35%	23%	26%	8.25	0.28
2014	35%	15%	29%	7.74	6.82






L HOUSE

Eco-friendly Technology at L HOUSE

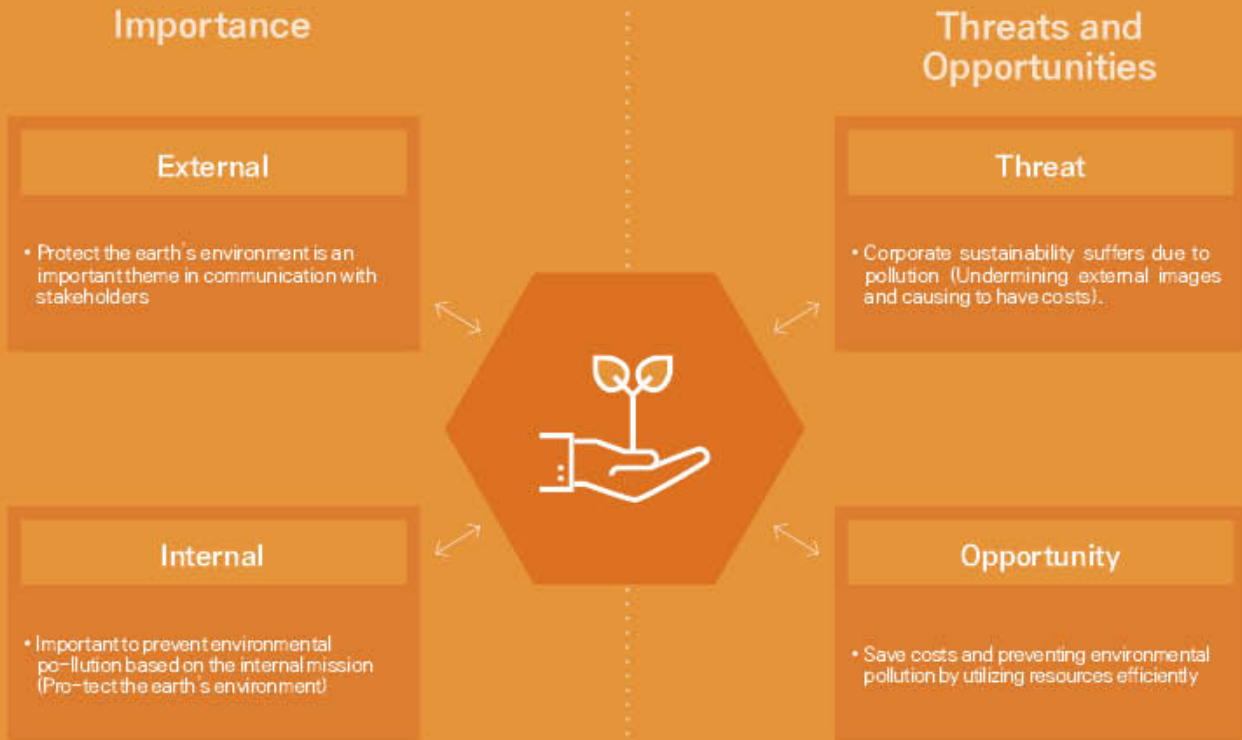
Pharmaceutical plants should pursue perfect sealing and sanitation to comply with the best medicine production quality control standard (GMP), but few plants were eco-verified because it was too difficult to use materials other than the existing ones. SK chemical's L HOUSE (Andong Plant), however, has applied various eco-friendly technologies based on the company's mission, "protecting the earth's environment and promoting the health of the human race." L HOUSE has not only complied with the GMP standard, but also applied 16 new eco-friendly and well-being technologies to save energy and water resources. As eco-friendly facilities such as LED lighting, heavy water recycling devices at toilets, and water-saving toilets were adopted, L HOUSE was designed to save water by 50% and reduce energy by 10% and more compared to existing plants. The plant also has a separate monitoring system for indoor air and temperature management. At the time of design, major tasks such as sustainable land, efficient use of water, energy and air, materials and resource, indoor environment quality were planned. For these tasks, various measures were applied to the entire L HOUSE, including planning eco-friendly landscaping and securing open space, using rainwater in the rainwater tank, applying energy-saving devices and LED light, utilizing recovery materials (over 22%), launching IAQ damper. L HOUSE (Andong Plant), which was constructed by reflecting the company's management philosophy, was the first in the world among pharmaceutical plants to achieve LEED Gold.



Eco-friendly Technology Applied to L HOUSE

 <p>Improve the land environment</p>	<ul style="list-style-type: none"> • Priority parking section for eco-friendly vehicles, applying water permeability to parking lot floors, and installing a bicycle storage facility • Plan eco-friendly landscaping and securing the maximum open space (6 times the base size) • Install a non-point pollutant source treatment facility and rainwater tank to control the amount of rainwater in heavy rain • Reflect measures for controlling on-site erosion/precipitation and dust in the construction process • Select materials to reduce the heat island effect on rooftops and paved surfaces at the site
 <p>Efficient water usage</p>	<ul style="list-style-type: none"> • Plan toilet hygienic tools utilizing water-saving products and plant treated water (toilet and river tank) • Plan eco-friendly vegetation to utilize rainwater from a rainwater tank and save water (saving 50% and over)
 <p>Save energy · Reduce GHG emissions</p>	<ul style="list-style-type: none"> • Save energy by over 10% compared to the basic standard by applying energy-saving equipment and LED • Apply eco-friendly refrigerant, preventing destruction of ozone layer and global warming • Conduct improved commissioning and verification for the energy use system
 <p>Recycle resources</p>	<ul style="list-style-type: none"> • Install recycling and waste separation ground and containers (external waste separation ground) • Write and implementing a construction waste management plan in the construction process • Utilize recovery materials (over 22%) and applying reduction of environmental loads for recycling resource (over 25%)
 <p>Improve the indoor environment of buildings</p>	<ul style="list-style-type: none"> • Measure and managing external air and supplying fresh air by over 30% compared to the basis • Apply various facilities to control indoor pollutants and block their introduction • Apply eco-friendly adhesive and paint (lower than the VOC, volatile organic compound, standard)

WHY? THIS IS IMPORTANT!



Ratio of recycling waste **69.5%** Amount of discharging volatile organic compound **9ton**

How We Manage	How We Measure	Our Performance Data
<p>Due to SK chemicals' industrial characteristics, its negative impact on the environment can be significant. The company considers prevention of environmental pollution important, with the protection of the earth's environment as our mission. Accordingly, the company thoroughly manages the entire process from flowing substances to abolishment.</p>	<p>SK chemicals manages the number of environmental accidents in priority and identifies the size of damage (price, scope, and persons in charge of handling damage). As introduced materials come from by-products and waste other than products, the company manages the recycling rate for this waste and minimizes the possibility of pollution that can be caused by discarded materials.</p>	<p>In 2014, SK chemicals conducted various activities in terms of waste, water, and soil management to prevent environmental pollution. These efforts led to performances such as zero cases of legal violation or leaking of pollutants. The company also minimizes environmental loads by introducing a resource circulation system through enhancing resource efficiency.</p>

PREVENTION OF ENVIRONMENTAL POLLUTION

Activities for Prevention of Environmental Pollution

Based on our mission of "promoting the health of human race and protecting the earth's environment," SK chemicals has established and conducted eco-friendly processes and led the prevention of environmental pollution. We will continuously make unceasing investment in achieving environmental management performance for air, soil, water quality, odor, and noise. Preventing environmental pollution and preserving the environment can guarantee sustainable life of human race on the earth, and we have the duty to realize happier lives for people. SK chemicals always thinks of ways to realize a healthy earth enjoyed by happy people.

● Waste Management

SK chemicals processes all wastes from business sites by appropriate methods stipulated in the legislation based on the International Basel Convention and Waste Management Act and thoroughly prevents secondary pollution from waste. In 2014, the company shifted all 4,698 tons of waste sludge from marine treatment into land reclamation to get involved with the national protection of the marine ecosystem. By recycling 4,234 tons of bottom ash at the EGB, which was simply reclaimed, to be used for primary molding, the recycling ratio in 2014 was 69.5%, which increased by 8.5% compared to 2012. To improve the recycling ratio and develop the use of recycling for generating profits in 2015, we are also conducting tests for changing the use of bottom ash. In storing and discharging medical waste, the Andong Plant stores materials in refrigerators at temperatures lower than 4°C to prevent infection and proliferation of pathogenic germs and monitors the current status of discharge of all wastes. The Osan Plant entrusts this work, from collection to disposal of unused medicines, to a waste processing company with a certificate or license from the government.



Site for Processing Waste

● Water Management

Industrial water used by a company includes water supply, river, and underground water. The water used at each business site of SK chemicals is from the water supply in each region and has a low level of impact on the local community and water intake. Underground water is partially used by the Ulsan Plant, Osan Plant, and Eco Lab. The Ulsan Plant collects underground water in a pond for emergency use, while the Eco Lab and Andong (L HOUSE) collect rainwater at a specific water-holding tank to utilize it for landscaping. Wastewater from business sites is discharged outside after being processed at waste treatment plants in business sites or reprocessed at sewage treatment plants to manage emissions more strictly than the legal regulations. The Osan Plant has established and utilized facilities for ethanol distillation to minimize ethanol content in high-concentrated waste and save costs for purchasing ethanol. In addition, considering the characteristics of business sites located near residential areas, the company writes daily reports on water and air quality and establishes and operates silencers and soundproof walls for equipment that generates noise to proactively deal with complaints from nearby apartment unit residents. As wastewater/effluent from S HOUSE in Cheongju is processed at the final sewage treatment plant in Cheongju Industrial Complex, the amount of wastewater has decreased by improving the operation methods for the system at the refined water and waste treatment plant. The Ulsan Plant has established and operated three facilities for reducing non-point pollutant sources to prevent pollution from reaching regular drains.

The Eco Lab, which is used as SK chemicals' headquarters and research institute, supplements part of the water it uses with underground water. Through this effort, it saved water resources by 15% compared to regular buildings and contributed to preventing floods in 2014. SK chemicals has established a system to manage and report water-related information more systemically. Since 2014, the company has opened information through CDP Water (project for opening water information), a global initiative to build awareness about the possible threat of a severe water crisis faced by the human race and prevent risks in advance. Through this project, the company provides information on decision-making processes regarding water, water management strategy, and risks and opportunities for water.

*Non-point pollutant source: Pollutant sources that discharge water pollutants in an unspecified way from an unspecified place, such as a city, road, farmland, mountain, or construction site

Reuse of General Drain Water

The Ulsan Plant signed an agreement with TSK Water to reuse and supply general drain water for its eco-friendly activities in October 2012. A total of KRW six billion was invested in this project from 2012 to 2013, and the system is currently in the trial operation stage. The R/O-based facilities will reuse 4,000 tons of drain water (water from cooling towers and rainwater) after purifying it. Thus, the facilities enable SK chemicals to recover 75% of 5,330 tons of general water a day and reused water to account for 62% of the 6,500 tons of purified water it uses a day.

● Management of Air Pollutants

SK chemicals has continuously strived to fulfill its social responsibility as a leading company, as well as comply with the government standard for air pollutants which are discharged outside the process. In terms of gas that is emitted outside, the company has installed automatic measuring equipment at facilities (points) to manage regular measurement. SK chemicals has monitored pollutant discharge situations 24 hours a day by utilizing a measuring tool called TMS (Tele-monitoring System). Other than the TMS, we deal with disorders in facilities and process and carry out emergency treatment, based on a manual that stipulates responses for such disorders, by conducting continuous monitoring through self-measurement. By signing a voluntary environmental agreement to reduce air pollutants, the Company is striving to cut NO_x, SO_x and VOC (volatile organic compound) emissions and dust by 15% during the first period from 2006 to 2010 and by 16% during the second period from 2011 to 2015.

*Refer to the "Performance Data" in the Appendix section for the types and concentrations of air pollutants that each plant emits.

Volatile Organic Compounds (VOC)

All the business sites of SK chemicals are not targets for VOC management. The Osan Plant, however, proactively deals with materials managed by the government, which are not targets for management, by collecting part of VOC and using it in the process. Of the VOCs defined by the Ministry of Environment in July 2012, the Ulsan plant generates methanol, chloroform, toluene, normal hexane, and xylene. The Ulsan plant established the Five-Year Plan for the Management of VOCs in 2012, and included it in its Report on the Voluntary Implementation of Environment Conventions on the Reduction of Air Pollutants. The materials remained the same with a weight of 9 tons which was the same as in 2012 and 2013. It is significantly low considering the total emission of VOCs in Korea in 2010 (approx. 865,000 tons as sourced by the National Institute of Environmental Research).

Ozone Layer-depleting Substances

Many ozone layer-depleting substances are included in refrigerants and fire extinguisher fillers. SK chemicals business sites use R-134a, R-123, R-12, R-22 as refrigerants for freezers, air-conditioners, and refrigerators, while Halon-1301, Halon-1211 are used as fire extinguisher fillers, which are slightly discharged due to the natural discharge during filling. SK chemicals employs no manufacturing process that directly uses or generates ozone layer-depleting substances, and as only a small amount of those substances is emitted from freezers, air-conditioners, refrigerators, and fire extinguishers due to natural discharge, and these emissions are not significant enough to have an impact on the ozone layer, the company has no independent plan to reduce the amount of these substances that are naturally leaked in tiny quantities. Nevertheless, the company, according to its greenhouse gas inventory system that was introduced in 2009, keeps records of the amount of ozone layer-depleting substances such as HCFC and CFC, used or leaked at each of its plants.

*All the plants together generate approximately 1,000 tCO₂eq in total.

● Management of Soil Contamination

SK chemicals conduct regular monitoring to manage soil contamination at business sites. The Osan Plant has shut down the boiler fuel storage system in an effort to eradicate risks of future soil contamination and replaced B-C oil with liquefied natural gas to minimize the possibility of soil contamination. Cheongju Plant received diagnosis for facilities by the Korea Occupational Safety and Health Agency: the plant was free from any possibility of soil contamination. In the soil contamination level test for 37 facilities and soil leaking test for one unit facilities by Korea Testing Laboratory, the Ulsan Plant passed all the tests. The company also received the appropriate level of results in the test for soil contamination test in the site of SK Advanced, which was used by POSCO Plantec.

● Noise and Odor Control

SK chemicals complies with the standard for noise and odor control at business sites and shares the current condition of compliance with the local community by receiving consultation from professional institutions. The Osan Plant has carried out construction for facilities to prevent noise and remove odors from freezing containers and research units to address stakeholder grievances in advance. The plant also identified the situation of noise level near the plant site and conducted assessment to check whether the noise level exceeded the legal standard. As a result, the plant installed silencers, sound-proof rooms, and activated charcoal adsorbing machines (capacity: 80Am³/min) to minimize inconvenience for local residents.

● Environmental Investment

To improve investment in environment-related facilities and environmental management performance, SK chemicals manages conditions by dividing them into various sectors such as air, water quality, odor (including VOC), noise, vibration, waste, soil contamination, toxic materials, creating green sites, and developing environmental technology. By systemically managing investments and improvement performances in each category, the company makes effective investment. The cost for environmental investment is KRW 240 million. With the investment plan for 2014 set for "preparing for stricter standards regarding discharge into the air," the company expected that the standard will become stricter starting January 1, 2015 when we received the plan for future investment in 2011. As the tightened standard for emissions can be complied by shifting from B-C oil to LNG and using more biogas, the company made no other investment in facilities.

Environmental Investment for Each Year (Unit: KRW 100 million)

Year of investment	Main content	Investment	Improvement
2012	Fuel switching and improvement in wastewater treatment plant	71.4	Reduce environmental load
2013	Reuse of general drain water	63.8	Recycle resources
2014	Prepare for stricter discharge standards	2.4	Reduce air pollution load
2015(planned)	First phase wastewater treatment plant expansion	71.2	Improve water treatment efficiency
2016(planned)	Second phase wastewater treatment plant expansion	77.1	Improve water treatment efficiency

*This table was produced based on Ulsan Plant, which has the biggest environmental facilities, and does not cover Osan S HOUSE since its proportion of invested items is small, including treatment chemicals and expendables.

