

More Than Chemistry

LOTTE CHEMICAL
SUSTAINABILITY
REPORT
2016

More than Chemistry

LOTTE CHEMICAL SUSTAINABILITY REPORT 2016

About This Report

The 2016 Sustainability Report is the 10th sustainability report for Lotte Chemical. This report is published as a response to our stakeholders' interest and demands on topics relevant to the economy, environment and society. We will continue to publish the sustainability report each year to provide information of our sustainability performances and activities and to utilize it as a communication channel with our stakeholders.

Introduction

This report covers the activities and performances of Lotte Chemical from January 1 to December 31, 2016. To ensure a better understanding of changing trends, the report provides key performance indicators of the last three years. Year-on-year data is based on December 31 of each fiscal year and some data with period gap is reported with additional statements.

Reporting Principle

This report is written in accordance with GRI (Global Reporting Initiative) G4 Guidelines' Core Option. Detailed indicators and reporting contents based on the recommendation of the GRI G4 Index are stated on pages 79 through 82.

Reporting Scope

This report covers sustainability management activities and performances of Lotte Chemical's Head Office in Seoul, Daejeon Research Institute, Yeosu Plant, Daesan Plant and Ulsan Plant where 99% of sales are generated. Our subsidiaries and overseas plants are also mentioned with respect to some issues. Financial data in this report was drawn up on the basis of consolidated financial statements of Lotte Chemical and its subsidiaries according to the K-IFRS (Korean International Financial Reporting Standards).

Assurance

A Third Party Assurance institution verified the credibility of the contents in this report. The results are stated on pages 88 through 89.

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

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Achieving Common Goal of the International Community

SDGs COMPASS

Adopted as a replacement for the MDGs (Millennium Development Goals) which expired in 2015, the Sustainable Development Goals, other known as SDGs for short, is a universal call to action for the United Nations and the international community to achieve between 2016 and 2030.

The SDGs is composed of 17 goals and 169 associated targets at its core. The 17 goals include no poverty, climate action and quality education among others.

Lotte Chemical deeply sympathizes with the SDGs of the UN, and puts its utmost into sustainability management activities to fulfill the goals. We plan to develop concrete plans to find new growth opportunities and contribute to a sustainable society.



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LETTER FROM THE CEO



We, Lotte Chemical, give our word that we will become a global chemical company that grows with our stakeholders based on continuous innovation and fair management.

Dear Valued Stakeholders,

Since our first publication of the sustainability report in 2007, it is a great honor for us to publish our 10th report this year thanks to your support and interest. And I would like to take this opportunity to extend my heart-felt appreciation to all of our stakeholders.

Lotte Chemical realized our biggest business profit in 2016 since our company was found in 1976 by achieving outstanding competitiveness in product costs, realizing stable plant management, and establishing an efficient business portfolio. Our employees will not settle at our current achievements but do our utmost to provide maximum profit to our stakeholders and contribute to the economic development of Korea by achieving our best performance.

We predict that we will face management difficulties inside and out in 2017. However, we will strive to be prudential in our existing businesses by ensuring an exhaustive management system. We will also prepare a foundation to become a global chemical company by successfully launching new businesses including our joint venture with Versalis on special rubber and our ECC project in North America and expanding our domestic and overseas NC plants.

“We will strengthen our compliance system and realize our social responsibilities.”

Lotte Chemical will strengthen our compliance management system and add new global ethics to realize fair business management and transparent ethics management. We will devote our efforts to maintain the trust of our stakeholders by spreading a strong compliance management culture to our overseas plants, subsidiaries and business partners through a newly established system, and by strengthening our monitoring system that will allow us to conduct regular inspections.

Also, in 2010, Lotte Chemical became the first company in the chemical industry to establish the GEMS (Greenhouse Gas & Energy Management System) to respond to risks on climate change. We are also doing our utmost to reduce consumption of raw materials and energy, and to preserve the environment by managing our data on reduction of greenhouse gas and energy, data on our inventory.

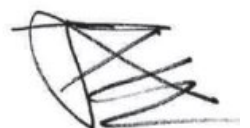
Dear valued stakeholders,

Lotte Chemical will listen to the various voices of our different stakeholders, such as our customers, employees, the local community and our partners, based on trust for mankind and love for the Nature. Moreover, we firmly promise to become a company that contributes greatly to the development of the chemical industry in Korea and abroad by ensuring innovation and mutual growth.

We ask for your continuous interest and support.

Thank you.

June 2017
 President & CEO, Lotte Chemical Corp.
Kim Gyo-hyun



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ABOUT LOTTE CHEMICAL

More than Chemistry

Lotte Chemical, as a top-tier chemical company in Asia, is committed to providing distinct values and a healthy and rich life for people.

GENERAL INFORMATION

(As of December 2016)

Company Name	Lotte Chemical Corporation		
Date of Establishment	March 16, 1976	Main Products	Polymer (PE, PP, PC, PET, EVA, etc) Monomer (EG, SM, PTA, PIA, etc) Basic Chemicals (BD, BZ, TL, XL, etc)
President & CEO	Shin Dong-bin, Huh Soo-young, Kim Gyo-hyun		
Head Office	Lotte World Tower, 300, Olympic-ro, Songpa-gu, Seoul	Total Assets (based on consolidated financial statements)	KRW 15,866.8 billion
Industry	Petrochemical Industry	Sales (based on consolidated financial statements)	KRW 13,223.5 billion

HISTORY

Based on 40 some years of challenges and innovations, Lotte Chemical is becoming a leading company in the global petrochemical industry. We will continue to create a history of creation that will generate new value for petrochemical products that exist everywhere in our daily lives.

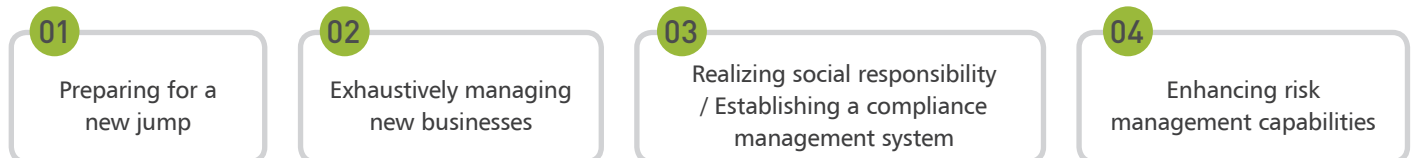
1970-1990	1990-2000	2000-2010	2010-Present
THE BEGINNING	THE GROWTH	THE LEAP	THE FLIGHT
<p>March 1976 Inaugural Meeting & Foundation of Lotte Chemical</p> <p>December 1979 Began commercial production at all plants</p> <p>May 1991 Completed construction of SEG plant</p>	<p>December 1991 Completed construction of NC plant</p> <p>August 1995 Attained ISO 14001 (Environment Management System)</p> <p>April 1997 Completed construction of 3EG Plant</p>	<p>June 2003 Acquired Hyundai Petrochemical</p> <p>July 2004 Acquired KP Chemical</p> <p>December 2009 Daesan Plant became first single plant to exceed ethylene production of 1 million tons</p> <p>November 2010 Acquired TITAN Chemicals of Malaysia</p>	<p>December 2012 Merged KP Chemical and changed name to Lotte Chemical</p> <p>January 2014 Produced synthetic xylene with Hyundai Oilbank Concluded joint venture contract with Hyundai Chemical</p> <p>June 2015 Concluded joint venture contract with Axiall of the US for ethane cracker</p> <p>October 2015 Confirmed acquiring of Samsung Group's chemical affiliates</p> <p>September 2016 Achieved 4,000 consecutive accident-free days at Yeosu Plant</p>

VISION 2020

Lotte Chemical is committed to pursuing its 'VISION 2020' to take a big step towards becoming a 'Global Top 10 Chemical Company.' Under the VISION 2020, Lotte Chemical is exhaustively managing its new businesses to take a big step forward in 2017. Moreover, as a corporate citizen, the company is focusing on fulfilling its social responsibilities and strengthening its risk management capabilities. And Lotte Chemical will continue to grow to become a top-tier company based on trust towards people and love towards the Nature.



Key Practices in 2017



Management Policies



Core Values



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INTRODUCTION OF BUSINESS

INTRODUCTION OF LOTTE CHEMICAL

2016 Financial Statements
(Based on consolidated financial statements)

SALES KRW 13,223.5 billion

BUSINESS PROFITS KRW 2,544.3 billion

Since its establishment in 1976, Lotte Chemical has grown to become a leading chemical company in Korea, operating world-class production plants in Yeosu, Daesan and Ulsan. Our representative products include HDPE, LLDPE, EVA, PP, functional resin, EG, SM, BD, PET, and PIA which constitute a business profit that brings in stable profits. Our efforts in M&A and developing domestic and overseas markets allow us to establish overseas subsidiaries in countries like China, Japan, the US, Hong Kong and Russia, and to export our flagship products to more than 120 countries throughout the world. Lotte Chemical is committed to becoming a 'Global Top 10 Chemical Company,' that considers mankind and the environment.

MAIN PRODUCTS

Lotte Chemical has a diverse business portfolio from polymer and monomer to megatrend. Our products are being applied extensively to produce household appliances, agricultural tools, industrial tools, medical devices, automobiles and new state-of-the-art materials.



- Polymer**
- HDPE(High Density Polyethylene)
 - LLDPE(Linear Low Density Polyethylene)
 - LDPE(Low Density Polyethylene)
 - EVA(Ethylene Vinyl Acetate)
 - PP(Polypropylene)
 - PC(Polycarbonate)
 - PC Compound(Polycarbonate Compound)
 - PET(Polyethylene Terephthalate)
 - Performance Materials



- Monomer**
- EG(Ethylene Glycol)
 - EOA(Ethylene Oxide Adduct)
 - GE(Glycol Ether)
 - MMA(Methyl Methacrylate)
 - BD(Butadiene)
 - SM(Styrene Monomer)



- Basic Chemicals,**
- BTX(Benzene, Toluene, Mixed Xylene)
- Chemical Fiber,**
- PTA(Purified Terephthalic Acid)
 - PIA(Purified Isophthalic Acid)
- Megatrend**
- UF Membrane for water treatment

DOMESTIC PLANTS & RESEARCH INSTITUTES

Domestic Plants

Lotte Chemical possesses world-class plants in Korea's top 3 petrochemical complexes, Yeosu, Daesan and Ulsan. The company maximized its advantages by optimizing the operations of each of its plants. Lotte Chemical has also secured a stable production capacity by expanding its plants in Yeosu, Daesan and Ulsan, and by constructing new plants. Moreover, Lotte Chemical is enhancing its competitiveness in the global market by systemizing production from raw materials to finished products.

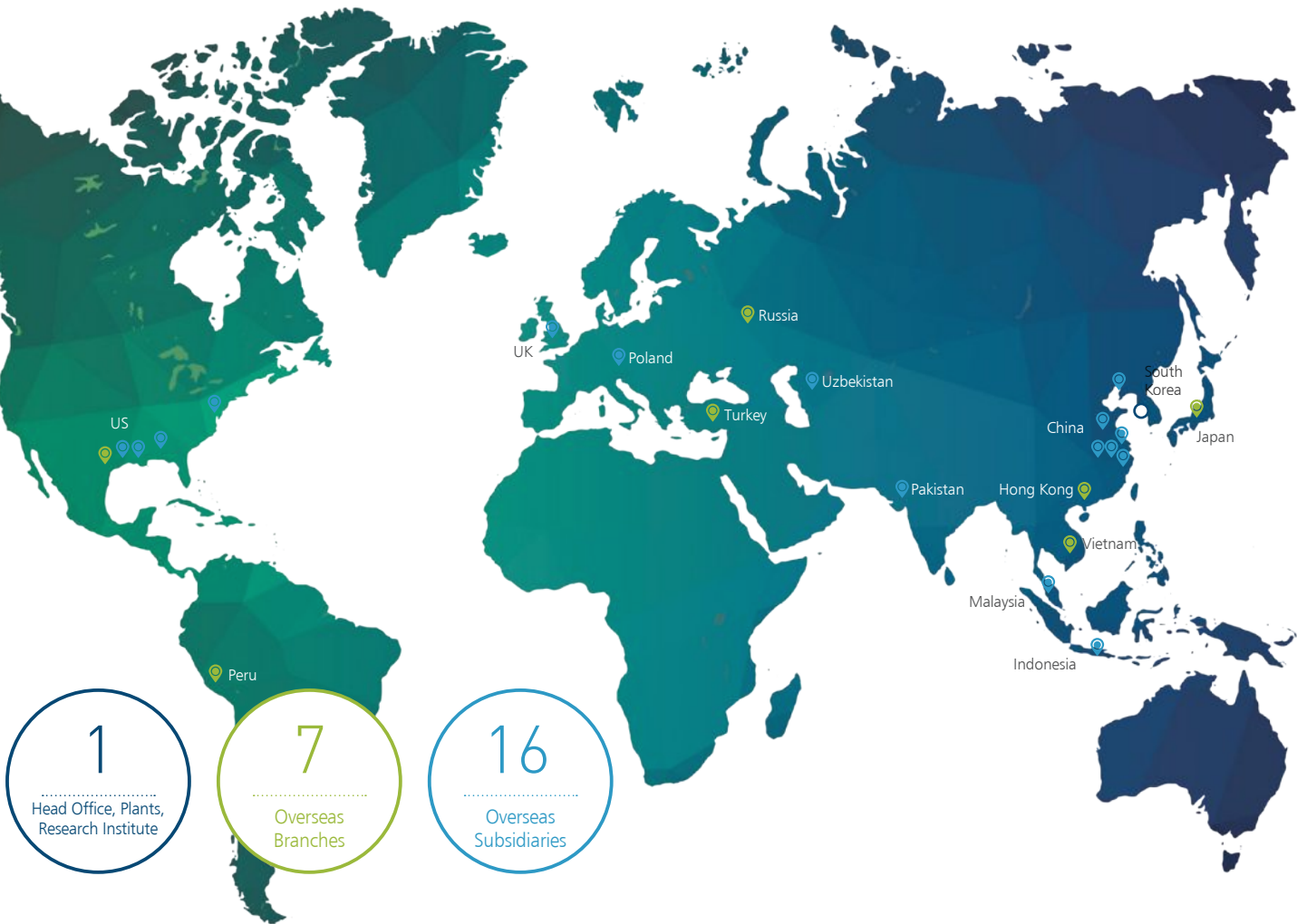
Research Institutes

Located within the Daeduk Research complex, Lotte Chemical Research Institute is encouraging new products and technologies under the objective of promoting R&D projects that contribute to its customers and the future. In 2005, the research institute merged Lotte Daesan Petrochemical and KP Chemical to operate an integrated research institute of the chemical business unit of Lotte Group. Now, the institute supports product development and technology to its overseas subsidiaries in China, Malaysia, Indonesia and the US. The institute is also taking the lead in securing source technology that will act as future growth engines and in pioneering new markets through research on developing polymer products and its catalyst, developing functional new materials, and through research on basic chemicals and megatrend.

GLOBAL NETWORK

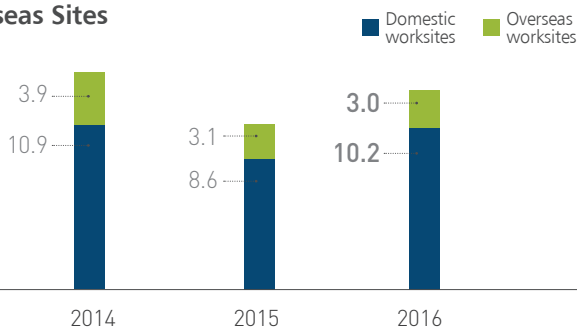
- Head Office, Plants, Research Institute
- Overseas Subsidiaries
- Overseas Branches

To strengthen its position in the global petrochemical industry, Lotte Chemical is active in entering overseas markets. The company is strengthening global competitiveness, acquiring Malaysia's Titan Chemical, completing the Surgil project in Uzbekistan, conducting an ethane cracker project and ethylene glycol project in the US, and acquiring Samsung Group's chemical affiliates. Lotte Chemical is also establishing future growth engines by expanding its business into the megatrend field. Lotte Chemical is stepping up its efforts to become a global top 10 comprehensive chemical company across Asia.



