FOCUS 2

SHE competitiveness at the global level

Background

The variety of variables surrounding the business environment, such as the growing consequences of climate change affecting the earth environment and the number of industrial safety accidents increasing, not only have direct and indirect impacts on local communities, but also on the company's sales. Also, the interests of the government, academia and industry have grown to establish a response system and take a more pro-active management style on SHE (Safety, Health, Environment) issues to achieve sustainable growth. In this regard, major companies are establishing reliable relationships with their stakeholders by adopting a proactive management style focused on SHE issues and sharing relevant information with stakeholders transparently.

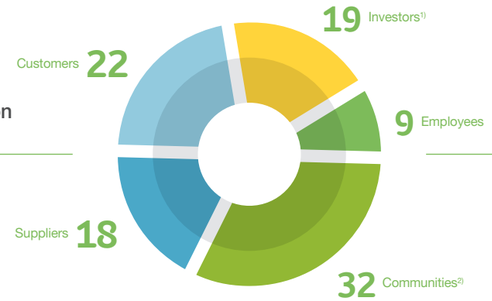
Response

SK Innovation is focusing on reinforcing its competencies of SHE management to systematically respond to policies and systems on climate change that will be newly introduced, while also maintaining and improving the SHE management system at the global level. In this regard, we will internalize the SHE culture and expand investments on the environment and upgrade facilities to meet global standards. Also, we strive to secure global competitiveness by actively investing in reducing GHG emissions and energy consumption and improving energy efficiency.

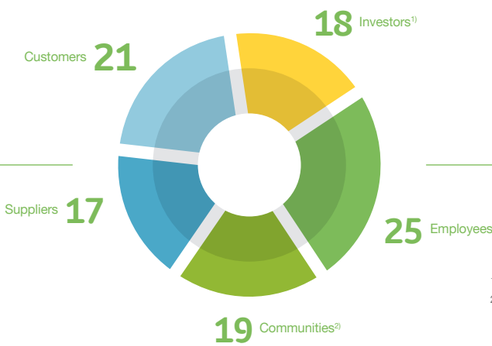
Stakeholder Survey

According to the result of analyzing major areas of issues in 2014 aimed at SK Innovation's five stakeholder groups, the highest interest shown in securing SHE competitiveness at the global level, were issues related to managing energy consumption and GHG emissions and implementing SHE management at the global level. In particular, high interests were shown by local communities in the case of issues related to managing energy consumption and GHG emissions, with employees showing high interest in issues related to SHE management at the global level.

Management of Energy Consumption and GHG Emissions (Unit: %)



Implementing SHE Management at the Global Level (Unit: %)



1) Analysts, institutional investors, etc.
2) NGOs, social welfare institutions, etc.

Performance and Future Plan

SK Innovation will implement various activities to secure the SHE (Safety, Health, Environment) competitiveness at the global level. We aim to bring out the best results by enhancing the emergency response system to meet global standards and establish an implementation system to address and comply with the laws and regulations related to the Emissions Trading Scheme, which will be implemented starting from 2015. In the future, we plan to continuously upgrade the SHE management system, while also increasing investments to improve the SHE competitiveness of all employees and suppliers and establish an advanced SHE culture.

Management of Energy Consumption and GHG Emissions

Issue Definition

In order to respond to global climate change, the necessity of strategic management on energy consumption and GHG emissions has been raised. Therefore, efforts have been made to reduce major energy resources by leading global companies, including improving facility efficiency and establishing the database for resources used, with many stakeholders taking interest in moving closer to implementing green management in the future.

Business Review

Abnormal climate and environmental changes can cause unexpected losses to the company's businesses and management practices, which may block new investment opportunities by increasing costs associated with it. However, a company that adapted to these changes with environmental management, including effective management of energy and GHG emissions, is able to discover new value through differentiated competitiveness.