*Investments have decreased because the standards for permitted discharge could be managed without changing facilities as planned, and investments were put off due to internal issues regarding cost reduction.

● Social Contribution Activities for Prevention of Environmental Pollution in the Local Community

Cheoyongam, designated as the No. 4 Natural Monument of Ulsan Metropolitan City, is located 2km from the Ulsan Plant. To preserve it with spirit of the Cheoyong tale, SK chemicals Ulsan Plant conducted purifying activities nine times in 2014. Furthermore, the plant carried out voluntary work at a welfare facility for the disabled at the Yecheon Business Site for People with Disabilities, implemented the Yecheoncheon Stream clean-up activities five times, and enacted purifying activities four times at Pyeongdong Village, Ganjeolgot, where the sun rises first in Korea, to protect the surrounding ecosystem. In 2014, a total of 371 employees participated in these activities. SK chemicals will continue its voluntary activities to preserve the ecosystem.

Efficient Utilization of Resources

SK chemicals not only maximizes utilization of input materials by enhancing production facilities in the flow of materials from stocking to release or from production to release and disposal, but also enhances the use of resources by including reuse and recycling of waste such as process materials. SK chemicals' employees are fully aware of the fact that efficiently using limited resources can be one of many ways to coexist with the earth, and this is SK chemicals' conviction.

● Strategy for Efficient Utilization of Resources

Utilization of resources has two premises: raising productivity and enhancing the ratio of recycling waste. First, waste generation needs to be reduced as much as possible by increasing product pass rate (1A rate), and as a principle for utilizing resources, the ratio of recycling waste (reuse, recycling) needs to be increased as much as possible. SK chemicals' Ulsan Plant continuously manages the ratio of recycling waste: in 2014, the plant recycled 69% of waste. The Andong Plant has applied the single use system by using disposable cultivation bags in the jacket (open-style), changing the previous method to use cultivation containers (closed-style) in the process of cultivation. In the previous method, containers needed to be cleansed by water and cleaning agents whenever cultivation ended. After implementing this new improvement, the amount of using cleaning agents and water was reduced by 100%, and this also secured securing flexibility to reduce the time for shifting the work.

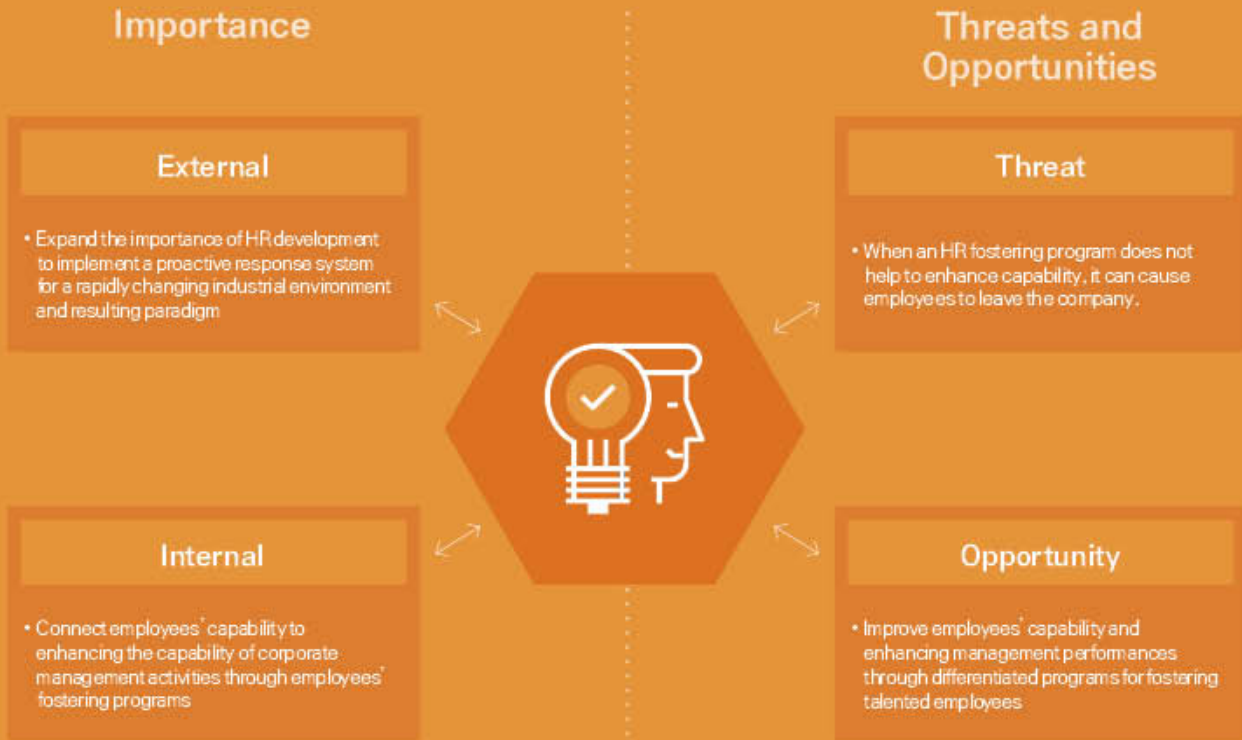
Waste Recycling Rate of Ulsan Plant

	2012	2013	2014
Waste Recycling Rate of Ulsan Plant	61%	73%	69%

● Management of Raw and Subsidiary Materials

SK chemicals enhances the use efficiency by managing the amount of use, inventory, stocking, and releasing of raw and subsidiary materials because using limited resources efficiently can preserve resources and reduce environmental impacts. The company distills waste ethanol, which is generated from the process of producing blood by four times a week to create ethanol with over 95.1% purity. This pure ethanol is then used after it passes a quality control test, and about 1,500L is generated on a daily basis on average. The company saves costs for purchasing ethanol through this distillation task and will continuously strive to secure a profit model that utilizes waste raw materials. In 2014, the total amount of raw and subsidiary materials used was 416,375 tons.

WHY? THIS IS IMPORTANT!



Average hours for participating in education by each person

160hr

Investments in company-wide education

KRW 3.7billion

How We Manage

Securing and fostering talented people have a great impact on company's sustainability. SK chemicals recognizes the importance of having the best talented people and makes fostering them one of the company's top priorities. To reinforce the capability of employees, the company operates various programs and reflects its effect in business performance.

How We Measure

Effects of HR development can be represented by achievement level of KPI and corporate performance and culture. For more practical assessment, however, SK chemicals manages the effects by dealing with average education time for each person and turnover rate as assessment items. The company has selected average time education time as a direct item for physical assessment and turnover rate as an indirect item for assessment of employees' satisfaction level.

Our Performance Data

To secure, develop, and foster talented people, SK chemicals operates differentiated HR development programs and aims to train warm-hearted professionals by connecting to "sustainable performance." Through these programs, the company achieved 160 hours of education performance for each person based on total employees in 2014.

FOSTERING AND DEVELOPING TALENT

Recruiting, Developing, and Fostering Talent

● Development of Talented People

As domestic and overseas environments grow more unstable, the importance of human resources has increased in corporate sustainable growth, as well as fostering talented people. SK chemicals has set "warm-hearted professionals" as a model for the company, operating various education and assessment systems to foster human resources with empathy and professionalism, and strives to nurture not only talented people but also a sound corporate culture. The company also operates short-term/long-term education programs to foster talented people with global capability and qualification and runs a reasonable assessment process to help employees to establish and achieve challenging goals and lead this achievement to company's growth.

● Securing the Talent and Direction for Development

SK chemicals makes great efforts to realize the company's model of employees as "warm-hearted professionals" by creating a "favorable workplace" to work. "Warm-hearted" means having consideration for others while having pride and a sense of community; "professionals" are people who set challenging goals, executing them thoroughly and happily, and passing down knowledge to the company with recognizing their own jobs. To realize this model of human resources, the company forms an extensive pool, recruits employees, and strives to reinforce employees' capability with the belief that recruited employees are the core of corporate competitiveness.

Strategy for Securing the Talent

SK chemicals secures talented employees by forming an extensive pool of human resources to secure talented human resources, which is the first stage for realization of the best model of employees. To prevent standardized recruitment of exemplary students but promote recruitment of potentially talented people, the company carefully assesses candidates by using a specially designed recruitment tool for a pool of various talent. We foster professional personnel for document screening and interviews to make reasonable judgments regarding applicants and reinforce capability for recruitment. The company also aims to secure talented people who go through verification by utilizing an internship system for job seekers to give them the opportunity to explore jobs suited to their aptitudes and get job experiences. In terms of some job groups, SK chemicals operates this recruitment policy to give priority to job seekers living in regions near business sites or neighboring regions for employment opportunities. This directly helps the local community by creating jobs for them.



Programs for Fostering the Talent

To secure the best and most-talented people, which is the second stage for achieving the best model of employees, SK chemicals has continued to invest in education and training despite difficulties, such as restructuring the business system and the economic recession. The company has provided all employees including temporary workers with the same education programs. SK chemicals' mission for fostering talented employees is "realizing sustainable performance." To realize this mission, we have laid the foundation to help all employees to create sustainable performances by operating education programs to allow at least 10% of all employees to receive education. Depending on each job, new employees learn not only education relating to each job but also importance of communication among employees, exchange, leadership, cooperation, and trust through the entry level of education for one to four months from joining the company. SK chemicals also fosters employees with a holistic approach by giving them an opportunity to do various voluntary work and self-examination. To nurture "warm-hearted professionals," the company operates various short-term and long-term education programs based on On-the-job Training (OJT) and maximizes the effect of education programs through a mentoring system where selected mentors among existing best employees lead their juniors. As part of a soft-landing program due to expansion of experienced employees, we operate a separate mentoring program for experienced employees to vitalize the human network and ensure harmony among employees. Based on promotion courses for each position level, SK chemicals strives to culture leadership capability required for each position. In 2015, the company will regularly review the entry level of education by diversifying mobile academy content and provide customized education for each level to reinforce capability.

Education Program

 General course	<ul style="list-style-type: none"> • Target: All employees • Provide requirements for conducting jobs through online and offline education • Example: Online language programs, supporting an academy
 Selective course	<ul style="list-style-type: none"> • Target: Selected employees • Provide various high-quality education. Employees for long-term dispatch education receive the total education costs as well as expenses for the period of their education from domestic and overseas education institutions • Example: Language intensive course, certificate, global capability development education, diploma course

Hours and Investments in Education

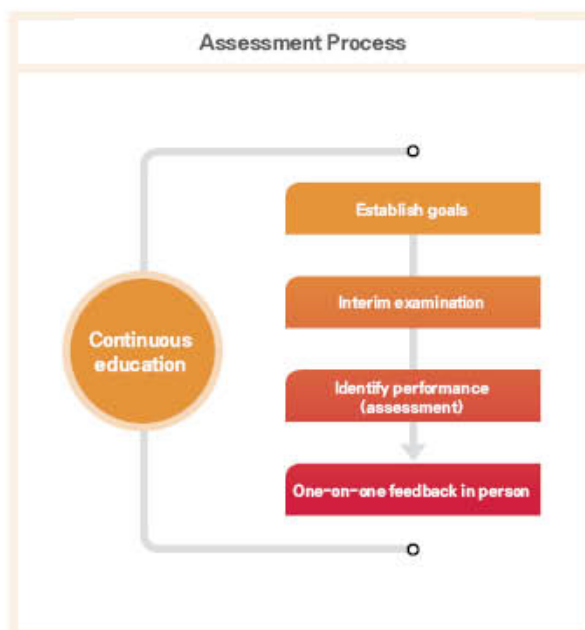
	2012	2013	2014
Annual average education time for each person (Unit: hr)	185	164	160
Investments in education (Unit: KRW 100 million)	34	37	37

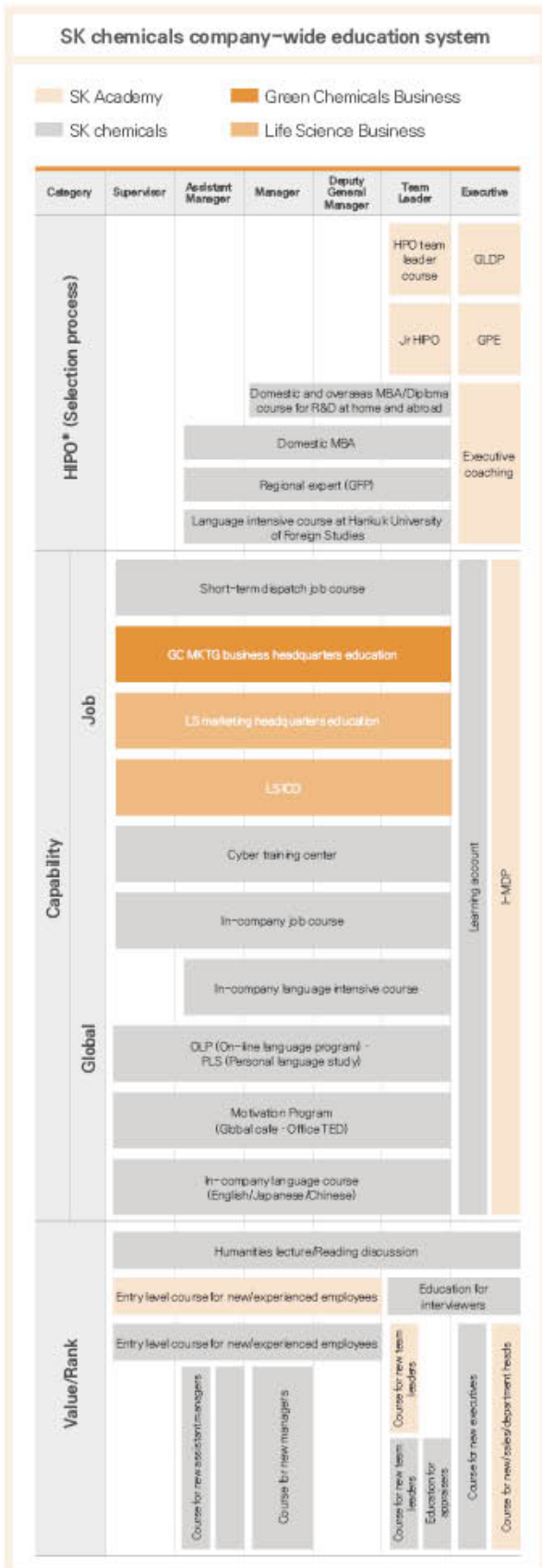
Assessment System and Reward

SK chemicals encourages employees to establish challenging goals based on "sustainable performances" pursuing win-win growth with the company and supports them to culture capability to achieve goals.

Fair Assessment

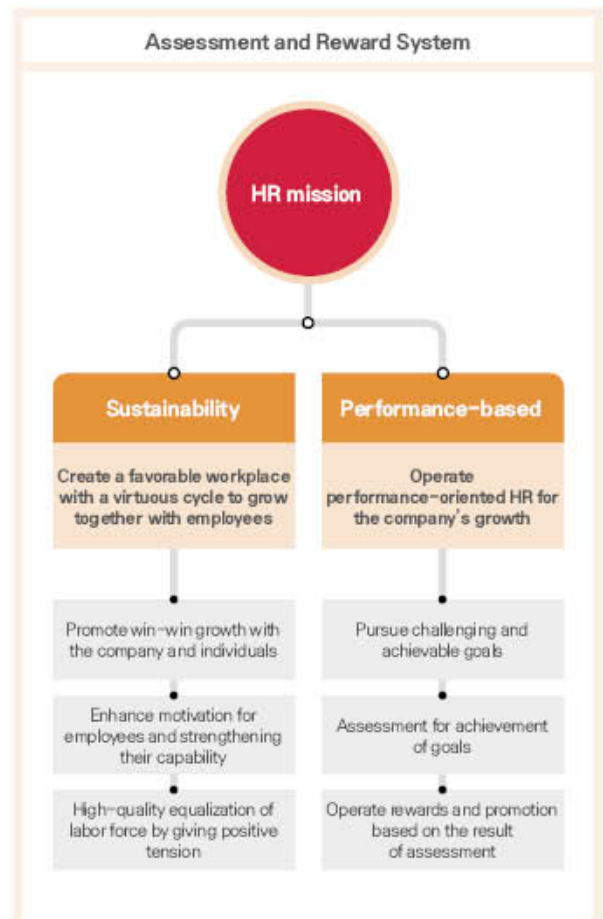
To ensure more objective and accurate assessment, SK chemicals operates an IT-based assessment system called PECS (Performance Evaluation & Coaching System). As a management tool for comprehensive performances, PECS has helped individuals and the organization to improve performances by analyzing information on work capability and performances more accurately. The company stipulated content to promote communication between appraisers and appraisees in the assessment process for reasonable and fair assessment. This is the tool for realizing "sustainable performances." This input and analyzed information leads to fair assessment, and the assessment is then calculated to acquire comprehensive performance rankings with consideration of achievements and capabilities. Since these performance ranks are considered for employees' promotion screening, education opportunities, and pay raise, we offer various assessment tools to appraisers, allow adjustment periods depending on each employee's level, and also carry out assessment audits in order to enhance fairness and objectivity during the assessment process. After assessment is determined, one-on-one feedback is given in person to explain the strengths and weaknesses of appraisees. By helping them to achieve performances by making a plan for supplementing capability, the company implements continuous coaching.





