

L I F E
V A L U E
C R E A T O R

2013
SUSTAINABILITY
REPORT

About this report



This is Lotte Chemical's seventh sustainability report to inform its sustainability management activities to internal/external stakeholders and to listen to their expectations and requirements. We hope this report will give Lotte Chemical a chance to communicate with the stakeholders to grow with them together.

Introduction

This Report covers Lotte Chemical's sustainability performances and activities from January 2013 through December 2013, data from the last three fiscal years were provided to grasp a time-series trend. Year-on-year data is based on December 31 of each fiscal year and some data with period gap are reported with additional statements.

Reporting Scope

This report was written to present Lotte Chemical's performances and future plans in sustainability management as transparently as possible in accordance with Global Reporting Initiative (GRI) G3.1 Guidelines and International Social Responsibility Standard ISO26000. The indicators and reporting contents based on the recommendation of GRI guideline are stated on page 66 through 70.

Reporting Boundary

Financial data in this report was derived from consolidated financial statements. This report covers sustainability management activities and performances of Lotte Chemical's headquarter in Seoul, Daejeon Research Institute, Yeosu Plant, Daesan Plant, and Ulsan Plant; the company's subsidiaries and overseas plants are also mentioned in regard of some issues.

Assurance

To ensure the credibility of the contents in this report, assurance from third party was performed by an independent and objective institution, and the results are stated on page 72 through 73.

This report can be accessed on the website of Lotte Chemical (<http://www.lottechem.com/>). For any inquiry or additional information, please refer to the following contact information. We are always listening to your opinion.

**Corporate Communication
Team of Lotte Chemical**

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CEO Message

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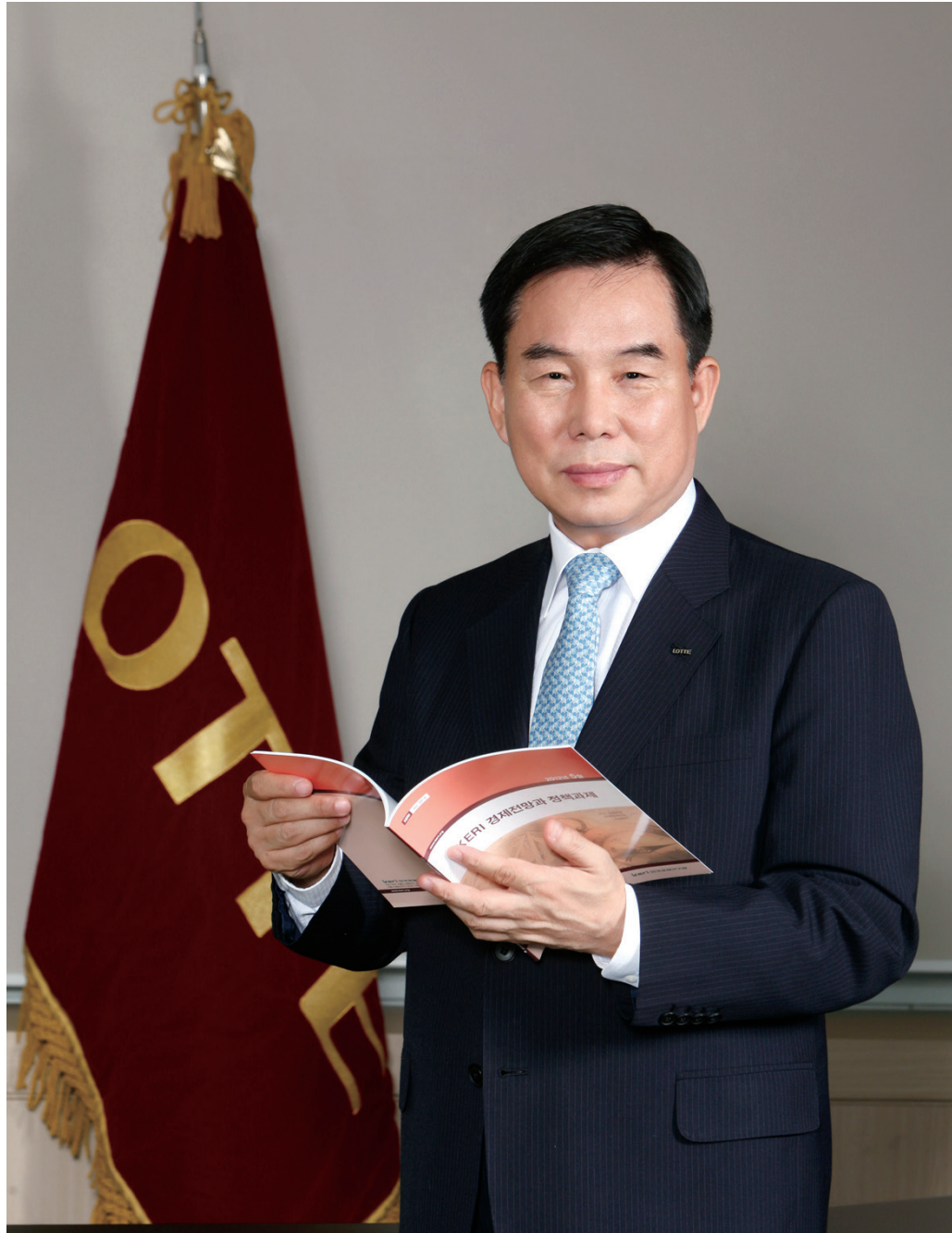
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Lotte Chemical is committed to becoming a company to win respect and love from all stakeholders by proactively communicating with them.



Dear Stakeholders,

Lotte Chemical would like to express our genuine gratitude for your interest and support. We have shared our sustainability management results and collected stakeholder feedback through the publication of sustainability report every year and the feedback has been reflected in our management. Lotte Chemical ensures that these activities will help shaping our vision: 'Top-tier Asian Chemical Company'.

In 2013, the lingering financial crisis in Europe and a slowdown of economic growth in China caused difficulties for many petrochemical companies. However, despite unfavorable business environments, Lotte Chemical has achieved meaningful performances by enhancing substantial management and promoting new businesses. Our company surpassed KRW 16 trillion in sales for the first time in its history, exported diverse products to over 110 countries, and won the USD 6 Billion Export Tower Award. These results are attributed to stakeholders' encouragement as well as our employees' sincere efforts.

We have also focused on expanding global operations and developing new businesses to secure sustainable growth and future competitiveness. Such performances include establishing a joint venture for special rubber business with an Italian company, Versalis, promoting a joint venture to produce mixed xylene and light naphtha with Hyundai Oil Bank, and developing gas field as well as petrochemical plant projects in Uzbekistan. These investments have empowered us to maximize the competitiveness of existing businesses and to stabilize the foundation for future growth.

Public interest in corporate social responsibility on environment, safety, and ethics has been higher throughout the world. Lotte Chemical realizes that environment and safety can have direct impact on its business as well as stakeholders; therefore the company regards those two values as its first priority. To this end, Lotte Chemical have been operating GHG(Greenhouse gas) management system, enhancing safety monitoring at all worksites, developing eco-friendly products such as Bio PET, and conducting various activities to ensure higher level of environment and safety.

Our ethical management system including the 'Shinmungo', an online compliance-reporting channel, contributes to building a culture of transparent and fair transaction. For mutual growth with business partners, we raised KRW 101 billion worth 'Win-win Growth Fund', and offered various educational and technical supports to enhance their competitiveness. In addition, a variety of social contribution activities such as offering scholarships, repairing houses, and hiring local talents have been conducted with the pursuit of mutual growth with local communities. We will continue to listen to voices of diverse stakeholders and faithfully play the role as a corporate citizen.

Lotte Chemical will devote its full attention to achieve its vision of 'Top-tier Asian Chemical Company'. We are committed to becoming a company to win respect and love from all stakeholders by proactively communicating with them. Please keep your eyes on our commitment to fulfilling social responsibilities and realizing sustainable growth.

Huh Soo-young
President & CEO, Lotte Chemical Corp.

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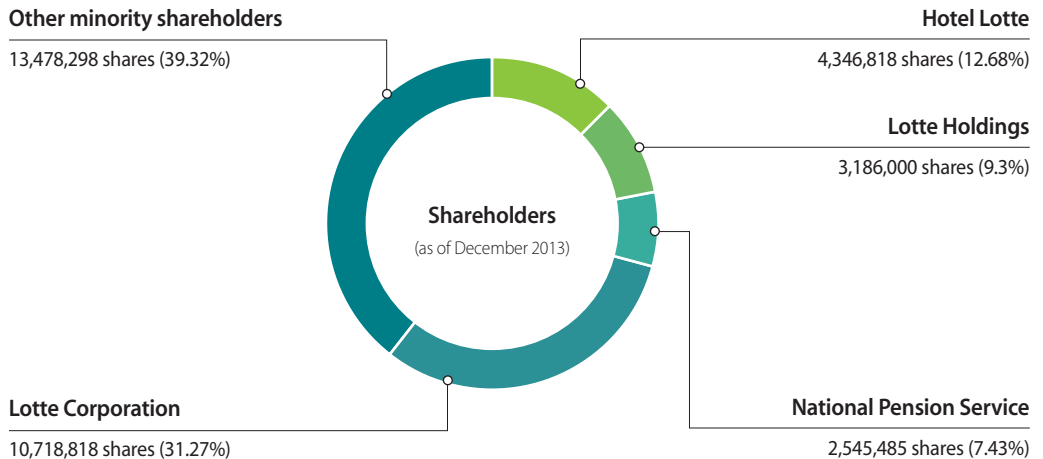
Introduction

Lotte Chemical, founded in 1976 as an integrated petrochemical company has localized cutting-edge petrochemical technologies and led Korea's heavy chemical industry by focusing on technology development. Based on the strong competitiveness of our facilities, we produce diverse products including basic chemical materials, chemical synthesis, synthetic resins, and functional materials. We are also committed to enhancing R&D competence by focusing on process research, fine chemical and eco-friendly materials. We at Lotte Chemical aim to become a top-tier Asian chemical company, and therefore constantly strive to position ourselves as a company that steadily grows with stable profits and contributes to human society amid rapid change in management environment.

► General Information

 <p>Company name</p>	[<p>Lotte Chemical Corporation</p>	 <p>Establishment</p>	[<p>March 16, 1976</p>				
 <p>Date of listing</p>	[<p>May 30, 1991</p>	 <p>Total assets</p>	[<p>KRW 10.69 trillion <small>(as of the end of 2013)</small></p>				
 <p>Worksite</p>	[<p>Seoul Headquarter, Yeosu Plant, Daesan Plant, Ulsan Plant, Daejeon Research Institute</p>	 <p>Credit ratings</p>	[<p>AA+ <small>(Korea Ratings, Korea Investors Service (Corporate Bond))</small></p>				
 <p>No. of employees</p>	[<p>2,539 persons (as of December 2013, excluding executives)</p> <hr style="border-top: 1px dashed #ccc;"/> <table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">Full-time job 2,463 persons</td> <td style="width: 50%;">Part-time 76 persons</td> </tr> <tr> <td>Male 2,334 persons</td> <td>Female 205 persons</td> </tr> </table>				Full-time job 2,463 persons	Part-time 76 persons	Male 2,334 persons	Female 205 persons
Full-time job 2,463 persons	Part-time 76 persons								
Male 2,334 persons	Female 205 persons								

► Shareholder Structure



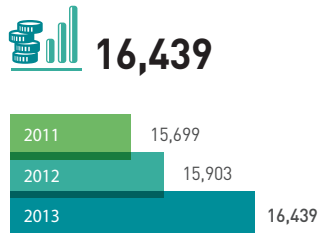


Summarized Financial Results

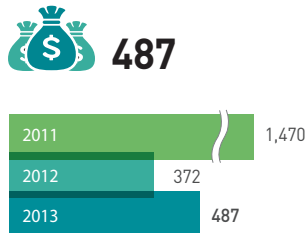
The summarized financial results were prepared to help stakeholders understand our business status. These data were drawn up on the basis of the independent auditors' report for each fiscal year. Please refer to our consolidated financial statement in website (<http://www.lottechem.com/>) and Financial Supervisory Service's Electronic Disclosure System (<http://dart.fss.or.kr/>) for more details.

Recent 3-Year Summarized Financial Performances

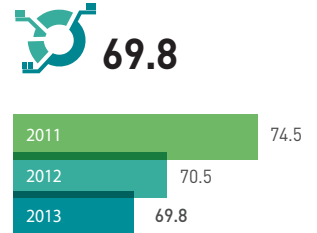
Sales (Unit: KRW in billions)



Operating income (Unit: KRW in billions)



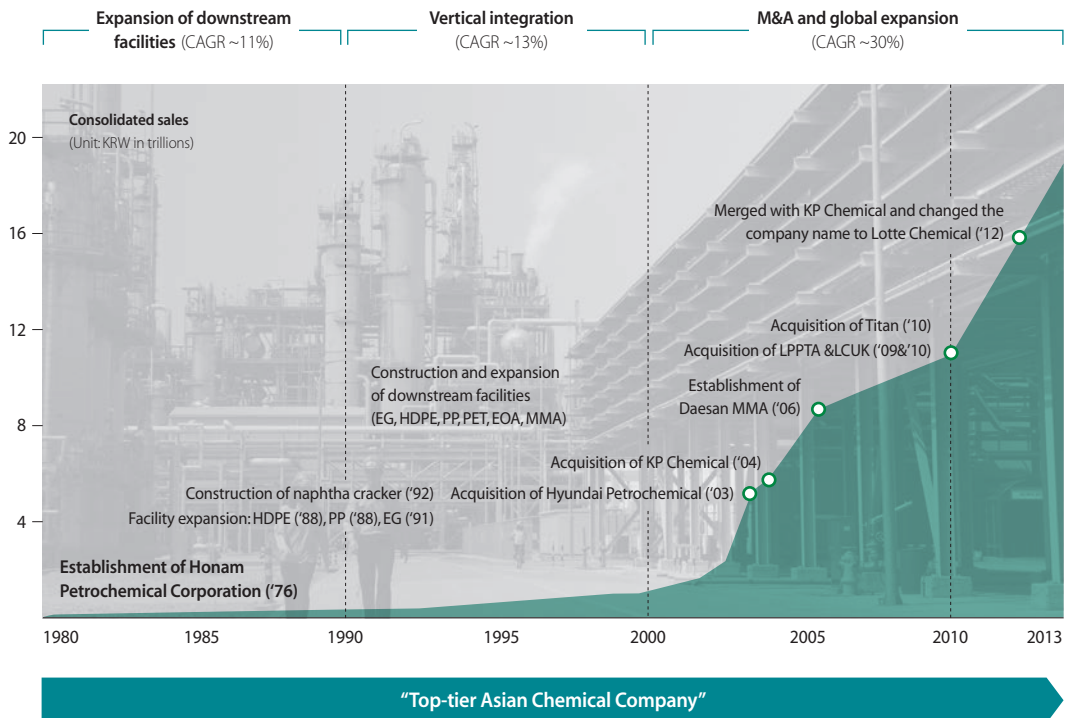
Debt-to-equity (Unit: %)



* Based on consolidated financial statements

Corporate History

For the past 38 years, Lotte Chemical has pioneered in petrochemical industry and taken the lead of domestic heavy chemical industry. Now, we are striving to become a top-tier Asian chemical company.



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Global Business Network



Sales Breakdown (Unit: KRW in trillions)



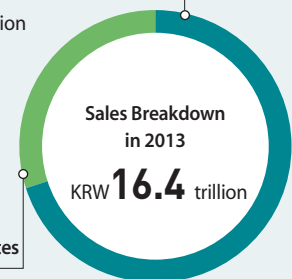
* Based on consolidated financial statements

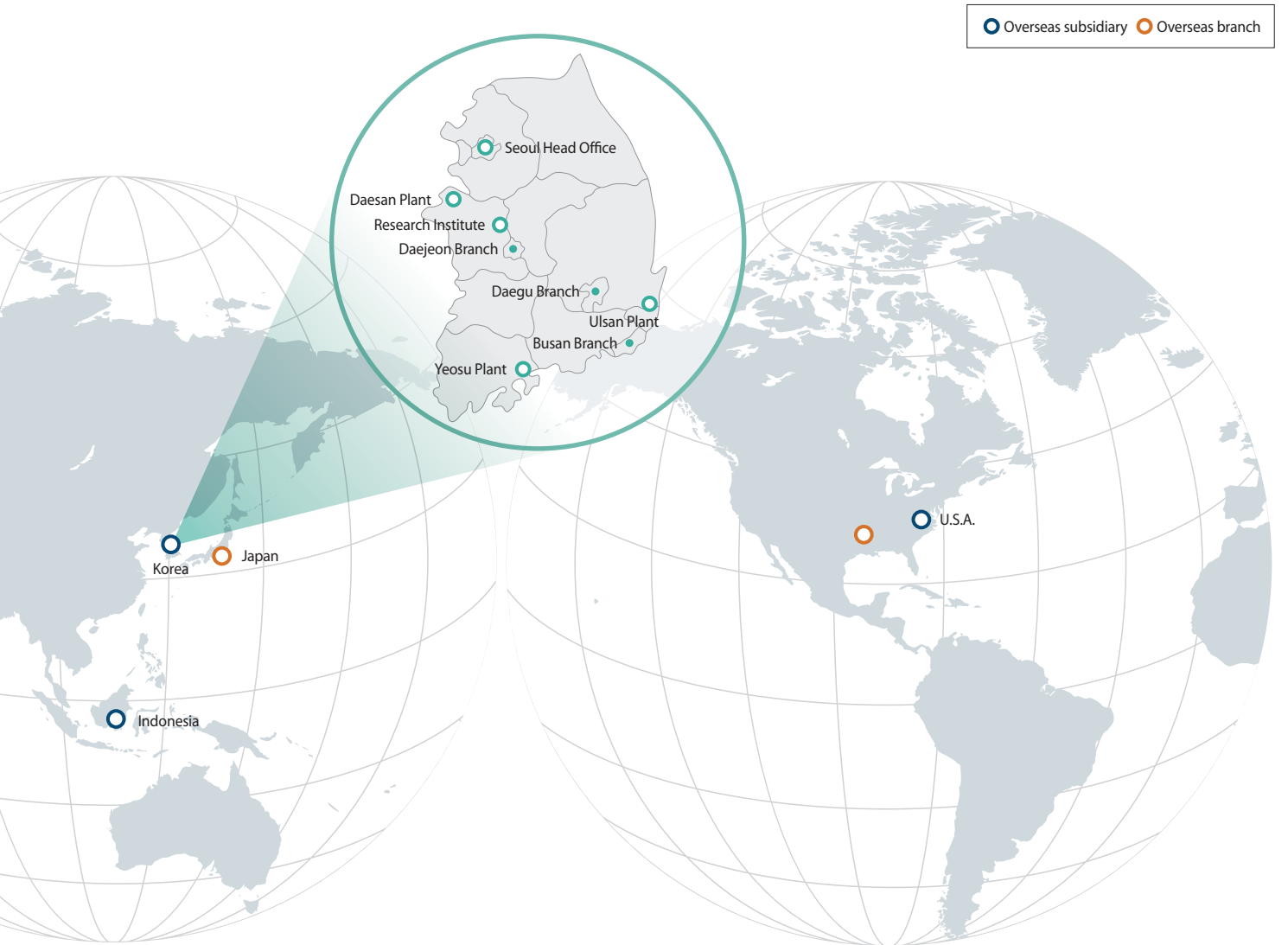
Domestic worksites

KRW **12.1** trillion (74%)

Overseas worksites

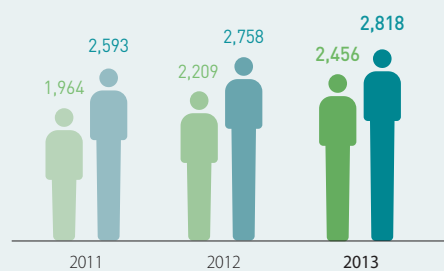
KRW **4.3** trillion (26%)





Employees (Unit: persons)

■ Domestic worksites ■ Overseas worksites



Domestic worksites

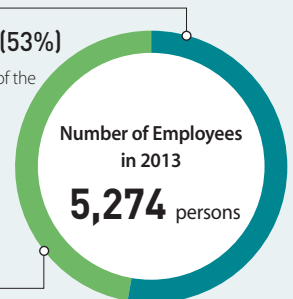
2,818 persons (53%)

* Including employees of the domestic subsidiaries

Overseas worksites

2,456 persons (47%)

* Including employees of overseas subsidiaries



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Value Chain

Under the mission of the Group "We enrich people's lives by providing superior products and services that our customers love and trust", Lotte Chemical has been taking the lead of petrochemical industry and pursues long-term, sustainable growth. Now we are making a concerted effort to identify and manage all sustainability issues related to our business activities from materials procurement to disposal of products.

Business Activities of Lotte Chemical

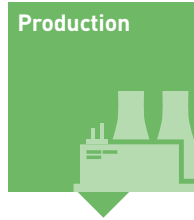
Relevant CSR Issues



Raw material

Raw materials include not only naphtha but also diverse sources such as energy and water to operate plants. A company has to pay the fair price for using raw materials and develop methods for their sustainable consumption.

- Fair transaction
- Accelerating sustainability management of supply chain
- Reducing resource consumption



Production

Raw materials, energy, and employees' efforts are essential to manufacture products. A company has responsibility to reduce waste and GHG emissions in the process of production. Also, safety of employees must be guaranteed during handling chemicals and facilities.

- Employee welfare benefits
- Strengthening employees' capability
- Preventing environmental pollution
- Safety and health management
- Reducing GHG emission



Distribution

Even during the process of distributing manufactured products, gasoline and other fuels are used and ultimately emits GHG. Therefore a company must strive to reduce environmental effects caused during the distribution process. Also, it is manufacturer's responsibility to manage the distribution process to deliver the product safely.

- Reducing GHG emission
- Product responsibility
- Reducing energy consumption
- Reducing resource consumption



Usage

A company must minimize the environmental effects caused from customers' product usage and from the by-products. Furthermore, preventive measures must be taken to protect customers from any danger may caused by using the product.

- Product responsibility
- Customer safety & health management
- Reducing resource consumption
- Preventing environmental pollution



Disposal

A company must make sure the product does not create any negative effects on environment and users even after the usage and disposal. For the used products, a company should research for ways to recycle them and use them as resources for other manufacturing process.

- Product responsibility
- Preventing environmental pollution
- Recycling resources



Creating Future Value

Development of New Growth Engines

Lotte Chemical is endeavoring to become a top-tier Asian chemical company, utilizing petrochemical capabilities and experiences accumulated over the past 38 years to emerge as an industry leading global company in the 21st century. To this end, we are focusing on developing new markets, business opportunities, and future technologies.

► Research & Development

We aim to create new businesses and highly profitable products, and enhance production process and quality. Also, our R&D competence is being strengthened via collaborations with the government and domestic/foreign research institutes specialized in cutting-edge technologies.

Lotte Chemical's Research Institute

Lotte Chemical's research institute, as a think-tank for R&D, engages in not only developing polyolefin resin, diverse new materials with high functionality, and process technology but also researching catalyst and megatrend projects that will become future growth engines. Securing source technologies and developing new markets are also being promoted for sustainable growth.

► Strengthening R&D Capability

To realize our long-term goal of evolving into a leading global petrochemical company, we will dedicate to strengthening our R&D capability. Some of our plans have been materialized by expanding our research facilities, changing project classification system, operating an R&D task promotion system, and establishing patent management system in 2013.