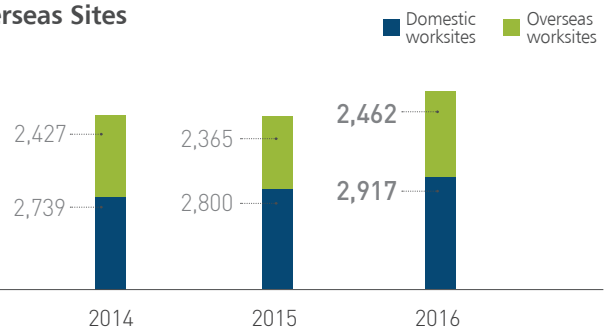
Sales in Domestic & Overseas Sites

(Unit: KRW Trillion)



Employees in Domestic & Overseas Sites

(Unit: Persons)



PRODUCT INTRODUCTION

Lotte Chemical in Your Everyday Life





Lotte Chemical is much closer to us than we think it is. Products of Lotte Chemical, which enhance the value of life, can be seen everywhere from basic household appliances to medical devices and state-of-the-art aviation materials.

HOUSE



EPP (Sofa Filler)

EPP is the PP foaming resin with improved functions of PP (Polypropylene). It is used for automotive bumpers, helmets and home appliances where safety and durability are required. And more industrial applications are adopting EPP.



PIA (Bathtub)

PIA is the raw material used to produce PET bottles, adhesives, coating agents and paint for vehicles and vessels. It is a high value added and technology intensive product manufactured only by 7 companies in 7 countries, including the US, Japan, Spain, Singapore and Korea. Lotte Chemical is the world's 5th PIA developer with independent technology and the only company in Korea that produces PIA.



WPC (Chairs)

WPC (Wood plastic composites) demonstrate the advantages of both wood and resin. As a strong environmentally-friendly material, it is suitable for highly functional constructive materials due to its great durability and excellent deformability.



HDPE (Shampoo Bottle)

HDPE is a type of PE (Polyethylene) resin. It has a high resistance to both low and high temperatures as well as damage, and is good in processability. It is used to produce household containers, fish nets, ropes, insulated cables, chemical containers, automobile fuel tanks, pipes, and films for agricultural, industrial and packaging purposes.



PMMA (Artificial Marble)

PMMA is also known as acrylic resin. It is transparent and weather-proof. As it is easy to color, PMMA is widely used as a material for organic glass, electrical parts and construction material.



EPP (Plastic Footholds)

EPP is the PP foaming resin with improved functions of polypropylene. It is used for automotive bumpers, helmets and home appliances where safety and durability are required. And more industrial applications are adopting EPP.



EOA (Dishwashing Detergent)

EOA is used as a material for detergents, shampoos, personal hygiene products and emulsifiers. Now, it is also being used as an additive to enhance the strength of concrete in the construction industry.



SM (TV)

SM is a colorless liquid substance made of ethylene and benzene. It is used as a material for polystyrene, which is used to produce stationery items and toys, as a material for ABS resin used on electronic appliances, and as a base material for paint.

OFFICE



PP (Clear Files)

PP is a plastic that represents petrochemical products. It has a high resistance to heat, impact and chemical agents, and is transparent. It is widely used as a material for automobile materials, home electronic appliances, disposable syringes, various transparent containers, sanitary staple fiber, and packaging films.



SM (Laptop Cases)

SM is a colorless liquid substance made of ethylene and benzene. It is used as a material for polystyrene, which is used to produce stationery items and toys, as a material for ABS resin used on electronic appliances, and as a base material for paint.



LDPE (Paper Cup Coatings)

LDPE is a type of polyethylene resin. It is easily modifiable, has a high resistance to moisture and water, and is highly transparent. Because of its characteristics, it is used on agricultural and packaging films, wire clothing, and a variety of wrapping products. The coated film on paper cups to prevent them from leaking is made with LDPE.



PC (Ball-point Pen)

PC is a plastic material with high intensity and a high resistance to impact and heat. It is mainly used for electronic and machinery parts, compact disks, DVDs, automotive headlamps, and sound walls due to its high transparency.



AUTOMOBILE



LOTTMER (Wiper)

LOTTMER is a TPEV (Thermo-Plastic Elastomer Vulcanized) material developed using Lotte Chemical's own technology. It has the elasticity of thermosetting rubber and deformability of thermoplastic resin. Because of its high elasticity, it can substitute PVC or synthetic rubber. And its low density makes it possible to produce lighter products.



TPO (Door Trims)

TPO is made of mixing reinforcement materials with typical polymer 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 stability or for products demanding lightweight property such as interior and exterior materials for automotive, construction materials, and other industrial materials.



TPO (BUMPER FASIA)

TPO is made of mixing reinforcement materials with typical polymer 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 stability or for products demanding lightweight property such as interior and exterior materials for automotive, construction materials, and other industrial materials.



BD (Tires)

BD (Butadiene) is the main raw material of synthetic rubber that substitutes natural rubber. It is used to produce tires, rubber hoses and industrial products. BD exists in a colorless gaseous state when at room temperature.



LFT (Rear Bumper Beam)

LFT is made by mixing plastic and special fibers, and boasts excellent mechanical properties and stability, and high resistance to heat. Lotte Chemical is the first company in Korea to develop LFT by applying its original fiber impregnation technology. Unlike existing products, because of its excellence in transformation, it is used as an alternative for metal in producing automobile parts.



TRAVEL



PET (Disposable Packed Lunch)

Plastic bottles, which we are well aware of, are made of PET, a type of plastic material. PET is mainly used to produce food and beverage containers, and is recyclable, making it an environmentally-friendly material. PET is transparent, lightweight and can easily change shapes. And because PET is highly economical, it is replacing glass bottles and aluminum cans.



TPE (Earphone Cords)

TPE is a highly utilized plastic material due to its characteristic of being elastic in room temperature and formable in high temperatures. Its low density enables it to produce lightweight products. It is actively used to produce automobile components because of its soothing texture and ease to be colored. And its non-electrical conduciveness makes it ideal for electrical wire cables.



EPP (Helmets)

EPP is the PP foaming resin with improved functions of PP (Polypropylene). It is used for automotive bumpers, helmets and home appliances where safety and durability are required. And more industrial applications are adopting EPP.



PC (Cellular Phones)

PC is a plastic material with high intensity and a high resistance to impact and heat. It is mainly used for electronic and machinery components, compact disks, DVDs, automotive headlamps and sound walls.



PET (Water Bottles)

Plastic bottles, which are close to our daily life, are made of PET, a type of plastic substance. PET is mainly used to produce food and beverage containers, and is recyclable, making it an environmentally-friendly material. PET is transparent, lightweight and can easily change shapes. And because PET is highly economical, it is replacing glass bottles and aluminum cans.



EG (Clothes)

You may have frequently seen the word polyester when checking clothing tags for materials used. EG is the main material used to produce polyester. And it reacts to terephthalic acid to create polyester. EG is also used to produce anti-freezing liquid for automobiles because of its low freezing point.



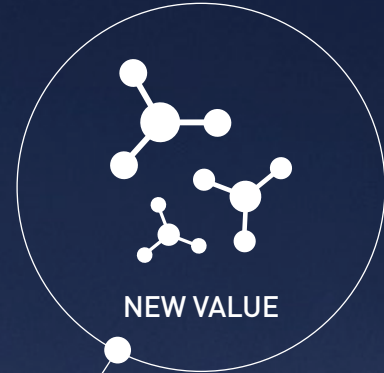
EVA (Shoes)

EVA is a form between rubber and plastic. It is largely used to produce the soles for running shoes because it is soft and thermal and absorbs impact well. Moreover, EVA of high VA content has superior adhesive properties and therefore, is used as a material for high quality adhesives.



BUSINESS HIGHLIGHT

Lotte Chemical is taking a step toward the global market using its world-class technology which creates new values.
Lotte Chemical will also contribute to a healthy and rich life for people.



Why We Invest R&D
How to do Global Business
What is Our Product Competitiveness



WHY WE INVEST R&D

Lotte Chemical emphasizes its objective of promoting R&D projects that go hand-in-hand with its customers and the future. Since establishing an integrated chemical research institute of Lotte Group in 2005, Lotte Chemical has grown to become a global R&D hub by expanding product development and technology support to overseas subsidiaries, including LC Jiaxing EP (in China), LC Titan (in Malaysia and Indonesia) and LC Alabama (in the US). The research institute is also taking the lead in securing source technology that will act as future growth engines and in pioneering new markets through R&D on polymer product and its catalyst, functional new materials, and basic chemicals and megatrends.

Lotte Chemical Research Institute Provides Convenience to Customers' Life

Lotte Chemical is much closer to us than we think it is. There are many opportunities for us to encounter Lotte Chemical's products in our daily lives as it can be seen everywhere from basic household appliances to medical devices and state-of-the-art aviation materials.

Lotte Chemical Contributes to Strengthening Industrial Infrastructure

Based on over 30 years of process/production controlling technology, Lotte Chemical was the first company in Korea to develop hot water and heating pipes and automotive fuel tanks. Our polypropylene resin for extrusion coating, which demonstrates outstanding adhesive properties and processability, was selected as a World-Class Korean Product and contributed greatly to increasing exports. Lotte Chemical is also active in developing adhesive resin which adds functionality to commodity plastics and composites that are highly intense and lightweight to adapt to automobile components and electronic appliances.



Securing Source Technology for Sustainable Growth

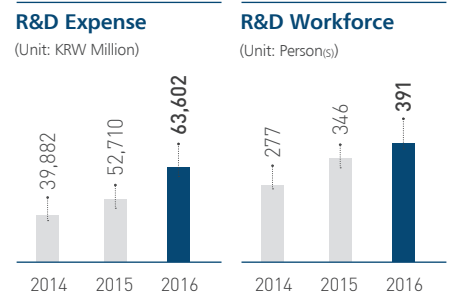
Lotte Chemical strives to secure source technology to realize sustainable growth and pioneer into new markets. The company is also increasing its investment in R&D to become a 'Global Top 10 Chemical Company' through R&D projects on polymer products and catalysts, functional new materials, and basic chemicals and megatrends, the future growth engine.

Developing Portfolio of High Value Added Products

Lotte Chemical's main business, polymer, allows the company to secure source technology on catalysts and processing, and to export products abroad. The company also continues to supply customer-oriented products by developing various uses for polymer and by supporting relevant technologies. The company continues to expand its portfolio on high added value products by grafting technology that it possesses to engineering plastic after its merge with Lotte Advanced Materials which was Samsung group's chemical business unit. In monomer business, Lotte Chemical is enhancing its cost competitiveness through energy efficiency, which result from improving the existing processes and catalysts, and through developing high value chemicals such as raw materials for high-rise concrete compounds.

Commercializing Environmentally-friendly Technologies

Lotte Chemical is propelling the commercializing of membrane technology for water treatment and the ESS (Energy Storage System) to expand into the environment and energy industry. The membrane facility for water treatment is confirmed to move into the Daegu water industry cluster and will begin constructions for a production plant in 2017. In the ESS business, the company developed a chemical flow battery with no risks of explosion and easy to enable mass storage, and is conducting proof tests in industrial facilities and wind power plants in Korea and abroad. Especially, in 2016, Lotte Chemical developed and delivered a standby hybrid ESS.



Major R&D Achievements

Lotte Chemical is close to fulfilling its objective to strengthen business competitiveness and to identify new businesses thanks to our success in developing high value added products and weight reducing automobile products. The company has attained many certificates and awards from outside the company for developing environmentally-friendly, cutting edge products using new materials. The company is also recognized for its outstanding technology and quality in the world market.

TIPP(Transparent Impact-resistance PP)

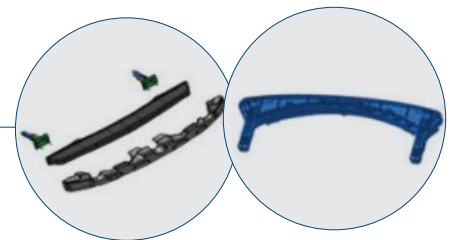
PP (Polypropylene) is one of the commodity plastics widely used in our daily lives. As the leading PP producing company in Korea, Lotte Chemical is developing customized products by developing various new technologies. TIPP is a material that demonstrates improved impact resistance and transparency, developed by Lotte Chemical for the first time in the world. And it is used to develop various products such as detergent containers, transparent sheets and medical devices. We expect to see an increase in production of TIPP, a high value added PP product.



TIPP(Transparent Impact-resistance PP)

LFT (Long Fiber Thermoplastic) Injection Molded Back-Beams for Automobiles

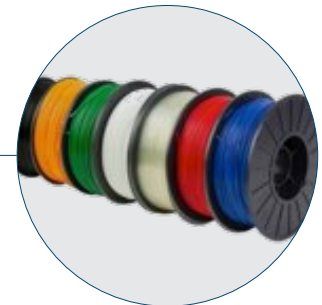
As the leading company in lightweight technology for automobiles, Lotte Chemical has lessened the weight of many automobile parts. LFT is a reinforced plastic material that substitutes metal using Lotte Chemical's independent environmentally-friendly technology. Using this technology, the company succeeded in developing a back beam that can be produced by injection molding. The LFT injection molded back beam reduced weight by 45%, and success in adapting injection molding enabled the company to innovatively improve its productivity by integrating different parts into one. Lotte Chemical will continue to develop environmentally-friendly lightweight materials using weight reducing technologies such as LFT and EPP (Expanded Polypropylene).



Existing Back Beam	→	LFT Injection Molded Back Beam
Weight 4.89kg		Weight 2,22kg Integrated different parts into one / Reduced weight by 45%

Polylactic Acid, a 3D Printer Filament Material for high-speed printer

PLA (Polylactic Acid), a high molecule material stemmed from biomass fuels, is taking center stage as an environmentally-friendly material that can substitute high molecule materials stemmed from oil. Using this PLA material, Lotte Chemical was successful in developing materials for 3D filaments that enable high-speed printing. This allows users to print 5 times faster than existing PLA materials and supplements the flaws of 3D printing technologies. Based on this technology, Lotte Chemical plans to lead the 3D printing material industry by developing various materials for 3D printers, an item taking center stage in the 4th Industrial Revolution.



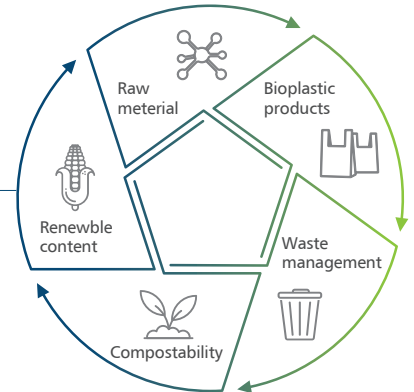
PLA (Polylactic Acid),
a 3D Printer Filament Material for
high-speed printer

Development of Environmentally-friendly Cutting Edge Technology

Lotte Chemical strives to minimize environmental impacts that occur during production, from raw materials to recycling of finished products. The company regularly checks to see if the finished products of R&D projects are green products from the proposing stage of research project. And it continues to develop new processes and improve preexisting processes to maximize energy efficiency and minimize CO₂ emission during the production stage.

Development of Environmentally-friendly Materials

Lotte Chemical is in the process of developing a Bio-based Polymer that uses plant resources such as corn and sugar cane, and a Bio-degradable Polymer that is decomposed by soil microbes when disposed of. The Bio PET, which is currently on sale, is adapted to various liquid containers. Lotte Chemical will continue to develop materials such as PLA (Polylactic Acid) and PBCT (Polybutylene Carbonate-co-Terephthalate) and adapt them to food packagings, films, and automobile materials.

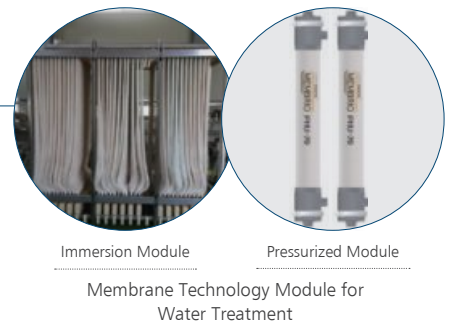


Development of Weight Reducing Materials

Lotte Chemical contributes to reducing the weight of automobiles and aircrafts by developing various weight reducing materials. It has reduced the weight of preexisting parts using various foaming technologies such as EPP and foam injection molding, and is substituting metal parts using reinforced plastic technologies such as LFT (Long Fiber Reinforced Thermoplastic) and CFRP (Carbon Fiber Reinforced Plastic). Lotte Chemical has substituted the metal materials of automobile fuel tanks, door modules and bumper back beams with plastic materials. And in 2016, the company succeeded in developing CFRP automobile hoods using HP-RTM (High Pressure Resin Transfer Molding) which allows mass production.