Sustainability Review

Maintaining the balance of our Earth's ecosystem and conserving resources for future generations and social value, are opportunity factors for achieving long-term development. It is necessary for companies to continuously participate in environmental protection activities, including reducing energy consumption and GHG emissions and making investments in technology development.

Key Figure

Energy Consumption in 2014

208,860 TJ

GHG Emissions in 2014

13,311 thousand tCO_2eq

Building a Response System to Climate Change

Building a GHG & Energy Management System (GEMS)

SK Innovation operates its own GHG & Energy Management System (GEMS) in connection with its Operation Information System (OIS). The GEMS gathers all the necessary data to automatically calculate GHG emissions from the OIS, allowing us to manage GHG emissions systematically. In addition, SK Innovation is in the process of improving its system, so that various information required for the Emissions Trading Scheme can be handled at the same time.

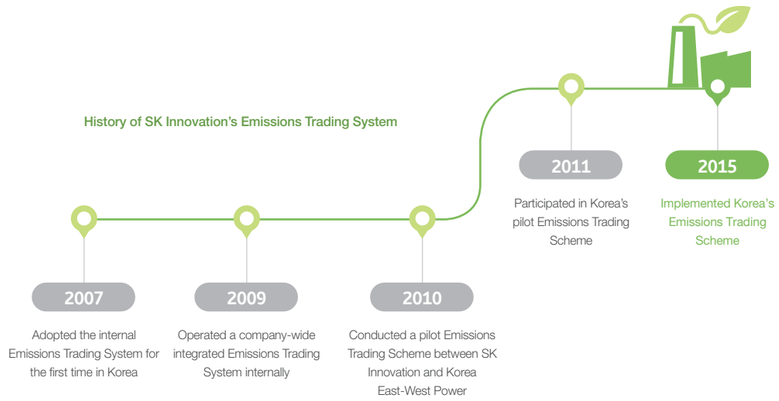
Responding to the GHG & Energy Target Management System

Since SK Innovation's subsidiaries, including SK Energy, SK Global Chemical, SK Lubricants and SK Incheon Petrochem, have been designated to the GHG & Energy Target Management System, we have been managing GHG emissions and energy consumption in accordance with the government's Target Management System Guidelines. With the mandatory target management system ending in 2014, we will faithfully comply with laws and regulations and reduce GHG emissions by building an implementation system focusing on the newly introduced Emissions Trading Scheme that starts in 2015.

Implementing the Emissions Trading Scheme (ETS)

As part of its efforts to reduce GHG emissions, the Korean government has been implementing the Emissions Trading Scheme (ETS) starting from 2015. In response to this, SK Innovation was the first company to adopt an internal Emissions Trading System in Korea. Based on the accumulated experiences from operation, we do our best to respond to climate change. In particular, we strive to adapt to the ETS by establishing an implementation system at the company-wide level and operating a GHG management system. SK Innovation will strengthen its competitiveness in the industry by actively utilizing the ETS, such as covering a shortage of allowances in the short term, and reducing its GHG emissions at the same time, thereby taking the lead in creating environmental value.

History of SK Innovation's Emissions Trading System



Management of Energy Consumption and GHG Emissions

Energy Conservation Campaigns

Adopting Electric Vehicles (EV) for Business Use and Installing Charge Stations

Starting from 2012, SK Innovation adopted electric vehicles (EV) for business use and installed charge stations, so that as of 2015, there are 4 Soul EVs, 1 Ray EV, 8 slow chargers and 1 fast charger at our Head Office. While reducing the use of fuel by using EVs, we also raise the awareness internally and externally on the use of new and renewable energies.

Enhancing the Efficiency of Internal Energy

SK Innovation's Head Office building utilizes an Ice Thermal Storage System that takes advantage of idle electricity after midnight to make ice, which is reused to create cool air during the day when air-conditioning the office building, allowing us to save approximately KRW 300 million in electricity bills annually. In addition, we adopted the Building Energy Management System (BEMS) to optimize the operating hours and settings of various facilities, which reduced carbon emissions by 17.3%. As a result of these performances made, we were selected as an Outstanding Eco Mileage Organization by the Seoul Metropolitan Government in 2014.