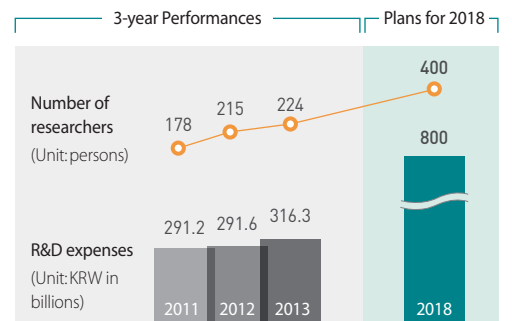
Expanding the Research Institute

In October 2013, Lotte Chemical has completed research institute expansion and remodeling project. The research institute is now able to accommodate 450 researchers, which is twice the amount than before, and provide more pleasant and professional research spaces. Research Institute will make bigger effort to contribute to generating larger profits and hardening the foundation for our sustainable growth as well as proactively supporting local subsidiaries in China, Malaysia, and US.

Vision of Lotte Chemical's Research Institute



R&D Performances and Plans



Lotte Chemical's Research Institute

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► **R&D Performance & Future Strategy**




R&D Performance

In 2013, Lotte Chemical has conducted wide range of researches on not only basic/Advanced chemical materials which are our traditional flagships, but also ESS (Energy Storage System) and megatrend businesses. As a result, our superb technology and innovative products were highly recognized from the domestic and foreign stakeholders such as Frost & Sullivan and JEC Group. Our commitment to these R&D tasks will be continued to win successes in the global stage.

Future R&D Strategy

Our R&D system and process has been upgraded systematically and efficiently since the establishment of the company. We are also promoting collaboration in R&D projects with various local and overseas stakeholders, advanced research institutions, and LOTTE affiliates and our subsidiaries to sustain innovative activities in the fields of basic chemicals, advanced materials, and megatrend businesses.

R&D Strategies by Each Sector in 2014

Sector	R&D Item	R&D Vision
Basic Chemical 	Polyolefin	Becoming a global market leader in the polyolefin sector
	Monomer	Securing source technology for monomer business by developing catalyst and process, and creating new businesses
Advanced Material 	Functional materials	Maximizing profitability through developing world's best functional materials in the PM sector
	Engineering plastic	Maximizing profitability through developing world's best products in the EP sector
Megatrend 	Megatrend business	Laying the foundation for fostering new growth engines by researches on megatrend sector



2013 Frost & Sullivan Awards



JEC ASIA 2013 Innovation Awards






The 29th Week IR52 Jang Young-shil Award in 2013*

* An award program jointly conducted by Maeil Business Newspaper and Korea Industrial Technology Association to award technology developers of domestic companies and research centers who contribute to developing and commercializing new technology products.



► **New Businesses**

We are promoting business diversification through expanding global operation and developing new businesses to achieve the vision of 'Top-tier Asian Chemical Company'. This strategy will be mainly driven by the following 3 core tasks: securing more growth opportunities in emerging markets for basic chemicals, intensively cultivating advanced material businesses, and sustaining our growth through fostering megatrend businesses.

Sector	Goal and Task	Progress	Plan
Basic Chemical 	<ul style="list-style-type: none"> Expanding local production of basic chemicals Promoting development of and entrance into emerging markets 	<ul style="list-style-type: none"> Surgil Project in Uzbekistan EO and ETA production plants in China 	Stably securing raw materials via joint businesses
Advanced Material 	<ul style="list-style-type: none"> Promoting joint projects with overseas firms to develop high value-added functional materials Securing technologies for the functional resin business Developing engineering plastic (EP) materials 	<ul style="list-style-type: none"> Establishing a joint venture engaging in producing synthetic rubber (Versalis and Ube Industries) 	Diversifying business by entering synthetic and special rubber business
Megatrend 	<ul style="list-style-type: none"> Energy storage device: Developing chemical flow battery (CFB) Bio & Chemical: Researches on bio polymer, platform compound, and microalgae Water treatment: Optimization of separation membrane, module, and their application system, researches on water treatment process 	<ul style="list-style-type: none"> Promoting in-depth researches and commercialization 	Full-scale operation of energy storage device, bio & chemical, and water treatment businesses

New Businesses in Progress

Lotte Chemical has invested in the fields of basic chemicals, advanced chemicals, and megatrend businesses to secure the foundation for sustainable growth. A total of about KRW 4 trillion has been invested in basic and advanced chemicals businesses by 2013 and the businesses generated approximately KRW 10 trillion in sales. In addition, our overseas plants created KRW 4.2 trillion in sales in 2013.

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► **Performances in and Strategies for New Businesses**

Performances in New Businesses

There were meaningful results in terms of new businesses and markets in 2013. First of all, we successfully carried out a mega petrochemical plant construction project in Surgil, Uzbekistan, for the first time among the local petrochemical companies. Our EO and ETA production plants in China which were built in 2012 also enjoyed sales growth backed by stable commercialization and development of new catalysts. On top of that, we established a joint venture to produce and sell synthetic rubber with Versalis, a world-leading petrochemical company with the best synthetic rubber technology. A synthetic rubber manufacturing plant is also being built in Johor Bahru, Malaysia, by a joint venture between Lotte Chemical and Ube Industries, a Japan's representative petrochemical company. Another project to build a plant for mixed xylene and light naphtha is being promoted together with Hyundai Oil Bank.

Strategies for New Businesses

Our strategies to enter new markets and new businesses include strengthening the competitiveness in procurement of raw materials as well as production capacity, diversifying business portfolio, and accelerating megatrend projects.

Priority Strategies in 2014

Participating in overseas mega projects	<ul style="list-style-type: none"> • Pursuing entrance into new markets and increases of sales and profits through participating in overseas mega petrochemical projects such as Surgil Project in Uzbekistan and ethane cracker and MEG projects based on shale gas business of the US
Enhancing competitiveness of existing businesses	<ul style="list-style-type: none"> • Reducing energy consumption in the production and expanding the production of high value-added products • Stably securing raw materials such as mixed xylene, light naphtha, and benzene via joint business
Diversifying business	<ul style="list-style-type: none"> • Entering the synthetic and special rubber businesses by capitalizing on existing raw materials
Megatrend	<ul style="list-style-type: none"> • Boosting energy storage device, bio & chemical, and water treatment businesses • Accelerating megatrend businesses



① Conclusion of Uzbekistan Surgil Project contract
 ② Established joint venture with Versalis
 ③ Established joint venture with Hyundai Oilbank
 ④ Established joint venture with Ube Industries
 ⑤ Surgil petrochemical plant in Uzbekistan



Enhancement of Core Capability

With the 5 core values of 'Customer Focus', 'Creativity', 'Passion', 'Cooperation', and 'Performance-based System', Lotte Chemical is focusing its capabilities on areas where the company has the biggest competitive advantage to achieve the goal of becoming 'A Top-tier Asian Chemical Company'. In addition, we will continue to enhance our competitiveness in flagship petrochemical business and then expand our reach to related fields.

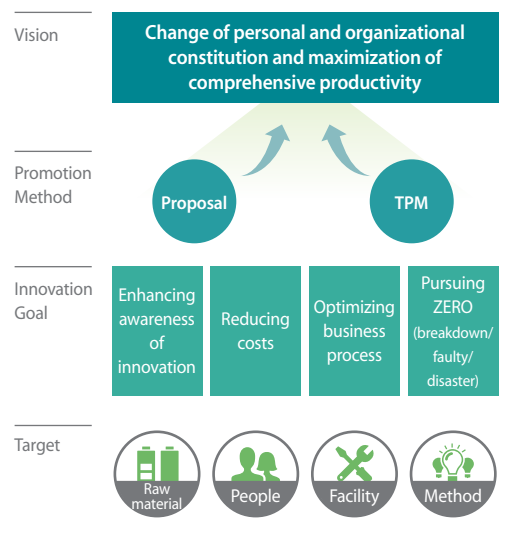
► Improving Production Processes and Stability

The reason we were able to maintain the top status in the local petrochemical industry for the past 38 years is stable production and procurement ability to ensure the delivery of superb products and services that satisfies customers' need. We are placing enormous effort on improving production process and stability to continuously produce high quality but low price products and to maintain the reliability that we built with our customers.

Vision for the PR!ME

Lotte Chemical held a contest to name the production innovation activity within the company for a friendlier impression. As a result, PR!ME was created. The implementation direction of PR!ME Activity is maximization of productivity, change in corporate constitution through TPM (total productive management) and invigoration of suggestion activities wherein all employees participate - targeting the production site's core factors of person, facility, raw material, and method - including promoting the establishment of Prime Activity as one of our innovation activities. Through TPM for production innovation, we constantly perform facility maintenance carry out improvement of the working environment, and realize cost savings. We have made unprecedented achievements in petrochemical industry in terms of production capacity, continuous production time, and zero accident man hours.

Vision of the PR!ME Activity



► Performance in Improving Production Processes and Stability

3,000 Days of Continuous Operation at Yeosu NC Plant

Our Yeosu NC Plant held a ceremony to celebrate 3,000 days of continuous operation in November 2013. The NC Plant with annual production capacity of one million ton of ethylene has been operating without any shutdown by abnormal ways since June 2005 based on top class operational stability and technologies. This is an unparalleled achievement in any NC plants in the world. Taking this as an opportunity, Lotte Chemical will continue to optimize production process and improve the efficiency of plant operation.

PR!ME Contest at Yeosu Plant

On December 9, 2013, the 11th PR!ME contest was held at Yeosu Plant to arrange a place to share the year's result of the PR!ME innovation activities of each team with employees and executives. A total of 9 teams participated in the heated competition, and all of them shared great results that were achieved through performing activities with the 'Back to the Basic' mindset.

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► Expanding Infrastructure including New Facilities

Lotte Chemical has concentrated on increasing production capacity which is core capability for the company to solidify the leadership in the local industry and evolve into a leading global petrochemical player. As part of this, we have been expanding production facilities to ensure quantitative and qualitative growth as well as global competitiveness. In addition, resource development is being conducted proactively in order to secure raw materials at low cost and supply products stably.

Enlarging Business Infrastructure

Our production capacity has greatly increased by completing the PP catalyst production plant through collaboration with Matsui Chemical of Japan in May 2013 and starting commercial operation of the TITAN TBA production plant in Malaysia and PET production plant in Ulsan. Also, we successfully substituted the existing foreign equipment in the Ulsan Plant with the domesticated equipment that was jointly developed with domestic SMEs. Therefore, catalysts, raw materials, and equipment essential for the production of petrochemical products can be procured independently, which is expected to lead to the improvement of production efficiency. The expanded infrastructure will also give us opportunities for the activation of our global business.



Lotte Chemical's Titan TBA Plant in Malaysia



PET film production plant in Ulsan



Completion ceremony of the PP catalyst production plant in Yeosu



Special Issue

Entering into New Markets and New Businesses

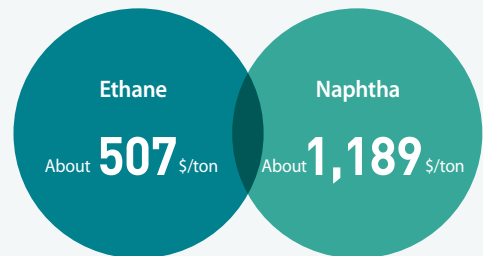
Entering new markets and new businesses is essential for our sustainable growth. In 2013, we enthusiastically searched and penetrated into new markets and new businesses. In particular, the Surgil project in Uzbekistan became a milestone for our global operation. Our progress in mega petrochemical projects has been continuing in 2014. One of major performances includes signing a contract for the joint ethane cracker project based on shale gas business in the North American market for the first time among Korean petrochemical companies. In addition, pursuing growth in sales and operating profit simultaneously are the top priority when entering new markets and new businesses.

Concluding the HOA with Axiall Company for Joint Ethane Cracker Project

In February 2014, Lotte Chemical concluded the HOA (Head of Agreement) to construct the world class ethane cracker plant in Louisiana with Axiall of the US. This joint project will allow Lotte Chemical and Axiall to produce 1 million tons of ethylene annually by utilizing low priced ethane based on shale gas reserved in North America. Through this, Lotte Chemical and Axiall will secure 500 thousand ton of ethylene every year, respectively. We are also planning to build a plant with an annual production capacity of 700 thousand tons of ethylene glycol by capitalizing on the ethylene on the same site. Lotte Chemical became the first domestic petrochemical company to advance into ethane cracker business in North America and paved the way for securing more production facilities in the region. Our annual production capacities of ethylene and ethylene glycol will also be extended from current 2.8 million and 1.04 million tons to 3.3 million and 1.75 million tons, respectively. Furthermore, this project together

with the Surgil project will help us reduce the dependency on naphtha and increase the use of low priced raw materials, enhancing our global competitiveness.

Costs for Producing Ethylene* (Unit: US dollar)



*Costs for producing one tone of ethylene, as of 1Q 2012

Source: Goldman Sachs chemical report

Major Overseas Projects

Country	Project	Production Schedule
Malaysia	• Producing 50 thousand tons of BR every year	2H 2014
Uzbekistan	• Producing 390 thousand tons of HDPE every year • Producing 80 thousand tons of PP every year	2H 2015
U.S.	• Producing 500 thousand tons of ethylene every year • Producing 700 thousand tons of EG every year	Mid 2018

Operating Performances in 2013

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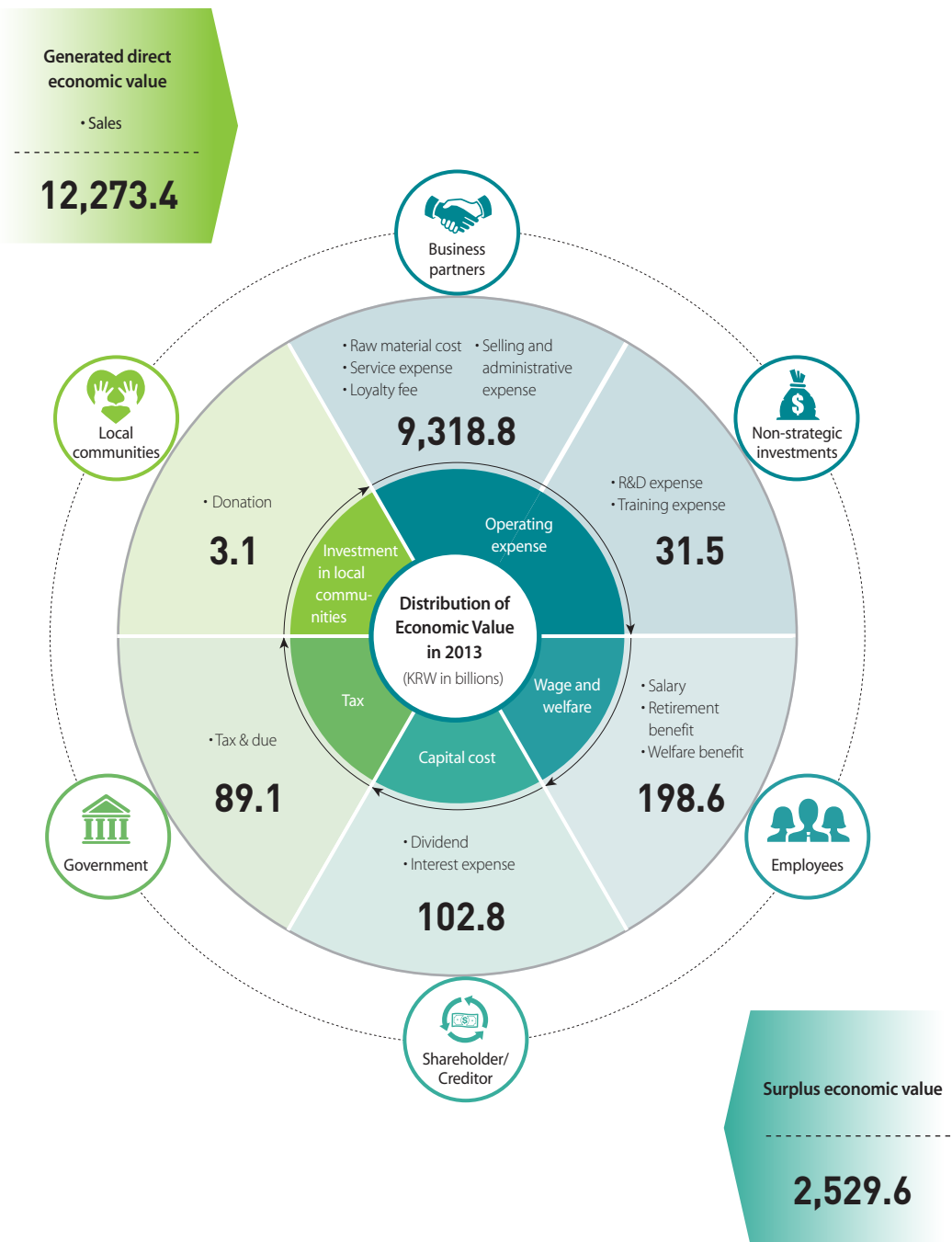
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► **Distribution of Economic Value in 2013** (based on non-consolidated financial statements*, unit: KRW in billions)

Economic value of Lotte Chemical generated every year is evenly distributed to diverse internal and external stakeholders. In 2013, a total of approximately KRW 12 trillion was delivered to stakeholders such as employees, business partners, the government, and local communities.

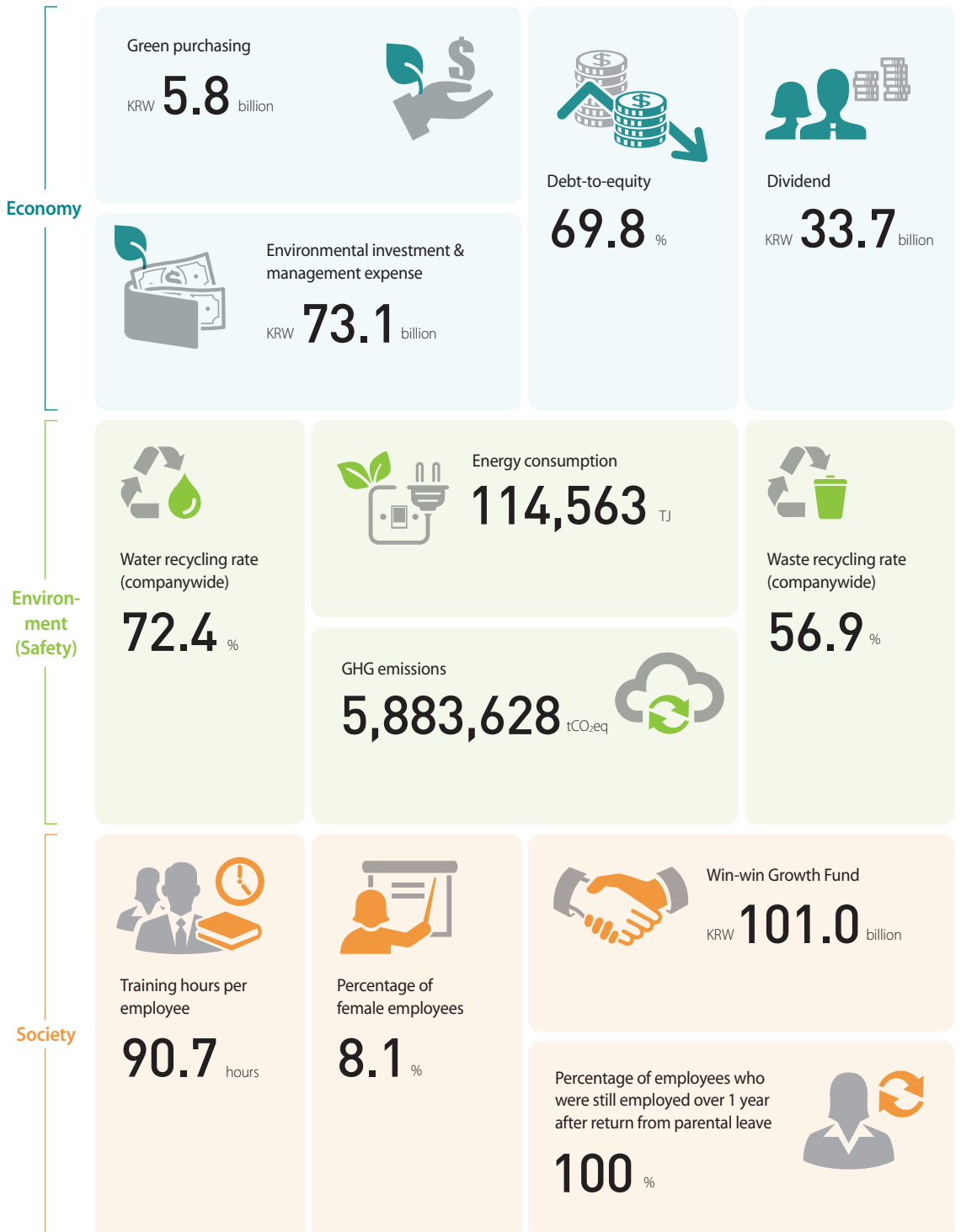


* Our local subsidiaries are independent corporations despite being subordinated to Lotte Chemical. Therefore, to accurately report the data, we used non-consolidated financial statements.



Summarized Performances in Sustainability in 2013

Our efforts for sustainable growth in 2013 have generated the following performances. We will continue to measure and manage the results of sustainability management. More detailed contents can be found in the appendix section of this report.





Governance

22p



Risk
Management

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Sustainability Management System of LOTTE CHEMICAL



Sustainability
Management System

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**Stakeholder
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**Selection of Material
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Lotte Chemical has established sustainability management system based on five core values of Customer-focus, Originality, Passion, Partnership, Performance.



Governance

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Corporate Governance

► Board of Directors

To ensure sustainable development, we have organized and operated the independent Board of Directors (BOD). As the top decision-making body that supervises decision making throughout economic, social, and environmental fields, the BOD consists of 7 directors where 4 of them are independent, outside directors. The BOD is a body resolving material issues and matters regarding the basic policy of corporate management and job execution under related laws and regulations and articles of incorporation. Therefore, the CEO – who knows the company’s management activities the most – is also in charge of the board chairmanship to operate the board efficiently.

Position	Name	Duty	Appointment	Career
Standing director (3 executive directors)	Shin Dong-bin	Chairman & CEO	2013.3.22	
	Huh Soo-young	President & CEO	2013.3.22	Former CEO of KP Chemical
	Ahn Ju-seok	Executive Director	2014.3.21	Current head of production HQ of Lotte Chemical
Non-standing director (4 outside directors)	Jeong Dong-gi	Audit Committee Member (legal affair)	2014.3.21	Current consulting lawyer of Bareun Law Firm
	Park Seok-hwan	Audit Committee Member (overseas business)	2014.3.21	Former Korean Ambassador to Great Britain
	Suh Hyun-soo	Audit Committee Member (finance)	2013.3.22	Current Chairman of Wookyung Tax Firm
	Lim Ji-taek	Outside Director	2014.3.21	Former director of accountant & procurement of LOTTE Confectionery

► Committees under the BOD

Audit Committee

(Jeong Dong-gi, Park Seok-hwan, and Suh Hyun-soo)

The Audit Committee consists of 3 outside directors. All committee members are appointed at the shareholders’ meeting and their tenure is set by the articles of incorporation, which ensures the independency of the Audit Committee. The committee contributes to establishing a dynamic and sound organizational culture by focusing on preventive and preemptive audits from the decision-making stage as well as post-audit on job execution to fundamentally avert conflicts of interest. The Audit Committee meeting is held at least quarterly in accordance with the Audit Committee Regulations.

Outside Director Recommendation Committee

(Huh Soo-young and Suh Hyun-soo)

The Outside Director Recommendation Committee is composed of two directors of which more than half is outside director. The committee members are appointed and dismissed by the BOD. The Outside Director Recommendation Committee possesses the authority to recommend outside director candidates and is required to include candidates recommended by shareholders with rights to make proposal.

Internal Transaction Committee

(Ahn Ju-seok, Suh Hyun-soo, Jeong Dong-gi, and Park Seok-hwan)

The Internal Transaction Committee is composed of more than 3 directors of which 2/3 are outside directors.

The committee members are appointed by the BOD. This committee possesses the authority to evaluate and approve internal transactions in accordance with the Monopoly Regulation and Fair Trade Act and large scale free contracts with subsidiaries exceeding KRW 10 billion.