Development of Membrane Technology for Water Treatment

Membrane technology for water treatment is a technology that provides high quality water by filtering pollutants in the water. It is also an environmentally-friendly technology that contributes to enhancing water quality standards and resolving water shortage issues. Lotte Chemical is expanding its market share focusing on sewages and wastewater facilities. And the membrane technology is applied to environmentally-friendly industrial buildings by developing compact cassettes that can easily be established in confined areas. In particular, Lotte Chemical's membrane boasts its strengths of being lightweight and allows purified water to flow with less resistance, realizing lower working pressure. It also cuts down the use of air that is used to minimize pollutant accumulation, thus lowering energy consumption. Lotte Chemical concluded a MOU (Memorandum of Understanding) with Daegu in Decemer 2015 to build a plant to produce membrane filters for water treatment. Once the construction is finished, Lotte Chemical is expected to obtain a world-class water treatment plant that will enable the company to jump into a next generation industry.



Large-scale Energy Storage System (ESS)

Lotte Chemical continues to invest in R&D projects and establish infrastructure on large-scale energy storage systems (ESS) that is spotlighted as a growth engine and future material in terms of energy. The ESS is an instrument that preserves self-generated electricity from natural sources such as sunlight and/or electricity from late at night when the electricity bill is low to use during peak hours. Use of the ESS is high when demand for energy suddenly increases. Lotte Chemical made an entry into the chemical flow battery ESS market, which features longer life and better safety compared to existing lithium-ion battery, securing an affirmative response from the market.



HOW TO DO GLOBAL BUSINESS

Lotte Chemical continues to form joint ventures and increase investments in facilities in many fields in Korea and abroad. As a representative of the Korean petrochemical business in the global chemical market, we will enhance the quality and value of our products, and lead sustainable growth and development by expanding mutual growth activities with our domestic business partners.

REPRESENT KOREA

Building of Additional Ethylene Plant in Yeosu to Become Global Top 7 Chemical Company

Lotte Chemical is expanding plants to annually produce 200 thousand tons of ethylene by 2018. Since its establishment in 1990, the Yeosu ethylene plant made its first expansion in 2000 and its second in 2012. Once the 3rd expansion is complete, the plant would have increased its initial production capacity by 350%. Also, Lotte Chemical's annual ethylene production capacity will have increased to 2.3 million tons when added to the production capacity of the Daesan plant. The company will be able to produce total 4.5 million tons of ethylene when including our Uzbekistan ethylene plant, completed in May 2016, our Lotte Chemical Titan plant in Malaysia, currently under construction, and our ethylene cracker plant in the US, which will be complete in the latter half of 2018, putting Lotte Chemical at the top in Korea and 7th in the global market in ethylene production capacity. And we expect to secure cost competitiveness by diversifying raw materials, using C3LPG (Propane) instead of the traditional raw material of petrochemistry, naphtha along with ethane produced from natural gas of Uzbekistan and shale gas of the US. This and Lotte Chemical's production plants in Korea, the Middle East, Southeast Asia and the US will strengthen the company's global competitiveness.



Expansion of Yeosu Ethylene Plant



Isoprene Business Project

Isoprene Business Project

The Isoprene Project, which will begin commercial production in 2017, is valuable in that Lotte Chemical established a foundation to secure a stable material supply source for the synthetic rubber business. Through this project, the company has succeeded in separated production of isoprene, dicyclopentadiene and piperlyene from C5 included in pyrolysis gasoline. And by utilizing byproduct dicyclopentadiene and piperlyene as raw materials of petroleum resin, Lotte Chemical was able to strengthen the competitiveness of naphtha cracker than that of ethane cracker.



Joint Venture for Mixed Xylene Production



Groundbreaking of Special Rubber Plant



Joint Venture for Mixed Xylene Production

Lotte Chemical launched the joint venture 'Hyundai Chemical' with Hyundai Oilbank in May 2014 to refine condensate crude oil and produce MX (Mixed Xylene) worth KRW 1.2 trillion. Hyundai Chemical, a 40-60 joint venture between Lotte Chemical and Hyundai Oilbank, was established within the Daesan Plant of Hyundai Oilbank covering a land area of 260,000m², and is operating in a normal manner. This project will allow Hyundai Chemical to annually produce 1.2 million tons of mixed xylene to be supplied to Hyundai Cosmo, an affiliated company of Hyundai Oilbank. And 1 million tons of light straight run naptha will be provided to Lotte Chemical. Moreover, this project will substitute imported mixed xylene, the main material for processing BTX, bringing about import substituting effect of KRW 1 trillion annually. On the other hand, we expect to see an increase in annual revenue of KRW 1.5 trillion coming from kerosene and light oil exportation. Through this strategic partnership, Lotte Chemical and Hyundai Oilbank will upgrade their respective competitive edge in the market, ultimately providing a breakthrough to the slowing domestic refinery and petrochemical industry.

Groundbreaking of Special Rubber Plant

Lotte Chemical established the joint venture 'Lotte Versalis Elastomers Co., Ltd.' in October 2013 in cooperation with Versalis, Italy's state run oil company, well known for its leading synthetic rubber technology. Versalis is completely owned by the state run chemical company Eni of Italy, which operates olefin and synthetic plants in Italy and across Europe. Moreover, it has become a leading chemical company with world-class technology in synthetic rubber. The joint venture, 'Lotte Versalis Elastomers' is currently building a plant in Yeosu with a production capacity of 200,000 tons for SSBR (high value styrene butadiene rubber) and EPDM (Ethylene Propylene Rubber). The plant is scheduled to make its first commercial production in 2018, with business effects of KRW 600 billion in sales, KRW 300 billion worth of import-substituting effect and KRW 300 billion worth of export increase. And the construction of plant facilities is expected to produce 150 thousand new jobs directly and indirectly, contributing greatly to vitalizing the local economy of Yeosu. Lotte Chemical, in cooperation with Versalis, is also planning to operate a new plant to produce 50,000 tons of SIS and SBS by the second half of 2018 with the aim of targeting the hot melt adhesive market. The company will provide the main raw materials, operating sites and structures while Versalis will contribute proprietary technologies, technical engineering and expertise for the plant. The business expansion will allow Lotte Chemical to diversify its business portfolio.

Groundbreaking of Special Rubber Plant



GLOBAL TO FUTURE

Completion of Uzbekistan's Surgil Project

Lotte Chemical is Korea's first chemical company to develop and operate a GC (Gas Chemical Complex) that utilizes gas material produced at local gas plants in the Middle East. The Uzbekistan Surgil project, which made its first commercial production in January 2016, established a joint venture, Uz-Kor Gas Chemical LLC, with the Korean consortium, composed of Lotte Chemical, KOGAS and GS E&R, and the Uzbekistan state run Uzbekneftegaz respectively owning 50% of stakes. This project, which received a funding of KRW 4 trillion through project financing, allows Lotte Chemical to take part in managing the joint venture and to take the lead in running the project, including licensing of source technologies to produce polymer, supervising the project as a PMC (Project Management Consultancy), managing the operation and maintenance of plants, and supplying catalysts needed to produce polymer and executing export sales of polymer products.

Through this project, we have expanded our business scope to a region where low-cost raw materials based on natural gas can be secured. In addition to developing new business models including upstream (gas field) and exporting our synthetic resin manufacturing technology to overseas, It has become meaningful. On the other hand, about 2.6 million tons of gas produced annually through gas field development is sold to the Uzbek government. Ethane-based gas chemical complex, which has cost competitiveness, produces 390,000 tons of HDPE and 80,000 tons of PP per year, Asia, and CIS countries. Based on the success of this project, we have been able to strengthen our global competitiveness by diversifying raw materials, production bases and sales areas by reducing the reliance on naphtha and increasing the use of low-cost gas raw materials, in addition to the US ethane cracker joint venture.



Achievements of Uzbekistan's Surgil Project



- Constructed the first Green Field Petrochemical Complex
- Projected the first Overseas Cracker Plant
- Licensed the first HDPE/PP technology and projected overseas construction
- Conducted first PMC (Project Management Consultancy)
- Established first joint venture for ensuring gas fields
- Lotte Chemical deployed overseas the most number of employees
- Lotte Chemical's first overseas plant to use its independent polymer catalyst
- First time to make a three country off-take sales of the polymer



Constructing of Ethan Cracker Plant in the US



Constructing of Ethan Cracker Plant in the US

Construction of US's Ethane Cracker Plant

In December 2015, Lotte Chemical made a decision to invest in a joint venture to construct a world class ethane cracker plant in Louisiana, USA. This project, which will be operated in cooperation with the US company, Axiall, will produce 1 million tons of ethylene annually, making use of ethane made from North American cheap shale gas. At its groundbreaking ceremony for construction of the ethane cracker and EG (Ethylene Glycol) plant in the US in June 2016, Lotte Chemical publicly announced that it would be advancing into the shale gas-based ethane cracker industry of North America, becoming the first petrochemical company in Korea to do so. The joint investment allowed Lotte Chemical to increase its production capacity of ethylene from 2.82 million tons to 3.72 million, and that of EG from 1.13 million tons to 1.83 million. Together with the Surgil project in Uzbekistan, this business cooperation will increase the quantity of cheap gas material and reduce the dependency on naphtha. Through this, the company is expected to diversify production base camps and sales regions and enhance its global competitiveness.



Expansion Project of TITAN NC in Malaysia

Malaysia Titan NC Expansion Project

The TITAN NC (Naphtha Cracker) Expansion Project, otherwise known as the TE-3 for its name 'Titan Ethylene 3rd' project, is a project to expand the ethylene plant of Titan, which Lotte Chemical acquired from Malaysia in 2010. This project, which is to be completed at the end of June 2017 in cooperation with KBR, will use a K-COT (KBR Catalytic Olefins Technology) Converter, a FCC Converter (Fluidize Catalytic Cracking Converter) in naphtha cracking, which will replace furnaces (steam crackers) needed for naphtha cracking at existing ethylene plants. When complete and fully in operation, Lotte Chemical will be the first global petrochemical business to introduce FCC converters to naphtha cracker for commercial production. Moreover, the K-COT converter technology is expected to convert a wide range of feeds from C4 to C10, to olefin at higher rates, by 10 to 25%, compared with the conventional converting way (furnace). This project will make olefin supply go smoothly for Titan not just in Malaysia alone, but also in Indonesia. It will also be of help while studying the profitability and feasibility of future domestic and overseas ethylene expansion projects.

2016 BUSINESS ISSUE

VERTICAL SYSTEMATIZATION OF THE PETROCHEMICAL INDUSTRY

Lotte Chemical acquired shares of the chemical business unit from Samsung SDI (now Lotte Advanced Materials) and Samsung Fine Chemical (now Lotte Fine Chemical), investing about KRW 3 trillion in 2015. Since then, Lotte Chemical, Lotte Advanced Materials and Lotte Fine Chemical are working together to establish a system to cooperate in purchasing raw materials and selling products, and working together overseas. Also, the 3 companies had consultations and process analysis to integrate their IT systems. By integrating their ERP system, which connects information on company operations such as production, logistics, purchases, finance and accounting, IT system integration project of 3 companies is in progress to reduce production development costs and enhance work efficiency.

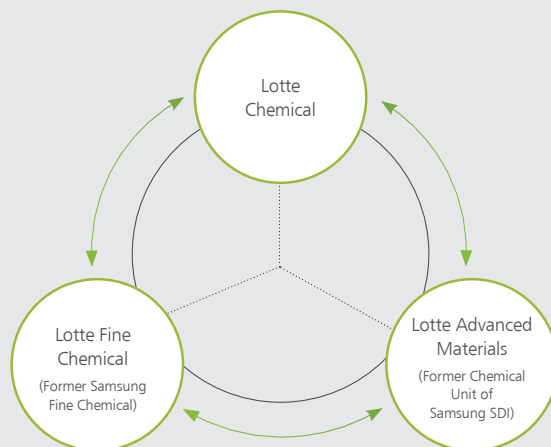
Creating Synergy through Vertical Systematization

Lotte Advanced Materials concluded an annual contract to receive 3,000 tons per month of BD (Butadiene) and 5,000 tons per month of SM (Styrene Monomer), both of which are raw materials of ABS (a type of plastic with high impact resistance and processability), as well as 500 tons of DMC each month, the raw material for PC (Polycarbonate, a type of plastic transparent and outstanding thermal resistance), from the Lotte Chemical from the latter half of 2016. Especially, because supply and demand for BD in Northeast Asia is unstable, the price of BD often demonstrates an annual fluctuation of 2 times or more. However, with stable supply of raw materials from Lotte Chemical, Lotte Advanced Materials is able to attain stability in its supply and demand, enabling it to expand its synergy including expanding in to the overseas market.

Increasing Possibility for Co-marketing & Sales

Considering the fact that polypropylene (PP) of Lotte Chemical and ABS and PC of Lotte Advanced Materials are used as interior and exterior materials of automobiles, Lotte Chemical and Lotte Advanced Materials is considering a way to integrate sales of its products to its customers such as Hyundai Kia, BMW and Ford. Also, the two companies are seeking ways to increase production facilities by sharing its overseas production sites in countries like China, Hungary and Mexico, and to co-market their products.

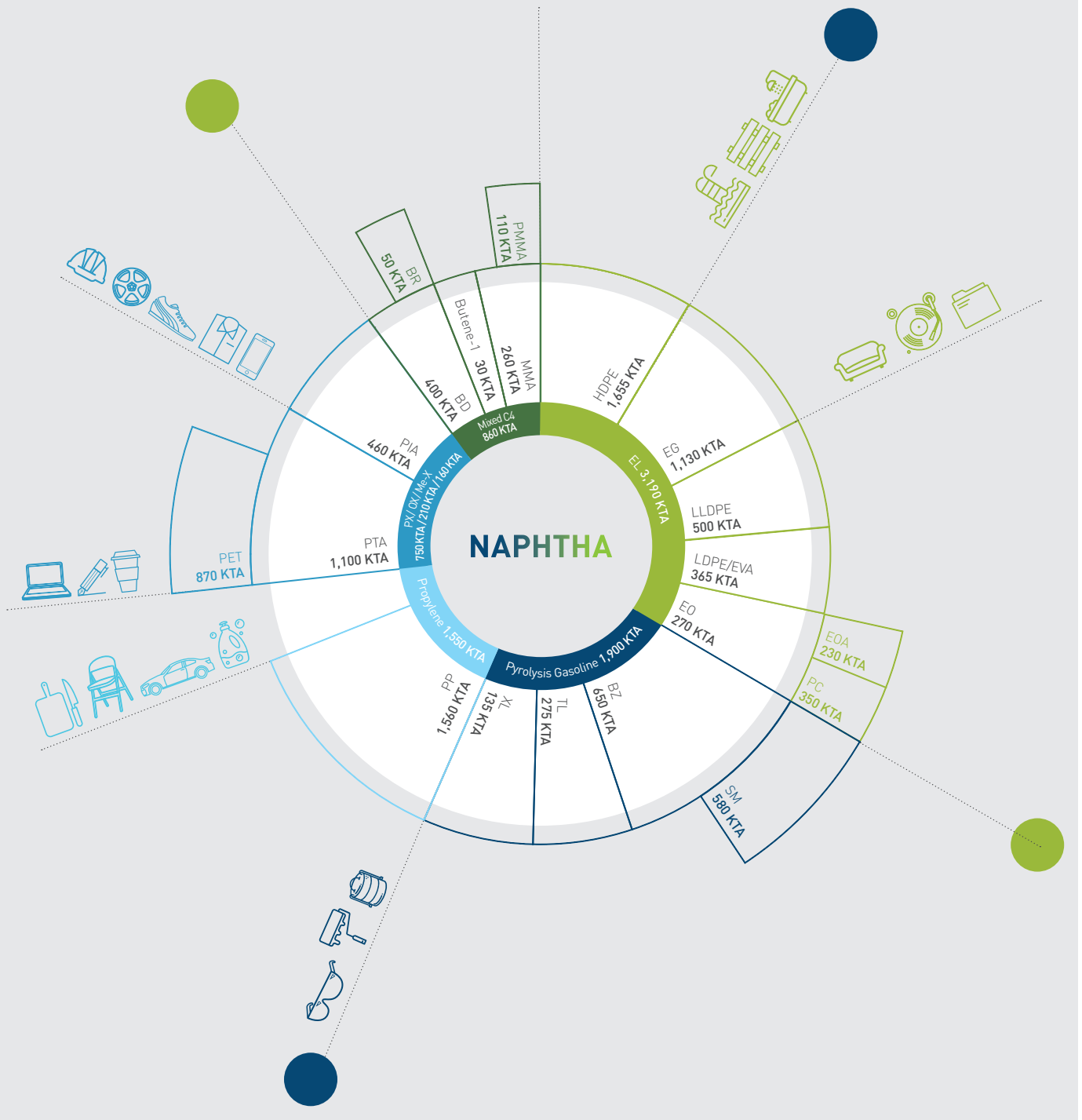
Flow of Synergy of Subsidiaries of Lotte Group



WHAT IS OUR PRODUCT COMPETITIVENESS

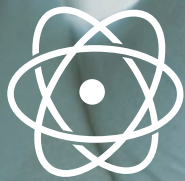
Production Capacity of Main Products

(Unit: KTA, 1,000 tons/year)





SUSTAINABLE



THE BEST TECHNOLOGY

Sustainability Management Initiative
Governance
Ethical Management
Risk Management
Activating Stakeholders' Engagement
Materiality Test

SUSTAINABILITY MANAGEMENT INITIATIVE





Lotte Chemical laid out a vision and a systematic strategy for sustainability management to establish a foundation for sustainable growth. From a mid-to-long-term sustainability management, Lotte Chemical is pushing forward to become a global Top 10 petrochemical company.