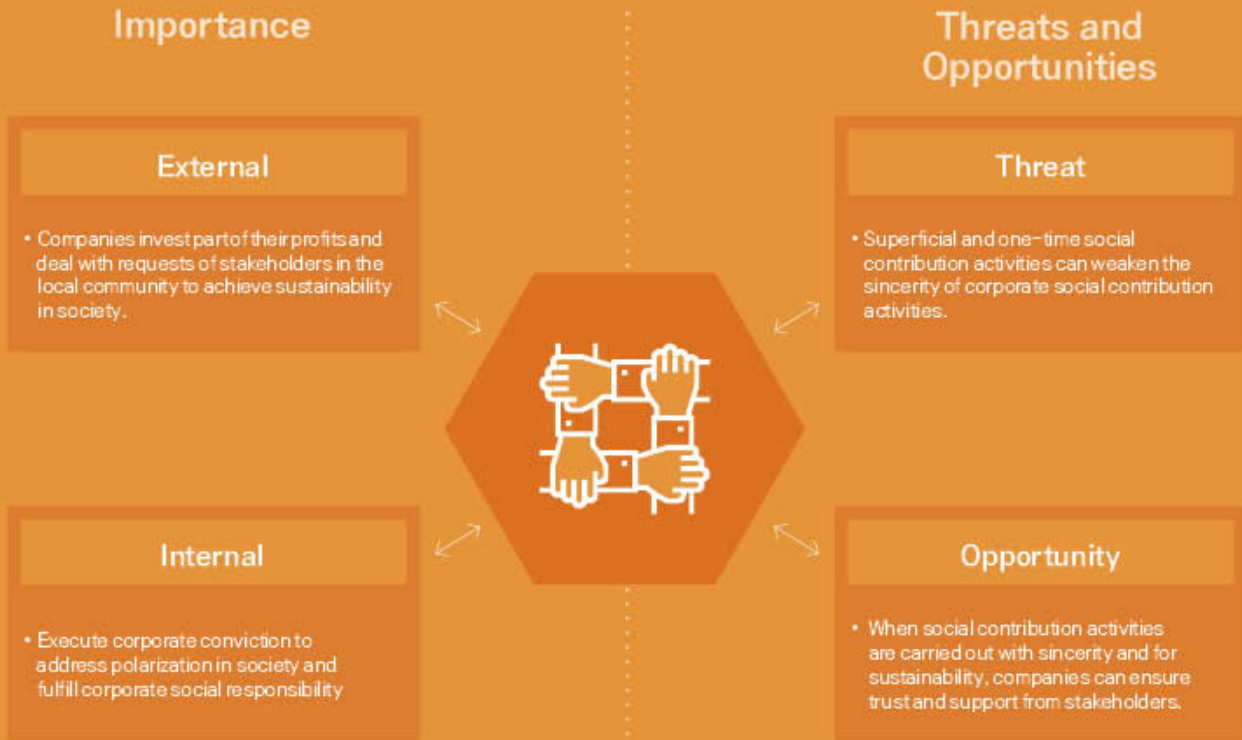
Reasonable reward

SK chemicals' wages for new employees are the same for male and female employees with no discrimination. After joining the company, differentiated rewards are provided, depending on the results of performance assessment, in a reasonable and strict way. The company motivates employees creating remarkable performances by presenting higher goals and rewards, while employees with a lack of performances receive the opportunity to supplement their insufficient competences as well as receive positive motivation. The company considers "sustainable performances" as its basic philosophy for its reward policy and strives to give all employees appropriate costs depending on each performance by maintaining the competitive reward based on their achievement of management goals. We have established the foundation and environment to ensure employees' stable life and help them to concentrate on their work by granting monetary rewards (yearly wage, incentives based on performance, etc.) and non-monetary rewards (prize, achievement, acknowledgement, sharing visions, etc.). The company also makes extensive efforts for employees' welfare by operating systems, including legal insurance, vacations, support for family events, and health check-up, regardless of whether they are permanent or temporary workers.



* HIPO: means "High-Potential" referring to employees with strong performance or potential for growth.

WHY? THIS IS IMPORTANT!



Hours of participating in voluntary activities

14,919 hr

Number of audiences at Silver Theater

250,000 persons

How We Manage

SK chemicals strategically performs social contribution activities that align with the of business strategy. The company also strives to ensure sincere social contribution activities through employees' voluntary participation.

How We Measure

To guarantee tangible performances in social contribution activities, SK chemicals selects and manages hours for social contribution activities by each employee and indicators such as investments regarding social contribution activities. The company ultimately aims to establish various indicators to analyze how good assessments by stakeholders impact the company.

Our Performance Data

SK chemicals implements activities for developing and engaging in local communities based on three strategic directions: eco-friendliness, social welfare, and spreading happiness. Through participation in the Hope Maker programs in 2014, the company provided 158 students with mentoring services as well as opportunities for cultural engagement and expansion for senior citizens through Silver Theater.

ENGAGING IN AND DEVELOPING LOCAL COMMUNITY

Social Contribution

Based on the company's mission of "promoting the health of human race and protecting the earth's environment," SK chemicals has set the strategic direction for social contribution in three major sectors: eco-friendliness, social welfare, and spreading happiness—to contribute to making a sustainable society. Through eco-friendly and social contribution activities, the company has contributed to protecting the earth's environment, pursued better lives together with the neighborhood by carrying out activities with the socially disadvantaged, and strived to spread happiness to internal and external stakeholders by making a healthy society and culture and supporting the environment. To contribute to the sustainable development of local communities, SK chemicals has planned a social contribution program. The company identified stakeholder needs and decided whether the program needs to be continued by measuring performances based on objective materials such as the engagement level of employees for CSR (Corporate Social Responsibility) programs, result report, and survey for satisfaction level. We support beneficiaries in a systemic way in cooperation with regional welfare centers and social workers with expertise in the social welfare sector.

● Eco-friendliness

A.cure (Activity for Protecting Rivers)

SK chemicals' A.cure (activity for Protecting Rivers) is named after "aqua", which means water, and "cure", which means treatment. This name symbolizes the company's efforts for protecting water resources and creating a pleasant ecosystem. The company carries out activities for cleaning rivers at the ecological marshes in Unjungcheon Stream, Seongnam, where the headquarters' Eco Lab is located, as well as Mipyeongcheon Stream in Cheongju, Cheoyong Park at Ulsan Plant, Ganjedgot Cape, and Solmarugil Street. In addition to neighboring areas of business sites, the company has voluntarily conducted environment purifying activities by cleaning the mountains and streams near meeting places when holding a "Can Meeting" for each team to lead environmental protection. Since 2015, five SK affiliates in Seongnam will jointly implement massive activities for purifying the environment based on Unjungcheon Stream.

Environmental Education: Happy Green Class

SK chemicals conducts environmental education for elementary students near business sites to help them create sound environmental value. "Happy Green Class", which is made up of activities that teach the importance of the environment in an interesting way provides



environmental education as SK chemicals' employees directly participate in the classes as lecturers, visit schools, and use video clips and teaching tools. As the environmental education was implemented in Seongnam where the headquarters are located and an elementary school in Yongin, the company expanded the education scope to an elementary school near Ulsan Plant in 2014. In 2015, we will broaden the scope of education nationwide by operating "Happy Green Class" in Cheongju and Andong.

● Social Welfare

Hope Maker

As part of the social contribution activities in the social welfare sector, SK chemicals has developed "Hope Maker," a program for sponsoring and mentoring domestic and overseas children/young people in low-income households to support their future. 1,715 employees, 91% of all employees, participated in voluntary work based on each team and supported economic and cultural activities for a total of 158 children/young people at 14 regional welfare centers near business sites. The company also plans and operates various programs, such as summer camp, campus tour, and year-end event, 12 times and more by creating a matching fund equivalent to sponsorship funds from employees. SK chemicals then uses these funds to support the medical expenses of unhealthy children/young people and their family members. As we expanded social contribution activities with the concept of matching funds to overseas activities, we have sponsored "Compassion Korea," an international group that supports about 300 children in low-income countries in Africa/Southeast Asia/South America. In 2015, the company will support more children/young people in need through various programs with engagement by all employees and plan more efficient programs by measuring the economic ripple effects on local communities.



Hope Maker Year-end Event

Supporting Social Enterprises: Silver Theater

While social welfare activities for supporting children/young people are carried out through "Hope Maker," activities for senior citizens are conducted through "Silver Theater." From 2009, SK chemicals supported KRW 120 million a year and 720 million in total to Silver Theater (formerly known as "Hollywood Theater"), Korea's first theater for the elderly. As a social company verified by the Ministry of Employment and Labor, Silver Theater had 250,000 audiences in 2014 and one million audiences in total by 2014 to become a representative company for expanding the cultural and artistic basis for elderly people. In 2014, Silver Theater and SK chemicals held "Visiting Silver Theater" by visiting senior citizen centers in disadvantaged regions and playing movies and holding performances for senior citizens in regions with little access to culture and welfare. This joint effort was greatly welcomed by local residents. The company also played movies at

the "Bundang Senior Welfare Center" located at Bundang-gu, Seongnam for Parent's Day and Silver Day. In 2015, the company will expand support for regions to play movies in Seongnam.

Overseas Social Contribution Activities: SK Happiness Well

SK chemicals operates "SK Happiness Well," a project to develop water resources for local residents in Kenya, Africa. In 2012, the company began the well development project in Tana River, Wachuoda, and Selfeh. We developed two wells and repaired ten pumps. For a total of 25 wells, we have completed development of wells and pump repairs. Through these efforts, the company contributed to addressing water shortages for about 26,000 residents in Kenya who had difficulty in securing water. This project is significant in that the necessary budget for developing wells was obtained in connection with Green Points and accumulated through eco-friendly activities by SK chemicals' employees in 2014. In 2015, the company will continue and expand activities for developing wells and repairing pumps for residents in Kenya, Africa, who suffer from water shortages by carrying out Green Point activities with engagement by all employees.



After opening SK Happiness Well in Kenya

● Spreading Happiness

SK Probono Activity

As part of the talent donation programs by SK Group, the SK Probono activity is carried out by employees with expertise, skills, and qualifications to help social enterprises and groups. SK chemicals' employees participate in the SK Probono activity by passing down their various skills and know-how, such as marketing/HR/corporate culture, to social enterprises.

Voluntary Work

Local Voluntary Work SK chemicals has assisted in providing free meals and delivering lunch boxes on a regular basis for the elderly living alone in connection with regional welfare centers at each business site. The company has even organized a company-wide voluntary work group, and we carry out voluntary work directly for the people who need help by engaging in programs at welfare centers. The company continuously implements voluntary activities suitable for the characteristics of each business site, such as carrying out voluntary work at rehabilitation facilities for the disabled, and has directly helped to achieve sales profits at the facilities.

SK Group "Happiness Sharing Season" Voluntary Work SK chemicals proactively participates in voluntary work for "Happiness Sharing Season," which is a voluntary work program for the winter season and implemented every November by SK Group. As the company has engaged in "Sharing Kimchi with Happiness" through volunteer workers, we made kimchi for winter from 2,000 cabbages and distributed it to social welfare centers in Seongnam. At the "Happiness Sharing Bazaar," which is held for supporting meal expenses for underfed children in the winter season, the company carried out voluntary work by donating not only SK chemicals' products but also employees' personal goods and directly selling them at the voluntary site.

Performances of Social Contribution Activities for Each Theme

Category	Performance in 2014	Goal for 2015
Number of conducting environmental education	1,500	1,800
Subscription to Hope Maker (%)	91.7%	100%
SK Happiness Well	Developing two/Repairing ten wells	Developing two/Repairing ten wells
Number of audiences at Silver Theater	250,000/1 million people	250,000/1.25 million people
Hours of voluntary work	14,919h	16,411h

● Green Point System

To enhance employees' awareness for eco-friendliness and settle awareness of environmental management as part of corporate culture, SK chemicals has established and continuously operated the Green Point System since 2010. The company has continuously improved the system by reflecting employees' opinions and results of survey for external trends and internal survey. The Green Point System was prepared for encouraging employees' participation for various eco-friendly activities. Employees engaging in this system can directly make donations for social contribution through accumulated points based on performances. The company uses donated points for social contribution through matching funding. As we began to reflect the Green Point System in KPI (Key Performance Indicators) in 2012, we have strived to settle environmental management as part of our corporate culture and carried out activities under the theme of 4G* Donation Points in 2013. The company's social contribution activities have been implemented by focusing on establishing infrastructure for daily lives in developing countries, such as creating happiness wells, supplying water cones, and providing solar power cooking utensils in Africa. While environmental management has successfully been settled in the company as part of corporate culture, SK chemicals does not stop at achieving internal success but strived to spread the system in the domestic industry. The company applied for patents with the Green Point System in 2013, and 898 employees exceeded the initial goal of 1,600 points in 2014, which is 51% of all employees.

*4G: Eco-friendliness (Green), Overseas social contribution (Global), Public benefits (Good), Donation (Give)

SK CHEMICALS WITH THE LOCAL COMMUNITY

All SK chemicals' social contribution programs are based on three major themes: eco-friendliness, social welfare, and spreading happiness. The company not just supports the local community in a material way, but strives to grow together with the local community by carrying out voluntary activities as well as holding various events. For example, Osan Environment Love Painting/Writing Contest began as a program in the eco-friendly sector in 2009, but as it was operated along with the Hope Maker social welfare program in 2012, the contest has been held in the eco-friendliness/social welfare sectors. The one-company-one-village sisterhood at Ulsan Plant and supporting social enterprises began as programs in the social welfare sector and joined with villages experiencing economic difficulty near business sites. Recently, the scope of sisterhood villages expanded, as well as support in the social welfare sector, and activities for purifying the environment are implemented.

Osan Environment Love Painting/Writing Contest

- Holding "Environment Love Painting/Writing Contest" for elementary students at SK chemicals Osan Plant (held every year in cooperation with Osan Metropolitan Government and Osan Comprehensive Social Welfare Center)
- Attended by about 400 elementary students residing in Osan
- Enhancing elementary students' awareness of the environment and spreading sound environmental value
- Proving its effectiveness in the region with the number of participants increasing



Sisterhood village between one company and two villages at Ulsan Plant and supporting social enterprises

- Making sisterhood ties between one company and two villages (SK chemicals Ulsan Plant and Geonam/Pyeongdong Village in Nam-gu, Ulsan)
- Activities: Supporting purchase of farm harvests, voluntary activities for the farming season, operating joint weekend farms, supporting breeding cows and chicks, holding village events and tours for filial piety (planning various joint cooperative projects by identifying needs of local residents), and supporting "Yeochon Business Site for Protection of the Disabled (social enterprise with the disabled)"
- Activities: Monthly regular voluntary activities (Activities for producing cotton gloves and purifying the environment near business sites)



HEALTHCARE & EARTHCARE

The willingness to create a sustainable society is realized by gathering thoughts of each employee to form a better corporate culture. This culture is the beginning of sustainable management. The willingness to create a sustainable society has already grown in the hearts of SK chemicals' employees.