► Operation of the BOD

The remuneration of a director, the annual pay ceiling, is resolved in the regular general shareholders’ meeting, and the specific amount and payment method for executive directors and executives are delegated to the CEO. The pay is given based on the company’s economic, social, and environmental management performance and personal performance. A director having interest in a specific agenda to be resolved cannot exercise voting right to prevent conflict of interest beforehand. Our employees can request the board’s approval for matters requiring resolution by the board through the Labor-Management Council.

► BOD Activities

The BOD holds a regular meeting every quarter and preliminary meetings when there are agendas to be reviewed. In 2013, a total of 10 BOD meetings were held and major agendas included the establishment of Tokyo Office, construction of a plant to produce PE catalyst, and appointment of internal transaction officer. More details on BOD activities can be found on Lotte Chemical’s homepage* and the business report.

* Please refer to http://www.lottechem.com/contents/financial/dominance-Structure_042013.asp



Risk Management

Risk Management

There are various risk factors such as global economic recession, deterioration of profitability from oversupply, unfavorable business conditions due to diverse regulation, uncertainty of new businesses, fluctuation of exchange rate, and non-performing trade receivables with respect to our businesses and sustainability. To proactively cope with these, we have established and have been operating the ERM (Enterprise Risk Management) system.

► Risk Management Process

The risk management process starts from creating risk portfolio that identifies risks in 4 areas of operation, finance, compliance, and strategy. The risk portfolio is evaluated by company-wide coherent criteria to select key risks. The selected key risks are preemptively and consistently controlled by being linked with our management process ranging from strategy development to performance evaluation.

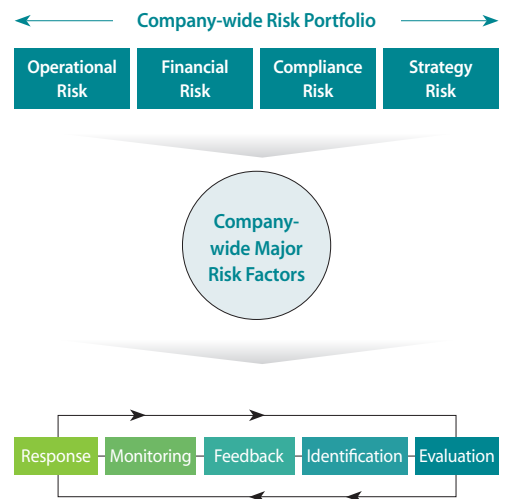
Risk Classification

Operational Risk	Compliance Risk
<ul style="list-style-type: none"> • Occurrence of environmental or safety incidents and problems • Damage of corporate image from inappropriate response to media • Poor management of subsidiaries due to insufficient control 	<ul style="list-style-type: none"> • Violation of environmental or safety regulations • Violation of fair trade related regulations
Financial Risk	Strategy Risk
<ul style="list-style-type: none"> • Loss from fluctuant exchange rate • Insolvency of trade receivables 	<ul style="list-style-type: none"> • Failure in new businesses • Deterioration of market condition and growth potential • Decrease of profitability due to fierce competition • Insufficient supply and strong prices of raw materials

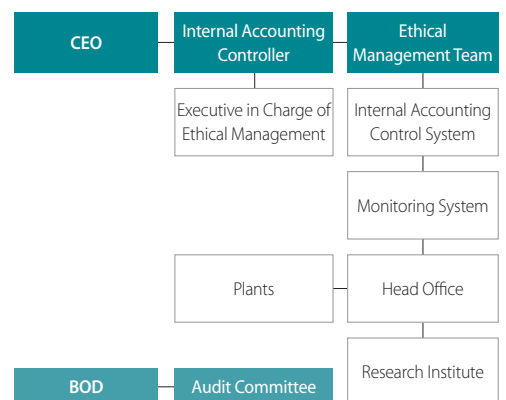
Internal Control System

The internal control system is being operated to efficiently respond to diverse relevant laws and regulations. The management and responsible organizations analyze work process to classify risks wielding serious impact on business activities, and evaluate and check the status of internal control for such risks. The evaluation results are reported to the Audit Committee as well as the BOD and subsequently reviewed and certified by the independent auditors and the Audit Committee. As a result of regular and frequent special audits by the Ethical Management Team in 2013, there was no internal control violation or corruption. We will continue to strictly operate the internal control system to comply with relevant laws and regulations and improve the reliability of financial reporting.

Risk Management Process



Internal Control System



Sustainability Management System

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Sustainability Management Issue Control System

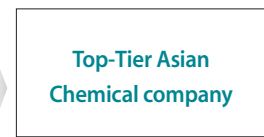
Every employee of Lotte Chemical pursues consistent change and growth with the mission of Lotte Group, "We enrich people's lives by providing superior products and services that our customers love and trust" as a principle in their works. The company is also committed to realizing our core values of customer originality, creativity, passion, partnership, and performance-based system to secure reliable relationship with all stakeholders and contribute to making a better tomorrow.

► Vision

Under the vision of Lotte Group 'Asia's Top 10 Global Group', we are making a concerted effort to achieve our vision 'Top-tier Asian Chemical Company'.



Vision of the Group



Vision of Lotte Chemical

► Core Values

Our core values imply key commitments of Lotte Chemical, which have overcome difficulties and written success stories. We will devote ourselves to accomplishing the five core values of customer focus, originality, passion, partnership, and performance-based system.



Customer-focus



Originality



Passion



Partnership



Performance

► Organizational Structure for Promoting Sustainability Management

Sustainability management system has been reflecting throughout the company by operating an efficient organizational structure. In particular, we have focused on organic cooperation among departments responsible for economic, social, and environmental business activities. Additionally, we have designated responsible organizations for each area and clearly defined their tasks to promote systematic sustainability management.

► Major Tasks in 2014

Our major tasks for sustainability management in 2014 include strengthening HR management, cultivating talents, promoting new businesses as well as enhancing their management, increasing profitability, and tightening risk management.

Sustainability management strategy based on management policy

Enhancing Core Capability	Field-oriented Management	Cultivating Talents	Green Management	Brand Management
Focusing our capability on businesses that we have competitive edge and expanding the horizons to relevant areas	Listening to voices of customers, employees, business partners, and local communities and reflecting them in our businesses	Recruiting high talented human resources and cultivating them as global talents to lead our future growth	Supplying eco-friendly products through reducing energy use and innovative management to fulfill our social responsibility	Evolving into a global premium brand by providing customers with products and services to maximize their satisfaction and trust
<ul style="list-style-type: none"> Enhancing productivity Expanding R&D infrastructure Promoting global business Continuously developing and promoting megatrend new businesses 	<ul style="list-style-type: none"> Upgrading work process through diagnosis Supporting management improvement of subsidiaries Supporting business partners Figuring out customer needs 	<ul style="list-style-type: none"> Building HR system meeting global standards Recruiting and cultivating global talents Securing and fostering excellent R&D workforce 	<ul style="list-style-type: none"> Reducing energy use and GHG emissions Supplying eco-friendly products Green management control Smart innovation activities 	<ul style="list-style-type: none"> Building a brand management system Realizing customer satisfaction Developing products to lead the megatrend Applying to the patent

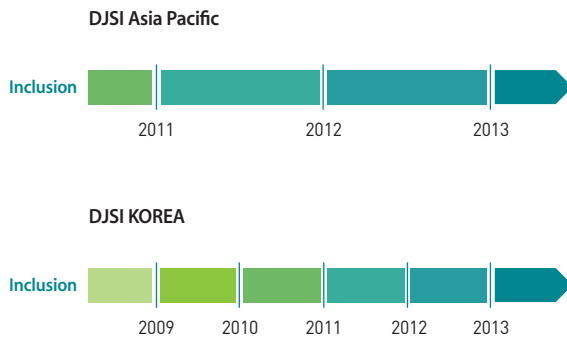


Performances in Sustainability Management

In 2013, we have strived to systematically promote sustainability management. Such efforts have been highly recognized from stakeholders and led us to meaningful achievements as followings.

► Included in the DJSI Asia Pacific

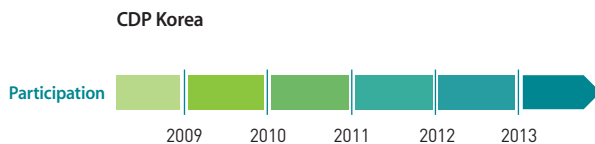
Lotte Chemical has been included in the DJSI (Dow Jones Sustainable Index) Asia Pacific - selected by DJSI and SAM (Sustainable Asset Manager) - for three years in a row. DJSI Asia Pacific is utilized as the standard for SRI (Social Responsibility Investment) and it evaluates overall financial, environmental, and social aspects. Only top 20% of 600 companies in the waitlist of the DJSI Asia Pacific are selected, in which 40 domestic companies were included as of 2013.



Included in the 2013 & 2014 DJSI Asia Pacific

► Participating in the CDP (Carbon Disclosure Project)

The CDP is a global initiative which evaluates governance, risks and opportunities, strategy, GHG emissions accounting, and communication that are related to climate change issues. Participating corporations must voluntarily disclose carbon management information, and therefore it can be utilized on climate change related investment. Currently, we have set the climate change as one of major management tasks, and actively participate in the CDP program.



Participation in the CDP

► Won the USD 6 Billion Export Tower Award

In addition to the above great results from global sustainability evaluation organizations, Lotte Chemical achieved meaningful performances in the aspects of economy in 2013. At the 50th Export Day on December 5, 2013, we won USD 6 Billion Export Tower Award, which was a splendid achievement made since receiving the 'USD 3 Billion Export Tower Award' in 2010.



Won the USD 6 Billion Export Tower Award

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Stakeholder Engagement

Lotte Chemical has been identifying the stakeholders' expectations and demands on our sustainability management through various communication channels. All organizations and individuals affecting the company directly and indirectly are defined as stakeholders, and they are classified into customers, shareholders, employees, business partners, government, and local communities. Regular stakeholder survey is conducted to encourage their participation in our sustainability management and for listening and analyzing comprehensively their opinions or requirements. We take consideration of appropriate responses to major stakeholder issues when establishing sustainability management strategy to improve the value of stakeholders.

Value Chain	Expectations	Our Response	Stakeholder Engagement Channels
Government	The government encourages companies to comply with legal and social responsibilities by inspecting and managing corporate business activities and influences on corporate management by enacting laws and regulations.	We contribute to creating social values, creating jobs, and improving the quality of people's lives through observing laws and conducting sound business activities.	<ul style="list-style-type: none"> Public hearing by the government Forum Council Participation in national tasks Collaboration programs
Employees	Employees want to be considered for their performances within environment and corporate culture to ensure the development of individual capability and to grow together with the company.	We are committed to offering fair compensation and diverse welfare systems to build optimized work environment and encouraging employees to participate in corporate management voluntarily and passionately.	<ul style="list-style-type: none"> Labor-Management Council Events for communication Site Operation Committee Satisfaction survey Intranet Presentation on business status
Business Partners	It is essential to build fair and transparent relationships with business partners and develop their capabilities for sustainable growth.	We build a win-win partnership for mutual growth through providing business partners with fair opportunities and ensuring transparent transaction.	<ul style="list-style-type: none"> Meetings with business partners Technical cooperation project with SMEs Lotte Academy CEO's visit to business partners
Local Communities	Local communities are not only consumers but also providers of infrastructure and labor force essential for business activities. Therefore, it is important to communicate with them regularly.	We carry out social responsibility via diverse communication channels and maintain close relationships with local communities and NGOs.	<ul style="list-style-type: none"> Sisterhood tie Meetings with local residents Environmental cleanup Social contribution activity
Shareholders & Investors	Shareholders offer capital necessary for stable business activities and they want to invest in companies with sustainable growth potential.	We are proactive in creating profits and shareholder value through efficient and transparent management, and attract proactive their investments in our company.	<ul style="list-style-type: none"> Shareholders' meeting Disclosure IR website Ethical management website
Customers	Customers require us to continuously offer information on and value of our products and services.	We always respond to requirements of the market and customers through regular customer satisfaction survey, seminars, and diverse channels. Customer satisfaction is our top priority.	<ul style="list-style-type: none"> Direct visit (frequently) Customer satisfaction survey Customer invitation program Customer complaint treatment process



Stakeholder Interview

Customer

Manager, Raw Materials Team,
Kolon Industry

Lee Sang-yun



Our company purchases MEG from Lotte Chemical for PET polymerization. We also buy TEG, an ingredient for detergent, from the company. Lotte Chemical shares the status of the domestic market with us through its salespeople and is implementing active information exchange, such as holding a seminar on global market conditions. Lotte Chemical maintains a win-win partnership with us by sponsoring our sports events. Fierce global competition in the industry makes it very important for Lotte Chemical to secure both product and price competitiveness for steady growth. Lotte Chemical products hold the key to upgrading the quality of our products. Thus, I hope that Lotte will strive to continue price competitiveness, and pursue product quality for mutual growth. Moreover, I anticipate that Lotte Chemical will extend its reputation as a highly regarded company through a variety of outreach activities, while also paying attention to safety and environmental issues.

Business Partner

CER, Ajin Electric Power

Bae Chul-hyu



For more than 30 years, Ajin Electric Power has played a steady role as a reliable business partner with Lotte Chemicals. We engage in the maintenance of power distribution equipment related to the electrical and instrumentation sector, electrical equipment for chemical and automated plants, and power generation facilities to support Lotte Chemical's business. Lotte Chemical shares industry trends to form a win-win partnership aided by communication between our procurement and public affairs teams. In addition, the company works hard at disaster prevention through a consensus on health and safety, based on mutual growth. Our partnership seeks to enhance competitiveness and establish a culture of safety and autonomy for sustainable growth. Looking ahead, it is recommended that Lotte Chemical continue its safe and eco-friendly business practices to realize the value of shared growth based on teamwork and cooperation. In addition, I hope that Lotte Chemical maintains support of its partners, including a reasonable pricing policy, so that partners can grow and extend social contributions to communities.

Related Organization

Assistant Manager, Korea
Petrochemical Industry Association

Choi Hong-jun



The Korea Petrochemical Industry Association publicizes the petrochemical industry and provides stakeholder awareness of the industry. It supports growth of the fundamental competitiveness of the industry by conducting national R&D projects and mutual growth projects for small and mid-sized companies in partnership with Lotte Chemical. Global climate change turned low-carbon green growth into a global megatrend. The petrochemical industry is not free from this trend. Therefore, Lotte Chemical is required to improve the foundation for green growth by taking part in low-carbon green growth projects that elevate energy efficiency through process upgrades and curtailment of GHG emissions. This principle calls for on-going efforts, including R&D. Furthermore, Lotte Chemical's steady growth will hinge on weaning itself off universal petrochemical products that traditionally depend on petrochemical companies. Other factors in the firm's growth include development of high-value-added new materials and business diversification.

Local Community

Head of Sharing Business Team,
The Child Fund Korea

Rah Hyeon-min



The Child Fund Korea is engaging in projects with Lotte Chemical to financially support the education of children from low-income families. The project has helped 50 children realize their dreams. This has been possible because Lotte Chemical and our foundation share a core concept of valuing people over all else. Lotte Chemical's steady sponsorship encourages children in unfortunate family situations, including domestic violence, to continue learning, and receive scholarships for academic performance. Lotte Chemical is already a standout business in terms of social contributions. In the future, I hope the company continues its interest in sustainable global growth issues, such as the environment and poverty problems.

Selection of Material Sustainability Issues in 2013

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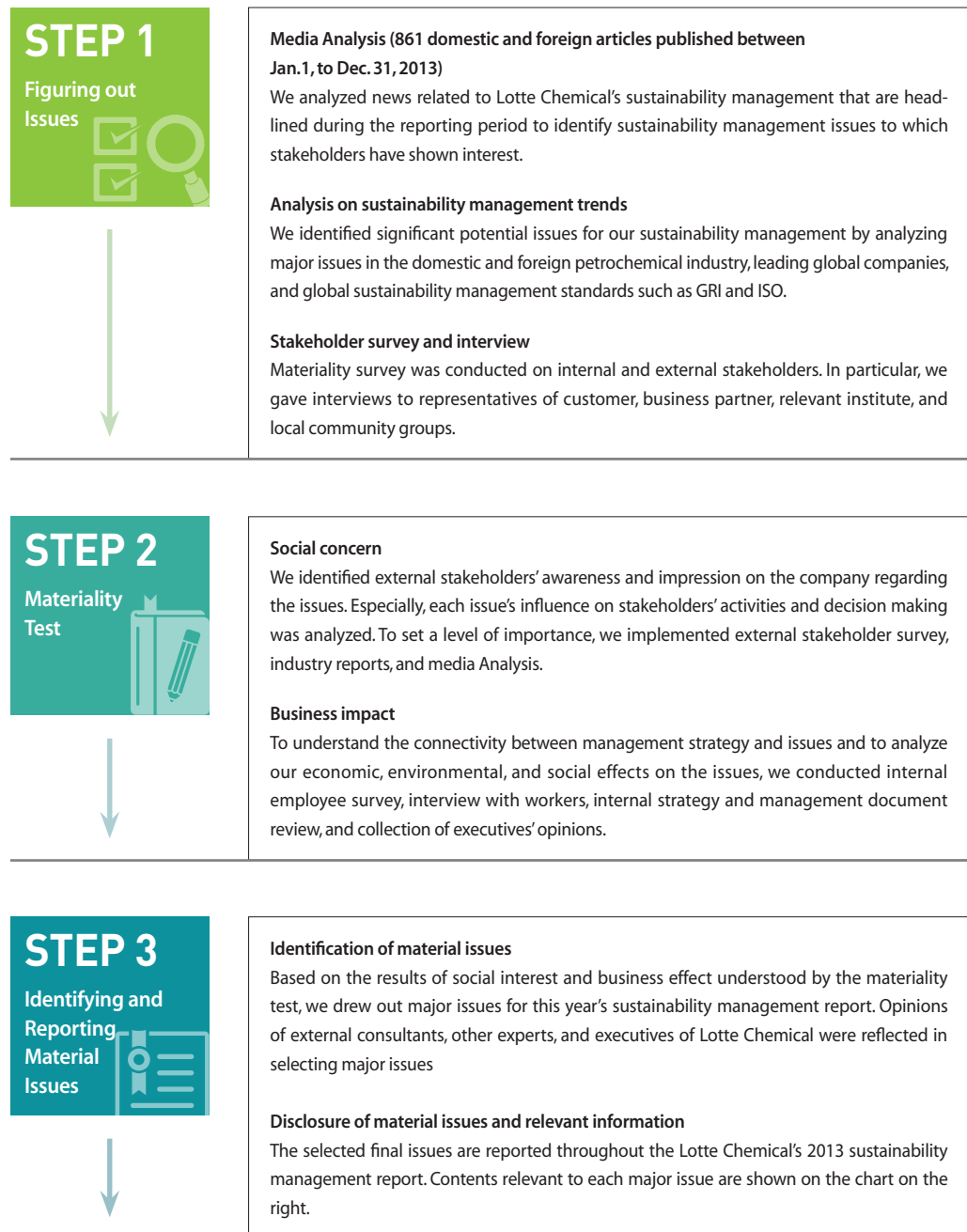
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Reporting Contents Determination Process

The GRI (Global Reporting Initiative) presents the following processes in selecting material issues and reporting contents. We have drawn up this report to ensure sustainability context, materiality, completeness, and stakeholder inclusiveness by faithfully reflecting the GRI's process of decision making on reporting content.

▶ 3-Step Process to Identify Material Issues





► Material Issue Pool

Media Research Results

Major Issues on Media

Economic Performance

Participation in mega projects • Surgil Project in Uzbekistan	Entrance into new markets • Establishment of a joint venture for synthetic rubber, etc.
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Environment & Safety

Development of eco-friendly technologies • Production of bio PET • Winning the Innovative Product Award for energy story system (ESS)	Excellence in safety management • Accident-free operation of the NC plant for consecutive 3,000 days
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Social Contribution

Implementation of social contribution activities • Improvement of residential environment in rural areas • Operation of the Win-win Growth Fund • Donation to scholarship foundations

Analysis of Sustainability Management Trend

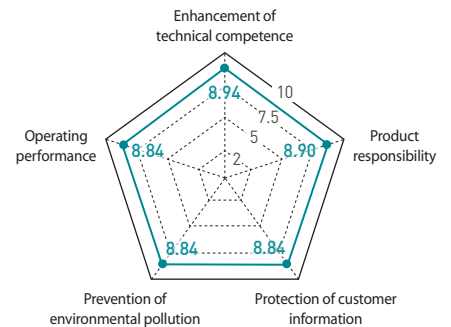
Global Initiatives and major Issues of Competitors*

Operating performance	Communication with customers
Response to climate change	
Health and safety of employees	Supports for business partners
Development of employees' capabilities	Social contribution

*The results came from researches of external experts.

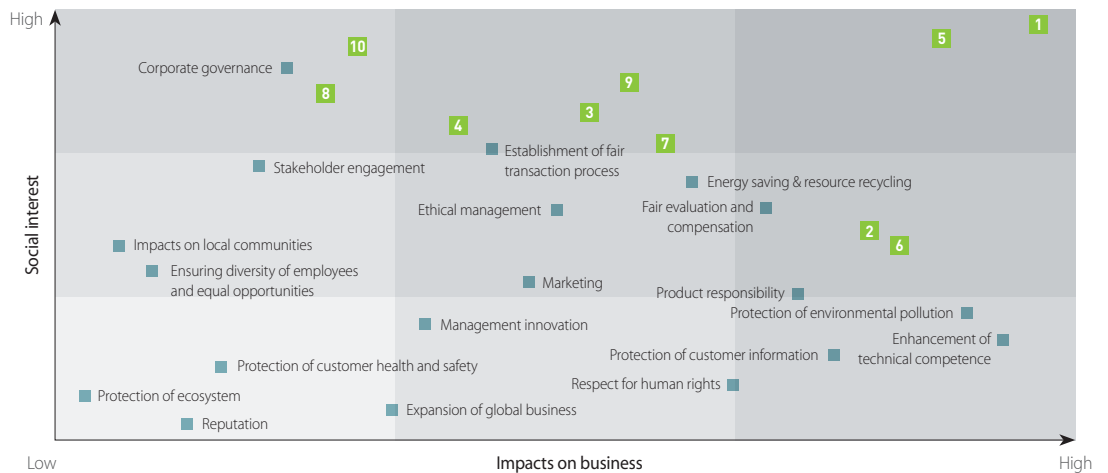
Analysis of Stakeholder Survey

Top 5 Issues Identified by Stakeholders (Unit: points*)



*The results came from surveys and analysis of external experts.

► Results of Materiality Test



► Material Issued Reflected in This Report

Material Issue	Reporting Contents	Page
1 Operating performance	Overview	p.11~19
2 Risk management		p.23
3 Low-carbon green management		p.36~37
4 Response to climate change	Environment & Safety Management	p.34~35
5 Health & safety of employees		p.38~39

Material Issue	Reporting Contents	Page
6 Labor-Management relation	HR development	p.49
7 Development of employees' Competence		p.47~48
8 Supports for business partners	Mutual growth	p.53~55
9 Communication with customers	Brand management	p.57
10 Social contribution	Corporate Citizenship	p.61~64



1
Issue

Environment and
Safety Management

32p



2
Issue

Human Resource
Management

44p



Material Sustainability Activities and Performances of LOTTE CHEMICAL



3
Issue

Mutual Growth
Management

50p



4
Issue

Brand Management

56p



5
Issue

Corporate Citizenship

60p

Lotte Chemical has selected 5 core issues to which stakeholders showed the highest interest through the materiality test and those issues were reported in depth.

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MAJOR SUSTAINABILITY ACTIVITIES AND PERFORMANCES

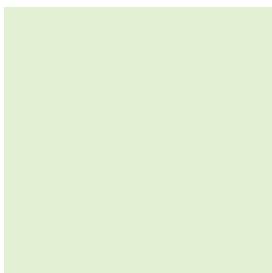
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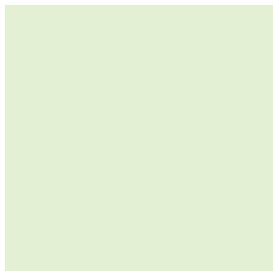
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Environment and Safety Management



Lotte Chemical is operating a green management system to minimize the impact on the environment from our business activities.