Sustainability Management System

To achieve its vision of becoming a 'Global Top 10 Petrochemical Company', Lotte Chemical supplemented 4 sustainability implementation strategies to the already existing 6 strategies to pursue sustainability management in a more focused manner.

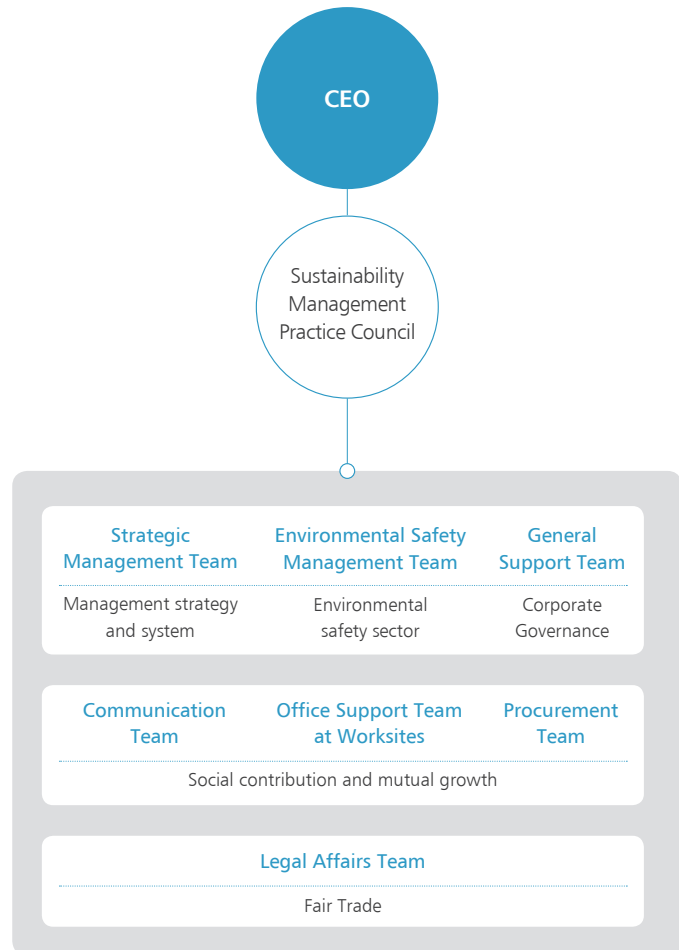
Vision

Global Top 10 Chemical Company

Sustainability Management Strategy for 2017	Implementation System
 Preparing to make a new leap forward	<ul style="list-style-type: none"> • Launching in-house education courses for sharing and spreading sustainability management
 Managing new projects thoroughly	<ul style="list-style-type: none"> • Perform regular checkups on new projects underway and establish a thorough management system • Perform checkups on and provide support for safety issues during construction
 Realizing social responsibility and establishing a compliance management system	<ul style="list-style-type: none"> • Operate education programs for ethical management, information security, customer information protection, and fair trade
 Enhancing risk management capacity	<ul style="list-style-type: none"> • Conducting basic education on information security and job-specific in-depth education

Sustainability Management Implementation Organization

Lotte Chemical operations a company-wide sustainability management process under the management and supervision of its CEO. The Sustainability Management Practice Council of the company selects organizations responsible for diverse topics, including environmental safety, governance structure and community, and then efficiently implements the management through clear definition of assignments and organic cooperation among related organizations.



Achievements of Sustainability Management

Lotte Chemical attained achievements within and outside the company by implementing detailed sustainability management strategies in 2016. Such achievements are meaningful in that all employees worked together to achieve the same goal.

Won the 'Industry Mover' Award of the DJSI (Dow Jones Sustainable Indices)

Lotte Chemical is the first petrochemical company in Korea to win the 'Industry Mover' Award for the sustainability movement sector at the current Dow Jones Sustainable Indices (SAM-DJSI). The Industry Mover is awarded to one company for each sector that demonstrates the best sustainability management achievements than the previous year among the top 2,000 companies in market capitalization by RobecoSAM, an international investment company in Switzerland. This award, along with it being nominated by SAM (Sustainable Asset Management) for 6 consecutive years for economic, environmental and social aspects by the DJSI Asia Pacific, is seen to be major achievements of sustainability management.

Won Excellence Award of the Green Company Award

The Yeosu Plant of Lotte Chemical won the Excellence Award at the awarding ceremony for the Green Company Award hosted by the Ministry of Environment of the Republic of Korea. The award celebrated its 6th anniversary in 2016. It aims to spread the achievements and case studies of selected as Green Companies, and seek ways for green companies to lead Korea's environmental management. Awarded companies are evaluated in various fields including establishing an environmental management system, saving resources and energy, reducing greenhouse gas and environmental pollutants, and fulfilling social and ethical responsibilities. Final selection is made after undergoing document examinations and on-site investigations. The Yeosu Plant was recognized for its efforts to reduce environmental pollutants and saving energy, bearing fruit to the active participation of its employees to environmental management. Lotte Chemical will continue to do its utmost to provide a safe and environmentally friendly worksite.

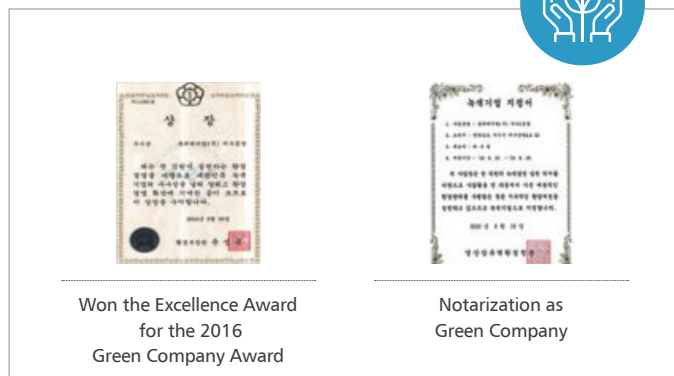
Won the Platinum Award at the Spotlight Awards for 3 Consecutive Years

Lotte Chemical won the platinum award at the 'Spotlight Awards', a competition hosted by the League of American Communication Professionals (LACP) to evaluate international PR activities and reports of companies around the world. Our sustainability report received the Platinum Award for 3 consecutive years in the 'Sustainability Report' category. Especially, our report achieved number One in the Top 100 Communication Materials of all categories. The award is recognition for our effort to transparently report our business achievements, and to include the interests of our stakeholders. Lotte Chemical will continue to efficiently use its sustainability report as a communication channel to disclose its activities and achievements.



Won Grand Prize in the Top 100 Communication Materials of 2016 Category

Won Platinum Award at the Spotlight Awards in the Sustainability Report Category



Won the Excellence Award for the 2016 Green Company Award

Notarization as Green Company

GOVERNANCE

Board of Directors

The Board of Directors (BoD) consists of 7 directors who lead through their expertise. The CEO serves as the Chairman of the BoD, and 4 external directors contribute to making balanced decisions.

Name (Expertise)	Gender	Duty	Position and Carrier
Shin Dong-bin	Male	Chairman and Representative Director	Current) Chairman of Lotte Group Date of Appointment: March 24, 2017
Huh Soo-young	Male	CEO & Representative Director	Former) CEO of KP Chemical Date of Appointment: March 24, 2017
Kim Gyo-hyun	Male	CEO & Representative Director	Former) CEO of LC Titan Date of Appointment: March 24, 2017
Park Kyung-hee (Finance)	Female	External Director, Audit Committee Member	Current) Professor of Business Administration, Ewha Women's University Date of Appointment: March 24, 2017
Kim Yoon-ha (Finance)	Male	External Director, Audit Committee Member	Former) Director of General Bank Inspection Bureau, Financial Supervisory Service Date of Appointment: March 18, 2016
Kim Chul-soo (Tariff)	Male	External Director, Audit Committee Member	Former) Senior Manager, Korea Customs Service Date of Appointment: March 18, 2016
Park Yong-seok (Legal)	Male	External Director	Current) Lawyer, Lee & Ko Law Firm Date of Appointment: March 18, 2016

Securing Diversity & Independence of the BoD

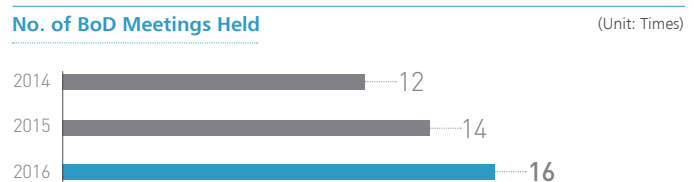
Directors are appointed in an objective and fair manner regardless of gender, ethnicity and nationality, and selected in accordance with internal regulations established by applying the statutory procedures. Internal directors are appointed by the recommendation of the BoD and by the stakeholders' general meeting. And external directors are nominated by the External Director Candidate Recommendation Committee in consideration of their professionalism. Especially, Lotte Chemical strives to correspond to the original meaning of the external directors' policy by appointing directors who are not influenced by majority shareholders so as to prevent authority of company from being concentrated and abused. The External Director Candidate Recommendation Committee nominates respected legal and business professionals from outside the company as candidates. The committee reviews the eligibility of each candidate including his/her capacity and ability as well as their relationship with

Lotte Chemical continues to strive to set transparent and fair corporate governance. We maximize our corporate value, and protect the profit of our stakeholders including our shareholders and investors through our advanced management of our Board of Directors.

Lotte Chemical. After strict evaluation the committee recommends to the general shareholders' meeting, the candidate who is most professional and independent from the BoD.

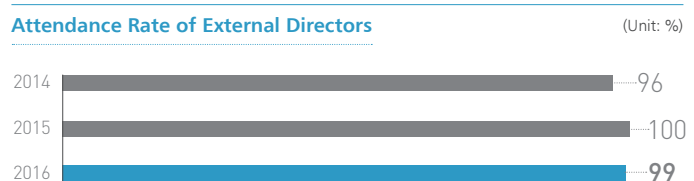
Operation of the BoD

The BoD holds annually 16 meetings, two meetings or more per quarter. The BoD, based on a rational and professional process, makes decisions on critical issues with regard to corporate management, including expanding the company's global business and investments. The BoD also reviews various issues from a sustainability management perspective. The Board operates three subcommittees, including the Audit Committee, to carefully review current issues in detail.



Strengthening Professionalism of the BoD

Lotte Chemical frequently reports major issues that may influence its sustainability management in economic, social and environmental aspects to strengthen the professionalism of the BoD. The company provides materials relevant to BoD meeting and subcommittee meetings in advance and if needed, organizes independent meetings to assist the BoD in conducting their roles in a professional manner. The BoD regularly visits the company's Korean and overseas worksites and attends in-house education programs to enhance their understanding of the company's business activities. The BoD operates three subcommittees – External Director Candidate Recommendation Committee, Internal Transaction Committee, and Audit Committee – to strengthen the BoD's expertise in making decisions, and to support efficient operations.



Subcommittee	Member	Name	Purpose and Authorities
External Director Candidate Recommendation Committee	Internal Director	Huh Soo-young	Recommendation of independent director candidates
	External Director	Kim Chul-soo	
	External Director	Park Yong-seok	
Internal Transaction Committee	External Director	Park Kyung-hee	Deliberation and request for correction of internal transaction and private contracts over a certain scale
	External Director	Kim Chul-soo	
	External Director	Kim Yoon-ha	
Audit Committee	External Director	Park Kyung-hee	Audit of accounting and works
	External Director	Kim Chul-soo	
	External Director	Kim Yoon-ha	

Audit Committee

All Audit Committee members are composed of external directors appointed at the shareholders’ meeting. The tenure of Audit Committee is set up by the articles of incorporation, which ensures the independency of the committee. And the Audit Committee meeting is held at least quarterly in accordance with its rules. The committee contributes to establishing sound corporate governance by focusing on preventive and preemptive audits from the decision-making stage to post-audit job execution in order to fundamentally avert conflicts of interest.

Performance Evaluation and Compensation

The BoD members are assessed for their performance through fair and transparent procedure according to the regulation. A comprehensive consideration of leadership, expertise, and company contribution as well as quantitative evaluation of management performance across the company is reflected to the directors’ remuneration. In addition, we are reviewing various financial and nonfinancial risks and opportunities based on mid- to long-term corporate vision so that more objective evaluation and rational compensation can be achieved. The remuneration limit is fully reviewed and confirmed at the shareholders’ meeting. Details are disclosed on the business report each year.

Share Ownership

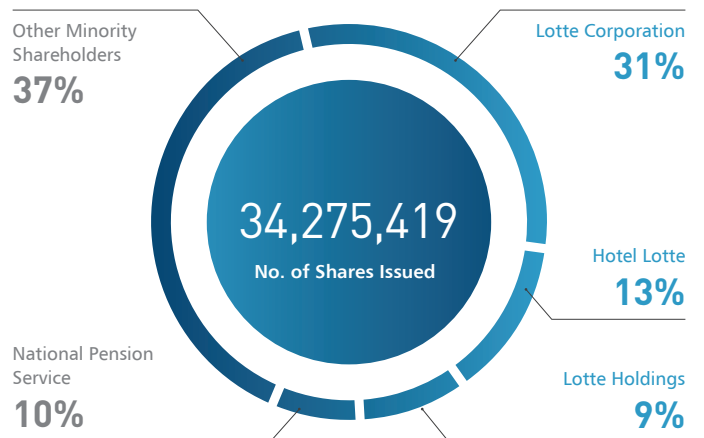
Lotte Chemical has established a stable and transparent share ownership structure considering status of shareholders and investors. Majority shareholders include Lotte Corporation and Hotel Lotte. Lotte Chemical also strives to listen to what minority shareholders have to say, and to maximize shareholders’ value. Shareholders are able to exercise their rights within the scope stipulated in relevant laws and regulations.

Providing Transparent Business Information

In an era where the business environment rapidly changes and advances, investors are demanding more information to estimate future economic

values of companies. Lotte Chemical understands the importance of communicating with investors and the market. Hence, it provides sufficient information on current and future value of the company. Through activities ensured within the corporate public announcement system framework, meetings and conferences, Lotte Chemical has come to be known as a reliable company among its investors. In 2016 alone, Lotte Chemical disclosed 54 cases of public announcements, communicating efficiently with its stakeholders including investors. In accordance, to comply with regulations related to public announcements, Lotte Chemical consistently monitors the enactment and amendments of relevant laws and regulations and will announce effective information disclosure through education on disclosure regulations.

Shareholder Structure (As of March 2017)



Shareholder	No. of Shares Owned (Shares)	Percentage (%)
Lotte Corporation	10,718,818	31.27
Hotel Lotte	4,346,818	12.68
Lotte Holdings Co., Ltd. (Japan)	3,186,000	9.30
National Pension Service	3,252,927	9.49
Others	12,770,856	37.26
Total	34,275,419	100.00

Credit Ratings and Date of Final Rating



Korea Investors Service (KIS)
2016.12.01

AA+

Korea Ratings Corporation (KR)
2016.12.20

A1

National Information & Credit Evaluation Inc. (NICE)
2016.12.21

A1

ETHICAL MANAGEMENT

Lotte Chemical wants to operate business management in ways that contribute to the social and economic development, and the welfare of mankind, by creating values for stakeholders on the basis of ethical management. To this end, the company endeavors to make all employees understand its ethical regulations and helps work ethics take deep root, while pursuing a clean and transparent corporate culture that carries out social responsibility.

Ethical Management System

The Ethical Management Team under the CEO has put in efforts to improve our ethical management to establish ethical management as a corporate culture, and to declare public company-wide ethical management principles.