TRANSPARENCY



EMPLOYEE ENGAGEMENT

Appendix

VALUE CREATION



PERFORMANCES FOR SUSTAINABLE MANAGEMENT

ECONOMY

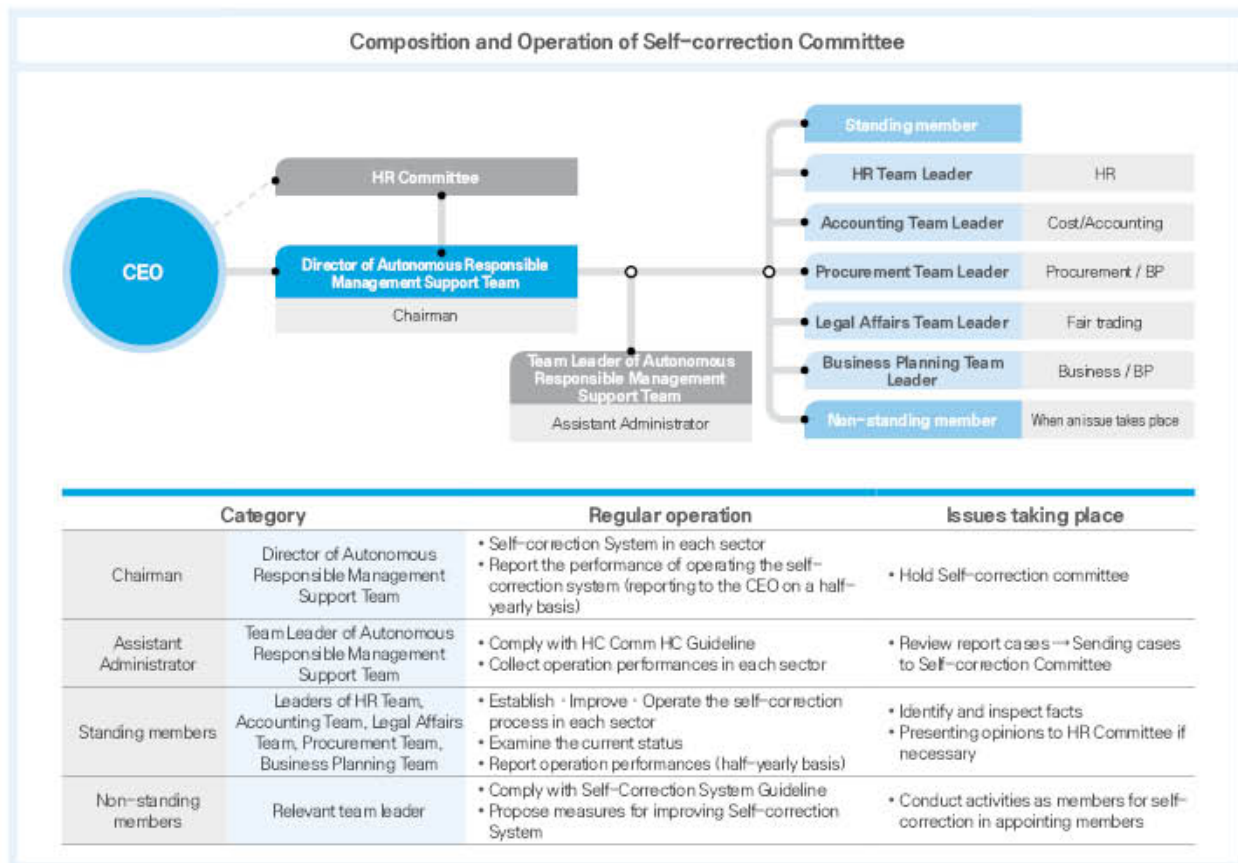
Ethics and Integrity

To settle transparent management and ethical management, SK chemicals operates SKMS, SKMS code of practice, code of ethics, code of conduct, and a program for autonomous compliance with fair trade to present the concrete code of conduct for employees as the standard for corporate ethics. By newly launching the ethical management sector, the company has reinforced executive ability and carried out ethical management by operating the development for supporting autonomous responsible management in charge of ethical consultation and handling relevant reports. Through these efforts, SK chemicals realizes fair and transparent management in all management activities.

Self-correction, Consultation, and Report System

SK chemicals' efforts for ethical management begin within the company. Since 2009, SK chemicals has been running the Self-correction

Committee. This committee, working directly under the CEO, is chaired by the Director of Autonomous Responsible Management Support Team and consists of the heads of the Human Resources, Accounting, Purchase, Legal, and Strategy and Planning Offices of both divisions as permanent members. The committee conducts semi-annual assessments of the company's ethical practices across five areas: human resources management, accounting, purchases, budget management, and business management. From 2014, the company has launched the Autonomous Responsible Management Support Team in charge of in-company audit and ethical management, and the head of the Accounting Team is chaired by the team. In 2014, the result of the autonomous examination shows no cases of violation. SK chemicals is striving to meet the needs of society by establishing a sound corporate culture within the company through the operation of the committee and spreading an ethical management culture. In addition, the Online Reporting System is in place. The system receives feedback



about the company's and members' ethical management-related activities from internal and external stakeholders. The system (guaranteeing anonymity, preventing revenge) shared principles on reporting source protection with the public to collect more valuable opinions. Programs are provided to protect the anonymity of reporting sources so that reports can be filed without worries about possible disadvantages. Online reporting can be done in the ethical management consultation and reporting corner of SK chemicals homepage (<http://www.skchemicals.com/kr/manage/advice.asp>). In 2014, seven online reports were submitted. The company took immediate measures for giving information and provided simple answers (inquiry about recruitment) for three cases; the other four cases ended up not being related to SK chemicals.

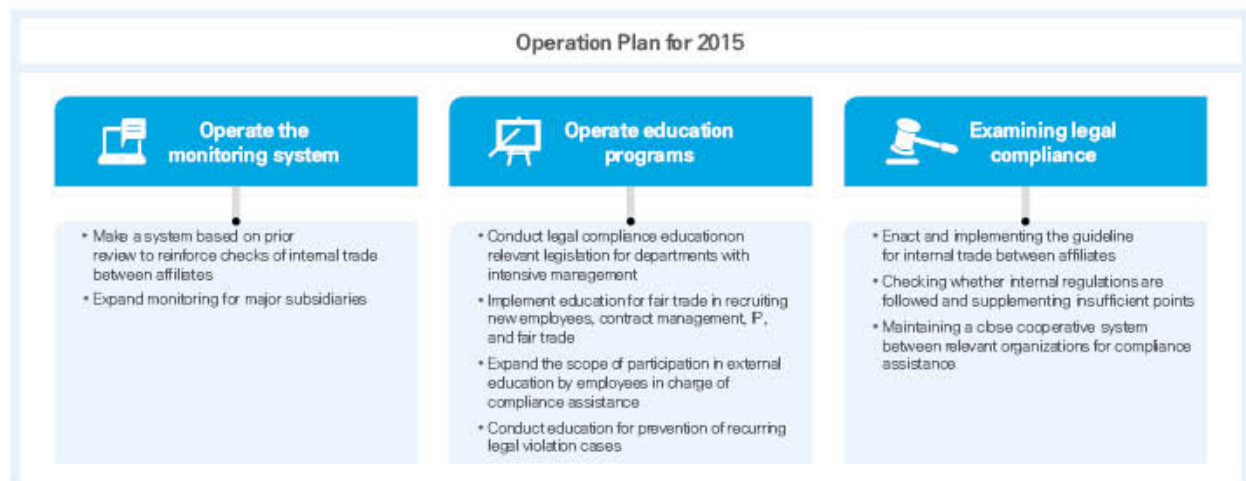
● Operation of Compliance Assistant System

In June 2012, SK chemicals appointed the Director of Legal Affairs Team as the legal compliance assistant in the Board of Directors

and enacted the standard for legal control, which is the highest standard in the company. The company then provided the basic framework for the legal compliance system and set the scope of work by the compliance assistant as part of the resolution of the Board of Directors in July 2012. As the company has established infrastructure for legal compliance assistance to support detailed activities, depending on the standard for compliance control, we operate education and training programs for legal compliance activities and report whether employees comply with the standard to the Board of Directors once a year. In connection with the autonomous compliance program for fair trade, the company conducts education and monitoring to encourage all employees to voluntarily comply with not only the Fair Trade Act but also other legislation. Through a close cooperative system between groups for compliance assistance, SK chemicals will make great efforts to strengthen ethical and legal compliance management and operate law-abiding activities in a systemic and comprehensive way.

Process for Compliance Assistance Activities

	Major task	Detailed job
Prevention	Providing regular advise	<ul style="list-style-type: none"> • Mandatory check of contacts in advance • Prevent and handle conflict cases • Spread major legislation and other activities
	Supporting major projects	<ul style="list-style-type: none"> • Check potential legal risks in the process of transferring business, develop joint vaccines, and introduce technology and patents
	Education for legal compliance	<ul style="list-style-type: none"> • Conduct seminars for employees to protect business confidentiality • Hold IP workshops regarding legal effectiveness of intellectual rights and patent conflicts for executives • Conduct education for fair trade in Life Science Business
Monitoring	Checking whether employees comply with the standard for legal compliance/ observing overall legislation	<ul style="list-style-type: none"> • Check the current status on compliance with the Subcontracting Act through the checklist • Check management of personal information offered to consignees for external tasks • Check whether promotional materials for prescription-only medicines comply with legislation
	Examining major points regarding compliance with legal risks	<ul style="list-style-type: none"> • Conduct risk management regarding IP and check internal trade between subcontracting affiliates, fair trade risks such as corporate combination report, violation and protection of business confidentiality, and risks on violation of the Pharmaceutical Affairs Act
Follow-up management	Analyzing results of activities for legal compliance control	<ul style="list-style-type: none"> • Report the result of activities for legal compliance to the Board of Directors once a year
	Implementing education programs for compliance	<ul style="list-style-type: none"> • Participate in education for fair trade, U.S. Competition Act, IP, and external education for compliance assistance groups, operate the bulletin board for autonomous compliance with fair trade, and carry out the pledge for execution of ethical management



PERFORMANCES FOR SUSTAINABLE MANAGEMENT

SOCIETY

Anti-corruption and Fair Competition

To promote and maintain fair and free competition among companies and ensure competition suitable for the market order, SK chemicals has established and continuously operated a "program for autonomous compliance with the fair trade act (Compliance Program)" from 2006. As staff members at departments related to fair trade examine relevant tasks autonomously through the checklist and cases with the possibility of legal violation are consulted with the in-company professional department in advance, the company operates its own internal monitoring system as well as a system for autonomous inspection and consultation.

● Education for Fair Trade

SK chemicals has continuously implemented regular or irregular fair trade education to spread employees' awareness of autonomous compliance. In 2014, the company conducted education on fair trade and law-abiding for new and experienced employees to get them to comply with SK chemicals' policies for ethical management and fair trade after joining the company. We implemented education on fair trade, including prohibition of enticing customers by providing unfair benefits and content about regulations on fair competition for employees in Life Science Business.

● Self-inspection for Subcontracting Transactions

SK chemicals carries out its own examination for fairness and legitimacy in subcontracting transactions. To establish a culture of fair subcontracts, the company has implemented a guideline in 2014. As all employees comply with this guideline as the standard for fair trade, the managers in charge of subcontracts examine the current status of compliance with the subcontract act (mandated by the government) and strive to ensure win-win growth with suppliers.

● Future Plan

SK chemicals will implement continuous fair trade education for all employees; the company has established and operates a system for prior review of internal transactions to reinforce the function of prior screening for legal risks. The company also pursues the free market economy through fair trade and competition with good will by distributing the relevant guideline to help employees avoid violations of legislation regarding the competition act. Based on the management principle of complying with laws and ethical regulations, we will strengthen execution of fair trade to grow into a top-notch company that is trusted and respected by society.

Fair Trade Education Programs for 2014



Executives and Employees (Work and Life Balance, Welfare Benefits, Labor-Management Relations)

● Work and Life Balance

SK chemicals pursues the realization of "warm-hearted professionals," the company's role model of exemplary employees, and creates a "favorable working environment" to help employees to enhance their pride in the company and seek their own goals for achieving visions. We aim to establish and settle corporate culture to achieve sustainable performances by helping employees to give value to their work and perform work thoroughly and pleasantly to achieve goals. With the aim of establishing a "favorable working environment," SK chemicals supports various programs for employees. Through these efforts, the company will enhance efficiency by improving quality and capability of work life and continuously expand corporate value by reinforcing corporate competitiveness.

● Supportive Activities for Maintaining Work and Life Balance

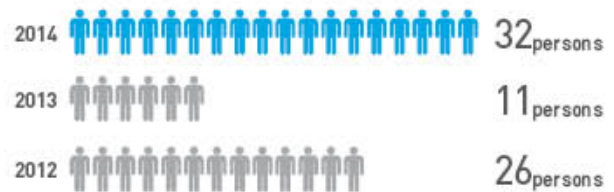
Supports for Rest and Family Members

SK chemicals has continuously operated a joint annual leave system to secure work-life balance through refreshing employees and improving the quality of systemic prior work and vacation. In addition to common annual leave, the company proactively recommends using annual leave to secure work efficiency; in 2014, we announced a total of six days of common annual leaves. As the company designates every Wednesday as "Day for Leaving the Office on Time," we encourage employees to use one day a week for spending time with family members and on self-development. To promote leisure activities, the company also supports employees to utilize time systemically and improve the quality of life by allowing them to use memberships for condominium for four days (each year) by each employee. By creating welfare funds for in-company work, the company promotes housing stability by supporting employees to purchase homes and borrow money for their deposits. We make great efforts to create a "favorable working environment" by supporting economic stability and education for employees' children, and even provide full scholarships (admission fee, class fee, school operation fee, etc.).



ECO Lab event for inviting family members

Current Status of Using Parental Leave



Supporting Childcare and Protecting Maternity

To create a culture that considers work-life balance, SK chemicals implements policies for protecting maternity by giving childbirth leave and parental leave for female employees and guarantees one-year parental leave in connection with leave before and after giving birth. The company also guarantees parental leave for male employees; in 2014, 32 female employees applied for maternity leave, among which 16 returned to the office. Of the remainder, 7 of those employees retired (none were male employees). The company operates a daycare center at Pangyo Global Research and Development Center so that excellent female workers do not need to interrupt their careers due to childbirth and childcare, and they can instead concentrate on their work. This daycare center is jointly operated with other companies in Pangyo and run by "Puruni," a professional company for daycare center operation. As the company strives to expand the number of daycare centers each year, "Puruni" provides specialized programs reflecting the developmental needs of infants/children at different ages.

Support for Health

To ensure health management for employees and their family members, SK chemicals provides all employees with "UB care Fortune Service," an individual customized health management program with the aim of prevention and cure, as well as legal medical check-up. "UB care Fortune Service" implements comprehensive medical check-ups through estimating employees' usual habits and conducts health examinations to help maintain the best health condition of employees by providing customized management based on individual results. Meanwhile, we implement regular medical check-ups by categorizing workers with a high possibility of having work-related disease as targets for special check-ups. The company continually implements health management education and various programs for all employees and conducts a campaign so that employees are encouraged to participate in these programs and develop and pursue an interest in health. Health programs include a health club program for exercising at the gym and a "mind-body control training" program for maintaining health and peace of mind. The latter program operates as a training course for not only individual employees at the company but also their family members on weekends so that they have the opportunity to cultivate peace of mind and maintain good health.

Support for Cultural Life

G.rium Program SK chemicals strives to spread a healthy social culture by sharing knowledge such as sound values and humanities. As a word made by combining "Green" and "Auditorium," G.rium Hall is a multi-purpose hall with 209 seats for humanities lectures and classical music concerts and located at Eco Lab, Pangyo. Humanities lectures at G.rium hall are held twice a month under various themes encompassing literature, history, philosophy, arts, and religions by inviting distinguished guests.