Environment and Safety Management

► Environment and Safety Risk Management

Environment and safety risks should be kept in the forefront in managing risks due to the characteristics of petrochemical industry that deals with diverse chemical materials. As a leader in the industry, Lotte Chemical strategically manages environment and safety risks under green management vision of “Top-tier Asian chemical company that pursues a harmony between nature and human beings.”

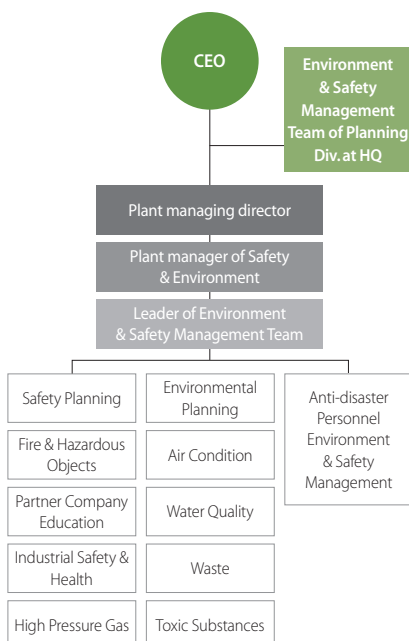
GHG emissions and environmental pollution.

Certifications on Green Management System
Our green management system satisfies global standards. Starting with the ISO 9001 (quality management system) certification in 1993, we have obtained the ISO 14001 (environmental management system), ISO/TS 16949 (automotive quality management system), OHSAS 18001 and KOSHA18001 (safety and health management system), and KSI 7001/KSI 7002 (green management system) certifications. These certifications are checked and evaluated every year, and recommendations are reflected in our environmental management strategies.



Green Management System Certifications

Classification	Certification	Certified by	Remark
Yeosu Plant	ISO 14001	KFQ	Environmental management system
	OHSAS 18001	KFQ	Occupational safety and health management system
	KOSHA 18001	KOSHA	Occupational safety and health management system
	ISO 9001	KFQ	Quality management system
	ISO/TS 16949	KFQ	Automotive quality management system
Daesan Plant	KSI 7001/ KSI 7002	KFQ	Green management system
	ISO 14001	KFQ	Environmental management system
	OHSAS 18001	KFQ	Occupational safety and health management system
	KOSHA 18001	KOSHA	Occupational safety and health management system
	ISO 9001	KFQ	Quality management system
Ulsan Plant	KSI 7001/ KSI 7002	KFQ	Green management system
	ISO 14001	KFQ	Environmental management system
	OHSAS 18001	KFQ	Occupational safety and health management system
Research Institute	ISO 9001	KFQ	Quality management system
	ISO/TS 16949	KFQ	Automotive quality management system
	ISO 14001	KFQ	Environmental management system
	KSI 7001/ KSI 7002	KFQ	Green management system



Organizational Structure for Environment and Safety Management

Responsible organizations at each plant independently perform monitoring and control of environment and safety risks management. And an organization at the headquarter inspects and monitors the practices of each plant to ensure a certain level of risk management. We are also reviewing and analyzing relevant issues and preparing countermeasures to cope with tightening environment and safety regulations.

Building Green Management System

Lotte Chemical has built green management system to effectively manage environmental factors in accordance with the introduction and execution of low-carbon and green management. The green management system allows us to efficiently use resources and energy and minimize



Best Award for emissions trading pilot project (Ulsan Plant)

Response to Climate Change

The climate change issue has been dealt at the global level, and requirements for activities and performances in climate change are also increasing. In regard to this, Korean government regulates GHG emissions through the GHG and Energy Target Management System. Lotte Chemical is also making every effort to proactively cope with climate change. At Lotte Chemical, climate change will be considered as a positive factor affecting business activities beyond just as a response to external demands.

▶ Building a System to Respond to Climate Change

The Environment and Safety Management Team at the headquarter and designated workforce on energy at each plant engage in responding to climate change. The Environment and Safety Management Team is in charge of managing strategies and performances with respect to climate change at the company

level, while workforce on energy at each plant encourages energy-saving, manages GHG reduction ideas and activities, and communicates with the headquarter.

GEMS

GHG emissions, reduction performances, inventory operation, and compliance with laws/regulations at each plant are managed through the Greenhouse Gas & Energy Management System (GEMS) built in 2010 and company-wide ERP system. In 2013, KP Chemical's GHG and energy use management system and activities were integrated into the GEMS.

▶ Preparations for Emissions Trading

Lotte Chemical is making systematic preparations for emissions trading which is to be put into effect from 2015 in Korea. Through the cap-and-trade, the government sets a limit or cap on the amount of GHG emissions of a company, and the company achieves its target by striving to reduce GHG emissions and to transfer permits on surplus emissions to other firms.

Roadmap for Emissions Trading

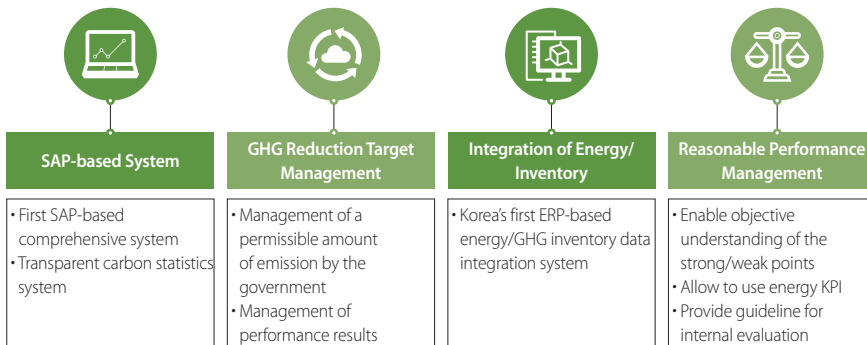
We are planning to establish a roadmap for emissions trading to encourage all employees to raise their awareness of climate change and to reflect the plant in entire business activities.

▶ Responding to GHG and Energy Target Management System

Ulsan Plant's Winning on the Emissions Trading Prize from the Minister of Industry, Trade and Energy

Lotte Chemical has participated in a pilot project for the introduction of emissions trading since 2011. Our Ulsan Plant won the prize from the Minister of Industry, Commerce and Energy for two consecutive years. The prize was given to only three companies that made the top 5% in the pilot project in 2012.

Lotte Chemical's GEMS



Roadmap for Emissions Trading





► **Activities to Reduce GHG Emissions and Energy Use**

GHG Emissions Reduction

With the aim of coping with the GHG Emissions and Energy Target Management System, we submitted GHG emissions statements of the headquarter, research institute, Yeosu Plant, Daesan Plant, and Ulsan Plant in March 2013. Since then, negotiation of the target and submission of execution plans were carried out in September and December, respectively. In January 2014, the company was chosen as an excellent 'GHG reduction company'. These achievements were attributable to our commitment to developing ideas for reducing GHG emissions as well as energy use and to investing in great ideas. In 2013, a total of 86 ideas were identified companywide.

Reduction of Indirect GHG Emissions and Energy Saving through Efficiency Improvement of Transport Vehicles

Our product transportation had been mostly conducted through hired vehicles. It had not been easy to directly control and manage those vehicles, which had been a menace for us to correctly check and reduce energy use and GHG emissions from transporting products. For this reason, we have participated in the government-led energy and GHG emissions reduction project in the transport sector and developed as well as executed means to reduce energy and GHG emissions from transportation. For example, our Daesan Plant reduced the inland transport distance by a modal shift to transportation by rail, the utilization of large-sized vehicles, and transportation through Daesan Port neighboring the worksite. Importantly, the utilization of large-sized vehicles enabled us to reduce standby time, logistics costs, and fuel/GHG emissions by innovating transportation mode and routes and vehicle weight measuring system.

Reduction of GHG Emissions and Energy Use by Each Plant



Yeosu Plant

Number of reduction activities	61
CO2 reduction (tCO ₂ eq)	33,781
Energy reduction (TJ)	637

Best Practices

- Energy saving by actively using the QW for refinery tower
- Using waste heat from CO2 Stripper (T-1302) OVHD



Daesan Plant

Number of reduction activities	21
CO2 reduction (tCO ₂ eq)	19,620
Energy reduction (TJ)	324

Best Practices

- Resolving MS vent in the plant
- Replacing EO Stripping Internals
- Decreasing pressure of deaerators




Ulsan Plant


Number of reduction activities	4
CO2 reduction (tCO ₂ eq)	4,167
Energy reduction (TJ)	81


Best Practices


- Minimizing the operation of boilers

Reduction in the Transportation Sector in 2013 (Daesan Plant)

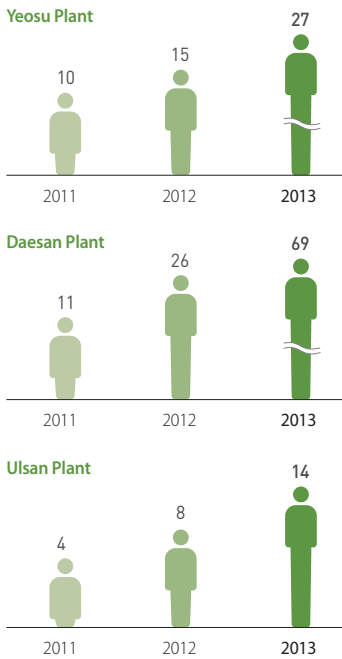
	Changed the mode of transportation (from land to railway)	Cost reduction (KRW in thousands)	400,000
		Reduction of fuel consumption (kℓ)	454
		Reduction of emissions (tCO ₂)	1,191

	Increased use of Daesan Port	Cost reduction (KRW in thousands)	789,000
		Reduction of fuel consumption (kℓ)	513
		Reduction of emissions (tCO ₂)	1,346

	Decreased transportation by small-sized vehicles	Cost reduction (KRW in thousands)	386,000
		Reduction of fuel consumption (kℓ)	119
		Reduction of emissions (tCO ₂)	313

	Introduced RFID system for weighting	Reduction of fuel consumption (kℓ)	77
		Reduction of emissions (tCO ₂)	202

Number of Employees Completed Environmental Trainings (Unit: persons)



Prevention of Environmental Pollution

We are under the obligation to preserve the environment and succeed it into our future generations. This makes it imperative to consider the environmental impact in the entire process from use of resources to disposal. We cannot also be free from our business partners' environmental impact. Lotte Chemical not only implements various company-wide activities but also encourages business partners to involve in our environment management system.

► **Building Environmental Management System**

Lotte Chemical conducts routine monitoring to minimize environmental impacts generated from the product production processes through our own inspection activities by

setting up environment organizations in each worksite and through TMS (tele-monitoring system). We also apply more strict in-house standards for environmental pollutants than emission permission standards and comply with domestic/international environmental laws and regulations.

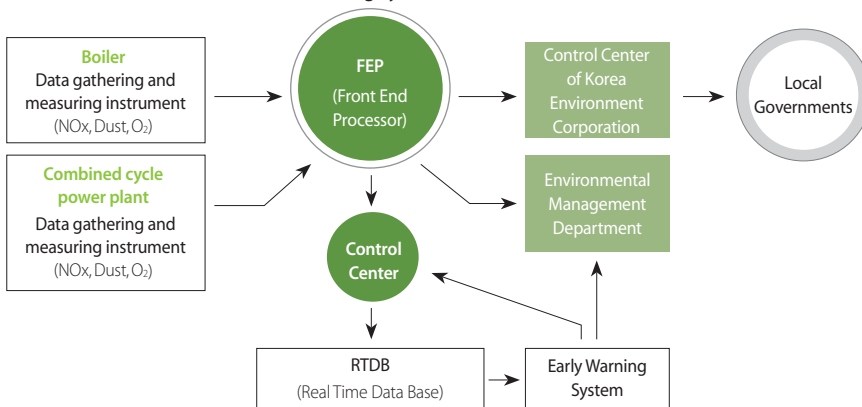
► **Enhancing Employees' Competence in Environment**

To boost environmental management, Lotte Chemical has invested in nurturing environment experts through legally obligatory environmental educations. A total of 110 experts in the fields of toxic chemicals, air, water, and waste have been cultivated since 2011.

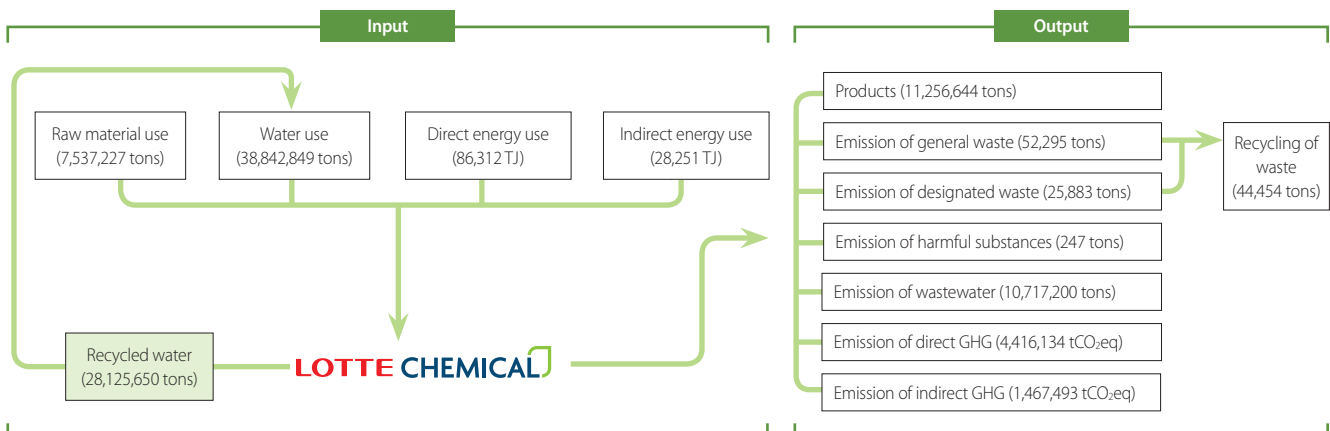
► **Air Pollutant Management**

Lotte Chemical is carrying out 24-hour environmental surveillance activities to systematically manage air pollutants by installing the TMS (Tele Monitoring System) in major facilities. The RTOs (Regenerative Thermal Oxidizer) have also been installed in discharging facilities to prevent pollutant leakage and bad smell, and regular self-measurement is conducted. Airtight chemicals storage tanks, wastewater storage tanks, and sample extraction equipment help prevent the leakage of VOCs (volatile organic compound). Furthermore, low ozone depletion refrigerants are used in all processes.

Transit Structure of the TMS (Tele Monitoring System)



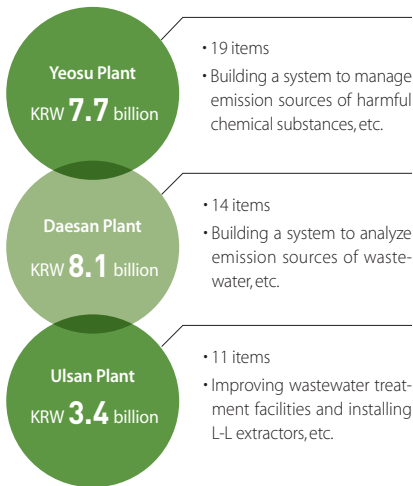
Product Flow Chart* (Yeosu Plant, Daesan Plant, and Ulsan Plant)



* The figures are based on the entire data of our Yeou, Daesan, and Ulsan plants. Data of each plant are presented on page 38 through 41.



Environmental Investment and Technology Introduction by Each Plant in 2013



Management of Water Pollutants and Water use

To ensure systematic control of water pollutants, each plant operates individual wastewater treatment facilities and responsible staff regularly monitors water quality through the TMS. Our Daesan Plant treats wastewater at lower level than legal standards within the plant and other plants transfer wastewater to disposal facilities in the industrial complexes after first treating it.

Reducing Environmental Impacts during Production

Saving Raw Materials

Naphtha and mixed xylene, basic raw materials for petrochemical businesses, are procured from domestic/global oil refining firms. In 2013, we used about 6.3 million tons of naphtha and 1.2 million tons of mixed xylene. In our production process, recycled raw materials are not used, and diverse innovation activities are promoted for efficient use of resources.

Hazardous Substance Management

Detecting and blocking equipment have been installed to prevent the discharge of hazardous chemical substances. Regular inspection, evaluation, and trainings have also been implemented to ensure safe treatment of hazardous chemical substances.

Biodiversity Protection

Yeosu, Daesan and Ulsan Plants are located in the national industrial complexes. Since the evaluations to protect environment and biodiversity around those plants had been performed prior to the establishment, there was relatively weak need for biodiversity protection activities. However, Lotte Chemical announced the "Declaration on Conservation and Sustainable Use of Biological Diversity" with the Ministry of Environment in 2013 and expressed its strong will to actively manage environment impacts including biodiversity.

Voluntary Disclosure of Information on Chemical Products

The GPS (Global Product Strategy) encourages companies to voluntarily disclose information on chemical products and assesses their safety, so that each company can share information on treatment, harmfulness, and risk management method of each product. Currently about 1,400 companies are taking part in the GPS. In 2011, we provided product safety information befitting our status as a global company and participated in the GPS pilot project in keeping with the principle of liability for all processes of products. Through the pilot project, we have conducted various activities such as participant activities, technology consulting, development of Korean-style GPS guidelines, and opening of regular training courses.

* ICCA's GPS Portal: www.icca-chem.org/env/Home/ICCA-initiatives/global-product-strategy/

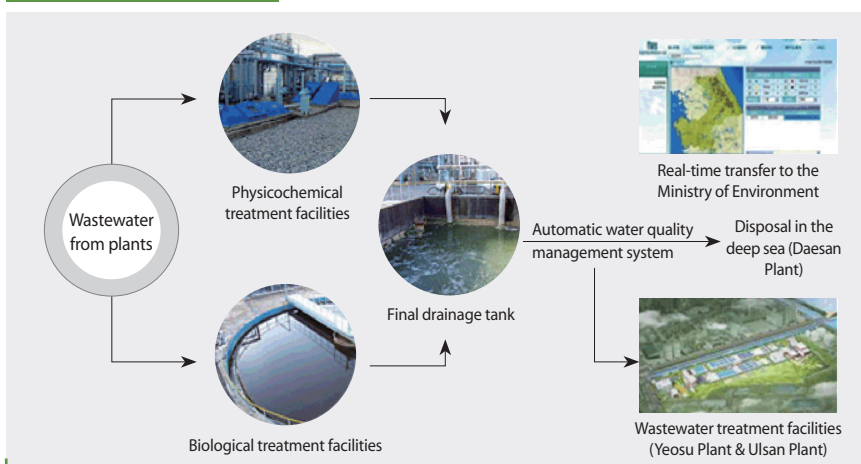


Declaration of preserving biodiversity and sustainable use

Reducing Waste Generation

Lotte Chemical recognizes wastes can be resources and is taking the initiative to reduce/recycle wastes through improvements of production processes and investments in facilities. Our real-name system for waste discharge allows us to grasp where and why waste is generated. Educations for efficient waste control and reduction are provided to employees as well.

Wastewater Treatment Process



Comprehensive Incident Prevention System



Safety Management

Lotte Chemical independently operates its environment and safety management organizations for accident prevention and safety management. Responsible organization at the headquarter comprehensively supports safety management of plants and subsidiaries. We have designated the fourth day of every month as the “Safety Inspection Day” to raise employees’ awareness of safety and boost autonomous safety management of each department. Furthermore, all employees participate in EH&S system-based online education, departmental field training using educational materials, and collective education to enhance their competence in environment and safety management. We also offer safety training to our business partners’ employees and actively support them to conduct trainings on their own.

► Comprehensive Accident Prevention System

The comprehensive accident prevention system is running in order to detect dangers such as gas leaks and fires in early stage and respond to them quickly. This system contains emergency intercoms, fire pumps and water monitoring equipment to quickly tackle a fire or other emergency situations as well as CCTVs, gas leak monitors, and fire detectors. In addition, the company operates facilities for meteorological observations to prevent not only risks within worksites but also emergency situations caused by external factors. Furthermore, we are making every effort to ensure safety management through systematic and comprehensive training programs such as experiential training, CPR classes, first aid education and anti-accident drills. We will continue to improve this comprehensive accident prevention system more efficiently and systematically.

Self-evaluation on RC by Each Plant

(Unit: points, 6-point scale)

Classification	Yeosu Plant			Daesan Plant			Ulsan Plant*		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Process safety	4.8	4.9	5.1	4.8	5.0	5.2	4.7	4.8	4.5
Safety and health of employees	4.8	4.8	5.0	4.9	5.0	5.1	4.7	4.2	4.4
Pollution prevention	4.7	4.7	4.7	5.2	5.3	5.4	3.7	4.6	4.3
Recognition of local communities and emergency response	4.7	4.7	4.8	4.2	4.5	4.9	4.3	3.9	4.3
Distribution	4.7	4.7	4.7	3.0	3.3	4.5	-	3.5	4.2
Principle of responsibility for all product processes	4.7	4.7	4.8	3.3	3.6	4.4	-	3.9	4.2

* The figures of Ulsan Plant were adjusted due to the merger in 2012.

► RC (Responsible Care)

Lotte Chemical carries out diverse responsible care (RC) activities such as holding regular workshops and self-assessment of all plants by organizing a TFT. Based on the integrated RC operation system, each worksite evaluates the execution of RC codes consists of process safety, health and safety, prevention of pollution, community recognition and emergency responsiveness, distribution, and principle of liability for all processes. As an officer company of Korea RC Council, we assist in the operation of the “Environment, Safety, and Health Academy for SMEs” as well.



① 3D-based empirical safety education ② Training about cardiopulmonary resuscitation ③ Experience of swing-type safety belt ④ Emergency relief training



Declaration of the vision for safety (Yeosu Plant)



Safety contest (Yeosu Plant)

Safety Training Process

Training for Leakage of Harmful Substances



Fire drill



① 1st workshop (Yeosu Plant) ② 2nd workshop (Research Institute)

► Environment and Safety Management Activities

Workshop on Environment and Safety Management

To respond to change in business conditions derived from increasing accidents in domestic petrochemical industry and tightening inspection on environment and safety by the government, our company held two workshops to deliberate countermeasures by each plant and to share best practices in those issues. We will continue to enhance our capabilities to deal with such issues and facilitate communication throughout the company. By doing so, environment and safety management will be embedded in our corporate culture.

Safety Contest

In December 2013, Yeosu Plant held the safety contest with employees of our company and business partners in attendance. Participants showed diverse programs such as presentations on advanced activities to improve safety culture within worksites and simulations of accidents caused by unstable behaviors. Since the promulgation of its vision 'The Safest and Most Eco-friendly Workplace' in December 2012, Yeosu Plant has been making a concerted effort to raise employees' awareness of safety to become accident-free workplace.

Happy 365 Safety Rally

Daesan Plant held the 'HAPPY 365 Safety Rally' event on December 26, 2013, to encourage employees to pay more attention to safety at home and workplaces. The event at the main auditorium was attended by all workers at Daesan Plant and workers at the safety departments of Yeosu and Ulsan Plant. The event included the Safety UCC Contest organized by the Environment and Safety Team and the Safety Awards to heap praises on excellent department, employees and partners in terms of safety.



Awards in Environment and Safety in 2013

In recognition of efforts for environmental preservation and safe workplace, Lotte Chemical was awarded diverse prizes and rewards from relevant institutes and local governments in 2013. On top of that, our Ulsan Plant received the P rating, the highest level, in the PSM (Process Safety Management) from the Ministry of Labor and Industrial Accident Prevention Center of Yeongnam Area.