Improving Ethical Management

Lotte Group set up its Code of Conduct to provide a definite direction of its ethical management. And in 2016, it enacted its Code of Practice, complementing its Code of Conduct, to provide a definite guide towards ethical issues. Lotte Group amended its Code of Practice, which has become the standard for ethical management, based on an exact understanding of current issues by measuring the level of the group's ethical management using an advanced management system that was established based on results of 'ethical management' and 'leadership capacity'. And the amendments are reflected in its education programs.

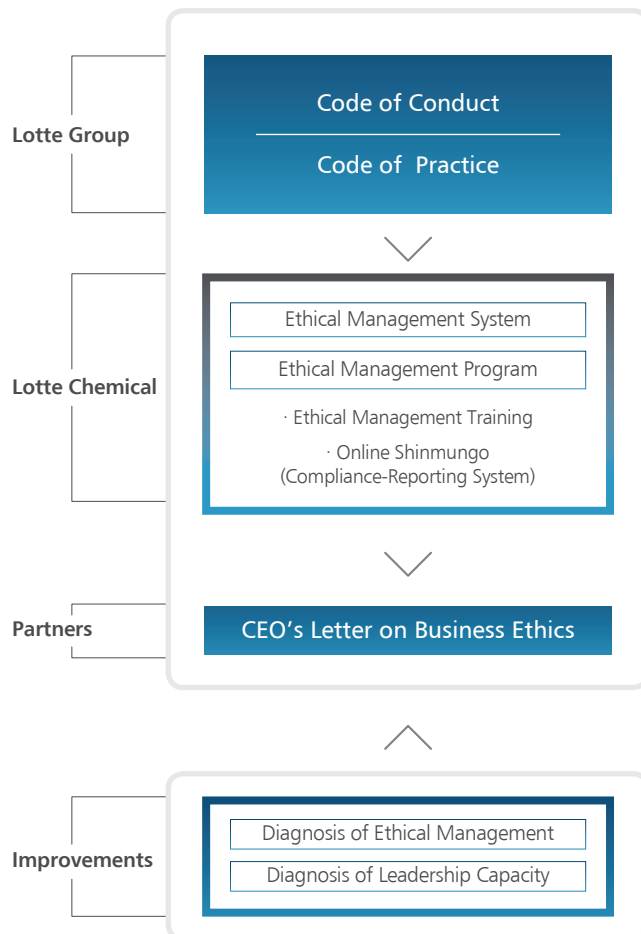
Code of Conduct

Theme	20 Practices
Trust from Employees	Fair Corporate Culture
	Respect for Others
	Safe Working Environment
	Transparent Financial Statements
	Asset Protection and Prevention of Abuse
	Protection of Intellectual Rights
	Compliance with Information Protection Regulations
	Forbiddance of Briberies
	Forbiddance of Internal Trade
	Forbiddance of Unfair Political Affairs
Trust from Customers	Top-notch Products & Services
	Honest Marketing
	Protection of Customer Information
Trust from Partners	Fair Trade
	Respect for Partnership
Trust from Society	Fair Competition
	Legit Collection of Information of Competitor
	Protection of the Environment
	Social Contribution
	Respect for Local Culture/ Compliance of Local Laws & Regulations

Ethical Management System

Our ethical management system covers all business ethics-related issues, including code of ethics, written oath, training, implementation, promotion, consultation and reporting of the management. Through this system, all employees can share and monitor related activities. We are making endeavors so that those who work at the company and external stakeholders manage and improve those issues efficiently.

Ethical Management System



Ethical Management Program

We have put in place different ethical management programs, based on the ethical management system. We inspect whether they are carried out by all employees and ensure that we inculcate them as part of our routine.

CEO's Letter on Business Ethics

Since 2012, Lotte Chemical has promoted a 'Do Not Give nor Receive Holiday Gift' campaign. In addition, the company sends out a letter on business ethics from the CEO to its employees and partners, demonstrating a strong will to implement ethical management. The company is also doing its utmost to establish a fair and transparent trade culture by spreading its strong will to outside stakeholders.



Ethical Education

Lotte Chemical provides training repeatedly in diverse ways, including online and collective forms, to spread awareness of ethical management to its employees, and internalizes an ethical mind. The education system is designed for proactive type of ethical management that factors in the relational ethics that relates to the cooperation and respect among those who work with us going beyond the passive type of ethical management that largely focuses on the prevention of unethical practices or irregularities.

Implementation of Education on Ethical Management in 2016 (6 collective and 1 online education)

Classification	Course	Date	Target	Contents
Collective Education	Entry-level education for new recruits	'16. 01 /07	New recruits in the second half of 2015 and first half of 2016	Introduction of ethical management and the role as a new employee
	Education course to develop expatriates	'16.01	Employees dispatched to LC Titan, LC Jiaxing EP	Enhancement of mindset toward ethical management, and education on anti-bribery laws and anti-corruption laws by each country
		'16.04	LC Shanghai	
		'16.10	LC Shanghai	
Online Education	E-learning for Lotte Chemical's business ethics	Weekly (52 times a year)	All employees	Video program for establishing a culture of ethical management



Online Shinmungo (Compliance-reporting System)

Lotte Chemical runs 'Online Shinmungo', a compliance-reporting system, on its ethical management website to provide a channel to report unethical or illegal behavior. We make reporting any unethical or illegal behavior obligatory and detailed contents and personal information are kept in confidence to protect informants from any disadvantage and unfair treatment. We also operate other reporting channels such as post, wired telephone and emails to spread fairness and transparency in businesses.



Online Shinmungo Reports

Unit: Cases

Classification	2014	2015	2016
Bidding and contract	2	1	3
Sales and receivables	2	2	1
Grievances of business partners	1	7	8
Complaints on work process	-	3	3
Total	5	13	15
Follow-ups and prevention of recurrence	5	13	15

Performances in Ethical Management Implementation

2016

- January → Sending the CEO's letter on business ethics to stakeholders and business partners on Lunar New Year's Day
- May → Distributed the 'Ethical Management Q&A Book' to all employees
- August → Sending the CEO's letter on business ethics to stakeholders and business partners on Korean Thanksgiving Day

2015

- January → Sending the CEO's letter on business ethics to stakeholders and business partners on Lunar New Year's Day
- August → Offering ethical education to new recruits
Offering ethical education to employees in charge of procurement
Sending the CEO's letter on business ethics to stakeholders and business partners on Korean Thanksgiving Day
- October → Conducting education to develop managers at overseas subsidiaries

2014

- January → Sending the CEO's letter on business ethics to stakeholders and business partners on Lunar New Year's Day
- May → Offering ethical education to manager-level expatriates
- October → Sending the CEO's letter on business ethics to stakeholders and business partners on Korean Thanksgiving Day
- November → Conducting education on business ethics for general employees

RISK MANAGEMENT

Understanding risks that we may face in a rapidly changing global business environment and coming up with a resolution in advance is an important element in sustainability management. Lotte Chemical is forming an efficient and stable business condition through actions that effectively deal with not only economic risks but also social and environmental ones based on the interest and support of its management.

Operating an Integrated Risk Management System

Lotte Chemical has been operating an integrated risk management system to ensure sustainability management. Doing so, Lotte Chemical has established a foundation to identify and respond to potential economic, social and environmental risks that might occur. This scheme is in service to identify and handle a bad element that undermines business sustainability and quickly eliminate it before it materializes.

continue to quickly respond to market change by developing end-users and identifying customer needs, and optimize R&D investments and production.

Established a Risk Management Governance System

Lotte Chemical operates an ERM (Enterprise Risk Management) system in all stages of business to identify any risks that may influence business and establish management and response strategies. The company also operates a Risk Management Committee, which is headed by the CEO, to share risk management status and improve risk management policies and/or strategies to accord with the company's business policy. The company also established a company-wide risk management governance by sharing roles with an exclusive team and relevant divisions.

Economic Fluctuation Risk | With the current international trade environment becoming more and more complicated, Lotte Chemical strengthened its monitoring of the world market to quickly respond to the changes of the international market. Especially, Lotte Chemical is establishing a foundation to become a global company by continuing to endeavor to advance into the international market and diversify its market, and by securing various stable sales channels.

Core Risk Management in Businesses

To deal with various internal and external risks effectively, Lotte Chemical strategically administers company-level risks.

Resource Procurement Risk | Lotte Chemical endeavors to predict the price direction of products and resource, and to strategically approach the market so as to ensure profit by strengthening its monitoring of the market environment. To mitigate raw material risk, we diversified our supply chain, through the Uzbekistan gas field project and the Louisiana shale gas project in the US. We are also establishing an advanced response system to respond to the changes of the international market by cooperating with divisions relevant to production, R&D and sales.

Industry Growth Risk | Due to the fall in oil prices in the second half of 2014, the global petrochemical industry showed a confusion situation. However, entering 2015, the stable low oil price reduced price costs which allowed Lotte Chemical to ensure stable income in 2016. New large-scale plants are planned to go under construction world-wide which will influence the market largely in 2017. We aim to reduce this risk by developing high value added products and new businesses.

Competition Risk | As demands for high value added products grow stronger, it is necessary not only to ensure profit through stable sales of commodity products but also to enhance technology and quality by designing a portfolio of high value added products. Lotte Chemical will

Arrangement of a Risk Portfolio

Lotte Chemical created a risk portfolio that is made up of 4 risk areas, i.e., operations, finance, compliance and strategy. Each risk is chosen by company-wide coherent criteria and controlled in a preemptive and consistent manner.



Compliance Risk Management

The company is changing from a temporary and postcontrol response to a preemptive management strategy through a manual on and monitoring of detailed risks. The company will finish in the second half of 2017 its project to establish a compliance management system, which began at the end of 2016 to cover all fields of operations including anti-corruption, anti-trust and fair trade, environmental safety and health, human resources management, tax accounting and trade secret protection. Lotte Chemical will secure the trust of its customers and partners, and spread a compliance culture as a global company through a strict response system.

Tax Risk Management

Lotte Chemical emphasizes the importance of strictly observing tax principles and regulations in countries that it does business in. We pay our due tax faithfully and disclose information publicly through an audit report and on an electronic announcement system in a transparent and dutiful manner. Going forward as well, Lotte Chemical, as corporate citizens, will continue to fulfill our obligation and manage this risk rationally and fairly.

Internal Control System

The management and responsible organizations of Lotte Chemical analyze work processes to classify risks wielding serious impact on business activities, and assess and check if such risks can be controlled internally. The evaluation results are reported to the Audit Committee as well as the BoD and subsequently reviewed and certified by independent auditors and the Audit Committee. Through the internal control system, we aim to prevent non-compliance risks from taking place with relevant laws and regulations, and increase the reliability of business management.

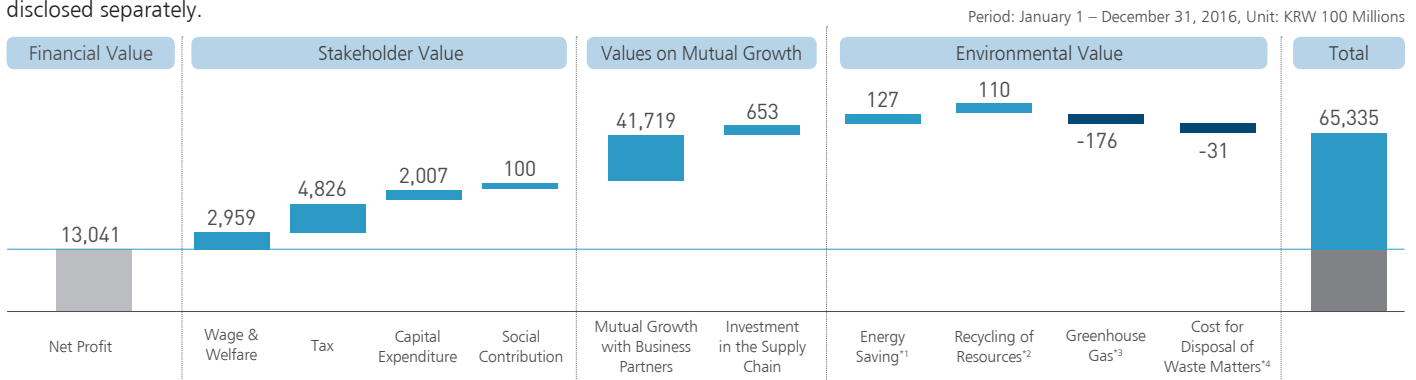
ACTIVATING STAKEHOLDERS' ENGAGEMENT

Lotte Chemical understands the importance of openly communicating with its stakeholders when doing business, and is proactive in communicating with its stakeholders through diverse channels. The opinions that we receive from our stakeholders, such as the government, employees, business partners, shareholders and investors, the local community, and customers, are reflected into places of improvement and the economic value generated from these business activities are shared with our stakeholders.

Achievements of Integrated Value Creation

Lotte Chemical analyzed and disclosed quantitative values of its annual performance to achieve its long-term sustainability management objective. The company cites an equation which complies with global and legal standards to apply traditional financial values, stakeholder values of the general society, and the actual values of mutual growth and the environment. References are disclosed separately.

We disclose synthetically in graphic form of positive and negative impacts of each value. Lotte Chemical will continue to make efforts to disseminate the details of each area of value that has not yet been analyzed quantitatively due to social consensus and technical limit.



* 1 Sum of energy saving effect and GHG emission reduction effect = 231943.7 BOE (1,419TJ) x 40.49 (The average price per barrel of Dubai crude oil in 2016) x KRW 1161.11 (Exchange rate in 2016) + (92,041tCO₂e * KRW 19,300)
 * 2 Sum of water recycling effect and recycling product sales revenue = 28,984,672 tons x KRW 52.7 (unit price of dam water) + 9.5 KRW billion
 * 3 Greenhouse gas emission cost = 5,689,234tCO₂e (Scope 1, 2, 3) * 19,300 won
 * 4 Total costs of recycling, landfill and incineration
 Cf. GHG emission price: KRW 19,300/ton (KAU16, 2016.07 ~ 2017.04 Average price, Resource: Korea Energy Agency)

Activating Stakeholders' Engagement

Government

We contribute to creating social values and jobs, and improving the quality of people's lives by observing laws, and conducting sound business activities.

- Public Hearings by the Government
- Forum
- Council Participation in National Projects
- Collaboration Programs

Employees

Fair compensation and diverse welfare systems are offered to create optimized work environment. We also strive to build a culture where employees are able to participate in corporate management voluntarily.

- Labor-Management Council
- Events for Communication
- Site Operation Committee
- Satisfaction Surveys
- Intranet
- Presentation on Business Status

Business Partners

We provide business partners with fair opportunities and ensure transparent transaction with the aim of mutual prosperity.

- Meetings with Business Partners
- Technical Cooperation Projects with SMEs
- Mutual Growth Academy
- CEO's Visit to Business Partners

Local Communities

Diverse channels are being operated to swiftly communicate with local communities. We are also proactive in social contribution activities.

- Sisterhood Ties
- Meetings with Local Residents
- Environmental Cleanup
- Social Contribution Activities

Shareholders & Investors

To promote both corporate value and shareholder value, we carry out transparent and efficient management activities as well as create profits.

- Shareholders' Meeting
- Disclosure
- IR Website
- Ethical Management Website

Customers

We always listen to requirements of customers through a variety of channels and implement regular surveys to maximize customer satisfaction.

- Direct Visits (Frequently)
- Customer Satisfaction Survey
- Customer Invitation Program
- Customer Complaint Treatment Process

Interview with Stakeholders

Cho Sam-rae, Director, Korea Chemical Management Association | The Korea Chemical Management Association is an organization that, in collaboration with Lotte Chemical, pursues the utmost environmental value to support sustainable growth of the chemical industry by protecting Koreans and the environment from the harmful effect of chemical substances. Securing safety of chemical products distributed within the global chemical market is the most important issue nowadays. Lotte Chemical must endeavor to perform its own safety inspection on all products that it produces before distributing it to the market. Lotte Chemical is becoming a global leader in the petrochemical industry by diversifying its production and sales base and its portfolio. However, the development of the chemical industry also involves a sacrifice of environmental value. Hence, to become a real leader, Lotte Chemical must put the same amount of effort to its growth policy and environmental activities.



Relevant Institution



Business Partner

Kim Hyun-jeon, CEO, Hwayang Industry Co., Ltd. | Hwayang Industry has been doing business with Lotte Chemical since 2008. It produces and delivers the 200L Steel Drum which is used to pack EOA products produced at the Yeosu Plant and GE products produced at the Daesan Plant. Thanks to the mutual growth fund of Lotte Chemical, our company utilized funds at a lower interest rate than that of financial institutes. And the reduced costs allowed us to strengthen our product competitiveness. Also, our company was able to introduce a more efficient production and management technology in our business by benchmarking advanced companies that we met during a German exhibition which Lotte Chemical was invited to. We hope that Lotte Chemical will increase its meetings with its business partners to strengthen its platform on exchanging information on market trends and issues, and to establish a stronger partnership.