Through humanities lectures with various themes, the company contributes to cultivating work capability and humanities knowledge in employees. Meanwhile, classical music concerts are held not only for employees but also for employees' family members and children/young people from disadvantaged households. These concerts have received a positive response, and the company has held 112 lectures and 64 concerts by 2014.

Italy Arete Tour Program To promote the humanities, SK chemicals selects best participants in lectures and employees with excellent performances and supports them to explore Italy. The Italy Arete Tour is an on-site program drawing applicable cases for SK chemicals' corporate culture. This program is operated with humanities tours by Yonsei University Professor Kim Sang-geun and has been operated four times by 2014. Italy Arete (meaning "remarkable") Tour, which began from 2011, provides the opportunity to look back on the historical background of Renaissance and achievements by geniuses in this age, understand the essence of human beings at the shrine of humanities (Dante), identify the importance of sponsorship and mentors (House of Medici), experience the remarkable (masterpieces by genius artists), and learn cases of exemplary and ethical lives (Francis of Assisi). Through this program, employees enjoy the opportunity to get insight for their own work to achieve the company's mission (We care for the future, Healthcare, Earthcare).



G.rium classical music concert



Italy Arete Tour

Management System for a Favorable Working Environment Management of Happiness Index

SK chemicals implements various corporate culture activities to continuously increase the result of diagnosis for happiness level by employees through "SK Culture Survey," which is conducted by the SK Group each year. The company manages the happiness index by reflecting the Culture Survey as one of KPIs (Key Performance Index) for all executives so that an increase in the happiness level can be handled as one of the management activities with its own goals and intentions. Through these efforts, all executives can recognize the happiness level of individual employees under the corporate organization with regard to work or non-work activities. By conducting consultation (coaching), Can Meetings, recognition, and outdoor activities, we support all employees to deal with stress and enjoy happy working lives.

Character Point System

As part of spreading communicative culture, the Character Point System promotes character growth and recognition in employees that are characteristic of "warm-hearted professionals," which are the model of SK chemicals' exemplary employees. The system motivates employees to develop the habit of complimenting or encouraging one another to develop a more mature corporate culture. In the SKMS code of practice for executives and team leaders, which is implemented each year based on SK Group's management philosophy SKMS, the theme of the compliment is autonomously selected and operated. To prevent giving simple compliments, the system grants character points to a person who gives compliments when the person who is praised admits the content of the compliment. Plus, the company avoids a culture of top-down compliments by allowing employees to express gratitude through character points and strives to settle a culture of mutual complimenting. In 2014, a total of 2,258 cases of compliments and character comments were written.

Performance for Accumulated Character Points in 2014


1,601 cases for compliment points


657 cases for character points

Activities for Supporting Balance between Work and Life

 <p>Support for rest and family members</p>	<p>Common annual leave Implementing common annual leave with certain days to secure work-life balance for employees, conducting systematic prior work, and improve the quality of vacation</p>	<p>Leaving the office on time Allowing employees to spend time together with family members every Wednesday or concentrate on self-development</p>	<p>Promoting leisure Supporting four days of staying at a condominium to help employees improve the quality of life and utilize time more systematically</p>	<p>In-company work welfare funds Providing housing loans and full tuition fees for economic stability of employees</p>
 <p>Supporting childcare and protecting maternity</p>	<p>Encouraging parental leave Guaranteeing one year of parental leave to ensure a culture that considers work-life balance</p>		<p>Operating the company daycare center Operating the company daycare center to prevent interruption in female employees' career and help them concentrate on work, alleviating the burden of childcare</p>	
 <p>Support for health</p>	<p>UB care Fortune Service Providing a customized health management program with the aim of prevention and treatment for health management of employees and their families</p>	<p>Medical check-up Supporting medical check-ups for all employees and paying costs for annual check-up for employees and their spouses at the age of 40 and over</p>	<p>Health club program Operating in-company gym facilities for health promotion and management and providing personal coaches that reside in the company as professional trainers</p>	<p>Mind-body control training Implementing mind-body control training to give an opportunity to maintain health and cultivate the mind as well as giving an opportunity for employees' family members by opening the course to them</p>
 <p>Supporting cultural life</p>	<p>Grium program Holding various lectures and concerts to spread healthy social culture by sharing knowledge such as sound values and humanities</p>		<p>Italy Arete Tour As part of spreading the humanities, this program selects the best employees to explore Italy and gives the opportunity to gain insights related to work to achieve the company's mission</p>	

Management System for a Favorable Working Environment

- Managing the Happiness Index by reflecting the result of diagnosis of happiness level, which is conducted by SK Group each year, as one of the performance assessment indicators for all executives
- Executives recognize the happiness level of individuals with regard to work or non-work activities, supporting employees to ease stress and enjoy a happy working life through coaching, Can Meeting, and outdoor activities



- Part of spreading a communicative culture, a system to support employees to become "warm-hearted professionals" by promoting character growth and recognition
- Contributing to developing a mature corporate culture by making a habit of complimenting each other

● Labor-Management Relations for Win-win Growth

Since its foundation in 1969, SK chemicals has built trust between the labor union and management through honest and continuous communication based on human-based management philosophy and continued its tradition without any conflict for 45 years. The company has gone through various difficulties, including massive restructuring in 1996, which was inevitable due to management crisis, and hardships in business advancement such as business restructuring in 2000, thanks to the company's smooth agreement between labor union and management. We also strive to ensure regular and continuous Labor-Management communication by operating various channels such as Labor-Management joint workshops, Labor-Management mountain hiking events, and

training events for executives. In addition to negotiation for collective agreement and wages, the company seeks reasonable solutions through Labor-Management communication and discussion for current issues regarding labor union and management and on-site complaints through regular Labor-Management TF. Thanks to these efforts, despite the global economic recession in 2013, the labor union entrusted requests for negotiation for collective agreement on wages to the company based on "Proclamation for Win-win Growth between Labor Union and Management." In 2014, we reached autonomous agreement on the issue of ordinary wages, which previously confused many companies.

Guarantee of Labor Union Activities

SK chemicals concretely stipulates content on guaranteeing rights and activities of the labor union in the General Provisions (Chapter 1) and Labor Union Activities (Chapter 2) in the collective agreement, which was drawn by agreement between laborers and management. The company also strives to protect rights of employees by guaranteeing activities by the labor union, which are stipulated in the relevant legislation (Trade Union and Labor Relations Adjustment Act, Act on the Promotion of Worker Participation and Cooperation). When there is a change that can affect employment, we notify the labor union at least three months before the change.

Major History of Labor-Management Cooperation



Labor-Management Administration

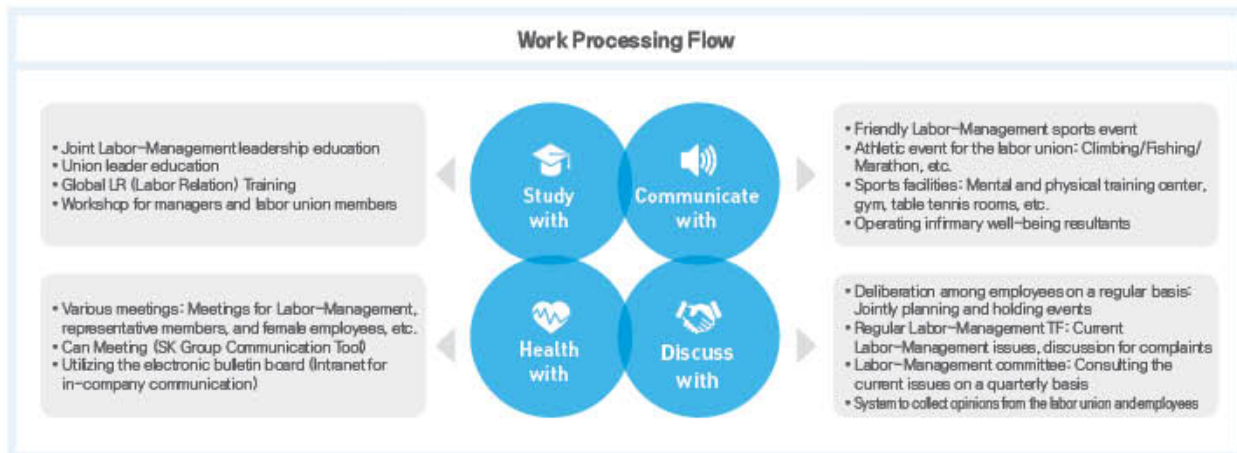
SK chemicals implements Labor-Management harmony programs under the themes of "Study with," "Health with," "Communicate with," and "Discuss with."

Study with SK chemicals believes that its stable and performance-centered Labor-Management relations can only be sustainable when the relations are rooted in logical and rational models. This is why the company runs and works on a variety of associated training programs in the form of joint and collective training, Global Labor Relation (LR) sessions, working-level workshops, and other special programs.

Health with To improve the health of employees, SK chemicals operates typical sports facilities such as a meditation place, fitness center, and table tennis area and holds sports events such as a labor-management friendship athletic meets and labor association athletic meets (mountain tracking, fishing, and marathon). Plus, the company performs health management to the smallest detail by developing programs suitable for current health trends and to improve the food culture.

Communicate with To vitalize labor-management communication, SK chemicals operates a system handling employees' opinions and complaints which are not limited to activities regarding the company, labor union, and its relevant issues so that opinions from employees are collected as a standard for labor-management communication. Further, the company holds meetings for each level of position and female workers as well as "Can Meeting" and utilizes the electronic bulletin board. All of the members of SK chemicals enjoy free and open communication through these various online and offline communication channels.

Discuss with For smoother discussion, SK chemicals continuously learns cases and models regarding labor-management, including regular staff consultation, regular labor-management TF, labor-management meetings, and a system for collecting opinions from the labor union and employees, finds various discussion themes by collecting and adjusting employees' opinions in an official or unofficial way, and forms a logical and rational discussion culture.



Autonomous Agreement on Ordinary Wages

As the Supreme Court judged an agreement en banc for ordinary wages in December 2013, many companies and labor unions are dealing with controversial issues regarding ordinary wages. SK chemicals reached autonomous agreement in the negotiation for collective agreement on wages in October 2014. While many companies suffered from intensified conflicts between labor union and management due to lawsuits regarding ordinary wages, SK chemicals has carried out honest communication and discussion based on mutual trust, achieving smooth agreement to solidify the basis for Labor-Management mutual growth.



Signing ceremony for collective agreement on wages

Suppliers (Win-win Growth and Supporting Suppliers)

● Providing the Supply Chain

To executive the company's basic philosophy of "pursuing happiness of stakeholders," SK chemicals seeks win-win growth through practical support and benefits to create a fair trade culture with suppliers and raise their competitiveness.

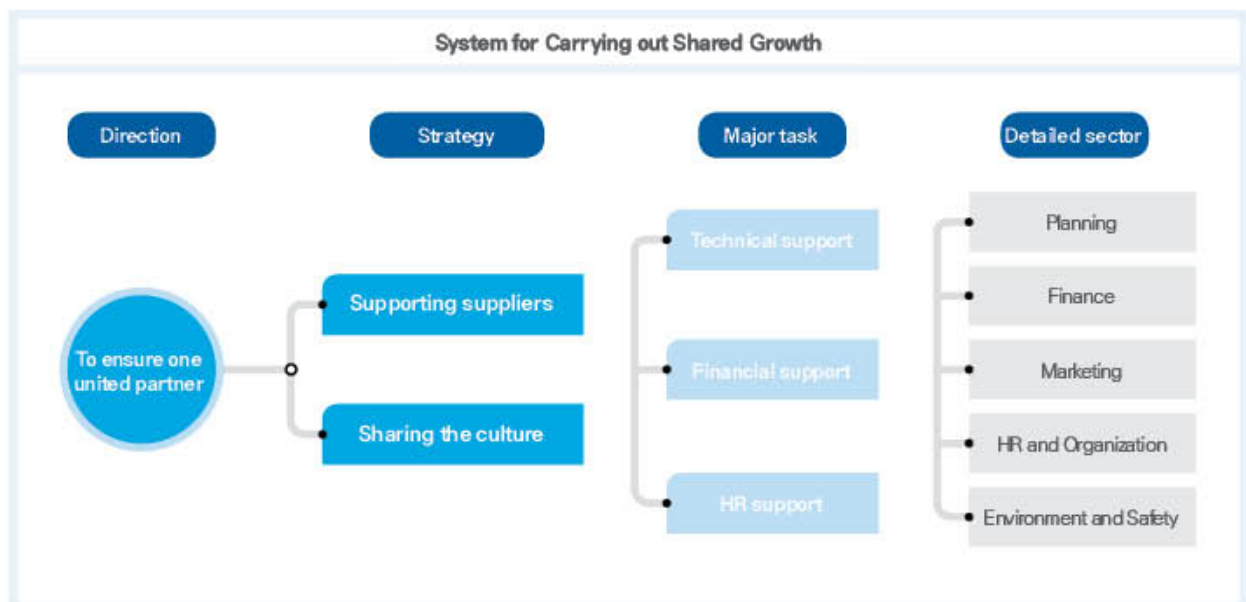
● Supporting Stability in Management

SK chemicals supports suppliers to lead stable management activities. Since 2013, the company has created and operated the SK Shared Growth Fund worth KRW 7.5 billion. As of late 2014, 13 companies in total utilize KRW 6.9 million in funds. We pay 100% in cash within ten days for payment to subcontract companies so that they can lead smooth management activities.

Size of SK Shared Growth Fund

(Unit: KRW 100 million/case)

	Cost for shared growth fund	Total loans	Number of suppliers having loans
2012	71	71	10
2013	75	59	15
2014	75	69	13



Providing Supports to Raise Competitiveness

SK chemicals seeks measures to enhance suppliers' competitiveness as well as leading support for suppliers to reinforce our competitiveness. Since 2006, the company has operated programs for supporting suppliers such as CEO seminars, SK Shared Growth MBA (formerly known as "Management Development Program"), and online education. In 2014, CEO seminars were attended by 62 CEOs from suppliers, while six middle managers participated in SK Shared Growth MBA and 13 staff members engaged in online education. To secure the best employees for suppliers, we held the "SK Shared Growth Job Fair 2014" in cooperation with SK affiliates in Ulsan (SK innovation, SK energy, SK global chemical, SK lubricants, SK E&C, and SKC) on October 7, 2014. Through this event, the company connected the best and talented people with suppliers and made opportunities to address difficulties in recruitment and employment. We acquired a high score in assessment of AEO (Authorized Economic Operator) in 2014, requested by the Korea Customs Service, including legal compliance, internal control, and safety management. This has improved our self-competitiveness as well as increased our score from "A" to "AA." As the company gained additional benefits of increasing the ratio of excluding import and export examination (50% → 70%) thanks to acquisition of the "AA" level, this is expected to improve export competitiveness by saving logistics expenses. The company has cooperated with suppliers to raise competitiveness by supporting compliance with new legislation. We conducted education for staff members of eight suppliers by notifying information on response for legislation, which are to be implemented from 2015, such as the Act on the Registration and Evaluation, etc. of the Chemical Substances and Toxic Chemicals Control Act.