Workplace	Institute	Award
Yeosu	Ministry of Environment	Promotion of Green Management
	National Emergency Management Agency	Contribution to the Development of Fire Administration
	Korea Environment Corporation	Tele Monitoring System
	Jeollanam-do Government	Emergency Relief Training
	Yeongsan River Basin Environmental Office	Contribution to the Development of Regional Environmental Administration
	Ministry of Security and Public Administration	2013 Safety Korea Training for Disasters
Daesan	Geumgang River Basin Environmental Office, Daejeon/Chungnam Green Environment Support Center	Best Practices in GHG Reduction (Participation Award_Geumgang Office Director's Award)

Workplace	Institute	Award
Daesan	KOGAS	Contribution to the Safety of Gas
	National Emergency Management Agency	Safe Management of Dangerous Object 2013 Safety Korea Training for Disasters
	Korea Occupational Safety & Health Agency	Accident-free Movement
Ulsan	Ulsan Metropolitan City	Exemplary Environment Engineer Excellent Institute in Comprehensive Training for Disasters
	National Emergency Management Agency	Safe Management of Dangerous Object

Environmental Data

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MAJOR SUSTAINABILITY ACTIVITIES AND PERFORMANCES

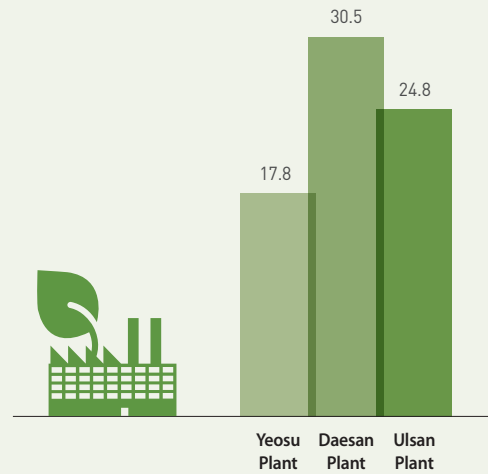
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► Environmental Investments and Management Expenses

Environmental Investments and Management Expenses by Each Plant



(KRW in billions)

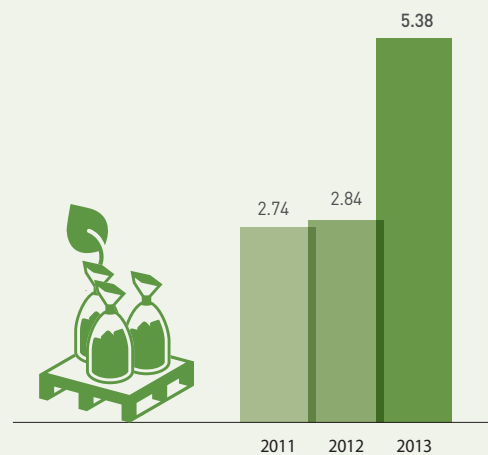
Classification	2011	2012	2013
Yeosu*	25.0	28.5	17.8
Daesan	29.8	26.7	30.5
Ulsan	27.3	27.0	24.8

* The figure in 2013 decreased due to the completion of environmental investments such as promoting the eco-friendly bio PET project.

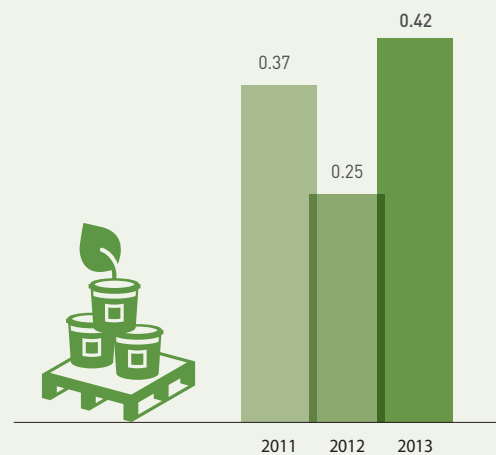
※ Including expenses for the introduction of environmental technologies presented on page 37

► Green Purchasing

Raw Materials (KRW in billions)



MRO (KRW in billions)





► Greenhouse Gas

GHG Emissions

■ Total Emissions (tCO₂eq)

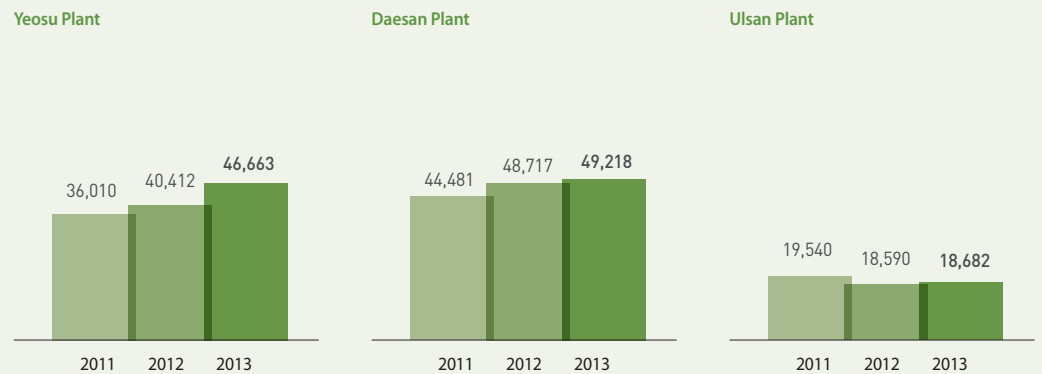


Classification	Unit	Yeosu			Daesan			Ulsan		
		2011	2012	2013	2011	2012	2013	2011	2012	2013
Direct emissions	tCO ₂ eq	1,678,792	1,748,252	1,981,623	1,637,327	1,747,574	1,777,219	785,672	673,019	657,292
Indirect emissions		370,274	385,121	448,667	613,735	677,427	628,374	403,756	379,423	390,452
Total emissions		2,049,066	2,133,373	2,430,290	2,251,062	2,425,001	2,405,593	1,189,428	1,052,442	1,047,744

► Energy

Energy Use

■ Total Use (TJ)



Classification	Unit	Yeosu			Daesan			Ulsan		
		2011	2012	2013	2011	2012	2013	2011	2012	2013
Direct use	TJ	29,803	32,393	37,571	34,322	37,425	38,136	11,747	10,778	10,605
Indirect use		6,207	8,019	9,092	10,159	11,292	11,082	7,793	7,812	8,077
Total use		36,010	40,412	46,663	44,481	48,717	49,218	19,540	18,590	18,682

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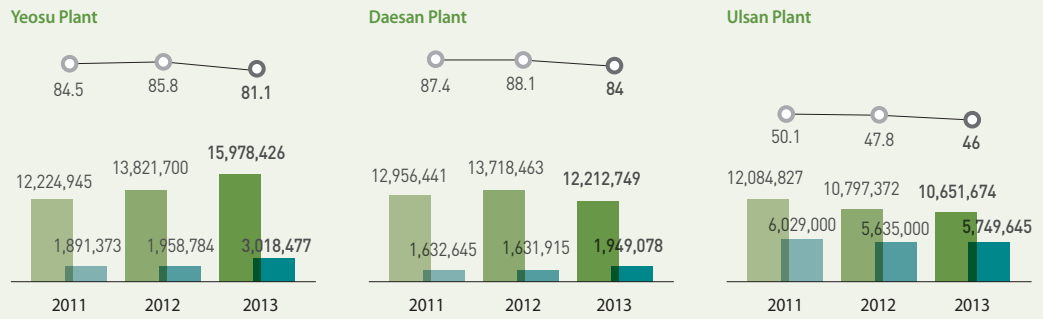
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Water

Water Use*, Wastewater Generation & Recycling Rate

○ Recycling Rate (%) ■ Water Use (tons) ■ Wastewater Generation (tons)



Classification	Unit	Yeosu			Daesan			Ulsan		
		2011	2012	2013	2011	2012	2013	2011	2012	2013
Water use	Tons	12,224,945	13,821,700	15,978,426	12,956,441	13,718,463	12,212,749	12,084,827	10,797,372	10,651,674
Wastewater generation	Tons	1,891,373	1,958,784	3,018,477	1,632,645	1,631,915	1,949,078	6,029,000	5,635,000	5,749,645
Water recycling rate	%	84.5	85.8	81.1	87.4	88.1	84.0	50.1	47.8	46.0

* Yeosu Plant : Juam Dam Daesan Plant : Asan Lake & Daeho Reservoir Ulsan Plant : Daeam Dam & Nakdong River

Waste Generation and Recycling

Waste Generation

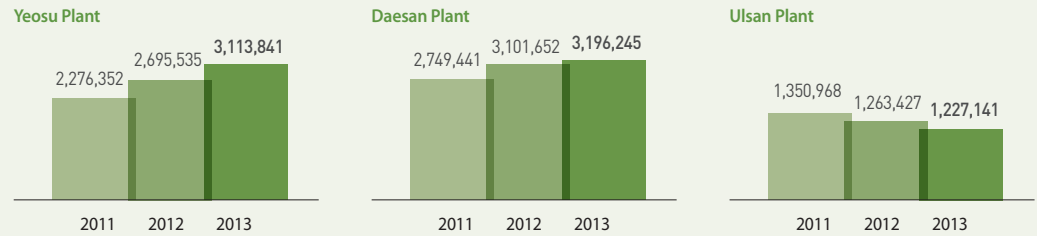
Waste Generation and Recycling										
Classification	Unit	Yeosu			Daesan			Ulsan		
		2011	2012	2013	2011	2012	2013	2011	2012	2013
General waste	Incineration	586	941	931	703	450	376	276	290	832
	Landfill	1,217	2,089	1,650	2,291	1,758	782	757	1,057	2,378
	Sea dumping	1,407	1,167	1,456	539	-	-	30,676	32,376	24,145
	Recycling	3,769	5,166	5,143	3,382	1,503	4,274	4,654	6,206	10,328
	Total	Tons	6,979	9,363	9,180	6,915	3,711	5,432	36,363	39,929
Designated waste	Incineration	699	1,497	795	767	485	238	58	255	49
	Landfill	6	7	86	-	-	-	39	30	6
	Sea dumping	-	-	-	-	-	-	-	-	-
	Recycling	8,726	9,524	13,083	4,312	11,341	11,394	211	299	232
	Total	Tons	9,431	11,028	13,964	5,079	11,826	11,632	308	584
Recycling rate	%	76.1	72.0	78.8	64.1	82.7	91.8	13.3	16.1	27.8
Recycling rate in 2013		56.9								

* Recycling rate: (amount of general waste recycling + amount of designated waste recycling) / (total general waste generation + total general waste generation)



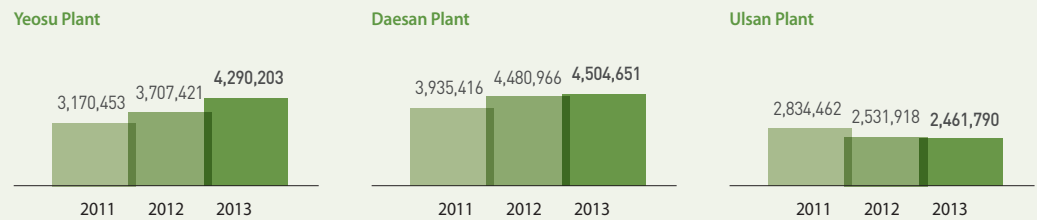
► Other Environmental Data

Use of Raw Materials* (Unit: tons)



* Yeosu Plant & Daesan Plant : Naphtha Ulsan Plant : Mixed Xylene

Production (Unit: tons)



(Unit: tons)

Classification	Yeosu			Daesan			Ulsan		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Use of raw materials	2,276,352	2,695,535	3,113,841	2,749,441	3,101,652	3,196,245	1,350,968	1,263,427	1,227,141
Production	3,170,453	3,707,421	4,290,203	3,935,416	4,480,966	4,504,651	2,834,462	2,531,918	2,461,790

Air Pollutant Emissions (Unit: tons)

Classification	Yeosu			Daesan			Ulsan		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Dust	68	70	76	14	11	11	40	34	33
SO ₂	68	55	58	-	-	0.4*	650	524	102
NO ₂	1,464	1,844	1,802	5	4	5	774	697	673
CO	136	58	53	4	1	1	-	-	-

* Conducted a self-measurement on SO_x of the bag-filter in 2013 (only measured 'dust' before 2013)

Emissions of Harmful Substances (Unit: tons)

Classification	Yeosu			Daesan			Ulsan		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Ethylene	8	12	15	14	14	13	-	-	-
Propylene	5	5	10	17	19	16	-	-	-
Paraxylene	-	-	-	-	-	-	14	14	14
Acetic acid	-	-	-	-	-	-	5	5	6
Others	67	84	92	67	73	60	18	16	21

* Yeosu Plant: 33 kinds of others, Daesan Plant: 22 kinds of others, Ulsan Plant: 10 kinds of others

Water Quality* (Unit: ppm)

Classification	Yeosu			Daesan			Ulsan		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
BOD	44	42	37	2	3	2	9	6	1
COD	65	60	49	24	24	21	30	29	11
SS	38	41	37	7	5	4	17	13	9

* Based on biochemical oxygen demand (BOD), total suspended solids (TSS), etc.

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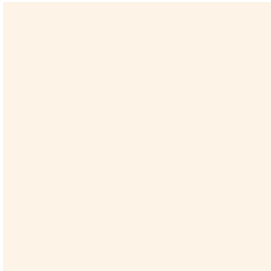
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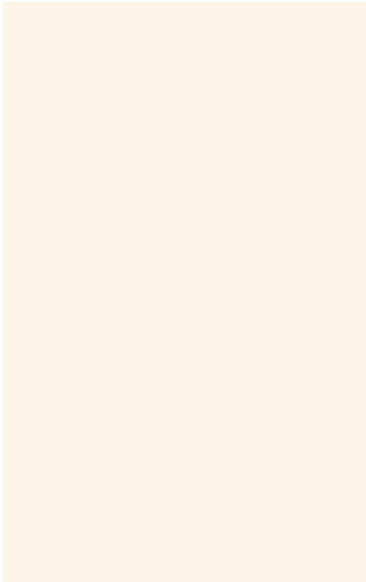
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- Awards & Association Memberships



Human Resource Management

Lotte Chemical helps employees work in pleasant environment as well as enjoy productive and stable life.





Events to invite employees' family members



Experiential learning program for employees' children



Event to invite employees' parents



Learning program for employees' children (Summer Art Camp)

Great Workplace

Trust in and respect for people are sources of our business success. Nothing takes precedence over hiring talented people and giving full support to them in our HR management so that they can create value to enrich the company, society and the world. Lotte Chemical's various systems and programs are designed to help its employees enjoy the quality of life. We also help them obtain professional knowledge and grow into globally talented people.

► Various Welfare Benefits for Employees

The corporate culture to ensure employees' mental and physical health as well as efficient and pleasant work environment is a prerequisite for enabling employees to make the most of their ability and for providing the best value to stakeholders. To this end, Lotte Chemical not only provides employees with various welfare benefit programs such as regular, special, and external general health check-ups but also operates fitness center, indoor swimming pool, culture and event hall, and restaurant.

► Various Welfare Benefits for Employees' Families

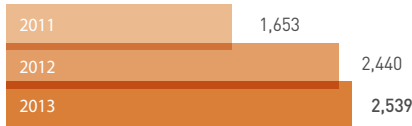
Family members of our employees are one of our valuable stakeholders since they fully support employees so that they can make the most of their ability. Therefore, Lotte Chemical offers a variety of cultural and educational programs for employees and their family members. Those include educational camp with fathers, plant tours, baseball games watching event, field job experiences, cultural lectures for spouse, and language camp for children. Full tuition is also given to the children of employees for their education from middle schools to colleges to ease the burden of educational expenses. Employees' families can receive regular health check-ups as well. In particular, in September 2013, we invited the parents of 24 new recruits in an effort to encourage our new recruits to be proud of being members of Lotte Chemicals.

Major Welfare Benefit Programs

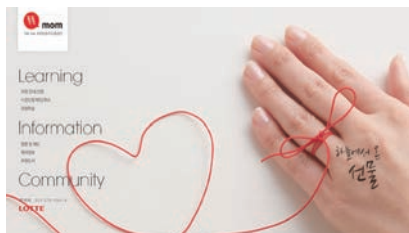
Classification	Details
Housing loans	Financial aids for purchasing or renting houses, company housing for employees at research institute and plants
School expenses	Support for school expenses of sons and daughters of employees (middle and high school, and university)
Family event	Gifts of cash and leave for family events such as marriage of employees or their families
Meal allowances	Operation of cafeteria to provide well-balanced meals to employees at each worksite, and supply of midday meal expenses
Overseas training for model employees	Provision of opportunities for overseas training to model employees (improvement of language skills and culture experience)
Awards to long-service employees	Award to employees who have served for 10, 15, 20, and 25 years, and gift for travel with their wife or husband to employees who have served for 20 years
Medical expenses	Support for medical expenses of employees, spouse, children, and parents
Medical checkup	Comprehensive medical checkup for employees every year (every two years for spouse)
Group accident insurance	Insured against accident of employees
Vacation program	Refresh vacation program and regular summer vacation (5 days)
Condominium	Provision of corporate memberships to use condominium in the nation
In-company club	Encouragement of in-company club activities and support for operation expenses
Language education expenses	Support for external language academy expenses and in-company language courses
Optional welfare benefit	Improvement of employee satisfaction by providing selective benefit programs

Operation of the Retirement Pension Fund

Number of Pension Holders (Unit: persons)



Percentage of Pension Holders (Unit: %)



Talk Talk Mom website

Other Support Programs for Employee

Retirement Support Programs

Lotte Chemical runs a retirement pension plan for the good quality of life for retirees. The company gives employees supports for job training and retirement procedures throughout the entire process from severance to retirement. Besides, education on retirement pay and retirement pension plan is given to employees once a year.

Maternity Protection

Our employees can take leaves for childbirth, childcare and spouses' childbirth. Birth supplies are delivered to employees who give birth and parental leave is encouraged to be used mandatorily after the end of childbirth leave. Those who do not use parental leave must explain the reasons by statement of reasons. The 'Talk Talk Mom' website helps employees who are on parental leave share information on childbirth and childcare, adapt themselves to their works before returning, and receive educations for career development. Those who took parental leaves are not treated unfairly in terms of promotion.

Family Loving Day and Encouragement for Leave Use

Lotte Group and its subsidiaries implement the "Family Loving Day" program to leave work on time every Wednesday in tandem with the Ministry of Gender Equality and Family. Every

Wednesday the company encourages all employees to leave their work through pop-up windows, billboards and in-house broadcasting. Office lights are turned off after official business hours. If an employee has to work overtime, he or she should submit the statement of reasons. We also provide all employees with various leave programs to encourage them work harder and enhance their quality of life. Those include holidays for employees' or their spouses' birthdays, additional holiday when national holidays fall on weekends. A day sandwiched between two holidays is turned into a holiday as well. The Refresh Vacation System ensures a two-week leave by combining a summer vacation and annual leaves.

In-house Mentoring System

New entry-level and career employees take mentoring services to meet their duties and positions for 5 months. Mentors and mentees write a pledge on the first day and receive basic education about mentoring services. Major mentoring programs include suggesting books, going to sports and culture events, delivering mentors' job skill and knowhow, and so on. Mentees can ask mentors questions and receive advices on their company lives from mentors. The mentoring system is evaluated to have positive effects on new recruits in enhancing loyalty to the company, job commitment, and adaptation to workplace.



Promotion of the Family Love Day

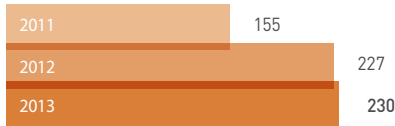


Mentoring system

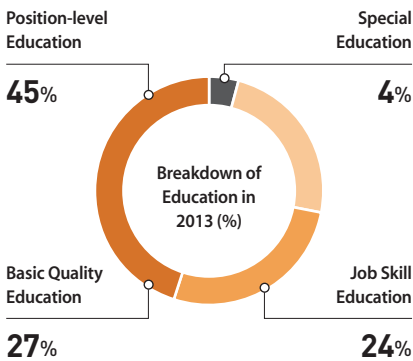


Time Spent on Education

Total Education Hours for Employees (Unit: hours)



Education Hours per Person (Unit: hours)



Enhancement of Employee Competence

Helping employees to reinforce their capabilities in accordance with career development plans holds the key to Lotte Chemical's sustainable growth. Accordingly, the company has prepared a roadmap on systematic HR development to help employees develop their ability which matches their positions and tasks, secure global competitiveness, while making various efforts for this goal.

Roadmap for Cultivating Talents

Lotte Chemical has established a roadmap to secure talented people and to develop specialized human resources through a variety of education and training programs. Our education framework consists of job education, language education, and special education. On top of that, our employees can enhance their work capabilities through various programs such as commissioned education, cyber education, and supports for developing language skills.

Performances in HR development

Education Hours

We operate not only special programs to cultivate experts in finance, tax, human resources, and logistics areas, but also level-focused programs.

Credit System

A credit system was introduced to motivate employees in position of staff to team manager except for executives to take active part in self-initiated educational programs. Employees taking part in this system should complete courses designated by Lotte Chemical for one year and their credits are reflected in performance evaluation.

Roadmap for Cultivating Talents

Position	Training Course
Executives Director~Junior Managing Director	<ul style="list-style-type: none"> S-EMBA (3 months) AMP (Advanced Management Program)
S-Level Team Manager/ Senior Manager	<ul style="list-style-type: none"> EMBA by job category (5 months) Business school
M-Level Manager	<ul style="list-style-type: none"> Job school (4~5 months) Business school
SA~A Levels Assistant Manager/ Employee	<ul style="list-style-type: none"> Job capability enhancement course Expert training for volunteers (External expert training to enhance job performance capabilities) → Diffusion Acquisition of technical qualification certificate

Education Framework

	Assistant-Senior Assistant	Manager	Senior Manager	Executive
General/ Basic Quality	Language / Information / Monthly Special Lecture / Core Values / Prevention of Sexual Harassment / Ethical Management			
Level Training	Petrochemical Academy, Accounting Academy	Essential Training by Grade		
	Job Capability Certification System		Team Manager Qualification	New Executive Course
	Job Expert Course	Commissioned Education to Improve Job Capability		
Cultivation of Core Talents/ Global Competency			EMBA Course	Senior-MBA Course AMP Course
		Business School / Interviewer Cultivation Course		
	Overseas Interchange Duty Program	Global School Course / Country Expert Course / Global Expert Course		



Petrochemical Academy at Seoul Head Office



Vocational school at Daesan Plant



Training course for newly promoted to expert jobs



Group-based education

Nurturing Experts

Lotte Chemical has various programs to hire and nurture experts who are essential for our businesses. The headquarter offers a 6-week training course to study chemical engineering and general chemistry for employees majored in liberal arts and society to help them acquire basic petrochemical knowledge. Employees working at management support and sale departments also receive special training course to enhance their expertise. Daesan Plant implemented a 13-week job training program for the purpose of strengthening the capabilities of new recruits in professional fields and securing local specialists from August to November in 2013, through which a total of 50 experts were cultivated. We ran an educational course to teach 104 newly promoted employees in specialized fields at Yeosu, Daesan and Ulsan Plants about communications among employees and becoming desirable site managers. Furthermore, the company ran the Opinion Leader Program to collect complaints of site workers while intensively nurturing model employees with a deep understanding of the company's future directions.

Other Educations

Language Education

Systematic language courses are offered to develop talents with global competitiveness. In addition, we support employees to create self-initiated learning groups and take in-house/e-learning/external language courses. Employees who record good grades in language courses can enjoy compensation from the company.

HR Development Center

Lotte Group implements on-line and off-line educations by job, issue, and position for all of its employees through the HR Development Center. Employees voluntarily take their own course. Education required for each job and position is designated as indispensable education.