Reducing GHG Emissions at the Head Office Building (Unit: $kgCO_2$)

Category	2013 (April~September)	2014 (April~September)	Increase/Decrease
Electricity	3,203,908	2,708,932	15.4% reduction
Gas	347,507	224,034	35.5% reduction
Waterworks	10,544	9,944	5.7% reduction
Total	3,561,959	2,942,910	17.3% reduction

* Based on the data submitted to the GU office for being selected as an Outstanding Eco Mileage Organization in the second half of 2014.

Recycling Outside Energy

SK Innovation enhances energy efficiency by implementing a collective energy project that provides a stable supply of steam to neighboring companies by recycling and reusing its surplus resources. Furthermore, we turn gas generated from the Seongam Sanitary Landfill in Ulsan into fuel, which is supplied to Kumho Petrochemical Co., Ltd. and a waste incineration plant in Ulsan, to make the most of biomass resources.

Energy Use in 2014

(Unit: TJ)

Classification	Direct energy	Indirect energy		Total amount
	Fuel	Electricity	Steam	
SK Innovation	944	1,950	0	2,894
SK Energy	65,053	17,209	8,727	90,989
SK Global Chemical	55,620	10,292	12,846	78,758
SK Lubricants	2,199	1,225	2,344	5,768
SK Incheon Petrochem	23,817	6,446	186	30,449
Total	147,633	37,122	24,103	208,858

Implementing SHE Management at the Global Level

Issue Definition

Companies can implement SHE management more effectively for its employees, worksites and local communities through the system management. In particular, the social demand for SHE management has increased due to the series of big accidents that occurred recently, which resulted in the importance of building a SHE management system that reflects the company's differentiated competitiveness.

Business Review

If a company neglects the SHE management, it can bring a huge loss to the business and cause big accidents. Moreover, it will put the company at a disadvantage if it fails to meet the strengthened environmental regulations, such as restricting business activities. However, we can gain the trust of our society if we set up SHE guidelines that are above legal standards and transparently disclose the results.

Sustainability Review

The SHE management is an essential factor for achieving sustainable development. Managing and addressing SHE issues, including running a safe worksite, improving employees' health and minimizing pollutants, are not only social responsibilities that corporate citizens should keep, but they are also needed to establish reliable relationships with stakeholders and achieve mutual prosperity.

Key Figure

2014 LTI[1)]

0.16

2014 UCL[2)]

0.208

1) LTI: Lost Time Incident rate, the ratio of lost time injuries for every 100 persons working approximately 1 year (2,000 hours)
2) UCL: Unplanned Capacity Loss, the ratio of lost time volumes due to accidents compared to the annually planned operating hours (%)

Implementing SHE Management at the Global Level

SHE Management System

SK Innovation recognizes that the SHE (Safety, Health, Environment) management practices are essential to achieve the company's sustainable development. The SHE Division is a company-wide organization overseeing SHE management that fulfills the role of upgrading the SHE management system to meet global standards, while also raising the employee awareness on SHE issues and establishing an advanced system to meet legal compliance. Instead of the traditional notion of social responsibilities, such as reducing accidents and pollutants, it is essential to have a SHE management system with global competitiveness to achieve sustainable growth and gain the trust of the society. As such, we set up a company-wide SHE guidelines and work procedures to be implemented. Meanwhile, we strive to ensure continuity in the implementation by securing the control of SHE management leadership and establishing SHE audit practices.

SHE Management System Framework

Building an Emergency Response System at the Global Level

Recently, the social demand for the company's emergency response system has increased due to the series of big accidents occurring. Therefore, SK Innovation enhanced its emergency response system by benchmarking the best practices of foreign companies from abroad, while also focusing on three major areas, including reinforcing on-site emergency responses, strengthening emergency response management for big accidents and enhancing emergency response capabilities.