Kim Dae-woo, Deputy General Manager, Hana Bank | With the acquiring of Samsung Group's chemical business unit, Lotte Chemical is now able to produce high value added chemical products. Such efforts of entering a new market to shed the limits of existing products seems to be very positive. Though Lotte Chemical is strengthening its global competitiveness with its joint venture in the US and its Uzbekistan project, it must also make preparations to manage well financial risks that may occur due to the global economic recession. Also, Lotte Chemical must quickly put an end to its management conflict so as to pursue an advanced management activity based on a stable governance structure. I hope that Lotte Chemical will continue to communicate in depth with its stakeholders and share its vision.



Shareholder & Investor



Local Community

Kim Eun-hwa, Teacher, Nambu Rehabilitation Center for the Disabled | Lotte Chemical makes monthly donations to support living costs to the severely disabled and medical treatment for disabled children. And since 2013, employees of Lotte Chemical deliver briquettes to needy families so that the families can spend a warm winter. Like its social contribution slogan, a 'Warm Heart and Hot Passion,' Lotte Chemical is proactive in volunteer work, actively communicating with our organization from the time it begins its planning until it completes the project. The value of sharing is realized only when people continue to show their interest and support. And I hope that Lotte Chemical will continue to work with local communities as it does now.

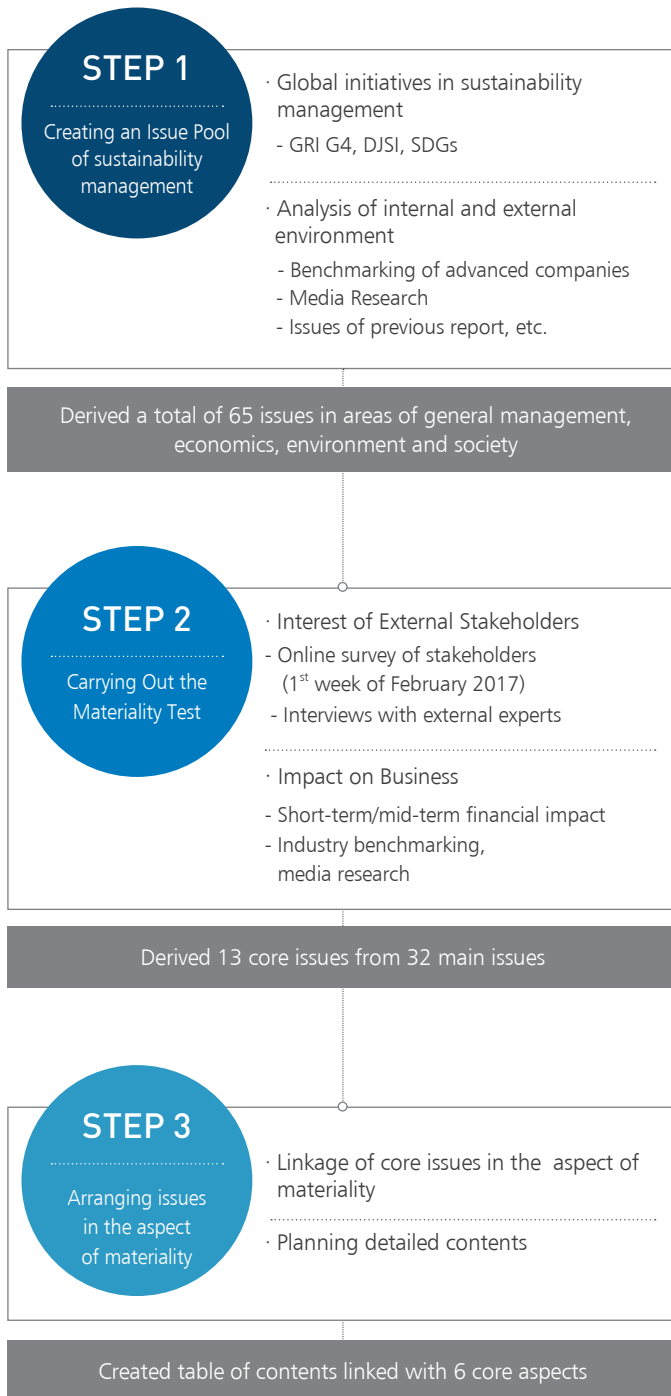
Kim Jin-young, Assistant Manager, Kolon Industry | Kolon Industry procures raw materials from the Daesan and Yeosu plants of Lotte Chemical, which allowed us to lessen our reliance to imports and obtain a secure supply channel. Unlike other companies which only put emphasis on selling products, Lotte Chemical establishes a communication channel with its customers to identify their needs and, in the long-term, find a win-win strategy for itself and its customers. I hope that Lotte Chemical will continue to strengthen its relationship with its customers and fulfill its social responsibility so as to strengthen its competitiveness.



Customer

MATERIALITY TEST

Materiality Test Process



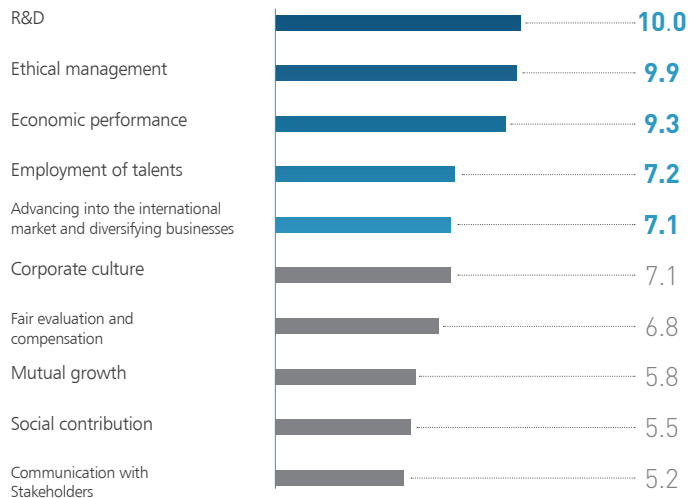
Lotte Chemical identifies core issues from a sustainable management perspective, and transparently reports objectives, achievements and future plans of each issue through a materiality test that is based on the GRI's Report Process.

Survey of Internal and External Stakeholders

We derived the top 10 core issues from 20 issues, including economic issues, social issues and environmental issues, which our internal (employees) and external (customers, business partners, local communities, investors, government and relevant institutions) emphasize.

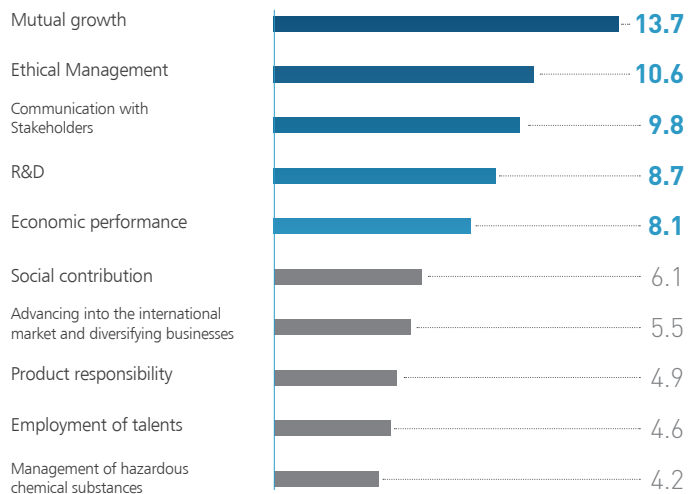
Internal Stakeholders

Others (Bottom 10) 26.3% (Unit: %)

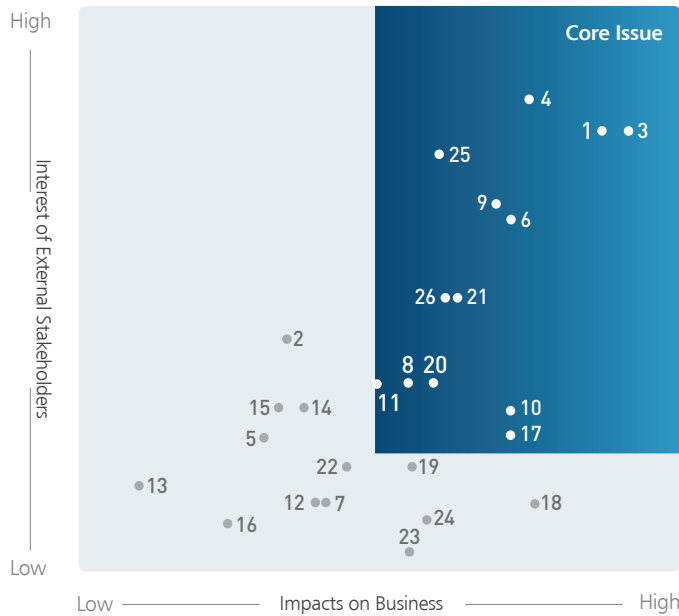


External Stakeholders

Others (Bottom 10) 23.6% (Unit: %)



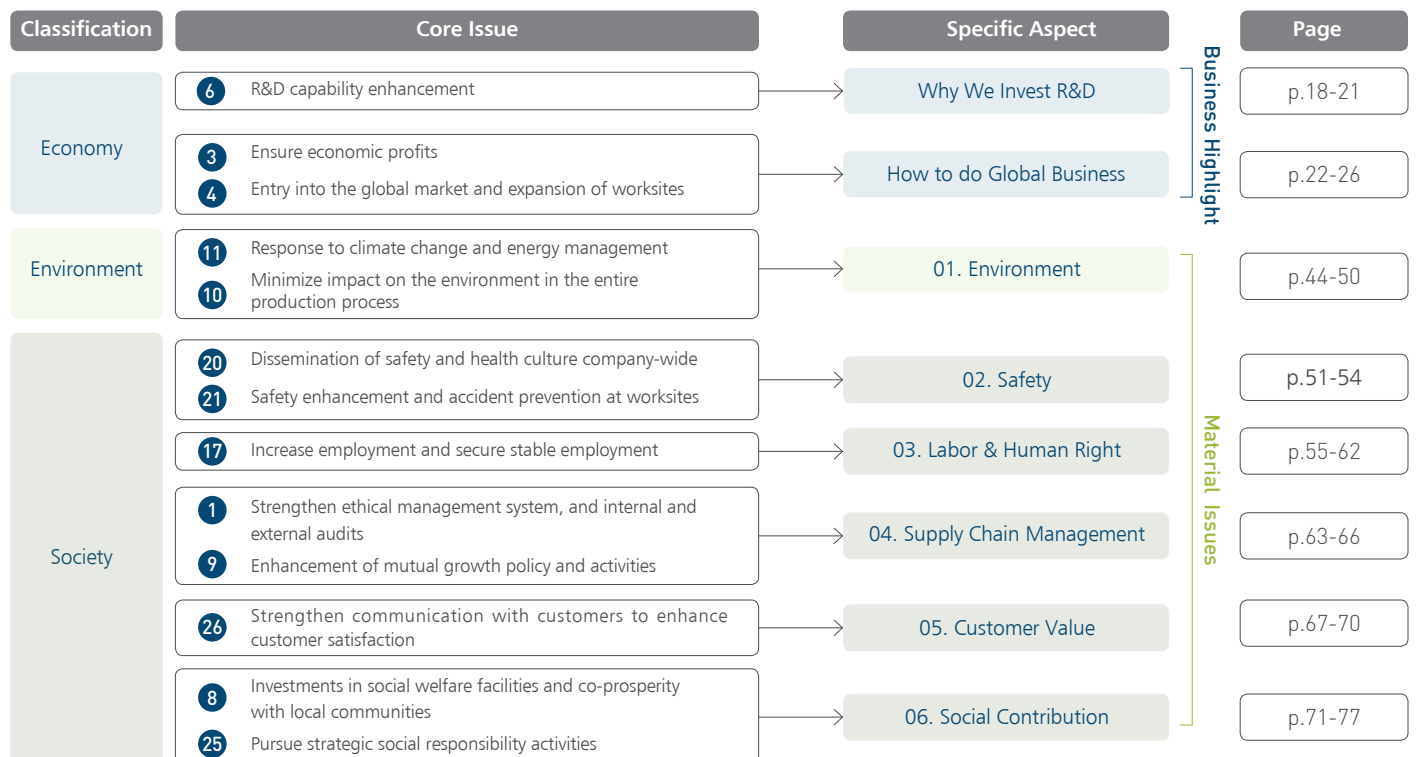
Results of Materiality Test



No.	Core Issue
1	Strengthen ethical management system, and internal and external audits
3	Ensure economic profits
4	Entry into the global market and expansion of worksites
6	R&D capability enhancement
8	Investments in social welfare facilities and co-prosperity with local communities
9	Enhancement of mutual growth policy and activities
10	Minimize impact on the environment in the entire production process
11	Response to climate change and energy management
17	Increase and secure stable employment
20	Dissemination of safety and health culture company-wide
21	Safety enhancement and accident prevention at worksites
25	Pursue strategic social responsibility activities
26	Strengthen communication with customers to enhance customer satisfaction

Reporting Contents in Connection with Specific Aspects

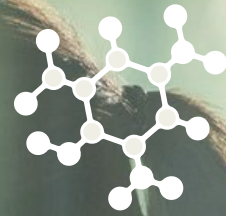
Based on the 13 core issues derived from the materiality test, Lotte Chemical will report matters of 6 core issues – environment, safety, labor & human rights, mutual growth, customer value and social contribution. Each core report was carefully selected based on the impacts it has on Lotte Chemical’s businesses, and the interest of its stakeholders.





MATERIAL ISSUES

Lotte Chemical reports 6 core issues with regard to our sustainability management, which have attracted the most attention of stakeholders on the basis of the results of the materiality test.



GROWTH



TOGETHER

Issue 01. Environment

Issue 02. Safety

Issue 03. Labor & Human Right

Issue 04. Supply Chain Management

Issue 05. Customer Value

Issue 06. Social Contribution

ENVIRONMENT

As the internet and social media continue to develop, interest and supervision on business impacts on the environment from global stakeholders continue to broaden. Hence, many leading global companies are putting in utmost efforts to promote their environmentally friendly products and disclose investment performances of environmentally friendly facilities and processes. By doing so, the companies are proactive in informing their stakeholders the efforts that they put in to protect the environment. To fulfill the social interest and demands, Lotte Chemical introduces in details its environmentally friendly business philosophy and its environmentally friendly facilities using various communication channels with its diverse stakeholders, emphasizing its role as a corporate citizen that communicates with stakeholders.

Our Response

Performance in 2016

Classification	Core Issue	2016 Goal	Performance	Achievement
Response to Climate Change	Setup and implementation of strategies to purchase emissions trading	Implementation of the 2 nd stage of emissions trading roadmap	1. Secured and managed emissions trading rights 2. Strengthened internal and external communication	●
Response to Climate Change	Analysis of emissions trading trends and reporting	Top 10% in the evaluation of corporate governance, risks and opportunities, and strategies with regard to CDP	1. Improvement in CDP level: B (Management) ⇒ A- (Leadership)	●
Response to Preemptive Regulations	Response to new environmental regulations	Deregulation ensured by preemptive response to environmental regulations	1. Amended irrational articles relevant to burden charge of the EPR (Extended Producer Responsibility) System 2. Mitigate standards for facility management in accordance with the Chemical Substance Management Act	●

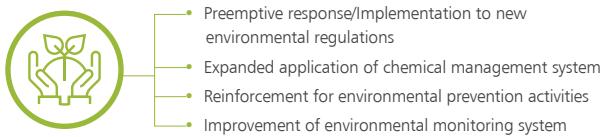
Plans for 2017

Classification	Core Issues	2017 Goal	Achievement Index	Deadline
Response to Climate Change	Setup and implementation of strategies to purchase emissions trading	Implementation of the 2 nd stage of emissions trading roadmap	1. Secure emissions trading rights 2. Allocation results of 2 nd stage	By 2018
Response to Climate Change	Analysis of emissions trading trends and reporting	Top 10% in the evaluation of corporate governance, risks and opportunities, and strategies with regard to CDP	Maintain and improve the Evaluation level	By 2018
Compliance Management	Implement compliance management in the environment, safety and health category	Identify and improve risks regarding violation of laws and regulations	Establish a compliance management system in the environment, safety and health category	By 2018
Environment Management	Establish a cooperation system between the head office and worksites to response to regulations	Compare operations of environmental facilities and equipment of each worksite and introduce best practices	Organize quarterly meetings and conduct environment evaluation	By 2018

Environmental Management

Environmental Strategy

Lotte Chemical is preserving the global environment and protecting its customers' healthy lives through strategic environmental management. The company is continuously practicing activities to reduce energy usage as well as investing emission reduction facilities for greenhouse gas throughout the company. Furthermore, Lotte Chemical is enhancing eco-friendliness of its products and services through innovation in R&D.