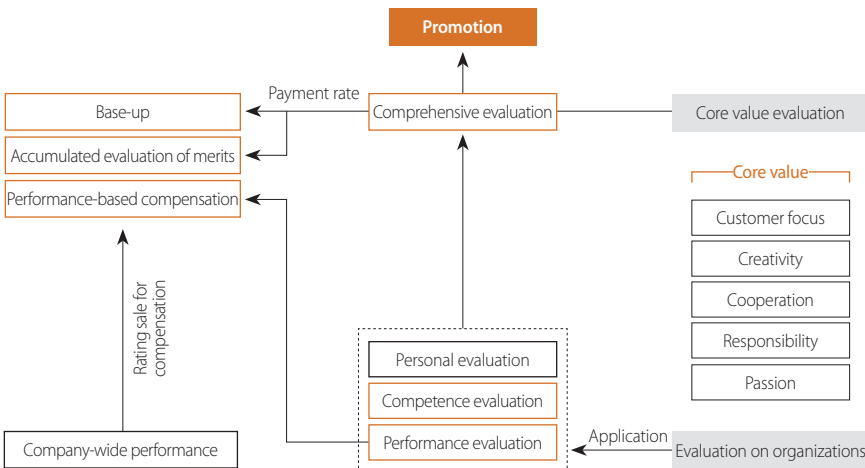
Fair Evaluation and Compensation

Letting employees receive accurate feedback on their current capabilities and performances is as important as offering employees various opportunities for self-development. We regularly and fairly evaluate employees' capabilities and performances and give them feedback through the performance management system to help them systematically manage their careers.

Evaluation Process

Our performance evaluation is divided into two parts – personal evaluation (MBO & capability) and organizational performance evaluation (KPI). For personal evaluation, we set objectives according to MBO (management by objectives) each year and conduct evaluation on work experience and performance once or twice a year. Our employees' job achievement is boosted by offering promotion and rewarding performance-based bonuses according to the assessment results. Employees and teams are awarded different bonuses according to their business performances.

Employee Evaluation Process





Declaration of ensuring diversity of employees in 2013 (attended by foreign employees of our company)



The Charter of Diversity in 2013



Special lecture on understanding Islamic culture

Grievance Treatment System

Site Operation Commission & Labor-Management Subcommittee



- Reporting grievances cyclically (quarterly, bimonthly)
- Documenting grievances and autonomously resolving those that can be handled within each department
- Transferring grievances needed for more actions to responsible departments

Interviews between Dept. Head and Dept. Members



- Counseling on bottlenecks and grievances through interviews with all members more than once a month

▶ Sound Labor-Management Relations

We have been operating the grievance handling system, Labor-Management Council, and Site Operation Committee to listen to voices of site workers, which helps establish sound and productive labor-management relations and activate communication. The grievance system encompasses various issues such as human rights, corruptions, discrimination, and safety in workplaces. Compliance with business ethics and prevention of sexual harassment are effectively integrated into the system. Regular communication channels between department managers and their members have been set up to remedy grievances in a timely and effective manner. More serious and complex complaints are submitted to the Labor-Management Council. We elevated employee satisfaction via preventive grievance procedures and onsite dispute resolution system. Furthermore, we discuss in advance with our labor union for any major work-related changes.

▶ Global GWP (Great Work Place) Activities

TITAN Games Carnival 2013

Lotte Chemical TITAN held the '2013 TITAN Games Carnival' on December 7 under the slogan of "SATU ARAH, SATU TITAN (One Heart & One TITAN)". The employees of Lotte Chemical TITAN were divided into two teams, red and blue, enjoyed various games such as water football, balloon games, and tug-of-war. On the sidelines of the event, we also raised MYR 3,730 to help support the victims of Haiyan Typhoon.

▶ Human Rights and Diversity

All of our worksites at home and abroad comply with labor-related laws and regulations and prohibit child labor and forced labor. We also strive to ensure human rights and welfare for all our employees. They are treated equally despite different race, gender, nationality, and physical condition. These matters are well illustrated in the 'Declaration on Diversity' announced by Lotte Group in 2013. Our Mentoring program is designed to support foreign new recruits. It helps them to adjust to new working environment and overcome cultural differences and language barriers. In 2013, we initiated a special theme lecture on "Understanding of Islamic Culture". We will continue to ensure diversity in our company.



TITAN Games Carnival 2013

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SUSTAINABILITY MANAGEMENT SYSTEM

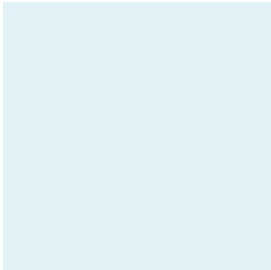
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MAJOR SUSTAINABILITY ACTIVITIES AND PERFORMANCES

- Environment and Safety Management
- Human Resource Management
- Mutual Growth Management
- Brand Management
- Corporate Citizenship

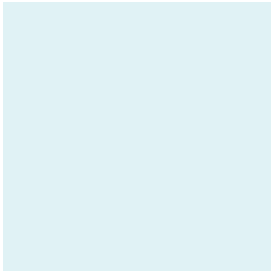
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Mutual Growth Management

Lotte Chemical seeks to strengthen transparency as well as business ethics, and pursues mutual growth with business partners.





Enhancement of Ethical Management & Fair Transaction

Recent complicated and multifaceted business environment requires a clear understanding of entire value chain. In particular, building a sound relationship with partners has become a key to sustainable growth of a company. Lotte Chemical is committed to making a relationship with business partners in which transparent and fair transaction is ensured and synergy can be created.

► Establishing Ethical Management and Fair Transaction Systems

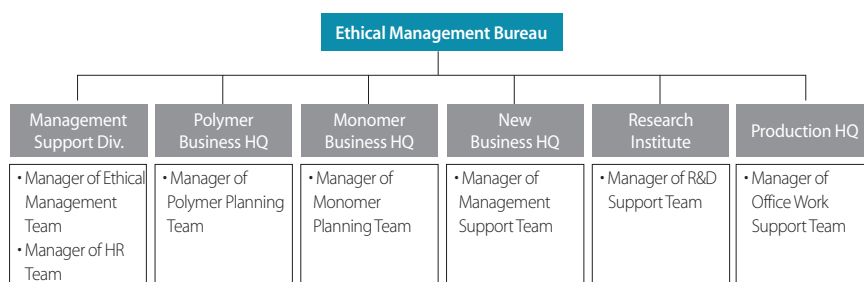
Lotte Chemical provides all employees with systematic educations on business ethics to raise their awareness of compliance and to build a transparent and ethical relationship with stakeholders. Our ethical management is governed by the Ethical Management Bureau and ethical management staff of each business unit.

The Ethical Management Bureau engages in internal control such as management diagnosis, risk management, and audit works, while ethical management staff is responsible for ethical educations to make ethical management and fair transaction take root into the company. In 2011, we opened a website on ethical management where all employees are asked to undergo regular ethics training, and also established the 'Shinmungo', an online compliance-reporting system, to prevent unfair behaviors and misconducts. In addition, our Compliance Program (CP) contributes to preventing violations of the Fair Trade Act and raising employees' awareness of fair transaction.

► Compliance Program (CP)

In 2006, we introduced the CP to honor laws and regulations related to fair transaction and prevent undesirable business practices. As part of this, compliance guidelines were published and distributed, and regular educations about relevant regulations were offered to each department. Besides, we have established an internal control system which detects and prevents potential compliance risks in advance. Our internal compliance officers oversee various sectors of our business fields such as new projects, marketing and purchasing. The BOD appoints the chief compliance officer to supervise the CP and operation results are reported to the BOD every year. Furthermore, the CP has expanded to our subsidiaries. Backed by our strong commitment and sincere efforts for the CP, there has been no violation or penalty in terms of fair transaction for recent 5 years.

Organization Chart of the Ethical Management Bureau



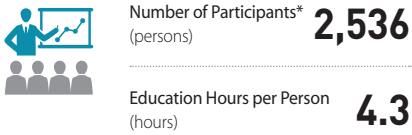
Operation of the Compliance Program

Classification	Details
Declaration of the pledge by the management	<ul style="list-style-type: none"> • Displaying interest in and strong will for the compliance program
Appointment and operation of the Compliance Officer	<ul style="list-style-type: none"> • Appointing the Compliance Officer with practical responsibility and authority
Preparation and distribution of a manual	<ul style="list-style-type: none"> • Publishing guidelines for conducting jobs
Establishment of documentation system	<ul style="list-style-type: none"> • Providing accurate up-to-date information • Building efficient and systematic management process
Operation of training programs	<ul style="list-style-type: none"> • Conducting online and offline trainings more than 2 hours every half year
Setup of monitoring system	<ul style="list-style-type: none"> • Building an internal inspection system to early identify and correct
Restrictions on violators	<ul style="list-style-type: none"> • Preparing measurements to restrict employees who violate relevant laws and regulations • Putting violators on unfavorable dispositions including personal sanctions



Letter to encourage ethical management activities

Number of Employees Participated in Ethical Management Education in 2013



* All employees

▶ Ethical Management Activities

Sending Letters on Business Ethics

Lotte Chemical has conveyed its intension of fair transaction to business partners. In 2013, we sent out official letters to all our business partners during the two major Korean traditional holidays (Lunar New year's day and Chuseok Day) and made sure that any gift cannot be permitted on those days. In addition, we requested them to report through the online compliance-reporting system or ethics hotline if they are asked for unreasonable demands.

Training of Ethical Management

We have initiated systematic training sessions on business ethics every year to ensure strict compliance to applicable laws and regulations. In 2013, a total of 2,536 employees participated in our total 52 training sessions held every week, which contributed to strengthening our commitment to transparent and fair business practices.

Grievance Handling System

We have established an online compliance-reporting system, 'Shinmungo', on our website to oversee and to prevent any potential violation with regard to fair transaction. In 2013, a total of 6 cases were reported through the system, 4 of which were resolved based on the company's ethical regulations, and the other 2 were either left unaccountable or proven irrelevant.

Operation Results of the Online Compliance Reporting System in 2013



* Including unconfirmed items or good deeds

Ethical management website



Online Compliance Reporting System (Shinmungo)





Mutual Growth with Business Partners

There is a rising interest in mutual growth in the local industry. Mutual growth no longer refers to simply supporting business partners but collaborating with them to generate new values. Lotte Chemical also pursues creating shared value together with business partners beyond just supporting them.

▶ Mutual Growth Framework

Lotte Chemical is operating the Mutual Growth Bureau chaired by the CEO. The executive in charge of mutual growth manages company-wide mutual growth activities, and staffs from relevant departments such as procurement, research, training, legal affairs, and marketing are joined to the bureau to boost mutual growth activities. The Mutual Growth Bureau takes charge of establishing and promoting mutual growth strategies, monitoring action plans, and figuring out improvements. We also reflect the results of mutual growth, communi-

cation with business partners, and compliance in evaluating executives in charge of mutual growth and procurement for sincere practices. In 2013, we diagnosed and supported our business partners to help them systematically manage environment and safety and rewarded business partners with competitive edge in technology and quality.

▶ Helping Business Partners Enhance Safety Management

Increasing Safety Management Capability of Business Partners

With the recognition that safety of business partners is directly connected to our businesses, we support them to systematically and efficiently control safety issues. As part of this, the CEOs, site managers, and safety officers of 12 partners held a conference to assure safety at our Yeosu Plant. In addition, we offered safety inspections, training sessions, and field tour for working-level staff of business partners that were suffered from safety-related damages in 2013.

Mutual Growth Bureau



Business Partners' Council and a ceremony for the safety-first at Yeosu Plant



Joint mutual growth program for environment and safety with SungEel Hitech



Cooperative contract to encourage SMEs to participate in green management

Supporting SME's Green Management

Our Yeosu Plant signed an agreement to join the green initiatives by the Ministry of Environment in 2013. According to this agreement, we offered mentoring services for environmental management, environmental education and technology, and green management technology to mentee companies.

▶ Technical and Educational Supports

The 'Hand-in-Hand' program is being operated to strengthen technical ties with business partners. This program is to conduct joint technical projects with those who have high-quality technology but lack of funding, or have innovative items but lack development capability. Moreover, we support partners with excellent technologies by helping their product development, conducting product analysis, supporting mass production, dispatching technical experts, and holding diverse technical seminars.

Industrial Innovation 3.0

Lotte Chemical signed an agreement to invest KRW 300 million every year for the next five years in the Industrial Innovation 3.0 Movement with the Large & Small Business Cooperation Foundation. The Industrial Innovation 3.0 Movement was jointly prepared by the Ministry of Trade, Industry and Energy, Korea Chamber of Commerce and Industry, and Large & Small Business Cooperation Foundation to make SMEs boost the innovation of management and productivity.

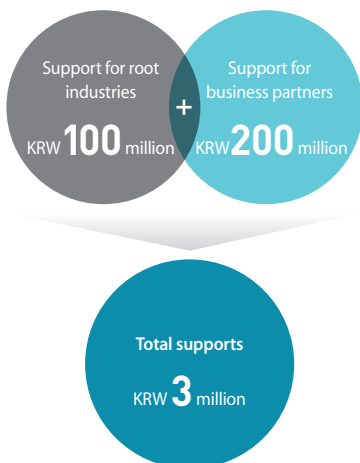
We donated KRW 300 million in 2013 for this movement and supported 10 partners and 5 small companies in the root industry*.

* SMEs that has no direct relation with Lotte Chemical but is a basis of the industry.

Mutual Growth Academy

Lotte Chemical is running the Mutual Growth Academy to help employees of business partners enhance their capabilities. Through this program, they can take diverse year-round education courses for leadership, job skill, language, and management. We fully finance this program and seek to expand education courses to increase their satisfaction.

Annual Support for the Industrial Innovation Movement 3.0

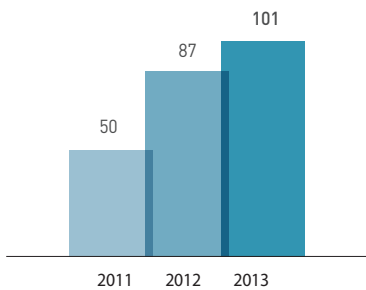


Technical Cooperation with Business Partners and Educational Support

Support Category	Contents	Methods
Conducting R&D tasks for technology development	Selecting and conducting 27 tasks	<ul style="list-style-type: none"> Research on developing products and technologies of excellent business partners Capitalizing on our company's researchers
Product analysis and property measurement	Implementing 882 product analyses and property measurements	<ul style="list-style-type: none"> Analyzing products and measuring property via our company's R&D equipment
Production/R&D technology	Production/R&D technology	<ul style="list-style-type: none"> Supporting technology development and offering relevant information Proposing solutions for process troubles and inferior products



Scale of Win-win Growth Fund (KRW in billions)



Export Support for Excellent Business Partners (KRW in billions)



* Started in 2012

► Financial Support for Partners

Raising the Mutual Growth Fund

We have raised a total of KRW 101 billion worth Mutual Growth Fund as of 2013 to provide business partners with financial supports at a low interest rate and plan to expand the scale of the fund. Our business partners are able to borrow working capital from the Mutual Growth Fund at 2~3% lower interest rate than market rate. A total of 101 business partners are benefiting from this fund and total loans to them amounted to KRW 83.5 billion as of the end of 2013. The Mutual Growth Fund program is well appreciated by our business partners in the aspects of scale and satisfaction.

Credit Guarantee Support

Lotte Chemical donated KRW 2 billion in order to support business partners' credit guarantee through signing an agreement with the Korea Credit Guarantee Fund. As of the end of 2013, a total of KRW 33.5 billion worth credit guarantee letters for 59 business partners have been issued to support their business activities. On top of that, we are partnering with the Industrial Bank of Korea to help business partners ensure cash flows.

Supporting Exports of Excellent Partners

We have introduced products of excellent partners to Lotte Chemical Titan, one of our local subsidiaries, and provided information on diverse technologies to them in order to support their entrance into overseas markets. As a result, they have enjoyed growing exports by our advices and new opportunities offered by us. We have intended to guarantee excellent partners more biddings as well as long-term partnership, and supported their exports by capitalizing on our residential staff throughout the world. As a result, in 2013, our 17 partners exported their products worth of KRW 3.7 billion.

Meeting for Mutual Growth

The meeting for mutual growth is regularly held to listen to opinions of business partners and to seek for shared growth plans. The meeting also plays a role as a communicating channel to form a consensus on mutual growth and to establish actual support plans for business partners. In 2013, we held the meeting twice, in which 28 partners participated.



Meetings for mutual growth

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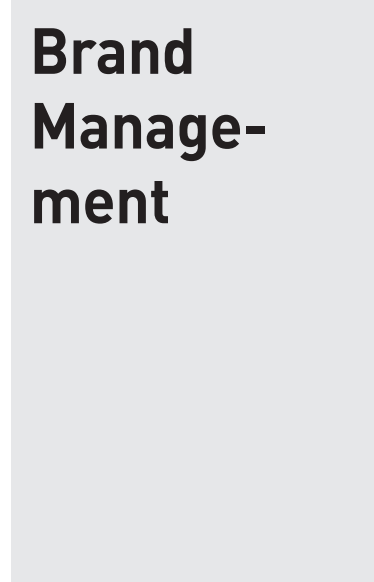
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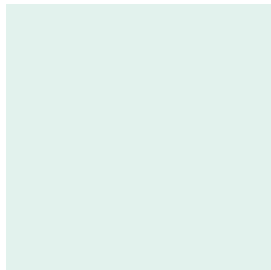
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Lotte Chemical is constantly communicating with stakeholders to build a strong brand that they can trust.





VOC Response Process



The Best Customer Award

Improvement of Trust in Brand

It is essential to faithfully listen to customers' opinions about products and services and proactively respond to them for building customer loyalty as well as developing better products and services. Lotte Chemical is always committed to being sensitive to customer complaints and satisfying product responsibility.

▶ Enhancing Customer Satisfaction

Every employee in charge of selling each product strives to rapidly identify customer complaints and registers them on the internal reporting system. Those complaints are placed on the table of quality meeting in which research institute, production departments, and each product sales team to come up with solutions and follow-up measures. Full records of handling customer complaints are strictly managed and reported to enhance customer satisfaction. Furthermore, we invite customers to our worksites or dispatch our employees to customers to carefully listen to their voices, which contribute to increasing their productivity and product quality.

▶ Product Responsibility for Customer Safety

Complying with Relevant Regulations

We are making a concerted effort to secure the safety of our products in the entire processes from development stage to customer service. As part of this, we made product responsibility regulations and took out the product responsibility insurance to efficiently cope with customer requirements on product responsibility.

Developing Green Technology

To minimize impacts from products on customers as well as environment and to grow into an eco-friendly company, Lotte Chemical has established plans for developing green products and operated relevant performance indices.

Eco-friendly Products



Thermoplastic Elastomer : LOTTMER™

LOTTMER™ is an olefin-based thermoplastic elastomer produced through reactive extrusion technology. This material is enjoying rapid market expansion replacing thermoset rubber and soft PVC. Its characteristics include excellent mechanical properties, strong formability, durability and eco-friendliness. It is used for automobiles, electrical and electronic products, industrial and household goods.



Bio PET

Bio PET is an eco-friendly biological resource made of bio-ethylene glycol generated from biomass. This material features strong transparency and formability. It can be applied without changing existing production lines and substitute conventional PET products used for automobiles, electric materials and fibers as well as water and beverage bottles, attracting much attention from related industries.



Exhibition hall of Lotte Chemical at the Chinaplas 2014

Brand PR

Lotte Chemical aims to promote its products and services to more potential customers and establishes a positive brand image in the market. To this end, we are proactively participating in fairs and exhibitions and continuously expanding channels to communicate with customers.

► Participating in the Chinaplas 2014

To promote our excellent products and build a positive corporate image in the global market, Lotte Chemical participated in the Chinaplas 2014 which is Asia's largest plastic and rubber industry fair and one of top three fairs of its kind in the world along with K-Fair of Germany and NPE of the US. More than 3,000 companies from 39 countries participated in the fair and approximately 8,000 customers visited our PR booth. In particular, we showcased the 'Intrado,' a hydrogen battery concept car of Hyundai Mo-

tor Company. This concept car is equipped with ultra light carbon fiber reinforced composite materials of Lotte Chemical.

Introducing Superb Products and New Technologies

At the fair, we showcased our products at four different zones: PE, PP, PC, PTA, PIA, and PET products at Basic Chemical Zone, EG/EOA, PM, and ADPOLY products at Advanced Materials Zone, new technologies at Megatrend Zone, and automobile materials at Performance Materials Zone.

Trend of Our Booth Concept at the Chinaplas

We have been participating in the Chinaplas for nine years since 2006 to promote our products, technologies, and corporate brand.



①



②



③

① PET specialty products ② Eco-friendly products ③ Automobile materials (concept car 'Intrado')

PR Concept at the Chinaplas

2006

Strengthening the position as a global company



2007

Promoting the image as a company that puts emphasis on environment and humanity



2008

Cohesive 3 companies to lead the petrochemical industry



2009

Challenging spirit and growth potential of petrochemical companies of Lotte Group





Main screen of renewed Lotte Chemical's website



Properties on MSDS screen



Cyber tour screen

► Website Renewal
(<http://www.lottechem.com/>)

Lotte Chemical has renewed its website to help all stakeholders easily get information on corporate value and business activities. New website screen is equipped with easy to click icons for the convenience of users and design concept based on CI color with various images efficiently delivers our corporate value and identity. Our customers can find product information as well as MSDS easier and more efficiently than before. We will continue to manage our website to help all stakeholders get access to information they need in a timely manner, working hard to reflect the feedback from our customers.

► Promotional Video

We made a promotional video with the title of 'Life Value Creator' to better serve our customers and help them understand how our products are used in our daily life. The five-

minute-long promotional video is available at our homepage (http://www.lottechem.com/contents/prcenter/movie_list.asp).



2013 Promotion Video

► Sports Marketing

To raise our corporate brand awareness and to build loyalty among our customer base, we have sponsored various sports events with great popularity from the public. In 2013, we sponsored the LPGA Lotte Championship, professional baseball club Lotte Giants, and a marathon festival hosted by one of our customers.



① Advertisement during the LPGA Lotte Championship ② Advertisement at Sajik Baseball Park, home ground of Lotte Giant ③ Advertisement during the Kolon Section Marathon

2010

Improving the image as a specialized petrochemical company



2011

Embodying the convergence and takeoff of petrochemical companies of Lotte Group



2012

Honam Petrochemical, KP Chemical, and Tital Chemical that are spreading throughout the world



2013

Promoting new CI and demonstrating the excellence of eco-friendliness and products



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Corporate Citizenship

We are committed to sharing our performances with all stakeholders and carrying out social contribution activities for local communities.





Vision of Our Corporate Citizenship

► Warmth & Dream to the Heart

Our social contribution is carried out under the slogan of 'Warmth & Dream to the Heart' and the vision of 'Together 50'. The vision presents our commitment to grow together with all the 5 billion people in the world with a 50% breadth of mind and seeing, thinking of neighbors who are remaining half people. To realize the vision, we are executing strategic and systematic citizenship activities centered on 3 areas of social welfare, education scholarship, and environment. And these activities are headed by the Social Contribution Deliberation Committee and support organizations at each worksite.

► Company-wide Social Contribution Programs

Volunteer Service Group

A total of 14 volunteer service groups consisting of employees from the headquarter, research institute, Yeosu, Daesan, Ulsan Plants and their families continue to carry out various

social contribution activities in the social welfare, education scholarship, and environment culture fields. The voluntary service groups economically assist the elderly living alone, welfare centers for disabled people, unfortunate children of low-income households, adolescents of multicultural families, regularly visiting them and delivering daily necessities, kimchi for winter, and briquettes.

Matching Grant

Lotte Chemical has been operating a matching grant system to disseminate the enterprise-wide donation culture since 2008. The Matching Grant is a system wherein the company donates the same amount of fund voluntarily donated by employees. The type of donation by employees can be divided into two: an odd money system to accumulate less than a certain amount from employees' salaries, and; a donation system wherein employees can freely donate. The fund raised by this program is used in volunteer services at each worksite and donating to NGOs such as the Korea Children's Foundation and the World Vision.