Customer Satisfaction

● Process for Addressing Customer Grievances

SK Group has a management tool called "SKMS (SK Management System)." SKMS's basic management philosophy stipulates its own value, saying "A company should be trusted from customers

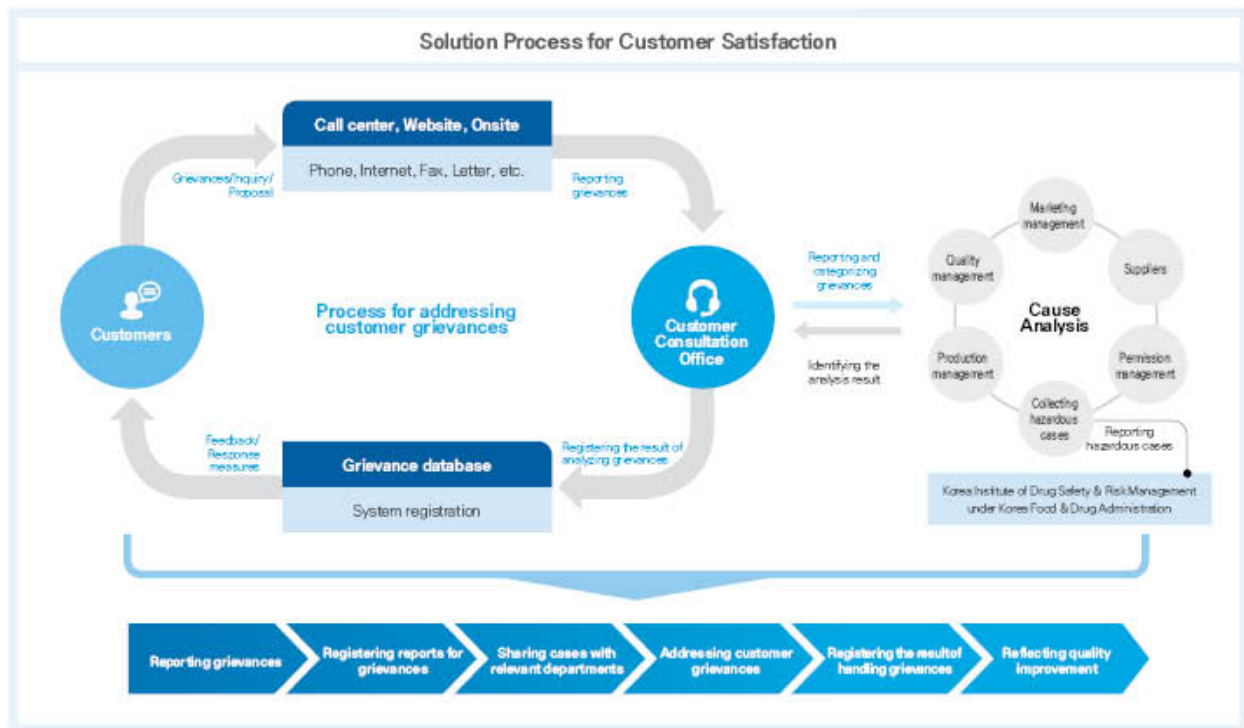
by satisfying them continuously and ultimately develop alongside customers." To achieve this aim, the Green Chemicals Business and Life Science Business strive to collect and address customer complaints and requests and operate the report center based on the characteristics of each business sector. For example, the Green Chemicals Business division receives customer opinions through staff members in charge of each business and through the website. It deals with customer opinions (grievances and requests) based on the internal regulations, while Life Science Business division, which directly communicates with customers, handles customer requests directly through the Customer Consultation Center and website. The latter division strives to build continuous trust from customers by collecting their grievances about difficulty in use or abnormality in medicines and addressing issues reasonably in accordance with the company's regulations on handling grievances. The Green Chemicals Business division's process for addressing customer complaints is operated based on each staff member in charge of businesses. This division, that produces and sells interim production goods, deals with customer opinions (requests and complaints) by business managers, who report cases to the headquarters director, division director, and CEO depending on the importance of issues. Most customer opinions include quality improvement, use development, and product grievances, and reported content and results are internally managed. The process of addressing customer opinions by the Life Science Business division is operated based on the Customer Consultation Center. Grievances reported through the Customer Consultation Call Center or website are categorized by each item and immediately sent to the relevant departments. After analyzing causes and solutions and their measures are established, opinions go through the initially reporting Customer Consultation Center to provide the final feedback. The entire record regarding report/management is managed in the grievance database, while detailed content regarding customer consultation and addressing customer grievances is reported on a monthly basis to the marketing headquarters director, production plant director, director of Life Science Research Institute, and CEO to reflect relevant results in improving quality such as enhancing sanction education, adjusting sizes, and changing packaging.

Education for Reinforcing Capability of Suppliers

Education name	Number of participants and targets	Theme	Content
SK chemicals capability enhancement education	18 persons at six companies/staff members	Improving job capability	Improving global skills for finance, analysis, and negotiation
New eco-friendly education	16 persons at eight companies/staff members	Compliance with legislation	Fully aware of the relevant legislation such as the Act on the Registration and Evaluation, etc. of the Chemical Substances and Toxic Chemicals Control Act

SK Group Shared Growth Academy

Program name	Number of participating companies and persons	Theme	Content
CEO seminar	11 companies/62 persons	Improving the CEO's capability, enhancing the management perspective	Managing changes in management, economic, and organizations Current conditions at home and abroad
Shared Growth MBA	6 companies/6 middle managers	Reinforcing management capability of core leaders at suppliers through systemic management education	Strategy, finance/accounting, marketing, HR/leadership, etc. Global workshop in China



● Protection of Customer Information

SK chemicals strives to protect customers' rights by preventing leakage and abuse of personal information. As the company enacted six major principles for collecting of personal information and its scope and use, we have used these principles as the standard for making decisions in eliminating risks for leakage and abuse of personal information and carrying out projects utilizing personal information. Based on the six principles for the collection of personal information, the company has continuously reinforced education and activities for examination in protecting personal information and will focus on conducting education and examination for executives and employees at suppliers in charge of handling the company's personal information. We will commit a day for a company-wide security check at least twice and more, including suppliers. For the collection and use of personal information, the company receives consent from information holders by utilizing the consent form except for inevitable cases.

As the company began to tighten education and examination for employees in protecting personal information from 2013, SK chemicals has enhanced awareness of personal information protection for all executives and employees at suppliers and operated a regular examination system. The company suspended all collection of unique identification information and sensitive information after August 7, 2014 in accordance with legislation. The company deleted all customers' resident registration numbers from the company's computing system in July 2014. We will delete all information regarding resident registration numbers by July 2016, checking once again whether already collected resident registration numbers are still included in various documents.

Six Major Principles for Collecting Personal Information



1. Inevitable cases: Inevitable cases in which legislation have relevant stipulation, legal duties must be complied, and contract needs to be signed and implemented with information holders
2. Sensitive information: Genetic information and criminal record information which is acquired that may hold details about individual philosophy, personal convictions, membership and withdrawal of labor unions or political parties, political opinions, health, sexual life, and genetic tests
3. Unique identification information: Numbers by which individuals can be identified, including resident registration number

PERFORMANCE DATA

To report 2014's performances regarding sustainable management in a more transparent and accurate way, SK chemicals presents quantitative performances in accordance with the GRI G4 Guideline standards.

Common · Labor index

Detailed content	Scope	Unit	2012	2013	2014	Notes
Product Quantity						
PET	Green Chemicals Biz.	Ton	79,164	73,917	78,550	
PETG	Green Chemicals Biz.	Ton	80,156	85,359	96,229	
BCN	Green Chemicals Biz.	Ton	7,506	7,665	9,866	
Bio Diesel	Green Chemicals Biz.	Ton	100,066	140,986	231,170	
Blood agents	Life Science Biz.	Bottle	945,125	1,266,733	1,270,850	Not counting only of completed development and sale
Vaccines	Life Science Biz.	Dose	7,058,231	6,321,279	5,421,648	Not counting only of completed development and sale
Solutions	Life Science Biz.	Kit	228	248	264	Counting only of sales completed development and sale
Tablets	Life Science Biz.	Tablet	738,803,555	699,888,209	561,886,404	Counting only of completed development and sale
Patches	Life Science Biz.	Patch	17,907,672	38,994,351	57,269,630	Counting only of completed development and sale
Current status of employees						
Current status of the number of employees and gender ratio	Male	Company-wide	Person	1,304	1,369	1,538
	Female	Company-wide	Person	311	388	320
Current status of types of employment	Permanent	Company-wide	Person	1,615	1,636	1,640
	Temporary	Company-wide	Person	106	121	135
Current status of gender ratio in executives	Male	Company-wide	Person	29	30	30
	Female	Company-wide	Person	1	2	2
Current status of new recruitment	Male	Company-wide	Person	174	225	162
	Female	Company-wide	Person	75	70	40
Current status of employment of people with disabilities	Company-wide	Person	16	12	15	
	Company-wide	%	1	1	1	
Foreigners	Company-wide	Person	1	3	3	
Patriot and veterans	Company-wide	Person	40	37	37	
Number of retired employees and turnover rate	Number of retired employees	Company-wide	Person	147	139	197
	Turnover rate of employees	Company-wide	%	9.1	7.3	11
Education hour and investment	Average education hour for each person	Company-wide	Hour	185	164	160
	Education investment	Company-wide	₩/100 million	34	37	37
Regular review of work performance and career development						
Number of employees for regular performance assessment		Person	1,103	1,130	1,165	
Number of employees who received regular performance assessment		Person	1,056	1,063	1,104	
Ratio of employees who received regular performance assessment		%	95.7%	94.1%	94.8%	
Ratio of employees to which collective agreement applies						
Number of employees who subscribed to the labor union and Labor-Management committee		Person	1,615	1,757	1,858	
Ratio of subscription to the labor union and Labor-Management committee		%	100%	100%	100%	
Number of employees at each business site and current status of gender ratio (based on year-end number of employees)						
Male	HQ	Person	769	845	822	
	Ulsan Plant	Person	373	382	357	
	L HOUSE	Person	N/A	66	99	Beginning operation from December 2014
	S HOUSE	Person	61	71	91	
	Ansan Plant	Person	40	40	N/A	Selling in 2014
	Osan Plant	Person	73	68	66	
Female	HQ	Person	211	233	217	
	Ulsan Plant	Person	25	24	22	
	L HOUSE	Person	N/A	25	30	Beginning operation from 2013
	S HOUSE	Person	36	48	57	
	Ansan Plant	Person	33	35	N/A	Selling in 2014
	Osan Plant	Person	37	33	31	
Permanent employees	HQ	Person	962	1,053	1,015	
	Ulsan Plant	Person	387	402	375	
	L HOUSE	Person	N/A	61	78	Beginning operation from 2013
	S HOUSE	Person	80	97	122	
	Ansan Plant	Person	62	60	N/A	Selling in 2014
	Osan Plant	Person	91	83	90	
Temporary employees	HQ	Person	18	25	24	
	Ulsan Plant	Person	11	4	4	
	L HOUSE	Person	N/A	30	51	Beginning operation from 2013
	S HOUSE	Person	17	22	26	
	Ansan Plant	Person	11	15	N/A	Selling in 2014
	Osan Plant	Person	19	18	7	
Type of injury, Rate of getting injury, Rate of getting work-related disease, Death toll regarding work						
Current status of having accidents	Number of accidents	Company-wide	Case	2	3	1
	Death toll	Company-wide	Case	0	0	0
	Number of lost days	Company-wide	Day	217	160	0
Number of grievances regarding labor practice, which are reported, found, and addressed through the official grievance solution system						
Number of reported grievances for the period of report		Case	1	1	0	
Number of addressed grievances for the period of report		Case	1	1	0	
Ratio of addressed cases		%	100%	100%	-	

* L HOUSE began to be operated from 2013, while reservation for operating Ansan Plant was made in 2014.

Current status of medical check-up

Detailed content		Scope	Unit	Target for examination	Person who received examination	Person who did not receive examination
Comprehensive check-up	Comprehensive check-up	Eco Lab	Person	837	833	4
		Ulsan Plant	Person	340	337	3
		Osan Plant	Person	97	97	0
		L HOUSE	Person	10	10	0
		S HOUSE	Person	122	122	0
	General check-up	Eco Lab	Person	988	985	3
		Ulsan Plant	Person	340	340	0
		Osan Plant	Person	97	97	0
		L HOUSE	Person	81	81	0
		S HOUSE	Person	122	122	0
	Special check-up	Eco Lab	Person	116	116	0
		Ulsan Plant	Person	138	138	0
		Osan Plant	Person	35	35	0
		L HOUSE	Person	70	70	0
		S HOUSE	Person	76	76	0

Economic index

Detailed content		Scope	Unit	2012	2013	2014	Notes
Retirement pension system							
Expenses operated for retirement pension (DB, Defined Benefit Retirement Pension)			KRW 100 million	656	727	836	
Expenses operated for retirement pension (DC, Defined Contribution Retirement Pension)			KRW 100 million	0	0	0	
Number of subscribers (DB)			Person	1,490	1,529	1,599	
Number of subscribers (DC)			Person	0	0	0	
Government's financial support							
Government subsidiary			KRW 100 million	10	25	35	
Tax exemption			KRW 100 million	26	63	89	
Social performance							
Use of expenses for social contribution activities	Expenses for social contribution activities	Company-wide	KRW 100 million	15	18	18	
Current status of participation in voluntary activities - Executives and employees	Number of participating executives and employees	Company-wide	Person	1,710	1,592	1,659	
	Average voluntary work time by each person	Company-wide	Hour	2	8	8	

Environmental index

Environment							
Detailed content		Scope	Unit	2012	2013	2014	Notes
Using raw and subsidiary materials							
Amount of using raw and subsidiary materials	Ulsan Plant	Ton	370,188	413,210	415,338		
	Osan Plant	Ton	380	613	614		
	L HOUSE	Ton	-	-	163		
	S HOUSE	Ton	338	342	260		
Amount of using recycling materials	Ulsan Plant	Ton	2,245	3,500	-		
Using energy and GHG emissions							
Amount of using energy	Coals	Company-wide	Ton	152,086	159,577	169,316	
	B-A	Company-wide	M	159	187	0	
	B-C	Company-wide	M	4,809	0	0	
	Water and materials	Company-wide	Ton	85,954	82,119	67,037	
	Gasoline	Company-wide	M	110	80	66,160	
	Diesel	Company-wide	M	212	159	140,366	
	Biodiesel	Company-wide	Ton	2,742	0	0	
	Refined oil	Company-wide	Ton	1,678	1,633	0	
	LNG	Company-wide	1,000m ³	8,851	15,660	16,008	
	LPG	Company-wide	Ton	39	16	3,286	
	Biogas	Company-wide	1,000m ³	11,188	11,140	11,504	Methane gas
	Electricity	Company-wide	MW	156,579	154,867	180,988	
	Heat	Company-wide	Cal	28,359	26,797	19,396	
Amount of energy sales	Electricity	Ulsan Plant	TJ	2,218	2,310	1,681	* Applying the electric rate for sales (based on consumption) of KRW 100 in accordance with the guidelines of the KEPCO.
	Heat	Ulsan Plant	TJ	3,272	3,347	2,386	
Change in GHG emissions	Scope 1	Company-wide	tCO ₂ e	395,890	408,424	434,964	
	Scope 2 (Electricity)	Company-wide	tCO ₂ e	73,005	72,207	84,385	
	Scope 2 (Heat)	Company-wide	tCO ₂ e	848	768	685	
	Total	Company-wide	tCO ₂ e	469,743	481,399	520,034	
	Basic unit 1 (Sales)	Company-wide	tCO ₂ e/KRW 100 million	31.6	32.4	42.2	
Amount of generated recycling energy	Solar heat	Eco Lab	MWh	7.54	8.25	7.84	
	Geothermal heat	Eco Lab	Cal	34,29	1,77	41.55	

* Various government supports for the company, including subsidy for R&D and investment in environmental facilities

