

Environmental Management

Safety and the environment are essential for a company's sustainable growth, which is why KKPC has set out our environmental vision of being 'a company that creates the future as a partner of humanity and the environment'. We undertake a range activities in support of this vision, to protect and look after the environment. Safety is also a top priority, so we make continued efforts throughout the company to create safe and clean workplaces.

EHS VISION & INITIATES

Environment, health and safety (EHS) are vital priorities for the international community and also among our stakeholders. We therefore not only keep up with current trends by actively implementing international environmental agreements, but also stay ahead by observing internal environmental regulations that are stricter than legally required. To support this, we undertake a wide range of environmental management and protection activities.

We established our environmental vision as being 'a company that creates the future as a partner of humanity and the environment' in 2008 when we prepared for another leap forward sustainable growth. We have since set our environmental goals based on this vision, and managed them in a systematic manner. Our major environmental safety goals for 2017 were zero environmental and safety accidents, reducing the emission of pollutants, maintaining the 'green company' certification from the Ministry of Environment, improving our Productivity Management System (PMS) grade, and reinforcing the culture of safety.

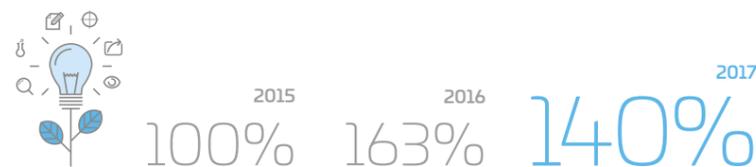
As part of our multifaceted efforts to achieve those goals, in order to make all our plant sites accident-free in particular, we identify risk and hazard factors by conducting annual safety inspections both within individual plant as well as cross-safety inspections between plant sites, and make facility improvements wherever necessary. In 2017, we undertook field assessments to examine compliance with the facility management criteria contained in the Chemicals Control Act. In addition, and removed asbestos, a class 1 carcinogen, from buildings that had used asbestos. We also monitor the enactment and amendment of laws every day, and share the relevant information on internal bulletin boards, so that we can rapidly respond to regulatory changes.

EHS MANAGEMENT SYSTEM

KKPC operates an integrated EHS management system that is run by each plant site's environmental and safety team under the Senior Executive Vice President of Production, with the CEO taking the overall lead. The CEO also supervises the integrated safety and environmental management meetings that take place twice a year. These meetings underline our commitment to safety and environmental management, share information on relevant activities, and address issues that we face at the company level. Integrated safety and environmental management meetings were held in June and December 2017, at which reports were presented on each plant site's safety and environmental performance for the previous year and plans for the year ahead, and other relevant information was shared.

We have obtained and maintained EHS-related certification of our plant sites. In 1996, KKPC became the first company in the petrochemical industry across the world to obtain ISO 14001 certification, an international environmental management system certification presented by DNV GL. We are also preparing for the transition to ISO 14001:2015 in 2018.

Increase in Environmental Investment



Moreover, we undertake internal audits to constantly assess and improve our EHS management system, and encourage all employees to be part of corporate-wide initiatives to build a safe workplace by offering regular trainings and creating a detailed emergency response system.

RESPONSE TO CLIMATE CHANGE

In recognition of the importance and needs to counter climate change, KKPC has built a corporate-wide system that aims to reduce our greenhouse gas emissions, and the taskforce formed in support of this system has formulated mid- to long-term strategies in response. In addition, we partner with outside professional organizations to implement greenhouse gas emission reduction projects, including by inspecting emissions levels and analyzing the potential and marginal abatement costs. For example, we invested approximately KRW 1,510 million in 2016 and 2017 to curtail energy costs by replacing 16,008 light fixtures with LED equivalents.

REGULATORY COMPLIANCE

KKPC actively complies with all laws established by the Korean government to strengthen chemical safety, including the Act on Registration, Evaluation, Etc. of Chemicals, and the Chemicals Control Act. For example, KKPC Chemical Management System (KCMS) was substantially improved during 2015 to 2016, so that we could transparently and systematically manage information on all the chemicals that we handle, as part of our response to the Act on Registration, Evaluation, Etc. of Chemicals. In response to the Chemicals Control Act, we created an inventory of all our chemicals, and we also won approval for our offsite risk assessment reporting and risk management plans which include planning for toxic chemicals accident scenarios, and countermeasures for each plant site.

In order to satisfy the facility management criteria for the reduction of emissions of hazardous air pollutants (HAPs) stipulated in the Clean Air Conservation Act, we have built an inventory of all possible leakage points, including valves, flanges, and gaskets, and operate a leak detection and repair (LDAR) system. In 2017, we replaced all HAP pumps and installed a new regenerative thermal oxidizer (RTO). We also changed all our pumps to either dual mechanical seal or sealess equipment, in line with the stricter facility management criteria for pumps relating to controlled substances.

Environmental Vision System

Environmental Vision

A company that creates the future as a partner of humanity and the environment

Mid-to Long-term Strategy



Develop eco-friendly products



Save energy and protect climate



Take the lead in EHS at home and abroad



Strengthen execution capabilities of system

2017 EHS Goals & Management

01. Identify risk and hazard factors related to environment and safety with the goal of zero environmental and safety accidents
02. Carry out environmental improvement activities with the goal to reduce water pollutants, air pollutants, waste generation intensity, and greenhouse gas emissions
03. Comply with environmental and safety laws and regulations with the goal to maintain the 'green company' certification and to improve PMS grade
04. Internalize a culture of safety and environment