Fostering Asia's Best Eco-friendly Chemical Company

By setting up a 'top-tier Asian chemical company that aims for harmony between nature and humanity' as its mid-to-long term vision, Lotte Chemical is reinforcing promotion activities as well as achievement of its environmental goals with employees' pride that they are working for an eco-friendly firm. Keeping this vision in mind, the company is putting in efforts to establish KPI for reducing 30% GHG (Green House Gas) intensity by 2018 compared to that of 2009 and increasing green growth sales ratio by more than 30%, and sharing the performance.



Exclusive Organization for Environment & Safety Management

In order to include environmental impact as well as safety of employees and customers, Lotte Chemical is operating the environment & safety management team at the head office to unify channel for work. The team is developing and promoting green management through analyzing business implementation period and impact by reviewing eco-friendly trends and laws & regulations and deciding how to apply such analysis throughout the entire company.

Response of Environmental Management Standard

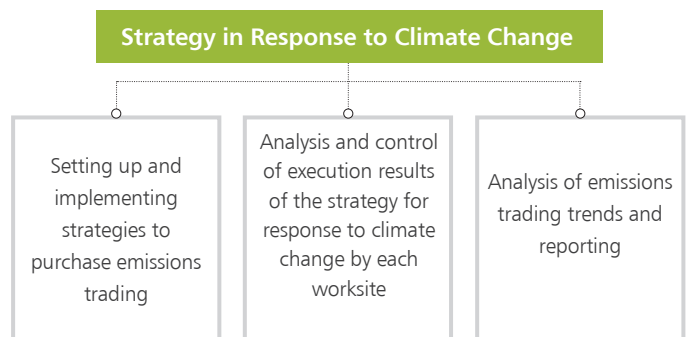
Lotte Chemical is actively involved in various certificate programs and evaluation processes regarding environmental assessment in order to actively respond to stakeholders' needs as well as secure objective grounds for implementation of global eco-friendly management.

Voluntary green purchasing | Green purchasing is one of the most representative consultative groups as eco-products purchasing convention to boost manufacturing, distribution and consumption of green products. Lotte Chemical joined this convention as it turned out to be necessary to establish the foundation of green growth, implement and manage green purchasing plans by boosting voluntary green management.

Participation in CDP | Lotte Chemical is joining other companies for minimizing risks in their management due to climate change through Carbon Disclosure Project (CDP). Lotte has been releasing carbon information as well as responding to the issues related to climate change and reviewing financial impact by carbon emission along with other chemical firms worldwide. In addition, the company has been under evaluation in areas like governance structure, risk, strategies and GHG accounting and won the leadership grade in 2016.

Strategy Implementation of Response to Climate Change

As global efforts to tackle climate change, there's a growing interest in response strategies in major industries and companies. Lotte Chemical is providing awareness improvement activities and training for implementation by regarding responses to climate change as a major issue of management activities.



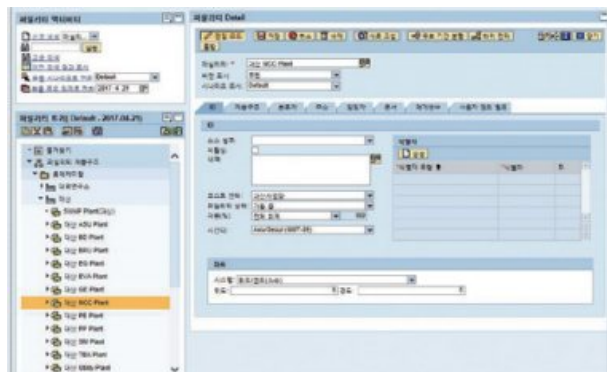
Establishment of low-carbon green management | Lotte Chemical introduced and is operating the low carbon green management system as an internal system to preemptively respond to environmental impact due to GHG and to prevent various risks in management environment due to climate change. Through such an organization, the company is able to efficiently use resources and manage energy, which gives positive influence on management efficiency improvement.

GEMS (Greenhouse Gas & Energy Management System)



GOAL 13. Response to climate change

Since 2010, Lotte Chemical has been operating the green management system called GEMS, which was the first organization in the petrochemical industry. The SAP-based management program, GEMS, analyzes risks regarding climate change and helps to establish responding activities. By connecting online, GEMS can provide real-time monitoring GHG-related status and issue. The GEMS is a cutting-edge operation system to manage GHG reduction goals, implementation performance and energy inventory.



GHG Emission Management | The national emissions trading scheme started in 2015 and Lotte is implementing various activities to minimize trading shortage. The year 2016 was 2nd stage of the roadmap to tackle emissions trading, which the company is carrying out securing emission trades and automated management based on network. In particular, Lotte Chemical jointly suggested to the Korean government what needed to be improved regarding emissions trading with external organizations and companies in the same industry. Starting 2017, based on improved productive technology and low carbon processes, the company will reinforce its effort to secure additional emission volume and improve management efficiency by actively participating in the emissions trading home and abroad.

Expanding Energy Reduction Campaign by Worksite | Under the health & safety management team, Lotte strategically manages the energy status by worksite. The company focuses on site-oriented and active energy reduction activities by setting up energy reduction goals by plant on a yearly basis and preparing for and carrying out measures depending on the plant. Furthermore, Lotte Chemical holds energy/GHG workshops that can increase the efficiency of energy reduction by reflecting voices from worksites, it helps employees to improve the awareness of energy reduction. Based on such company-wide efforts, the company became more active to prepare for energy/GHG reduction measures by plant. In 2016, it reduced 92,041tCO₂e of CO₂ and 1,419TJ of energy.

Greenhouse Gas Emissions

(Unit: tCO₂e)

Classification		2014	2015	2016
Direct emissions	Yeosu Plant	1,996,353	1,959,363	1,853,137
	Daesan Plant	1,786,445	1,673,856	1,742,081
	Ulsan Plant	616,071	565,993	611,069
	Head office and other worksites	1,246	1,311	1,407
Indirect emissions	Yeosu Plant	452,055	474,786	510,123
	Daesan Plant	639,079	642,546	646,846
	Ulsan Plant	351,268	310,630	319,826
	Head office and other worksites	4,304	4,497	4,745
Total	Yeosu Plant	2,448,408	2,434,149	2,363,260
	Daesan Plant	2,425,524	2,316,402	2,388,927
	Ulsan Plant	967,339	876,623	930,895
	Head office and other worksites	5,550	5,807	6,152
Greenhouse gas (GHG) emissions intensity (tCO ₂ e/MT)	Yeosu Plant	0.585	0.572	0.586
	Daesan Plant	0.543	0.549	0.526
	Ulsan Plant	0.502	0.495	0.494
	Entire company	1.205	1.216	1.191

* Head office and other worksites: Head Office (Seoul), Research Institute (Daejeon), Kukje Building (Busan)

* Figures in 2015 may differ from the previous report as those were drawn from the final GHG statement.

Company-wide Efforts to Save Energy | Lotte Chemical is planning to replace office facilities with eco-friendly ones in order to reduce unnecessary energy waste in offices and plants. Replacing lighting and switch panels with ones with higher energy efficiency helps to minimize standby power. The company is also expanding its effort to save energy through activities like awards for energy reduction households among those who live in the company's complex.

Energy Consumption

(Unit: TJ)

Classification		2014	2015	2016
Direct energy consumption	Yeosu Plant	37,413	36,731	34,786
	Daesan Plant	38,362	36,203	37,787
	Ulsan Plant	8,824	7,565	7,700
Indirect energy consumption	Yeosu Plant	9,094	9,536	10,235
	Daesan Plant	11,715	11,370	11,450
	Ulsan Plant	7,342	6,505	6,688
Energy intensity (TOE/MT)	Yeosu Plant	0.268	0.260	0.266
	Daesan Plant	0.268	0.269	0.259
	Ulsan Plant	0.171	0.165	0.160

* Figures in 2015 may differ from the previous report as those were drawn from the final GHG statement.

* Energy intensity is deducted from production outputs.

Operation of Eco-Friendly & Highly Efficient Facilities



GOAL 7. Securing Sustainable energy

Yeosu Plant newly installed a steam generator at DMC plant. Steam is generated from waste heat of hot oil, which reduces 1.1 ton of steam per hour. As a result, there's an investment effect of KRW 310 million, yearly. The GHG is also reduced over 2,000 tons yearly. Furthermore, Ulsan plant was invested in with KRW 7.822 billion, which is equipped with step-by-step installation (1 inverter) and maintenance (2 inverters) of anaerobic digestion tank (total 3 inverters) since 2015. As a result, a total of 4.2 billion including cost reduction for waste treatment, fuel cost reduction was made thanks to bio gas and power cost reduction for blower. This leads to a reduction of GHG over 4,000 tons.

Reduction of GHG Emissions and Energy Use by Each Plant

Yeosu Plant		Daesan Plant		Ulsan Plant	
Number of reduction activities					
27		28		7	
CO₂ reduction					
17,170 tCO ₂ e		69,070 tCO ₂ e		5,801 tCO ₂ e	
Energy saving					
312TJ		1,054TJ		53TJ	
Classification	2014	2015	Classification	2014	2015
No. of reduction activities (Unit: cases)	27	29	No. of reduction activities (Unit: cases)	18	21
CO ₂ reduction (Unit: tCO ₂ e)	11,122	28,636	CO ₂ reduction (Unit: tCO ₂ e)	12,895	14,848
Energy saving (Unit: TJ)	172	499	Energy saving (Unit: TJ)	375	265
Classification	2014	2015	Classification	2014	2015
No. of reduction activities (Unit: cases)			No. of reduction activities (Unit: cases)		
CO ₂ reduction (Unit: tCO ₂ e)			CO ₂ reduction (Unit: tCO ₂ e)	9,144	11,579
Energy saving (Unit: TJ)			Energy saving (Unit: TJ)	186	219

Best Practices

- Reduced MS by improving efficiency of EA-126 and H-NC
- Reduced LS by heating up SBW feed water temperature caused by installing a SBW pre-heater and H-COG
- Produce LS using waste heat from hot oil and H-DMC
- Enhance energy efficiency by installing a T-230, 270 pre-heater and H-PC

Best Practices

- Reduced steam consumption by D-EG2, waste heat recovery and installing MVR (Mechanical Vapor Recompressor)
- Reduced C₃C₄ splitter (307-E) reboiler steam by D-NC and recovering waste heat recovery of Quench oil
- Reduced HP steam by operating a D-GE, R212-C (Circulation Butanol Cooler) Bypass
- Reduced energy by recovering D-5M, MM-13 Vent steam

Best Practices

- Saved electricity by installing a GA-2310 pump inverter
- Saved electricity by installing a K-CIA2, G-7101, G-7606 inverter
- Saved electricity of installing K-PTA3 SL steam BW supply pump
- Saved electricity of downsizing K-PAT3 CTS steam turbine CW Pump Impeller
- Reduced production costs by repairing the water treatment anaerobic digester of K-PTA3 Plant 2
- Saved electricity by using SSP processed inert gas at Plant 2
- Saved electricity by installing inverters (Plant 1: 3 inverters, Plant 2: 3 inverters)

Environmental Impact Assessment for All Processes

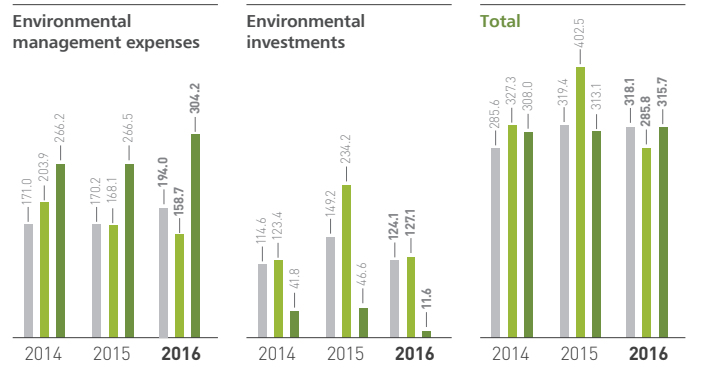
Lotte Chemical has established the automatic measuring system for environmental impact assessment. This system is to track down and monitor environmental impact that may occur during the manufacturing and processing procedures. The environmental impact data checked through the system is analyzed and managed real time.

Nurturing Environmental Professionals

Lotte Chemical constantly supports programs to nurture environmental professionals as well as legally mandatory programs for systematic environmental management. Every year, the company strives to educate its employees through enhancement of professional knowledge in environment, so that they tend to comply with regulations and prevent environmental pollution.

Environmental Investment Expenses

(Unit: KRW in 100 Millions)



No. of Employees who Completed Environmental Training (Unit: Persons)

	Yeosu	Daesan	Ulsan
2014	34	37	25
2015	58	48	183
2016	30	32	152

Efficient Resource Management

Major manufacturing items of Lotte Chemical need raw materials including naphtha and mixed xylene. These materials are provided through overseas business partners including domestic oil refineries. In the process of delivery, Lotte Chemical strives to optimize energy use by reviewing the best delivery process.

Use of Raw Materials

(Unit: tons)

	Yeosu	Daesan	Ulsan
2014	3,031,950	3,174,834	1,041,076
2015	3,138,235	3,074,429	708,482
2016	2,804,013	3,279,027	725,204

Water and Wastewater | Each plant is provided with water by reviewing water inlet routes from nearby source of water supply real time for stable supply of needed water for production. Water supply to Yeosu Plant comes from Juam Dam, while Daesan Plant uses water from Daeho Reservoir and Boryeong Dam. Daeam Dam and Nakdong River are the water sources for Ulsan Plant.

Water Use (Unit: tons)			
	Yeosu	Daesan	Ulsan
2014	16,334,268	13,552,606	10,317,627
2015	16,562,628	12,951,533	9,872,509
2016	16,620,605	13,533,898	10,516,029

Water Recycling (Unit: %)			
	Yeosu	Daesan	Ulsan
2014	81.3	85.8	43.1
2015	81.3	84.2	42.2
2016	80.8	83.0	41.1

Wastewater Discharge (Unit: tons)			
	Yeosu	Daesan	Ulsan
2014	3,053,536	1,921,111	5,875,053
2015	3,092,672	2,040,277	5,703,259
2016	3,208,148	2,306,581	6,203,873

Air Pollutant | To systematically control air pollutants, Lotte Chemical has installed TMS (a round-the-clock automatic air pollution monitoring system) for regular self-inspection which is preventing pollutant spill, and has also built the RTO (Regenerative Thermal Oxidizer) at air pollutant discharging facilities to minimize pollutants and odor. Furthermore, the company introduced a sealed system to collect and incinerate VOCs (Volatile Organic Compounds) which is discharged from storage tanks, wastewater disposal plants, and sampling devices.

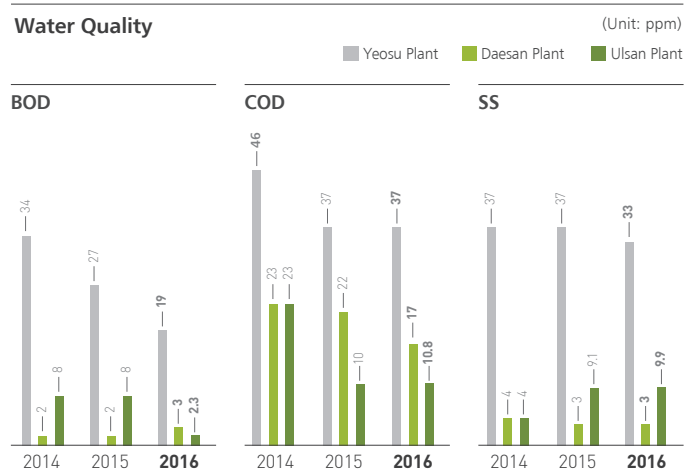
Air Pollutant Emissions (Unit: tons)				
Classification		2014	2015	2016
Dust	Yeosu Plant	43	39	30
	Daesan Plant	6	5	3
	Ulsan Plant	29	23	19
SOx	Yeosu Plant	37	36	15
	Daesan Plant	2	2	1
	Ulsan Plant	9	40	46
NOx	Yeosu Plant	382	350	360
	Daesan Plant	8	7	4
	Ulsan Plant	413	462	392
CO	Yeosu Plant	32	29	43
	Daesan Plant	3	5	7
	Ulsan Plant	-	-	-

* There can be a difference in the total amount due to round-off.