Corporate Citizenship Activities

► Social Contribution Activities in 2013

Sponsorship for Children

We have been helping children at local welfare centers have dreams and hopes by providing free meals, coaching their learning, and joining various cultural experiences.

Yeosu Plant	Supporting the Dolsan Community Child Center and Dreamers Community Child Center, etc.
Daesan Plant	Visiting local social welfare centers and donating necessities, offering scholarships to low-income family students, and delivering necessities and heating fuels to the underprivileged
Ulsan Plant	Becoming education mentors at the Onsan Community Child Center, helping children of families without parents, becoming a Santa Clause for children raised by grandparents, and delivering newspaper and books to local elementary schools
Research Institute	Donating auxiliary textbooks and other educational guidebooks to the Central Child Center
Head Office	Regularly sponsoring overseas children and conducting voluntary community services for community child centers and delivering necessities



Improving Residential Environment at Rural Areas

We have supported the underprivileged at rural areas by improving their residential environment. In 2013, in particular, we repaired houses severely damaged by a fire in Eonyang region, which gave them comfort, courage, and hope.

Yeosu Plant	Implementing diverse activities to improve residential environment - papering walls and floors, painting, and cleaning - for local areas with poor residential conditions in Yeosu
Daesan Plant	Repairing houses of senior citizens who live alone in Daesan and providing helping hands to sisterhood villages, etc.
Ulsan Plant	Improving residential environment in Ulsan and repairing houses damaged from forest fire in Eonyang

Support for Multicultural Families

Lotte Chemical has provided multicultural families around our workplaces with various services to facilitate their adaptation to Korean society and growth as our social members.

Yeosu Plant	Supporting living expenses and necessities to multicultural families in Yeosu
Daesan Plant	Supporting living expenses and necessities to the poorest households among multicultural families in Daesan
Ulsan Plant	Offering living expenses, necessities, and scholarships needed for settlement to multicultural families in Ulsan
Head Office	Regularly sponsoring study rooms for multicultural family students around the head office and providing necessities to them



Support for the Disabled

We have helped the disabled people regularly so that they can live with dignity as a social member, based on a warm heart for those who have physical or mental disabilities caused by accidents or innate disability.

Yeosu Plant	Supporting welfare facilities for the handicapped including the Yeosu Welfare Center
Daesan Plant	Visiting welfare facilities for the handicapped to entertain with them and provide goods such as computers, copiers, and refrigerators
Ulsan Plant	Donating goods such as beds for medical purpose and dinnerware to a social welfare center 'Love House'
Head Office	Regularly sponsoring the Nambu Welfare Center for Intellectually Handicapped People and conducting voluntary community services

Environmental Cleanup

Lotte Chemical has been proactive in caring mountains and cleaning coastal areas around each worksite. Other activities to protect environment include installing birds' nests, planting flowers along trails, and cleaning hiking tracks, adjacent beaches and coastal areas. Through all these, we pursue creating a pleasant environment for local residents and communities.

Yeosu Plant	Regularly conducting environmental cleanup activities in the mountains and coastal areas around the plant
Daesan Plant	Implementing environmental cleanup activities on roads around the plant and one-mountain, one-river, and one-cost cleanup campaign
Ulsan Plant	Cleaning rivers, coastal areas, and mountains around the plant
Head Office	Cleaning rivers around the head office

Other Citizenship Activities

In addition to the activities mentioned above, we reach out to other places where our help is needed. We donate kimchi, fuel and other basic necessities to the socially marginalized and hold bazaars for them. Our activities also include sponsorship for university student volunteer groups, charity events and educational donation fairs.

Yeosu Plant	Supporting senior citizens who live alone through offering necessities and side dishes, counseling health conditions, visiting them for consolation, and helping housework
Daesan Plant	Providing Kimchi and briquettes to the underprivileged and local welfare centers, and holding bazaars to raise money to help them
Ulsan Plant	Offering necessities to the needy people and living and medical expenses to North Korean defectors, and sponsoring the educational donation fair and university student volunteer groups
Research Institute	Donating briquettes, heating fuels, lunch boxes, and necessities to senior citizens who live alone
Head Office	Donating blood and supporting school and living expenses to 3 middle school students

► Social Contribution at Overseas Worksite (Pakistan)

Lotte Chemical's social contribution is borderless. We seek to make our world a better place to live by proactively carrying out social contribution activities for local communities where we are engaging in businesses.

Drought Relief

Tharparkar, the southeastern region of Pakistan, is an arid region where yearly precipitation is only around 30%. The region is also one of the most dilapidated parts of the country. Employees of Lotte Chemical's worksites in Pakistan conducted volunteering activities to help local people in the region suffering from severe drought.

Region	Umarkot in Sindh Province, Pakistan (400 km from Karachi)
Supports	1,400 1.5 liter bottles of mineral water and 700 food packages (rice, lentils, energy biscuit, sugar, cooking oil, tea, and milk)

Eco Internship Program

Our worksite in Pakistan has been running the Eco Internship program since 2011 to provide local students with opportunities to participate in environmental protection activities. Through this program, local students are able to realize the importance of environmental issues and accumulate experiences in solving them.

Region	Karachi in Sindh Province, Pakistan
Target	250 schools around the project site
Participant	About 1,500 persons every year

Commemoration Planting on the Earth Day

The Earth Day is celebrated every April 22. On the day, various events are held all around the world to raise people's awareness of environmental protection. Our worksite in Pakistan also planted trees in nearby areas on April 22, 2013.

Region	Karachi in Sindh Province, Pakistan
Participant	80 persons
No. of trees	100 trees



①, ② Activities to solve the serious drought problems in Pakistan ③, ④ Eco internship program ⑤, ⑥ Commemoration planting on the Earth Day



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G3.1	Description	Reporting	Page	Remarks
Profile Disclosures				
Strategy and Analysis				
1.1	Statement from most senior decision-maker in organization	●	5	
1.2	Description of key impacts, risks, and opportunities	●	10	
Organizational Profile				
2.1	Name of organization	●	6	
2.2	Primary brands, products, and/or services	●	book in book	
2.3	Operational structure	●	6	
2.4	Location of organization's headquarters	●	6	
2.5	Location of overseas branch offices and sites	●	8~9	Refer to homepage (http://www.lottechem.com/contents/company/workplace.asp) and business reports
2.6	Nature of ownership and legal form	●	6	
2.7	Markets served	●	8~9	
2.8	Scale of the reporting organization	●	6~10	
2.9	Significant changes during reporting period regarding size, structure, or ownership	●	6~10	
2.10	Awards received in reporting period	●	78	
Report Parameters				
3.1	Reporting period	●	2	
3.2	Date of most recent previous report (if any)	●	2	
3.3	Reporting cycle (annual, biennial, etc.)	●	2	
3.4	Contact point for questions regarding the report or its contents	●	2	
3.5	Process for defining report content	●	28~29	
3.6	Boundaries of report	●	2	
3.7	State any specific limitations on the scope or boundary of report	●	2	
3.8	Basis for reporting on comparability from period to period and/or between organizations	●		Described in the relevant article
3.9	Data measurement techniques and bases of calculations for data, including performance index	●	2	If additional information is necessary, it is described in the relevant article
3.10	Explanation of the effects of & reasons for any re-statements of information provided in earlier reports	●		Described in the relevant article
3.11	Significant changes from previous reporting periods applied in the report	●		Described in the relevant article
3.12	Table identifying the location of the Standard Disclosures in the report	●	66~70	
3.13	Policy and current practices with regard to seeking external assurances for the report	●	72~73	
Governance, Commitments, and Engagement				
4.1	Governance of organization	●	22	
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	●	22	
4.3	No. of members of highest governance body that are independent and/or nonexecutive members	●	22	All of four outside directors are male.
4.4	Mechanisms for shareholders and employees to provide recommendations or directions to highest governance body	●	22	
4.5	Compensation for members of highest governance body, senior managers, and executives	●	22	
4.6	Processes in place for highest governance body to ensure conflicts of interest are avoided	●	22	
4.7	Process for determining the qualifications and expertise of the members of the highest governance body	●	22	
4.8	Internally developed statements of mission or values, codes of conduct, and principles	●	24	
4.9	Procedures of highest governance body for management of economic, environmental, and social performances	●	22	
4.10	Processes for evaluating highest governance body's own performance	●	22	
4.11	Whether and how the precautionary approach or principle is addressed by the organization	●	23, 33	



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4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives	●	25, 77	
4.13	Membership in associations and/or national/international advocacy organizations	●	25, 77	
4.14	List of stakeholder groups engaged by the organization	●	26~27	
4.15	Bases for identification and selection of stakeholders with whom to engage	●	26	
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and stakeholder group	●	26	
4.17	Key topics and concerns raised through stakeholder engagement, and responses to them	●	26	
Economy				
Economic Performance				
EC1	Direct economic value generated and distributed	●	18, 74~76	
EC2	Financial implications and other risks and opportunities for organization's activities due to climate change	●	34	
EC3	Coverage of organization's defined benefit plan obligations	●	46	
Market Position				
EC4	Significant financial assistance received from governments	●		Government R&D subsidy: KRW 1,861,920,000
EC5	Range of ratios of standard entry-level wages compared to local minimum wage at significant locations of operation	●	-	2.5 times the minimum wage New employee's wage: KRW 12,050 per hour. (salary: KRW 2,157,000 based on 179 working hours per month) / based on minimum wage of KRW 4,860 (source: the Minimum Wage Committee)
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	●	-	Total local purchasing at Yeosu, Daesan, and Ulsan Plant amounted to KRW 25 billion (4.4%).
EC7	Process of hiring local workers preferably and percentages of locally-hired high-ranking managers	●	-	A total of 29 high positioned local employees at Yeosu, Daesan, and Ulsan Plant, and research institute are candidates for promotion to executive level (28.6%)
Indirect Economic Effect				
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	●	60~64	
EC9	Understanding and describing significant indirect economic impacts	●	60~64	
Environment				
Materials				
EN1	Materials used by weight or volume	●	43	
EN2	Percentage of materials used that are recycled input materials	●	37	
Energy				
EN3	Direct energy consumption by primary energy source	●	41	
EN4	Indirect energy consumption by primary energy source	●	41	
EN5	Energy saved due to conservation and efficiency improvements	●	35	
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives or services more widely used	●	-	Because Lotte Chemical produces raw materials and components, it is unsuited for calculating energy reduction through product supply.
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	●	35	
Water				
EN8	Total water withdrawal by source	●	42	
EN9	Water sources significantly affected by withdrawal of water	●	-	Because Lotte Chemical receives contractual amount of water from local dams and reservoirs around worksites, there is no case effecting local reservoirs by our water use.
EN10	Percentage and total volume of water recycled and reused	●	42	

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Biodiversity				
EN11	Location and size of land owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity managed by us	●	-	Lotte Chemical's Yeosu, Daesan, and Ulsan Plant and research institute are located in the national industrial complex. Therefore, we have no land that is designated for wildlife preserve or areas with high biodiversity value.
EN12	Description of significant impacts of activities, products, and services on biodiversity biological diversity	●	-	
EN13	Habitats protected or restored	●	-	No reported case
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	●	37	
EN15	No. of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk and the government and living in the areas affected by our business activities	●	-	There is no endangered species within the business area.
Air Emissions, Wastewater-Waste				
EN16	Total direct and indirect greenhouse gas emissions by weight	●	41	
EN17	Other relevant indirect greenhouse gas emissions by weight	○	41	It is insignificant due to the characteristics of our businesses.
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	●	35	
EN19	Emissions of ozone-depleting substances by weight	●	36	
EN20	NOx, SOx, and other significant air emissions by type and weight	●	43	
EN21	Total water discharge by quality and destination	●	42, 43	
EN22	Total weight of waste by type and disposal method	●	42	
EN23	Total No. and volume of significant spills	●	-	No reported case
EN24	Weight of transported, imported, exported, or treated wastes deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII Annex of Basel Convention	●	-	There is no waste with listed characteristics.
EN25	Name of water bodies significantly affected by the reporting organization's discharges of water and runoff protection states, protection levels and biological diversity value of related habitats	●	-	No relevant case
Product - Service				
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	●	57	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	●	-	Because Lotte Chemical produces raw materials and components, there is no chain system to recover and recycle products or packaging materials. Packaging materials are made from recyclable materials and can be recycled by consumers.
Compliance				
EN28	Monetary value of significant fines and total No. of non-monetary sanctions for noncompliance with environmental laws and regulations	●	-	No reported case
Transporting				
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations and transporting members of the workforce	●	35	
Total				
EN30	Total environmental protection expenditures and investments by type	●	19, 37, 40	
Labor				
Labor				
LA1	Total workforce by employment type, employment contract, and region	●	77	
LA2	Total No. and rate of employee turnover by age group, gender, and region	●	77	
LA3	Benefits provided to full-time employees that are not provided to temporary employees	●	45	
LA15	Ratio of basic salary of men to women by employee category	●	77	
Labor-Management Relations				
LA4	Percentage of employees covered by collective bargaining agreements	●	77	
LA5	Minimum notice period(s) regarding significant operational changes	●	49	
Health and Safety				
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committee	●	77	



● Reported ● Partially Reported ○ Not Reported

G3.1	Description	Reporting	Page	Remarks
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and No. of work-related fatalities	●	77	
LA8	Staff composition by site obtaining the HSE management system certification	●	45	
LA9	Disease and safety control programs to assist workforce members, their families, and community members	●	49	
Training				
LA10	Health and safety topics covered in formal agreements with labor unions	●	47	
LA11	Average hours of training per year per gender and employment type	●	46	
LA12	Programs for skills management and lifelong learning for continued employability and managing career endings	●	77	
Diversity and Equality				
LA13	Percentage of employees receiving regular performance and career development reviews	●	77	All of the BOD members are male.
LA14	Composition of governance bodies and breakdown of employees per category by indicators of diversity	●	-	No difference in basic wage between male and female employees
Human Rights				
Investment and Procurement				
HR1	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including percentage of employees trained	●	-	We do not implement specific human rights evaluation.
HR2	Total No. of incidents of discrimination, and actions taken	●	-	We do not implement specific human rights evaluation.
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including percentage of employees trained	●	-	Included in ethical management education
Prohibition of Discrimination				
HR4	Total No. of incidents of discrimination, and actions taken	●	-	No discrimination
Collective Bargaining				
HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk	●	49	
Child Labor				
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken	●	49	
Forced Labor				
HR7	Operations identified as having significant risk for incidents of forced labor, and measures taken	●	49	
Security				
HR8	Percentage of security personnel trained in the organization's policies concerning human rights relevant to operations	●	-	All security personnel responsible for human rights of customers, business partners, and visitors are regularly trained for safety accident prevention and customer reception process.
Indigenous Peoples				
HR9	Total No. of incidents of violations involving rights of indigenous peoples, and actions taken	●	-	No violation of indigenous people's rights
Assessments				
HR10	Percentage and total No. of operations that have been subject to human rights reviews and/or impact assessments	●	-	Impact assessment is not conducted.
Revision				
HR11	No. of complaints related to human rights that are filed, dealt with, and resolved through the official complaint registration channel	●	-	No complaint with regard to human rights
Society				
Local Communities				
SO1	Return to work and retention rates after parental leave	●	60~64	
SO9	Monetary value of significant fines, and total No. of non-monetary sanctions for non-compliance with laws and regulations	●	-	No worksite that affects bad influences
SO10	Operations with significant potential or actual negative impacts on local communities	●	60~64	

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Corruption				
SO2	Percentage of operations with implemented local community engagement, impact assessments, and development programs	●	23	Entire business sites (Head Office, Yeosu plant, Daesan plant, Ulsan plant, and Research center) was analyzed for risk of corruption.
SO3	Percentage and total No. of business units analyzed for risks related to corruption	●		
SO4	Percentage of employees trained in organization's anti-corruption policies and procedures	●	-	No corruption
Public Policy				
SO5	Actions taken in response to incidents of corruption	●	-	No lobbying activity
SO6	Public policy positions and participation in public policy development and lobbying	●	-	No donation
Anti-competitive Behavior				
SO7	Total value of financial and in-kind contributions to political parties, politicians, and related institutions, by country	●	-	No legal action
Compliance with Laws				
SO8	Total No. of legal actions for anti-competitive behavior and monopoly practices	●	-	No penalty and legal action
Product Responsibility				
Customer Health and Safety				
PR1	Countermeasures to move local inhabitants by business developments	●	-	Ulsan Plant participated in the LCI DataBase project led by the government in 2010 and 2012, and completed the LCI DataBase on PX and PET.
PR2	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	●	-	No violation
Product and Service Labeling				
PR3	Type of product and service information required by procedures	●	-	Applied to every product Lotte Chemical manufactures
PR4	Total No. of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling	●	-	No violation
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	●	57	
Marketing Communication				
PR6	Programs for adherence to laws and standards related to marketing communications	●	-	No compliance program
PR7	Total No. of incidents of non-compliance with regulations, standards and voluntary codes concerning marketing communications	●	-	No violation
Customer Privacy Protection				
PR8	Total No. of substantiated complaints regarding breaches of customer privacy and losses of customer data	●	-	No complaint
Compliance				
PR9	Monetary value of significant fines for noncompliance with laws and regulations concerning provision of products and services	●	-	No penalty

Disclosures on Management Approach (DMA)	Status	Page	Remarks
Economic (DMA-EC)	●	12, 14, 24	
Environment (DMA-EN)	●	24, 33	
Labor (DMA-LA)	●	24, 45, 47	
Human Rights (DMA-HR)	●	24, 49	
Social (DMA-SO)	●	24, 53, 61	
Product Responsibility (DMA-PR)	●	10, 24, 57	



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Core subjects	Issues	Page
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Human rights	Due diligence	49
	Human rights risk situations	49
	Avoidance of complicity	51~52
	Resolving grievances	49
	Discrimination and vulnerable groups	49
	Civil and political rights	44~49
	Economic, social and cultural rights	44~49
	Fundamental principles and rights at work	44~49
Labor practices	Employment and employment relationships	45, 46, 49
	Conditions of work and social protection	45, 46, 49
	Social dialogue	49
	Health and safety at work	38~39
	Human development and training in the workplace	47~48
The environment	Prevention of pollution	36~37
	Sustainable resource use	35
	Climate change mitigation and adaptation	34~35
	Protection of the environment, biodiversity and restoration of natural habitats	37
Fair operating practices	Anti-corruption	51~52
	Responsible political involvement	33, 37, 51
	Fair competition	51~52
	Promoting social responsibility in the value chain	53
	Respect for property rights	-
Consumer issues	Fair marketing, factual and unbiased information and fair contractual practices	51~52, 58~59
	Protecting consumers' health and safety	57
	Sustainable consumption	57
	Consumer service, support, and complaint and dispute resolution	57
	Consumer data protection and privacy	N/A
	Access to essential services	N/A
	Education and awareness	N/A
Community involvement and development	Community involvement	60~64
	Education and culture	60~64
	Employment creation and skills development	60~64
	Technology development and access	11~12, 57, 60~64
	Wealth and income creation	60~64
	Health	60~64
	Social investment	60~64

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Foreword

The Korea Management Association Registration and Assessments (KMAR) has been requested by Lotte Chemical to verify the contents of its 2013 Sustainability Report (the Report). Lotte Chemical is responsible for the collection and presentation of information included in the Report. Our responsibility is to carry out assurance engagement on specific information in the assurance scope stipulated below.

Assurance scope and standard

Lotte Chemical describes its efforts and achievements of the sustainability activities in the Report. KMAR performed a type 2, moderate level of assurance using AA1000AS (2008) as an assurance standard. That is, the assurance team assessed whether inclusivity, materiality, and responsiveness were observed, and verified the followings to assess the reliability of the data and information specified in the Report where professional judgment of the practitioner of KMAR's assurance team was exercised as materiality criteria.

Assurance of the economic section

Reviews whether the financial data and information have been extracted appropriately from Lotte Chemical's 2013 financial statements and public notification data

Assurance of the environmental and social section

Reviews whether the environmental and social data and information included in the Report are presented appropriately

"Appropriately presented" means that the original data and information are reported appropriately in the Report with consistency and reliability.

The confirmation of the application level of GRI G3.1 utilized as the report criteria was included in the scope of assurance.

Assurance process

In order to verify the contents of the Report within an agreed scope of assurance in accordance with the assurance standard, KMAR's assurance team visited the Lotte Chemical's headquarter and carried out an assurance engagement as follows:

- Reviewed systems and processes used in producing data
- Assessed internal documents and materials
- Interviewed people in charge of disclosed strategies, activities and performances
- Reviewed the GRI G3.1 application level which was used as a reporting framework

Conclusion

Based on the results we have obtained from material reviews and interviews, we had several discussions with Lotte Chemical on the revision of the Report. We reviewed the Report's final version in order to confirm that our recommendations for improvement and our revisions have been reflected. When reviewing the results of the assurance, the assurance team could not find any inappropriate contents in the Report to the compliance with the principles stipulated below. Nothing has come to our attention that causes us to believe that the data and information are not presented appropriately.



Inclusivity

Inclusivity is the participation of stakeholders in developing and achieving an accountable and strategic response to sustainability.

- Lotte Chemical is developing and maintaining stakeholder communication channels in various forms and levels in order to make a commitment to be responsible for the stakeholders. The assurance team did not find any critical stakeholder group left out during this procedure.

Materiality

Materiality is determining the relevance and significance of an issue to an organization and its stakeholders. A material issue is an issue that will influence the decisions, actions, and performance of an organization or its stakeholders.

- Lotte Chemical is determining the materiality of issues found out through stakeholder communication channels through its own materiality evaluation process, and the assurance team did not find any critical issues left out in this process.

Responsiveness

Responsiveness is an organization's response to stakeholder issues that affect its sustainability performance and is realized through decisions, actions, and performance, as well as communication with stakeholders.

- The assurance team did not find any evidence that Lotte Chemical's counter measures to critical stakeholder issues were inappropriately recorded in the Report.

In addition, the assurance team checked that the Lotte Chemical complied with the GRI G3.1 in preparing the Report, and that the Report fulfills the requirements of GRI application level 'A+'.

Recommendation for improvement

We hope the Report is actively used as a communication tool with stakeholders and recommend the following for improvements.

- We recommend Lotte Chemical specifies the internal reporting standard and responsibility in order to make more systematic report publishing process. Documentation of report publishing process is also included in this effort.
- We recommend Lotte Chemical enhances completeness of the Report by expanding the report boundary as a global corporation.

Our independence

With the exception of providing third party assurance services, KMAR is not involved in any other Lotte Chemical business operations that are aimed at making profit in order to avoid any conflicts of interest and to maintain independence.



AA1000
Licensed Assurance Provider
000-129

18 June 2014

CEO **Ki Ho Park**

K. H. Park

Consolidated Financial Statements

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Financial Performance Outline

In succession to last year's report, Lotte Chemical's consolidated financial statements are included in this report from this year in order to help stakeholders understand management status of the company. The following consolidated financial statements are based on the independent auditors' report as of 2013. Please refer to DART system (<http://dart.fss.or.kr/>) for more details.