PERFORMANCE DATA

Detailed content	Scope	Unit	2012	2013	2014	Notes
Use of water and emission of wastewater						
Amount of water use	Osan Plant	Ton	34,783	67,550	54,180	*외종 배출지
	Ulsan Plant	Ton	7,580,928	7,076,053	6,472,319	
	L HOUSE	Ton			128,114	
	S HOUSE	Ton	59,922	53,588	46,540	
	Eco Lab	Ton	66,128	65,760	78,076	
Amount of underground water used by self-development	Osan Plant	Ton	60,010	29,920	14,112	
Amount of recycled water	Eco Lab	Ton	2,181	4,882	3,612	
	Ulsan Plant	Ton	4,167,642	3,946,126	3,781,238	
Amount of wastewater	Osan Plant	Ton	49,680	39,420	37,831	Sewage treatment plant in Osan East Sea
	Ulsan Plant	Ton	673,010	694,519	771,610	
	L HOUSE	Ton			79,052	Complex sewage treatment plant
	S HOUSE	Ton	31,831	31,916	28,449	
	Eco Lab	Ton	37,188	22,957	36,291	
Air and water quality						
Concentration of dust emissions	Osan Plant	mg/Sm ³	0	10	10	*Standard in the Emission Permission Act
	Ulsan Plant	mg/Sm ³	4	4	4	
	L HOUSE	mg/Sm ³			0	
	S HOUSE	mg/Sm ³	8	6	5	
Concentration of sulfur oxides emissions (SOx)	Osan Plant	ppm	0	0	0	180
	Ulsan Plant	ppm	64	41	29	
	L HOUSE	ppm			0	
	S HOUSE	ppm	0	0	0	
Concentration of nitrogen oxide emissions (NOx)	Osan Plant	ppm	0	0	0	200
	Ulsan Plant	ppm	48	61	55	
	L HOUSE	ppm			0	
	S HOUSE	ppm	0	0	0	
Volatile Organic Compounds (VOC)	Osan Plant	ppm	0	0	0	Not applicable
	Ulsan Plant	ppm	9	9	9	
	L HOUSE	ppm			0	
	S HOUSE	ppm	0	0	0	
Concentration of water pollutants emissions (BOD)	Osan Plant	ppm	10	3	2	120
	Ulsan Plant	ppm	5	4	3	
	L HOUSE	ppm			101	
	S HOUSE	ppm	17	36	2	
Concentration of water pollutants emissions (COD)	Osan Plant	ppm	15	7	5	130
	Ulsan Plant	ppm	20	13	12	
	L HOUSE	ppm			58	
	S HOUSE	ppm	23	53	18	
Waste generation and treatment	Osan Plant	ppm	15	25	4	120
	Ulsan Plant	ppm	4	4	2	
	L HOUSE	ppm			110	
	S HOUSE	ppm	24	25	6	
Amount of generated regular waste	Osan Plant	Ton	103	106	145	
	Ulsan Plant	Ton	40,164	32,816	29,229	
	L HOUSE	Ton			54	
	S HOUSE	Ton	185	12	137	
	Eco Lab	Ton	37	56	107	
Amount of generated designated waste	Osan Plant	Ton	16,251	19,180	4,944	
	L HOUSE	Ton			45	
	S HOUSE	Ton	2	1,169	1,543	
By each treatment method						
Incineration	Osan Plant	Ton	115	101	132	
	Ulsan Plant	Ton	230	311	368	
	L HOUSE	Ton			100	
	S HOUSE	Ton	52	40	52	
Reclamation	Osan Plant	Ton	22	36	24	
	Ulsan Plant	Ton	11,282	6,948	5,460	
	L HOUSE	Ton			0	
Recycling	S HOUSE	Ton	85	68	37	
	Osan Plant	Ton	51	48	49	
	Ulsan Plant	Ton	34,336	37,904	23,702	
	L HOUSE	Ton			0	
Marine emissions	S HOUSE	Ton	49	56	69	
	Osan Plant	Ton	0	0	0	
	Ulsan Plant	Ton	8,765	6,831	6,831	
	L HOUSE	Ton			0	
	S HOUSE	Ton	0	0	0	

Detailed content	Scope	Unit	2012	2013	2014	Notes	
Recycling ratio	Osan Plant	%	5	30	19		
	Ulsan Plant	%	61	73	69		
	LHOUSE	%			0		
	S HOUSE	%	26	5	4		
Hazardous chemical substances							
Amount of using hazardous chemical substances	Ulsan Plant	Ton	30,238	33,637	36,998		
Vehicles							
Mobile combustion by executives and employees	Gasoline	Company-wide	lit	110	80	71,224	
		Company-wide	GJ	3,580	2,592	2,322	
		Company-wide	tCO ₂ eq	240	174	156.04	
	Diesel	Company-wide	lit	30	86	22,139	
		Company-wide	GJ	1,135	3,249	836	
		Company-wide	tCO ₂ eq	80	229	58.919	

Index for human resources

Detailed content	Unit	2012	2013	2014	Notes
Number of violation cases for rights of local residents and measures taken					
Number of violation cases for rights of local residents for the reporting period	Case	0	0	0	
Violation cases for rights of local residents, which are being reviewed	Case	0	0	0	
Violation cases for rights of local residents, for which improvement measures are being implemented	Case	0	0	0	
Violation cases for rights of local residents, which are being resolved	Case	0	0	0	

Social Index

Detailed content	Unit	2012	2013	2014	Notes
Number of legal measures and result for unfair trade practices such as practice undermining competition and monopoly					
Number of legal measures for unfair trade practices such as practice undermining competition and monopoly	Case	0	0	0	
Amount of major penalties and number of non-monetary sanctions for violation of legislation and regulations (excluding environmental rules and legislation)					
Amount of major penalties	KRW	0	0	0	
Number of non-monetary sanctions	Case	0	0	0	
Number of lawsuits	Case	0	0	0	

Product Index

Detailed content	Unit	2012	2013	2014	Notes
Number of grievances with proven loss of personal information and violation of personal information protection					
Number of stolen customer information	Case	0	0	0	
Number of lost customer information	Case	0	0	0	

GRI INDEX

Marking core suitable method: External verification for GRI G4 index: P. 94-95

Category	Index	Description	Page	Notes	External Verification
Strategy and analysis	G4-1	Statement of intent or declaration of the organization about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability	14-15		●
	G4-2	Statement of intent or declaration of the organization about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability	16-21, 35		●
Organizational profile	G4-3	Name of the organization	12-13		●
	G4-4	Primary brands, products, and/or services	16-29		●
	G4-5	Location of organization's headquarters	12		●
	G4-6	Number of countries where the organization operates, and a list of countries where it operates (or a list of its subsidiaries covered in the report)	12-13		●
	G4-7	Nature of ownership and legal form	13, 15		●
	G4-8	Markets served	12-13, 16-21		●
	G4-9	Scale of the reporting organization	8-9, 12-13, 84		●
	G4-10	Total workforce	12, 84		●
	G4-11	Percentage of employees covered by collective bargaining agreements	84		●
	G4-12	Organization's supply chain	81-82		●
	G4-13	Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain	○	No significant change	●
	G4-14	Precautionary approach or principle by the organization	35, 50		●
	G4-15	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	2, 88-89, 92-93		●
	G4-16	Memberships in associations (industrial associations, etc.) or national/international advocacy organizations	91		●
Identified material aspects and boundaries	G4-17	All entities included in the organization's consolidated financial statements or equivalent documents and any entity not covered in this report	13, 90-91		●
	G4-18	Process for defining the report content and the aspect boundaries and methods to apply the reporting principles for defining report content	2		●
	G4-19	All the material aspects identified in the process for defining report content	39-41		●
	G4-20	Aspect boundary within the organization for each material aspect	39-41		●
	G4-21	Aspect boundary outside the organization for each material aspect	41		●
	G4-22	Effect of any restatements of information provided in previous reports, and the reasons for such restatements	○	No modification in information	●
	G4-23	Significant changes from previous reporting periods in the scope and aspect boundaries	○	No significant change	●
	G4-24	List of stakeholder groups engaged by the organization	38, 41		●
Stakeholder engagement	G4-25	Basis for identification and selection of stakeholders with whom to engage	38		●
	G4-26	Organization's approach to stakeholder engagement	38		●
	G4-27	Key topics and concerns that have been raised through stakeholder engagement and organization's response	41		●
Report profile	G4-28	Reporting period for information provided	2		●
	G4-29	Date of most recent previous report	2		●
	G4-30	Reporting cycle	2		●
	G4-31	Contact point for questions regarding the report or its contents	2		●
	G4-32	Organization's method for "in accordance"	2		●
	G4-33	Organization's policy and current practice with regard to seeking external assurance for the report	2		●
	G4-34	Governance structure of the organization, including committees of the highest governance body	14-15		●
Governance	G4-35	Process for delegating authority (economic, environmental and social topics) from the highest governance body to senior executives and other employees	14-15		●
	G4-36	Whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether such report directly to the highest governance body	14-15		●
	G4-37	Process for consultation between stakeholders and the highest governance body on economic, environmental and social topics, and if consultation is delegated, to whom and any feedback processes to the highest governance body	14-15		●
	G4-38	Composition of the highest governance body and its committees (Executives or non-executives, independent, Tenure on the governance body, Number of each individual's other significant positions and commitments, and the nature of the commitments, Gender, Memberships of under-represented social groups, Competences relating to economic, environmental and social impacts, Stakeholder representation)	14-15		●
	G4-39	Whether the Chair of the highest governance body is also executive officer (and if so, how to function with the organization's engagement and the responsibility assigned)	14-15		●
	G4-40	Nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members (Whether and how diversity is considered, Whether and how independence is considered, Whether and how expertise and experience relating to economic, environmental and social topics are considered, Whether and how stakeholders are involved)	14-15		●
	G4-41	Processes for the highest governance body to ensure conflicts of interests are avoided and managed (Cross-board membership, Cross-shareholding with suppliers and other stakeholders, Evidence of controlling shareholders)	14-15		●
	G4-42	Highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts	14-15		●
	G4-43	Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics	14-15		●
	G4-44	Processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics (Whether such evaluation is independent or not, and its frequency)	14-15		●
	G4-45	Highest governance body's role in the identification and management of economic, environmental and social impacts risks, and opportunities	14-15		●
	G4-46	Highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics	14-15		●
	G4-47	Frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities	14-15		●
	G4-48	Highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material aspects are covered	14-15		●
	G4-49	Process for communicating critical concerns to the highest governance body	14-15		●
	G4-50	Nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them	14-15		●
	G4-51	Remuneration policies for the highest governance body and senior executives	○	Business Report 2014 pp.234-235	●
G4-52	Process for determining remuneration	○	Business Report 2014 pp.234-235	●	
G4-53	How stakeholders' views are sought and taken into account regarding remuneration (if applicable)	66-67		●	
G4-54	Ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country	○		●	
G4-55	Ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country	○		●	
Ethics and integrity	G4-56	Organization's values, principles, standards and norms of behavior such as conduct and codes of ethics	74-75		●
	G4-57	Internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity	74-75		●
	G4-58	Internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity	74-75		●

Category	Index	Description	Page	Notes	External Verification
Economic performance	EC 1	Direct economic value generated and distributed	8-9		●
	EC 2	Financial implications and other risks and opportunities for the organization's activities due to climate change	17		●
	EC 3	Coverage of the organization's defined benefit plan obligations	85		●
	EC 4	Financial assistance received from government	85		●
Indirect economic impacts	EC 7	Development and impact of infrastructure investments and services supported	63, 68-71		●
	EC 8	Significant indirect economic impacts, including the extent of impacts	68-71		●
Materials	DMA		60		●
	EN1	Materials used by weight or volume	63, 85		●
	EN2	Percentage of materials used that are recycled input materials	63, 85		●
Materials	DMA		60		●
	EN3	Energy consumption within the organization	55, 85		●
Water	DMA		60		●
	EN8	Total water withdrawal by source	86		●
	EN9	Water sources significantly affected by withdrawal of water	61-62	No water resource under significant impact	●
	EN10	Percentage and total volume of water recycled and reused	86		●
Emissions	DMA		52		●
	EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	54, 86		●
	EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	54, 86		●
	EN18	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	54		●
	EN19	Reduction of greenhouse gas (GHG) emissions	37, 54		●
	EN20	Emissions of ozone-depleting substances (ODS)	62		●
	EN21	NOx, SOx and other significant air emissions	62, 86		●
Effluents and waste	DMA		60		●
	EN22	Total water discharge by quality and destination	86-87		●
	EN23	Total weight of waste by type and disposal method	86-87		●
	EN24	Total number and volume of significant spills	51		●
	EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention annex I, II, III, and VIII, and percentage of transported waste shipped internationally	0	Not applicable	●
	EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	0	Not applicable	●
Overall	DMA		60		●
	EN31	Total environmental protection expenditures and investments by type	63		●
Employment	DMA		64		●
	LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region	84		●
	LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	77-81		●
Labor/management relations	LA3	Return to work and retention rates after parental leave, by gender	77		●
	DMA		64		●
Occupational health and safety	LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	80		●
	DMA		44		●
	LA5	Percentage of total work hours spent in occupational injury and health and safety committees, help notes and advice or occupational health and safety programs	45-49	Ulsan Plant (56%)	●
	LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	85		●
	LA7	Workers with high incidence or high risk of diseases related to their occupation	85		●
Training and education	LA8	Health and safety topics covered in formal agreements with trade unions	45-49		●
	DMA		64		●
	LA9	Average hours of training per year per employee by gender, and by employee category	64, 66, 84		●
Diversity and equal opportunity	LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	65-66		●
	LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	84		●
Equal remuneration for women and men	LA12	Composition of governance bodies and boards of employees by employee category according to gender, age group, minority group membership, and other dates of diversity	14-15, 84		●
	DMA		64		●
Labor practices/grievance mechanisms	LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	67		●
	LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	85		●
Freedom of association and collective bargaining	DMA		64		●
	HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	79-81		●
Local communities	DMA		68		●
	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	69-71		●
Anti-corruption	SO2	Operations with significant actual and potential negative impacts on local communities	77	No business sites having a negative impact	●
	SO4	Communication and training on anti-corruption policies and procedures	76, 87		●
Anti-competitive behavior	SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	87		●
Compliance	SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	87		●
Grievance mechanisms for impacts on society	SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	85		●
Product and service labeling	PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	16-29		●
Marketing communication	PR6	Sale of banned or disputed products	87	No products applicable	●
Customer privacy	DMA				
	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	87		●
Compliance	PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	87		●

SUMMARY OF FINANCIAL PERFORMANCE

Financial Statement		(Unit: KRW)		
	2012	2013	2014	
Assets				
I. Current assets	642,506,626,344	677,638,720,410	625,451,085,374	
1. Cash and cash equivalents	36,412,291,229	15,691,222,908	20,453,807,375	
Cash and cash equivalents	42,954,882			
2. Trade receivables and other bonds	362,284,138,557	385,891,893,941	322,892,199,745	
3. Inventory	239,855,145,705	252,481,702,888	275,241,880,132	
5. Non-current assets held for sale		13,979,249,119	304,047,060	
4. Other current assets	3,912,095,971	9,594,651,554	6,559,151,062	
II. Non-current assets	1,551,759,080,995	1,725,769,319,173	1,718,849,352,270	
1. Long-term financial assets	13,969,568,985	14,938,439,505	14,571,242,771	
2. Long-term loans	964,578,498	716,225,355	467,872,212	
3. Deposits	9,269,831,341	9,889,643,700	9,594,195,620	
4. Investment stocks for associates	325,955,021,891	455,213,369,891	409,670,947,917	
5. Investment stocks for subsidiaries	360,691,420,691	372,265,420,691	403,393,311,320	
6. Property	690,136,182,542	718,917,001,136	750,872,150,255	
7. Intangible assets	41,845,834,327	38,393,473,290	33,411,422,627	
8. Investment in properties	108,517,742,720	115,026,845,605	88,988,847,076	
9. Other non-current assets	408,900,000	408,900,000	442,080,000	
10. Deferred tax assets		-	7,437,282,472	
Total assets	2,194,265,707,339	2,403,408,039,583	2,344,300,437,644	
Liabilities				
I. Current liabilities	476,538,657,736	648,375,977,495	515,005,385,157	
1. Sales debt and other debts	211,194,215,522	231,013,897,297	160,978,402,326	
2. Short-term borrowings	120,831,701,288	145,956,949,060	157,977,148,472	
3. Long-term current borrowings	123,610,111,638	241,495,233,528	181,270,708,176	
4. Corporate tax payables	1,854,558,606	6,561,250,728	1,319,982,085	
5. Other current liabilities	19,048,070,682	23,348,646,882	13,459,144,098	
II. Non-current liabilities	769,469,070,324	791,927,332,630	894,482,621,523	
1. Bonds	658,145,508,911	608,351,350,224	765,077,845,521	
2. Long-term borrowings	70,314,200,000	156,430,000,000	104,115,505,895	
3. Defined benefit liabilities	18,691,741,597	23,738,204,217	24,455,946,859	
4. Deferred tax liabilities	21,381,482,852	2,601,142,712	-	
5. Allowance	936,136,964	806,635,477	833,323,248	
Total liabilities	1,246,007,728,060	1,440,303,310,125	1,409,488,006,680	
Capital				
I. Capital stock	118,300,860,000	118,300,860,000	118,300,860,000	
II. Capital stock	145,530,430,546	145,530,430,546	145,530,430,546	
III. Other capital items	(98,068,499,377)	(98,068,499,377)	(98,068,499,377)	
IV. Accumulated other comprehensive income	1,369,992,555	2,370,977,641	4,325,109,810	
V. Earned surplus	781,125,195,555	794,970,960,648	764,724,529,985	
Total capital	948,257,979,279	963,104,729,458	934,812,430,964	
Total liabilities and capital	2,194,265,707,339	2,403,408,039,583	2,344,300,437,644	