Major Improvement Directions

Reinforcing on-site emergency responses	· Establish SK Innovation's emergency response plan · Clarify the standards for internal and external reporting · Improve the emergency response grade system
Strengthening emergency response management for big accidents	· Reestablish the Head Office's emergency response mission and duties · Set up the operational guidance for emergency response plan
Enhancing emergency response capabilities	· Establish detailed emergency response standards for the media and SHE issues · Strengthen emergency response training · Reinforce emergency response system, including standard procedure and facility management

Reinforcing On-site Emergency Responses

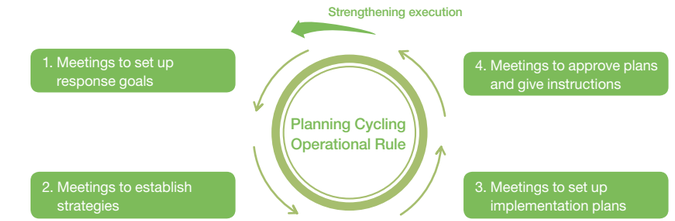
In order to encourage quick emergency responses on the site, SK Innovation offers a clear operational rule, which stipulates primarily protecting life and environment and then protecting assets and images after that. All rights associated with on-site emergency responses are given to the highest-ranking officer at the worksite, while also improving the responsiveness by coming up with a clear standard for internal and external reporting. Meanwhile, we improved our emergency response grade system to stipulate the operation of an integrated crisis management committee, so that the corporate image and the possibility of accident expanding are taken into consideration besides the existing scope of losses when calculating the grade.

Operational Rule for Emergency Response

Strengthening Emergency Response Management for Big Accidents

SK Innovation re-established the relationship between the Head Office and worksites' emergency response management in detail to minimize damages caused by an accident occurring at the worksite, quickly. The Head Office focused on securing sustainability management at the company-wide level and improving on-site emergency responses. Also, we newly adopted the operational rule for emergency response meetings to respond quickly to issues that were difficult to address in big accidents only, with a detailed manual. Meanwhile, in the case of a big accident, we ensured accurate and efficient communication in writing by adopting it as a report form in the emergency response plan.

Adopting the Operational Rule for Emergency Response Meetings



Enhancing Emergency Response Capabilities

SK Innovation strives to strengthen emergency response training, including clarifying training item and cycle and making it mandatory to submit the training report. We enhance management capabilities by regularly reviewing and monitoring the emergency response system and frequently checking on changes made to the organization and human resources.

Safety and Health Management at Worksites

Running a safe and healthy worksite is the basic factor in achieving sustainable and stable business growth. SK Innovation has thoroughly implemented the safety and health management, such as monitoring the levels of implementation and risk factors found from the worksites' safety and health management and conducting safety training, contributing to enhancing the health of all employees and preventing industrial safety accidents. Furthermore, we strive to improve the safety and health management capabilities of our suppliers.

Safety Control at Worksites

In order to proactively prevent safety accidents at worksites, SK Innovation adopted the Process Safety Management (PSM) system supervised by the Ministry of Employment and Labor. By monitoring the process and safety regularly, we manage the whole process, which resulted in 7 plants out of 14 plants earning the highest grade 'P' grade as of the end of 2014, with the remaining seven receiving the second highest 'S' grade. We plan to continue implementing process safety management practices to earn 'P' grade for all plants subject to the PSM grading, while also holding various safety training to enhance the employees' SHE competencies and create the SHE culture.