► Consolidated Financial Position

As of December 31, 2013, 2012 and 2011

(Unit: Korean Won)

Item	2013	2012	2011
Assets			
I . Current assets	4,614,354,225,960	4,178,674,705,431	4,888,629,545,257
1. Cash and cash equivalents	979,089,879,334	744,816,589,107	1,251,251,599,062
2. Short-term financial instruments	311,516,213,804	191,600,034,538	558,274,533,190
3. Fair value financial assets	-	-	13,066,560
4. Available-for-sale financial assets	312,590,000	232,110,000	186,330,000
5. Trade and other receivables	1,595,061,185,532	1,634,473,228,473	1,675,637,293,781
6. Inventories	1,628,759,888,662	1,500,592,461,088	1,266,628,348,441
7. Financial lease receivables	138,598,084	123,857,902	123,341,088
8. Current income tax assets	31,238,001,747	21,292,096,839	10,627,990,985
9. Other financial assets	6,877,836,580	16,219,176,632	9,652,988,801
10. Other current assets	61,360,032,217	69,325,150,852	116,234,053,349
II . Non-current assets	6,073,309,345,040	6,193,639,541,797	5,857,978,359,030
1. Long-term financial instruments	50,513,500,000	44,905,760,000	25,309,773,263
2. Available-for-sale financial assets	105,097,809,642	113,326,841,993	102,795,789,497
3. Financial lease receivables	3,389,012,815	3,527,610,907	3,651,468,806
4. Investments in associates	1,051,906,522,764	1,002,268,250,575	771,101,371,514
5. Investments in joint ventures and associates	400,170,679,159	331,628,513,514	314,041,283,942
6. Tangible assets	4,186,519,030,580	4,420,854,213,194	4,307,764,920,004
7. Investments in real estate	85,441,372,373	44,810,637,784	46,226,352,619
8. Goodwill	3,196,151,567	8,421,663,619	19,226,441,107
9. Other intangible assets	20,592,373,765	24,573,553,345	20,216,550,541
10. Other financial assets	7,343,568,175	8,595,251,159	12,741,525,227
11. Other non-current assets	9,630,509,274	22,658,458,713	94,641,346,030
12. Deferred income tax assets	149,508,814,926	168,068,786,994	140,261,536,480
Total assets	10,687,663,571,000	10,372,314,247,228	10,746,607,904,287



As of December 31, 2013, 2012 and 2011

(Unit: Korean Won)

Item	2013	2012	2011
Liabilities			
I. Current liabilities	2,929,005,557,339	2,672,664,693,872	2,728,479,989,429
1. Trade and other payables	1,439,008,571,487	1,855,030,525,733	2,032,023,023,009
2. Fair value financial liabilities	9,137,448,320	1,867,232,400	584,365,600
3. Borrowings	1,308,825,834,232	640,358,154,452	303,059,256,064
4. Current income tax liabilities	58,147,641,280	52,351,153,466	211,778,551,912
5. Other financial liabilities	30,403,051,396	52,207,622,561	103,582,737,412
6. Other current liabilities	62,130,992,798	65,415,162,660	74,330,236,472
7. Provisions	21,352,017,826	5,434,842,600	3,121,818,960
II. Non-current liabilities	1,464,199,290,492	1,615,534,766,738	1,860,352,742,967
1. Borrowings	1,166,967,360,889	1,294,678,949,431	1,554,702,273,479
2. Retirement benefit liabilities	19,434,578,786	27,542,367,337	22,913,519,602
3. Deferred income tax liabilities	185,848,010,576	203,451,719,369	208,758,444,259
4. Other financial liabilities	87,940,318,227	84,198,116,558	68,588,356,525
5. Other non-current liabilities	4,009,022,014	5,544,110,276	4,649,615,156
6. Provisions	-	119,503,767	740,533,946
Total liabilities	4,393,204,847,831	4,288,199,460,610	4,588,832,732,396
Equity			
I. Equity attributable to the owner of the parent	6,256,119,973,079	6,043,424,852,327	5,462,573,293,138
1. Share capital	171,377,095,000	171,377,095,000	159,300,000,000
2. Other share capital	477,284,160,127	472,058,339,430	15,403,073,116
3. Retained earnings	5,682,230,930,647	5,427,874,760,228	5,188,270,590,287
4. Other reserves	(74,772,212,695)	(27,885,342,331)	99,599,629,735
II. Non-current interests	38,338,750,090	40,689,934,291	695,201,878,753
Total equity	6,294,458,723,169	6,084,114,786,618	6,157,775,171,891
Total liabilities and equity	10,687,663,571,000	10,372,314,247,228	10,746,607,904,287

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► Consolidated Statements of Comprehensive Income

As of December 31, 2013, 2012 and 2011

(Unit: Korean Won)

Item	2013	2012	2011
I. Sales	16,438,935,362,784	15,902,803,025,026	15,699,439,575,484
II. Cost of sales	15,527,174,061,634	15,109,197,299,993	13,805,330,865,347
III. Gross profit	911,761,301,150	793,605,725,033	1,894,108,710,137
Selling and administrative expenses	424,338,582,195	421,874,257,265	424,007,307,129
IV. Operating income	487,422,718,955	371,731,467,768	1,470,101,403,008
Financial income	111,567,410,134	118,990,254,912	94,831,661,249
Financial cost	169,637,458,738	142,418,364,487	114,429,300,863
Gain (loss) from investments in associates and joint ventures	(27,350,302,117)	29,585,553,109	21,939,822,432
Gain on disposal of investments in associates	(27,410,007,722)	7,535,793,899	55,007,477,736
Other non-operating income(loss)	-	1,443,659,971	-
V. Net income before income tax	374,592,360,512	386,868,365,172	1,527,451,063,562
Income tax expense	88,767,377,493	60,407,846,243	393,877,961,358
VI. Net income from continuing operations	285,824,983,019	326,460,518,929	1,132,553,550,571
VII. Net loss from discontinued operations	-	(10,315,714,395)	-
VIII. Net income	285,824,983,019	316,144,804,534	1,132,553,550,571
IX. Other comprehensive income (loss):	(49,616,382,351)	(163,160,844,489)	20,204,400,409
1. Items that will not be reclassified subsequently to income (loss):	4,649,580,274	(15,289,845,258)	(9,088,120,634)
Remeasurement factor on defined benefit plans	3,471,656,621	(11,064,910,179)	(9,901,299,412)
Retained earnings using the equity method	1,177,923,653	(4,224,935,079)	813,178,778
2. Items that will not be reclassified subsequently to income (loss):	(54,265,962,625)	(147,870,999,231)	29,292,521,043
Retained earnings using the equity method	(4,587,971,272)	(5,549,973,953)	-
Gain on valuation of AFS financial assets	575,825,058	942,258,567	2,771,367,789
Changes in capital variation of equity method	(8,274,614,787)	(9,111,565,037)	(22,028,594,916)
Gain on valuation of derivatives	(5,794,593,290)	8,707,078,250	719,474,202
Foreign currency translation differences of foreign operations	(36,184,608,334)	(142,858,797,058)	47,830,273,968
X. Total comprehensive income	236,208,600,668	152,983,960,045	1,152,757,950,980
Net income attributable to:			
Owners of the group	287,921,105,894	314,537,434,708	978,146,488,697
Non-controlling interests	(2,096,122,875)	1,607,369,826	154,407,061,874
Comprehensive income attributable to:			
Owners of the group	241,121,331,055	167,874,197,875	1,000,834,704,936
Non-controlling interests	(4,912,730,387)	(14,890,237,830)	151,923,246,044
Earnings per share			
Basic and diluted earnings per share	8,546	9,865	30,701
Earnings per share from continuing operations	8,546	10,046	30,719
Earnings(loss) per share from suspended operations	-	(181)	(18)



Other Data

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► Employee Status

Classification	Unit	2011	2012	2013
Number of total employees		1,698	2,484	2,539
Employment type	Full-time job	1,653	2,430	2,463
	Part-time job	45	54	76
Gender	Male	1,573	2,292	2,334
	Female	125	192	205
Age	Under 30	316	425	437
	30s to 50s	1,151	1,753	1,635
	Over 50	231	306	467

► Employees to Receive Regular Performance and Career Development Reviews

Classification	Unit	2011	2012	2013
Percentage	%	35	36	41
Employees	Persons	589	898	1,049

► Turnover

Classification	Unit	2011	2012	2013
Turnover rate	%	4.9	6.1	5
Number of turnovers	Persons	83	152	128

► Employees Covered by Collective Bargaining

Classification	Unit	2011	2012	2013
Percentage	%	52	45	46
Employees	Persons	878	1,106	1,153

► Employees Represented by the Labor-Management Joint Safety & Health Committee

Classification	Unit	2011	2012	2013
Percentage	%	69.7	70.5	70
Employees	Persons	1,184	1,751	1,778

► Incident Rate

Classification	Unit	2011	2012	2013
Total incident rate	%	0	0.05	0.13
Total number of incidents	Cases	0	1	3

► Parental Leave

Classification	Unit	2011	2012	2013
Number of parental leave users	Persons	9	10	16
Number of employees who returned to work after parental leave	Persons	2	8	3
Number of employees who have still work for more than 12 months after return	Persons	-	2	8

* Figures in the past years were adjusted due to the change in calculation criteria according to the assurance and detailed calculation criteria are as follows:

- 1) Parental leave users: Number of employees who requested parental leave during the reporting period
- 2) Employees who returned to work after parental leave: Number of employees who returned to work after parental leave during the reporting period
- 3) Employees who have still work for more than 12 months after return: Number of employees who have still work for more than 12 months after return as of the end of reporting year

► Patents

Classification	Unit	2011	2012	2013
Patent application	Cases	53	91	100
Patent registration	Cases	18	44	44
Sales revenue of patented products	KRW in billions	603.7	467.4	463.9
Sales volume of patented products	Thousand tons	335	300	297

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Awards in 2013

Lotte Chemical won meaningful awards from diverse stakeholders in recognition of our efforts and commitment to sustainability management in 2013.

Classification	Title	Date	Hosted by
Award	Energy & Power Sector at the 2013 Frost & Sullivan South Korea New Product Innovation Awards	2013.6	Frost & Sullivan
Award	29 th -week IR52 Jangyoungsil Award	2013.7	Ministry of Science, ICT and Future Planning
Evaluation	Included in the 2013 DJSI Asia-Pacific (3 years in a row)	2013.9	SAM
Award	USD 6 Billion Export Tower at the 50 th Trade Day and Men of Merits	2013.12	Ministry of Trade, Industry and Energy

Association Memberships

We have joined the following associations and worked on memberships to contribute to developing not only our sustainability management but also petrochemical industry and national economy. We will continue to make a concerted effort to build a better future through cooperating with diverse stakeholders.

Federation of Korean Industries	Economic Organization Council
Korea Employers Federation	Korea Industrial Technology Association
Korea Petrochemical Industry Association	Korea-Japan Economic Association
Korea International Trade Association	Seoul Chamber of Commerce & Industry Association
Korea Management Association	Korea Polymer Society of Korea
Korea Listed Companies Association	Korea Productivity Center
Korea Chemical Industry Council	Korea Institute of Chemical Engineers
Korea Economic Research Institute	Korea Fair Competition Federation
The National Academy of Engineering of Korea	Incorporated Association Korea Engineering Club
Korea Business Council for Sustainable Development	Asia Business Council
Korea Standards Association	EPCA (European Petrochemical Association)
Korea Union of chemical Science and Technology Societies	Korea Personnel Improvement Association
Korea Specialty Chemical Industry Association	The Membrane Society of Korea

Separate volume

LOTTE CHEMICAL IN YOUR DAILY LIFE

Lotte Chemical is closer to you than you think.

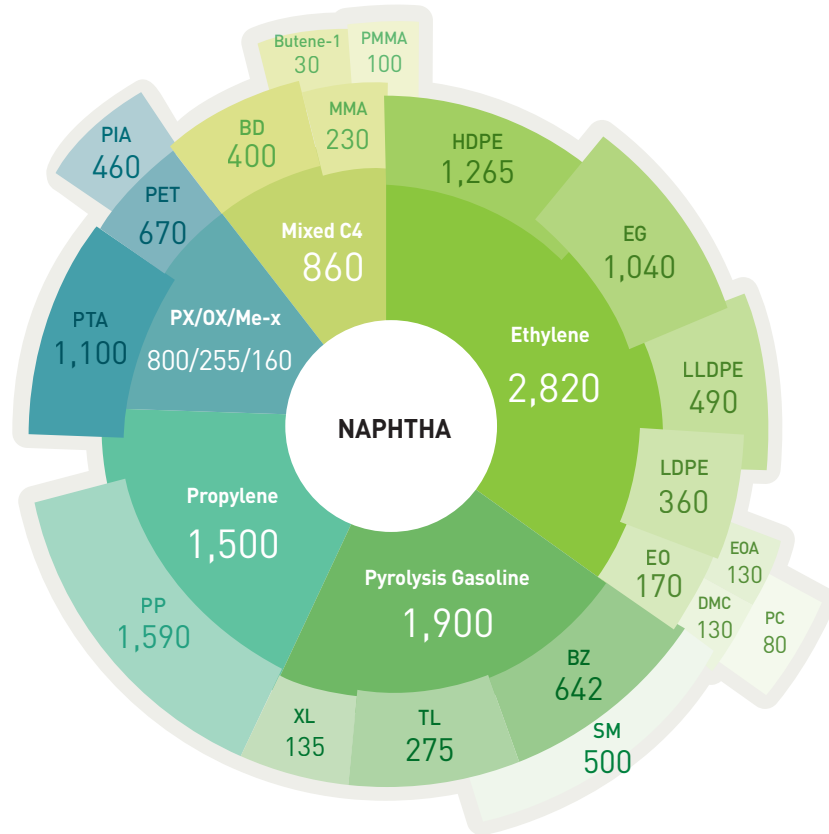
Our products can be found in your daily life from basic supplies to cutting-edge medical and aviation materials. We are always committed to raising the quality of your life through these products.

Main Products

Lotte Chemical contributes to enriching human life by providing essential materials for diverse products from household appliances to agricultural, industrial as well as medical products, automobiles, and aircrafts.

Production Capacity of Main Products

(Unit: thousand tons a year)



Usage of Major Products

Resin Product		Basic Petrochemicals		Basic Chemicals				
PE	<ul style="list-style-type: none"> Household item Sheet for solar battery Toy 	<ul style="list-style-type: none"> Wire clothing Vessels for chemicals Car fuel tank 	EG	<ul style="list-style-type: none"> Polyester fiber Antifreeze 	GE	<ul style="list-style-type: none"> Cleansing agent Machine lubricating oil Break oil Antifreeze 	BZ	<ul style="list-style-type: none"> Agricultural chemicals Photo chemicals Insect repellent SM raw material
PP	<ul style="list-style-type: none"> Auto material Home appliances Transparent 	<ul style="list-style-type: none"> container Hygienic non-woven fabric Packaging film 	EOA	<ul style="list-style-type: none"> Detergent, shampoo Concrete compound 	MMA	<ul style="list-style-type: none"> Adhesive for medical use, acryl film Artificial marvel 	TL	<ul style="list-style-type: none"> Medical supply Paint Ink Dye Aromatics, gunpowder
PC	<ul style="list-style-type: none"> Optic disc (CD, DVD) Sunglasses, lens 	<ul style="list-style-type: none"> Car lamp Home appliances 	BD	<ul style="list-style-type: none"> ABS, raw material for synthetic rubber (SBR, BR) 			MX	<ul style="list-style-type: none"> Raw material of dye, organic pigment, spice, plasticizer, and medical supply Solvent for paint, agricultural chemical, and medical supply
PET	<ul style="list-style-type: none"> Container for beverage Container for cosmetics 		SM	<ul style="list-style-type: none"> PS resin ABS resin SBR latex 	<ul style="list-style-type: none"> Synthetic resin paint Ion exchange resin 	MeX	<ul style="list-style-type: none"> Raw material of PIA 	
PMMA	<ul style="list-style-type: none"> TV, cellular phone, notebook Car tale lamp, dashboard Lens of glasses 		PTA	<ul style="list-style-type: none"> Polyester fiber PET film, paint 		PX	<ul style="list-style-type: none"> Raw material of PTA and DMT 	
Functional Resin	<ul style="list-style-type: none"> Auto interior material, bumper Electric parts, building material Electronic material 		PIA	<ul style="list-style-type: none"> PET resin, special paint Unsaturated resin 		OX	<ul style="list-style-type: none"> Raw material of PA and MA that are plasticizers, solvent 	



06:00 EXERCISE

EPP (Helmet)

As the PP composite resin with improved functions of polypropylene, EPP is toxic free and boasts strong durability and insulation. It is used for automotive parts such as bumper, airbag cover, dashboard, helmet, and home appliances where safety and durability are required. More industrial applications are adopting EPP.

BD (Tire)

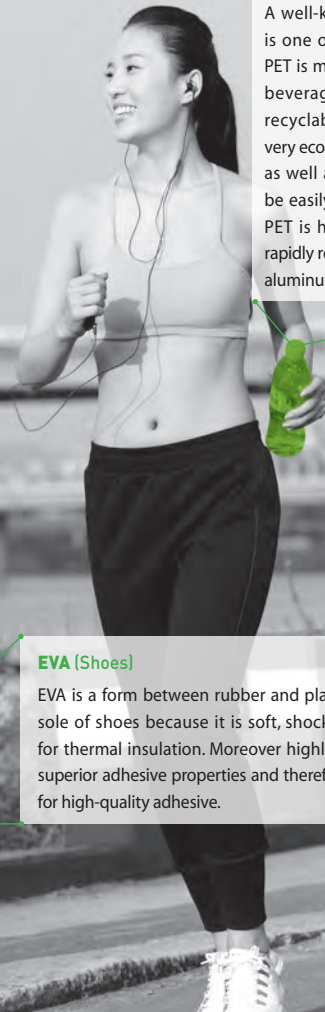
Butadiene (BD) is mainly used as the raw material of synthetic rubber for manufacturing tire, rubber hose, and diverse industrial products. It is colorless and exists as a gaseous state at room temperature.

EVA (Shoes)

EVA is a form between rubber and plastic. It largely used as a sole of shoes because it is soft, shock absorbable and great for thermal insulation. Moreover highly concentrated EVA has superior adhesive properties and therefore is used as a material for high-quality adhesive.

PET (Water bottle)

A well-known PET bottle's PET is one of the plastic materials. PET is mainly used for food and beverage containers and it is recyclable which makes them very eco-friendly. PET is toxic-free as well as lightweight and can be easily shaped. Also, because PET is highly economical, it is rapidly replacing glass bottle and aluminum can.





08:00 GOING TO WORK

TPE (Earphone Cord)

TPE is a highly utilizable plastic material due to its characteristic of being elastic at room temperature and easily formable at high temperature. Its low density makes product lightweight. It is actively used as a automobile components because it feels great on touch and easy to color. Non-electrical conduciveness makes it ideal for electrical wire cable.

LDPE (Billboard in subway)

LDPE is a part of polyethylene resin. It is easily modifiable, resistant to moisture as well as water, and highly transparent. Because of its characteristics, it is used for agricultural products, packaging film, wire clothing, and variety of rap products. Exterior plastic part of the billboard you can see at the subway stations or on the roads is LDPE product.

PC (Cellular phone)

PC is a plastic material with high intensity, heat resistance, and shock resistance. Being exceptionally transparent and toxic-free, it is mainly used for electronic parts, machinery parts, compact disk, DVD, automotive headlamp, and sound wall.

EG (Clothes)

You might have seen the word polyester from the tag of the clothes. EG is a major material for synthetic textile, polyester. EG reacts to terephthalic acid to create polyester. Also, EG with low freezing point is used as antifreeze for automobile.



10:00 MEETING

PP (Clear File)

Polypropylene has various strengths including high heat resistance, shock resistance, transparency, and chemical agent resistance. It is widely used for automobile plastic materials, home electronic appliances, disposable syringes, various transparent containers, sanitary staple fiber, packaging film, and more.

SM (Notebook Cases)

SM is made of ethylene as well as benzene and colorless. It is used as a material for PS resin for stationary and toys, ABS resin for electronic appliances, and synthetic resin-based paint.

PC (Ball-point Pen)

PC is a plastic material with high intensity, heat resistance, and shock resistance. Being exceptionally transparent and toxic-free, it is mainly used for electronic parts, machinery parts, compact disk, DVD, automotive headlamp, and sound wall.



12:00 LUNCH

LDPE (Paper Cup)

LDPE is a part of polyethylene resin. It is easily modifiable, resistant to moisture as well as water, and highly transparent. Because of its characteristics, it is used for agricultural products, packaging film, wire clothing, and variety of rap products. The coating film to keep paper cup dry is made of LDPE.

WPC (Chairs)

WPC (Wood Plastic Composite) material has advantages of both wood and resin. It is suitable for highly functional constructive materials due to great durability, insulation, eco friendliness, and excellent deformability.

PET (Disposable Packed Lunch)

A well-known PET bottle's PET is one of the plastic materials. PET is mainly used for food and beverage containers and it is recyclable which makes them very eco-friendly. PET is toxic-free as well as lightweight and can be easily shaped. Also, because PET is highly economical, it is rapidly replacing glass bottle and aluminum can.



13:00 OUTSIDE WORK

LTF (Rear Bumper Beam)

LTF is made by mixing plastic and special fibers, and boasts excellent mechanical properties, dimensional stability, and thermal resistance properties. Lotte Chemical first developed LTF by applying its original fiber-impregnation technology in the industry. It is used for interior and exterior materials of automotive due to excellence in transformation.

TPO (Door Trim)

It is made by mixing reinforcement materials with thermoplastic resins PP or PE and boasts improved mechanical property and functionality which cannot be found in general-purpose resins. It is used for parts requiring excellent dimensional stability or for products demanding lightweight property such as interior as well as exterior materials of automotive, construction materials, and other industrial materials.

Lottmer (Wiper)

Lottmer is TPEV (Thermo-Plastic Elastomer Vulcanized) material developed by Lotte Chemical's own technology. It has elasticity of thermosetting rubber and deformability of thermoplastic resin. It can substitute soft PVC or thermosetting rubber and makes products lighter due to its low specific gravity.

TPO (Front Bumper)

It is made by mixing reinforcement materials with thermoplastic resins PP or PE and boasts improved mechanical property and functionality which cannot be found in general-purpose resins. It is used for parts requiring excellent dimensional stability or for products demanding lightweight property such as interior as well as exterior materials of automotive, construction materials, and other industrial materials.





18:00 DINNER

EOA (Dishwashing Detergent)

EOA is used as a material for detergent, shampoo, personal hygiene products, and emulsifier. Recently, it is used as an additive to enhance the strength of concrete in construction industry.

PMMA (Upper Deck of Sink)

PMMA is also known as acrylic resin. It is transparent and weather resistant. Being easily colored, it is used as a material for organic glass, electrical parts and construction material.

HDPE (Chopping Board)

HDPE is a part of polyethylene resin. It is easily modifiable, resistant to heat, damage and cold, and highly deformable. Because of these characteristics, it is used for household containers, fish net, rope, insulated cable, chemical containers, automobile fuel tank, pipes, and agricultural, industrial, as well as packaging films.





20:00 BATHROOM

HDPE (Shampoo Bottle)

HDPE is a part of polyethylene resin. It is easily modifiable, resistant to heat, damage and cold, and highly deformable. Because of these characteristics, it is used for household containers, fish net, rope, insulated cable, chemical containers, automobile fuel tank, pipes, and agricultural, industrial, as well as packaging films.

PIA (Bathtub)

PIA is the raw material for PET bottles, paint used for automobiles and ships, adhesives, and coating agents. It is a high value-added and technology-intensive product produced by only 7 companies from 7 countries which are USA, Japan, Spain, Singapore, and Korea, and etc. Lotte Chemical became the world's 5th PIA developer and is the only company that can currently produce PIA in Korea.

EPP (Plastic Footholds)

As the PP composite resin with improved functions of polypropylene, EPP is toxic-free and boasts strong durability and insulation. It is used for automotive parts such as bumper, airbag cover, dashboard, helmet, and home appliances where safety and durability are required. More industrial applications are adopting EPP.





21:00 BREAK

SM (TV)


SM is made of ethylene as well as benzene and colorless. It is used as a material for PS resin for stationary and toys, ABS resin for electronic appliances, and synthetic resin-based paint.

EPP (Artificial Leather Sofas)

As the PP composite resin with improved functions of polypropylene, EPP is toxic-free and boasts strong durability and insulation. It is used for automotive parts such as bumper, airbag cover, dashboard, helmet, and home appliances where safety and durability are required. More industrial applications are adopting EPP.

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Lotte Chemical has been included in the DJSI (Dow Jones Sustainable Index) Asia Pacific for three consecutive years.

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