Income statement		(Unit: KRW)		
	2012	2013	2014	
I. Sales revenue	1,476,191,492,605	1,484,565,400,695	1,232,853,528,219	
II. Cost of sales	1,188,949,912,636	1,170,887,086,595	951,757,923,103	
III. Gross profit	287,241,579,969	313,678,314,100	281,095,605,116	
IV. SG&A	238,851,298,084	242,387,066,868	245,498,364,434	
V. Operating income	48,390,281,885	71,291,247,232	35,597,240,682	
VI. Non-operating income				
1. Other profits	22,084,239,553	15,466,141,638	33,903,232,265	
2. Other costs	12,012,635,028	16,861,466,216	62,282,824,314	
3. Financial profits	20,274,808,240	21,955,941,684	21,986,520,559	
4. Financial costs	48,395,945,686	52,272,033,054	53,665,614,297	
VII. Earnings before taxes (loss)	30,340,748,964	39,579,831,284	(24,461,445,105)	
VIII. Corporate tax profits (costs)	(18,983,813,070)	(13,111,994,351)	4,333,195,648	
IX. Net profit (loss)	39,324,562,034	26,467,836,933	(20,128,249,457)	
1. Items re-categorized as profits and losses for the current term subsequently				
- Profits for assessment of financial assets available for sale	(262,281,612)	936,175,255	2,018,942,000	
- Profits for assessment of derivatives (losses)		64,809,831	(64,809,831)	
2. Items not re-categorized as profits and losses for the current term subsequently				
- Re-measured elements for defined benefit debts	(4,620,021,684)	(4,311,787,990)	(1,807,897,356)	
Re-measured elements for defined benefit debts	(4,882,303,296)	(3,310,802,904)	146,234,813	
X. Total comprehensive profits for the current term (losses)	34,442,258,738	23,157,034,029	(19,982,014,644)	
XI. Basic and diluted earnings per share (losses)	2,162	1,431	(1,199)	

MEMBERSHIPS

Federation of Korean Industries	Korea Economic Research Institute
Korea Employers Federation	Seongnam Chamber of Commerce & Industry
Fair Competition Federation	Korea Industrial Technology Association
Korean Association of Occupational Health Nurses	Korea Industrial Safety Association Seongnam Branch

These associations that SK chemicals has joined are listed based on their relevance to sustainability, and some of the associations related to the industry are not listed.

ISO 26000 INDEX

SK chemicals faithfully implements sustainable management activities in each economic, social, and environmental sector and reports policies, activities, and performances regarding the seven core themes of ISO26000 as follows.

Core theme	Issue	Report
Organizational governance	Decision-making process and structure	14-15, 32-37
Human rights	Due diligence	Compliance 64-67 68-71 78-79
	Risks regarding human rights	
	Avoidance of complicity	
	Resolving grievances	
	Discrimination and vulnerable groups	
	Civil and political rights	
	Economic, social, and cultural rights	
Labor practices	Fundamental principles and rights at work	44-51 64-67 77-81
	Employment and employment relationships	
	Conditions of work and social protection	
	Social dialogue	
Environment	Health and safety at work	52-59 60-63
	Human development and training in the workplaces	
	Prevention of pollution	
	Sustainable resource use	
Fair management activities	Climate change mitigation and adaptation	74-76 81-82
	Protection of the environment, biodiversity and restoration of natural habitats	
	Anti-corruption	
	Responsible political involvement	
	Fair competition	
Consumer issues	Promoting social responsibility in the value chain	24-27 82-83
	Respect for property rights	
	Fair marketing, factual and unbiased information and fair contractual practices	
	Protection consumers' health and safety	
	Sustainable consumption	
	Consumer service, support, and complaint and dispute resolution	
Engagement in and development of local communities	Consumer data protection and privacy	22-24 64-67 68-71
	Access to essential services	
	Education and awareness	
	Community involvement	
	Education and culture	
	Employment creation and skills development	
Social investment	Technology development and access	68-71
	Wealth and income creation	
	Health	
	Social investment	

REPORT ON UNGC PERFORMANCE (COMMUNICATION ON PROGRESS)

In February 2011, SK chemicals has joined the UN Global Compact as a member and supported ten major principles regarding human rights, labor, environment, and anti-corruption. The company reports its voluntary compliance efforts and activities for ten major principles in four sectors as follows.

Major theme	Principle	Report
Human rights	1. Businesses should support and respect the protection of internationally proclaimed human rights.	Compliance
	2. Businesses make sure that they are not complicit in human rights abuse	
Labor	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	64-67, 77-81
	4. Businesses should eliminate all forms of forced and compulsory labor.	
	5. Businesses should abolish child labor effectively.	
	6. Businesses should eliminate discrimination in respect of employment and occupation.	
Environment	7. Businesses should support a precautionary approach to environmental challenges.	44-63
	8. Businesses should undertake initiatives to promote greater environmental responsibility.	
	9. Businesses encourage the development and diffusion of environmentally friendly technologies.	
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery.	74-76

INDEPENDENCE ASSURANCE STATEMENT

Introduction

DNV GL Business Assurance Korea Ltd. (hereinafter "DNV GL") is commissioned to carry out the assurance engagement of the Sustainability Report 2014 (hereinafter "the Report") of SK Chemicals Co., Ltd. ("SK Chemicals"). This engagement focused on the information provided in the Report and the underlying management and reporting processes. SK Chemicals is responsible for the collection, analysis, aggregation and presentation of all information within the Report. DNV GL's responsibility in performing the work follows terms of reference and scope of work agreed. The assurance engagement is based on the assumption that the data and information provided to us is complete, sufficient and authentic. SK Chemicals' stakeholders are the intended recipients of the assurance statement.

Scope of Assurance

This Assurance Engagement covered data and information presented only in the Report. The scope of DNV GL's Assurance Engagement includes the review and assessment of the following.

- Evaluation of the reporting principles for defining the sustainability report content and the quality in the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 4.0
- Evaluation of adherence to Accountability principles provided in AA1000 Accountability Principles Standard (APS) 2008 with a moderate level of assurance and Type 1.
- Check of GRI 4.0 Disclosure level against GRI 4.0 Disclosure option
- Visit to Headquarter of SK Chemicals

Limitation

The engagement excludes the sustainability management, performance and reporting practices of SK Chemicals' suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this Assurance Engagement. Any financial information from SK Chemicals' annual report and company reporting on operations in 2014 or other sources are not included in the scope of the Assurance. Economic performances based on the financial data were cross-checked with internal documents and the audited financial statements. The aggregation and calculation process for building economic performances is reviewed and tested by the verification team. The baseline data for Environmental and Social performance are not verified, while the aggregated data are used for the verification. The qualitative statements addressed in the GRI Content Index are not verified but the audit team has just confirmed that the indicator is reported in the GRI Content Index. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

Verification Methodology

The Assurance Engagement was planned and carried out in accordance with the DNV GL Verification Protocol for Sustainability Reporting (VeriSustain™ V.4.1) and AA1000AS (2008). As part of the verification, we challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls. In accordance with the VeriSustain, the Report was evaluated with regard to the following criteria: DNV GL has examined and reviewed documents, data and other information made available by SK Chemicals. We performed sample-based audits of the following.

- The process for determining the materiality of the contents to be included in the Report
- The process for generating, gathering and managing the quantitative and qualitative data in the Report
- The accuracy of data
- The adherence of the report to the principles of AA1000 Accountability Principles Standard (2008)
- The disclosure of performance indicators in accordance with GRI 4.0

Conclusion

In DNV GL's opinion, and based on the scope of this Assurance Engagement, the report provides a reliable and fair representation of SK Chemicals' sustainability strategy, policy, practices and performance in 2014. The report is prepared "in accordance with the Core option" of GRI G4.0. Standard disclosure items assured are indicated in the verification report submitted to SK Chemicals. Further opinions with accountability principles are made below.

Inclusivity

SK chemicals has engaged with a wide range of stakeholders which are shareholders and investors, local communities and government, employees, customers, and business partners. The report includes a process to derive expectations and interests of internal and external stakeholders. Main issues were clearly represented in the report.

Materiality

SK chemicals has formed a sustainability issue pool by analyzing stakeholder's opinion, and media coverage for its sustainability and reviewing the material issues reported by peer groups. The material issues are determined by combining the issues which are important for stakeholder and the issues which are relevant for SK chemicals in terms of sustainability. The output of the process clearly brings out material issues.

Responsiveness:

SK chemicals monitors and reports performances of material issues drawn by the materiality assessment process in the report. The report includes financial (economical) and non-financial (social and environmental) performances. SK chemicals states its vision and business strategies with the performances in the report.

Opportunities for Improvement

The following is an excerpt from the observations and opportunities reported to SK Chemicals' management. However, these do not affect our conclusions on the Report and are provided to encourage continual improvement.

- The organization should select, compile and report information consistently. The organization should establish and implement internal reporting principles, frameworks, or guidelines for the consistency of information disclosure.

Statement of Competence and Independence

DNV GL is a leading provider of sustainability services, including the verification of sustainability reports. Our environmental and social assurance specialists operate in over 100 countries. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV GL maintains complete impartiality toward stakeholders interviewed during the verification process.

June 2015
Seoul, Republic of Korea



AA1000
Licensed Assurance Provider
000-10

A handwritten signature in black ink, appearing to read 'In-Kyoon Ahn'.

Country Representative **In-Kyoon Ahn**

DNV GL Business Assurance Korea Ltd.

GREENHOUSE GAS ASSURANCE STATEMENT

Foreword

DNV GL Business Assurance Korea (hereinafter referred to as "DNV GL") conducted verification for the amount of GHG emissions and energy use by SK chemicals Co., Ltd. (hereinafter referred to as "SK chemicals") under the level of reasonable assurance. SK chemicals has the responsibility for preparing verification materials in accordance with the "Administrative Guideline for the Greenhouse Gas Target Management System (No. 2014-186 of Notification by the Ministry of Environment)." DNV GL's responsibility is limited only to SK chemicals, a verification contract party under the agreed conditions, and DNV GL cannot be held responsible for other decisions such as investment based on this verification statement.

Scope of Assurance

The amount of GHG emissions and energy use in this verification was calculated based on the statement written by SK chemicals

- Amount of emissions for verification: Amount of GHG emissions in 2014
- Scope of report for emissions and activities for verification: SK chemicals (in Korea)

Methods of Assurance

This verification was conducted in accordance with the verification principles and standards of the "Administrative Guideline for the Greenhouse Gas Target Management System (No. 2014-186 of Notification by the Ministry of Environment)" and "Verification Guideline for the Operation of Greenhouse Gas Emissions Trading System (No. 2014-153 of Notification by the Ministry of Environment)" for February to March 2015. DNV GL conducted verification after establishing a plan for verification to acquire necessary information and data for presenting verification opinions for GHG emissions reported by SK chemicals. DNV GL identified the following information as part of the verification process.

- SK chemicals, "Statement (2014)"
- SK chemicals, "Amount of Energy Use and GHG Emissions (2014)"
- Process for management, collection, calculation, and report of data on greenhouse gas and energy by SK chemicals

Result

The amount of GHG emissions by SK chemicals in 2014 was identified as follows. There were no issues regarding significant errors or omission in reporting cases based on the calculation methodology stipulated in the "Administrative Guideline for the Greenhouse Gas Target Management System (No. 2014-186 of Notification by the Ministry of Environment)."

Amount of GHG Emissions in 2014 by SK chemicals

Direct emissions (Scope 1)	Indirect emissions (Scope 2)	Total emissions
434,964	85,070	520,034

* Due to rounding off numbers to report cases in whole numbers, the amount of GHG emissions above might have a difference of less than ± 1 tCO₂ from the actual value in the system.

* Total emissions = Direct emissions + Indirect emissions

 Verification Team Leader
Oh Deok-geun

 Korea CEO
Ahn In-gyun
DNV GL Business Assurance Korea

June 11, 2015

This verification statement by an external assessor is effective as of the day of issuing the statement (June 11, 2015). For the period between the issuing and browsing this statement, incidents or situations which can have a significant impact on calculating GHG emissions by SK chemicals can take place. Due to such changes, the verification statement can be modified.

TF FOR THE SUSTAINABILITY REPORT

Overview	2014 Highlights	Manager Shin Ro-min	Promotion Team
	Company Overview	Assistant Manager Lee Chang-hui	Strategy team 1
		Head Kim Gyu-jin	Promotion Team
	Creating Economic Performances and Sharing Performances with Stakeholders by SK chemicals	General Manager Gi Dong-bae	Sustainable Management Team
		Manager Lee Won-gi	Accounting Team
Mission and Vision System	General Manager Kim Dong-beom	Sustainable Management Team	
Business Strategy and Value Creation for the future	Composition and Operation of the Board of Directors	Assistant Manager Kim Jeong-min	Legal Affairs Team
	Business Model	Manager Lee Jong-eun	Biomaterials Team 2
		Assistant Manager Rho Seung-hye	Export Team 2
		Assistant Manager Choi In-chang	Bio Energy Team
		Assistant Manager Lee Chang-hui	Strategy Team 1
		Manager Jo Hui-sang	LS Strategy Planning Team
	Product Innovation and Responsibility	Deputy General Manager Hwang Jin-ho	Research and Planning Team
		Manager Jo Hui-sang	LS Strategy Planning Team
		Team Leader Lee Ran-ju	SK plasma
		Manager Kim Taek-su	New Medicine Assessment and Analysis Team
		Assistant Manager Mun Ju-hwan	Clinical Test Team 1
	Value Creating Products & Services	Assistant Manager Lee Chang-hui	Strategy Team 1
		Manager Jo Hui-sang	LS Strategy Planning Team
Sustainability Management	Sustainable Management System	General Manager Kim Dong-beom	Sustainable Management Team
Material Issues	Safety at Business Offices and Health Chemical Substances Management Coping with Climate Change Prevention of Environmental Pollution	Head Seo Myeong-gyo	(Ulsan) Safety Environment Team
		Assistant Manager Kim Dae-bok	SK plasma
		Assistant Manager Kim Jeong-seok	(L HOUSE) Technical Support Team
		Assistant Manager Ahn Jae-hong	(L HOUSE) Operation Support Team
		Staff Member Park Seong-hun	(S HOUSE) Management Team
		Staff Member Lee Gwang-ho	(S HOUSE) Public Affairs Team
	Fostering and Developing Talent	Assistant Manager Lee Hui-yeong	HR Team
	Engaging in and Developing Local Communities	Assistant Manager Kim Gwang-hun	Promotion Team
Appendix	Ethics and Integrity	Manager Lee Won-gi	Accounting Team
		Assistant Manager Han Gyeong-hui	Legal Affairs Team
	Anti-corruption and Fair Competition	Assistant Manager Han Gyeong-hui	Legal Affairs Team
	Executives and Employees	Manager Ryu Jin-su	HR Team
		Assistant Manager Lee Hui-yeong	HR Team
		Manager Kim Seon-ho	SKMS Team
		Assistant Manager Kim Dong-wu	Work Support Team
	Suppliers	Deputy General Manager Jo Seong-wu	Procurement Team
Customer Satisfaction	Manager Hwang Seon-gyo	Marketing Support Team	
	Manager Jeong Yu-seon	Medicine Information Team	



This report was printed by using eco-friendly paper.

The cover and paper inside the report acquired the FSC™ (Forest Stewardship Council®) mark to qualify as eco-friendly paper. Products only qualify for the FSC™ mark if they were made from trees planted in forests developed and managed in an eco-friendly way.



Pangyo-ro 310, Bundang-gu, Seongnam, Gyeonggi
Tel. +82-2-2008-2008
Homepage. <http://www.skchemicals.com>