Employee Health Management

In order to create a healthy workplace for our employees, SK Innovation operates various facilities and programs. At the Ulsan Complex, we have an Industrial Health Center with doctors and nurses on full-time standby. The center also has an affiliated clinic, physical therapy room, physical strength testing & exercise room as well as medical equipment to assist employees' health management. In addition, we upgraded the regular health check-up to total health check-up and a Health Management Center at the Tech R&D Center has been installed to provide a more systematic support to employees' health management. At the same time, the Head Office, Ulsan Complex and Tech R&D Center operate Sports Centers to help employees and their families keep healthy.

Safety Control at Suppliers' Worksites

In accordance with the basic policy that the suppliers' SHE competencies have to be enhanced for its sustainable competitiveness, SK Innovation operates various programs to support enhancing the safety management practices of suppliers.

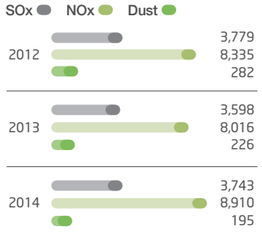
Support for Building Suppliers' Safety and Health Management System

SK Innovation supports its suppliers' safety management levels to remain above the level of legal compliance, so that the suppliers' employees can feel proud at the high levels. To achieve this, we are implementing the project to help our suppliers acquire the KOSHA and OHSAS 18001 certifications in collaboration with the Korea Occupational Safety & Health Agency (KOSHA). Under the slogan of Achieving Safety Together in 2015, a total of 41 suppliers are provided with support programs where SK Innovation helps out in building a safety and health management system, including supporting consulting costs.

Pollutant Control

SK Innovation applies its own strict environmental standards that include managing air pollutants, water pollutants and wastes. We strive to reduce the environmental impacts by conducting the environmental impact assessment on the production process regularly, while also doing it on an ad hoc basis when changing the processes and work methods and purchasing raw materials.

Air Pollutant Emissions (Unit: Tons)



* Based on worksites in Ulsan (SK Energy, SK Global Chemical) and Incheon (SK Incheon Petrochem).

Air Pollutant Control

In order to limit the levels of air pollutant emissions, SK Innovation adopted the Tele-Metering System (TMS) for pollutant emissions monitoring and periodic check-ups at its major facilities where air pollutants are discharged. At the same time, we control odors to maintain a clean and pleasant environment, while also operating VOC to address environmental issues arising from neighboring areas.

Water Pollutant Control

SK Innovation is striving to enhance the efficiency of water use and its wastewater treatment capabilities. Besides installing a remote water quality monitoring system and highly efficient biological wastewater treatment system called the Membrane Bio Reactor (MBR), we manage the water quality of wastewater by using our original technology of WAO*. Also, water that contains corrosive materials generated from the production process is reused as water to remove salt after reprocessing, with some of the reclaimed water used for fire extinguishing and watering gardens.

* WAO: Wet Air Oxidation

Wastewater Treatment

Worksite	Treatment Facility	Treatment Method	Destination
SK Energy (Ulsan)	Ulsan CLX Wastewater Treatment Plant	Biological + Advanced treatment	Public bodies of water (East Coast)
	No. 2FCC Wastewater Treatment Plant	Biological treatment	Youngyeon Wastewater Treatment Plant
SK Global Chemical (Ulsan)	PE/PP Wastewater Treatment Plant	Physiochemical treatment	Yongam Wastewater Treatment Plant
	EPDM Wastewater Treatment Plant	Biological treatment	Yongam Wastewater Treatment Plant
SK Incheon Petrochem (Incheon)	Incheon CLX Wastewater Treatment Plant	Biological + Advanced treatment	Gajwa Wastewater Treatment Plant

Waste Discharge Volume (Unit: Tons)

* Based on worksites in Ulsan (SK Energy, SK Global Chemical) and Incheon (SK Incheon Petrochem).

Waste Control

SK Innovation manages waste generation through its own waste treatment system and periodic on-site inspections. In the case of waste oil, which is a designated waste, it is reused by sending it to renewable fuel plants. We also promote recycling waste at the company-wide level by holding recycling training programs for our employees and suppliers.