* Differences in figures of each plant result from existence of its own boilers (Daesan Plant does not have its own boiler).

*How emission of air pollutants at the Yeosu and Ulsan plant is estimated has differed (reflecting measured values), resulting in a difference in figures from previous reports.

Water Pollutant | Lotte Chemical operates in-house wastewater treatment plants at worksites in order to manage water pollutants. Wastewater is disposed through its own wastewater treatment plants and the integrated wastewater treatment facilities at the industrial complex. Constant monitoring for wastewater through TMS minimizes environmental impact of wastewater for water.



* Differences in wastewater density are attributable to treatment methods such as the integrated wastewater treatment facilities at the industrial complex (Yeosu Plant and Ulsan Plant) and the independent wastewater treatment facilities at each site (Daesan Plant, Ulsan Plant 2). Wastewater density at each plant is below legal standards.

Harmful Substances | Each worksite of Lotte Chemical endeavors to prevent harmful substances from leaking. As a measure, the company installed leakage detectors to all harmful sources and blocking equipment. Lotte also adopted the LDAR (Leak Detection and Repair) system, under which we can stop the outflow of harmful substances in advance, perform regular inspection and assessment and offer education and training programs.

Emissions of Harmful Substances (Unit: tons)				
Classification		2014	2015	2016
Ethylene	Yeosu Plant	18	11	12
	Daesan Plant	12	13	13
	Ulsan Plant	-	-	-
Propylene	Yeosu Plant	11	8	8
	Daesan Plant	17	16	17
	Ulsan Plant	-	-	-
Xylene	Yeosu Plant	-	-	0
	Daesan Plant	-	-	0
	Ulsan Plant	12	4	6
Acetic acid	Yeosu Plant	0	0	0
	Daesan Plant	-	-	-
	Ulsan Plant	4	3	9
Others	Yeosu Plant	83	77	72
	Daesan Plant	67	61	54
	Ulsan Plant	23	20	23

Soil Pollution | Lotte Chemical has laid out internal guidelines for the prevention of soil pollution due to manufacturing process and chemical delivery. The company paved floors of administered facilities with impervious concrete, so that pollutants do not permeate into the soil. Some areas of the plants need additional rounds of review for thorough preventive measures. To that end, the company additionally provides environmental work permission before and after work. Regular inspection of soil can help to figure out how much the company's work affects the soil near worksites.

Expansion of Recycled By-products | Lotte Chemical separately collects by-products that can be recycled including steam, hydrogen and gas. The collected by-product resources are sold to outside companies or reused as raw materials and fuel sources in the process.

Classification		2014	2015	2016
By-products generated	Yeosu Plant	3,299,596	3,485,344	2,950,579
	Daesan Plant	3,073,048	3,058,939	3,103,951
	Ulsan Plant	53,550	38,990	44,882
By-products recycled	Yeosu Plant	3,299,596	3,485,344	2,950,579
	Daesan Plant	3,073,048	3,058,939	3,103,951
	Ulsan Plant	53,550	38,990	44,882
Rate of by-products recycled (%)	Yeosu Plant	100	100	100
	Daesan Plant	100	100	100
	Ulsan Plant	100	100	100

* In the case of Yeosu plant, the figures are different from those in the previous report due to the change in the by-product collection standard.

Cases of By-product Recycling

Hydrogen	Steam	Methane
Source At production of ethylene at NC	At PC MVR, EO Reactor and NC Heater	At production of ethylene at NC
Yeosu Plant Use as feedstock at BTX and PE/PP plants and as fuel in other sites	Consume all by-products after recycling within the plant	Consume it as fuel at NC Plant or as feedstock at EG and MMA plants
Daesan Plant Utilize as fuel at BTX and polymer plants and the remaining amount is sold to nearby businesses	Use within itself or move to other plant. EG plant uses it, after recompressing low-pressure leftover steam	Use for NC plant fuel and for monomer plants fuel and for supplementary fuel at EG and SM

Gas By-product	
Source Off-Gas from PX production	Bio-gas from wastewater treatment
Ulsan Plant Send off-gas to heater and fuel gas surge drum for it to be used as fuel	Move bio-gas to heater for supplementary fuel

Minimizing Waste | Lotte Chemical strives to minimize waste generation volume by implementing intensive management for waste sources and carry out green management activities through strict separation and maximization of recycling. All waste is labeled with the generators' name, which increases the sense of responsibility by employees regarding waste generation and recycling. By tracking down generation volume by waste source, the company checks whether the waste generation is at a normal level. By analyzing collected data, the company prepares measures for waste reduction and improvement. In the future, Lotte Chemical plans to continue additional activities for process improvement and investment on eco-friendly facilities, which will minimize waste generation with higher recycling rate.

Impact Assessment of Waste | Lotte Chemical conducts waste analysis to see whether waste from the production process has impact on surroundings on a regular basis. The company also prevents any environmental impact due to waste by thoroughly managing waste storage.

Management of General Waste		2014	2015	2016
Incineration	Yeosu Plant	2,098	2,638	3,850
	Daesan Plant	303	535	485
	Ulsan Plant	1,175	359	308
Landfill	Yeosu Plant	1,562	2,519	3,002
	Daesan Plant	215	1,461	399
	Ulsan Plant	15,788	6,369	17,668
Sea dumping	Yeosu Plant	-	-	-
	Daesan Plant	-	-	-
	Ulsan Plant	-	-	-
Recycling	Yeosu Plant	4,844	5,795	6,781
	Daesan Plant	4,723	5,162	3,757
	Ulsan Plant	9,937	19,534	8,889
Total	Yeosu Plant	8,504	10,952	13,632
	Daesan Plant	5,242	7,157	4,640
	Ulsan Plant	26,900	26,262	26,865

Management of Designated Waste

Classification		2014	2015	2016
Incineration	Yeosu Plant	1,281	1,211	1,544
	Daesan Plant	249	336	144
	Ulsan Plant	272	105	49
Landfill	Yeosu Plant	45	9	41
	Daesan Plant	-	-	-
	Ulsan Plant	4	7	9
Sea dumping	Yeosu Plant	-	-	-
	Daesan Plant	-	-	-
	Ulsan Plant	-	-	-
Recycling	Yeosu Plant	12,749	13,050	10,766
	Daesan Plant	12,714	20,027	18,128
	Ulsan Plant	361	176	280
Total	Yeosu Plant	14,075	14,270	12,351
	Daesan Plant	12,963	20,363	18,272
	Ulsan Plant	637	288	338
Integrated recycling rate of general and designated waste (%)	Yeosu Plant	77.9	74.7	67.5
	Daesan Plant	95.8	91.5	95.5
	Ulsan Plant	37.4	74.2	33.7

* There can be differences in the total amount due to round-off.

Eco-friendly Products & Expansion of Investment on Technology

Lotte Chemical strives to increase the eco-friendly value of customers and local communities who are using our products and technology by developing green products and technology. Since the announcement of eco-friendly product guidelines in 2011, Lotte Chemical has performed eco-friendly R&D activities, and invented and commercialized bio PET, thermoplastic elastomer and an eco-friendly resin, PLA.

Eco-friendly Products

Thermoplastic Elastomer: LOTTMER® | LOTTMER® is an olefin-based thermoplastic elastomer produced through reactive extrusion technology. Unlike thermoset elastomer like rubber, this material can be recycled and is being spotlighted as environmentally friendly elastomer. Its excellent mechanical properties, processability and durability make it possible to be used for automobiles, electrical and electronic products, industrial and household goods.



Thermoplastic Elastomer

Bio PET | Bio PET is an eco-friendly biological resource made of bio-ethylene glycol generated from plant resources (Biomass), becoming a substitute for the conventional PET. This material, first produced by Lotte Chemical, reduces CO₂ in production process by 20%, compared to the existing PET. Outstanding transparency and processability allow it to be used for automobiles, electronic materials and fibers as well as beverage bottles. In 2016, a total of 9,626 tons was sold and the sales amount was KRW 13 billion, 20%(sales based) increase compared to 2015.



Bio PET



Chinaplas 2016 Asia's Biggest Petrochemical & Rubber Exhibition

Lotte Chemical participated in Chinaplas 2016 at Shanghai International Exhibition Center between April 25 and 28, 2016: Chinaplas is Asia's biggest international exhibition in the field of plastic and rubber. A total of around 3,000 companies from 33 countries took part in the event with hundreds of thousands of visitors. Participants included prominent petrochemical firms like Exxon Mobil Corporation, Du Pont, BASF and Dow. Lotte Chemical prepared 9 zones that represent dynamic image with stability, which shows the cutting-edge technologies in Asia.

- 1 In the 'Motor Zone', Lotte Chemical introduced the carbon frame of 'Intrado' of GM, the concept vehicle with the next generation's hydro-fuel cell. Intrado was first introduced at Geneva Motor Show in 2014. Hyundai Motors and Lotte Chemical jointly developed ultra-light carbon fiber composite materials, which is applied into this frame. This is the reflection of high technology that drastically lowers vehicle weight.
 - 2 In the 'Dynamic Life Zone', a variety of light-weighted materials were introduced and highlighted which are manufactured by Lotte Chemical.
 - 3 In the 'Simple Life Zone', commodity plastic products of Lotte Chemical were introduced based on the purpose of use.
 - 4 In the 'Eco Life Zone', biodegradable products were displayed in order to introduce high-quality eco-friendly technologies of Lotte Chemical.
 - 5 In the 'Better Life Zone', various plastic products with high added value including engineering plastic were introduced.
 - 6 In the 'Premium Life Zone', special rubber products were displayed. Special rubber is scheduled to be utilized for new businesses of Lotte Chemical.
- etc In the 'Global Network', 'Experience Zone' and 'Attraction Zone', the general public as visitors had opportunities to listen to the introduction of Lotte Chemical in easier and more fun ways.





SAFETY

In the chemical industry, safety management and health activities of worksite need to be maintained in the best conditions and in a well-maintained manner as a mere accident could cause enormous human loss and damages. To this end, safety and health has been in the spotlight and the interest by numerous stakeholders including locals in the community for many years. Lotte Chemical establishes safety and health system at the level of global standards for all worksites at home and abroad as well as the headquarters. As one of the biggest general chemical companies in Korea, Lotte Chemical strives to create a safety work environment from a variety of safety accidents including leakage of hazardous chemicals, fire and explosion. This report focuses on the result of the corporate campaign regarding safety and health throughout the entire company as well as its safety & health system and organization status. Also, this report suggests a variety of programs to prevent accidents due to chemicals and poor management.

Our Response

Performance in 2016

Classification	Key Issue	2016 Goal	Performance	Achievement
Safety and health	Enhancement of safety inspection by worksite	Conducting company-wide safety and health inspections and holding workshops on safe environment	<ol style="list-style-type: none"> 1. Exchange opinions to achieve zero hazards during maintenance period at Yeosu and Ulsan plants 2. Inspect transportation of EO tank trucks 	●
Safety and health	Establish a company-wide safety management system	Building a system to report and disseminate emergency situations	<ol style="list-style-type: none"> 1. Build a system to report and disseminate when emergency situations occur 2. Establish principles and emergency procedures to follow in case of an earthquake 3. Conduct drills to prepare for emergencies 	●
Safety and health	Inspection of environmental safety of subsidiaries and business partners	Supporting safety management of subsidiaries and business partners	<ol style="list-style-type: none"> 1. Conduct inspections and education programs for subsidiaries and subcontractors 	●
Management of chemical substances	Prevention of leakage of harmful chemical substances	Upgrading constructions of storage facilities on-site	<ol style="list-style-type: none"> 1. Finish floor construction at facilities handling harmful chemical substances 2. Maintain the walls and interiors of storage facilities 	●

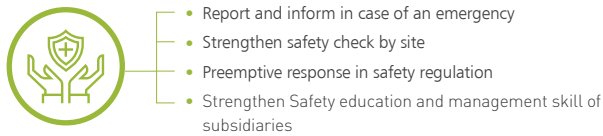
Plans for 2017

Classification	Key Issue	2017 Goal	Achievement Index	Deadline
Safety and health	Prevention of accidents and setting of a company-wide safety culture	Ensure safety management of worksites and subsidiaries through preemptive measures	<ol style="list-style-type: none"> 1. Identify potential risks at worksites (twice every year) 2. Increase support for subsidiaries and business partners (twice every year) 	By 2018
Safety and health	Establishment of a company-wide integrated safety and health standard	Integrate a company-wide advanced standard for safety and health management	<ol style="list-style-type: none"> 1. Review the level of safety and health management at each worksite and integrated relevant standards 	By 2019

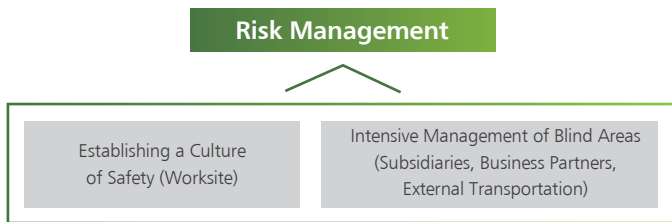
Safety system

Safety strategy

Lotte Chemical is building an on-site safety & health system by establishing a world-class safety & health culture. In order to prevent safety accidents on site and manage employees' safety & health management well, a safety campaign has been carried out.



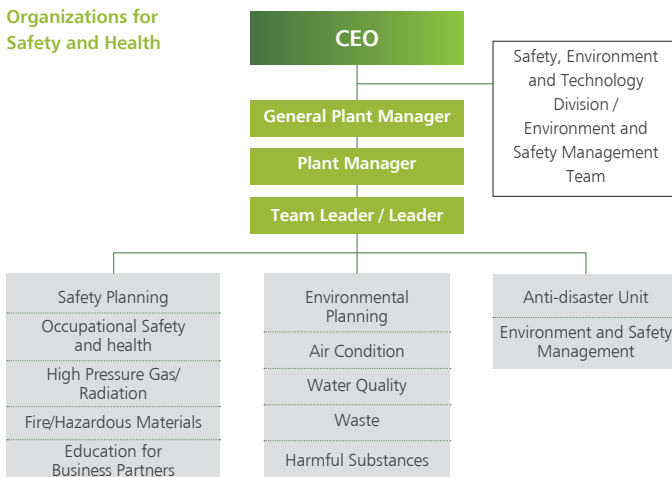
Safety Management Implementation Scheme



Safety, environment & technology Division

Lotte Chemical independently operates environment safety management group for accident prevention and safety management. Also, Safety environment technology team directly responsible to CEO oversees environment management of all sites and subsidiaries. In addition, the Environment safety team that manages and supervises safety environment work carries out safety environment training, education and diagnosis. It also supports partner companies with safety diagnosis and experts in safety environment, to expand safety environment cultures in the supply chain.

Organizations for Safety and Health



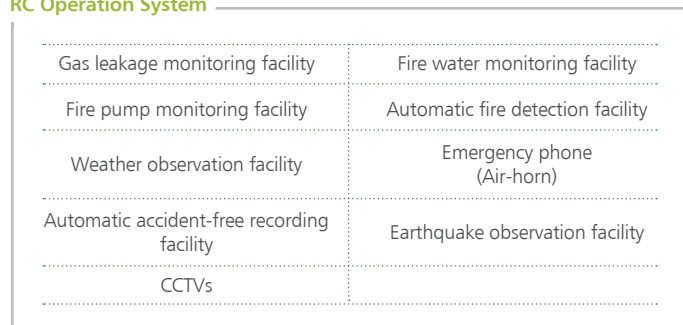
Industry safety & health committee | Industry safety & health committee consists of the same number of labor union members and company representatives. Regular meetings take places every quarter and the items raised in the meetings are transparently disclosed to union members. The items discussed in the committee are later reflected in management, and regular feedbacks are provided for the result.

Reporting system in safety & environment emergency | A prompt reporting system is required for the emergency Lotte Chemical defines four major emergencies of casualty, environmental degradation, fire explosion and natural disaster, and applies informing and reporting system in those cases to quickly handle the situation. For secondary accident prevention, customer protection and quick and accurate countermeasures, all workers have been learning the reporting system through regular training. The system would be consistently operated and developed.

RC (Responsible Care) management | RC management system was established that manages process safety for each site, safety & health, pollution prevention, community awareness, emergency response, and distribution. In order to successfully establish RC management, TFT holds regular workshops and monitors/evaluates the progress per site and shares related information.

Self-evaluation of RC	Out of 6 Points		
	Yeosu Plant	Daesan Plant	Ulsan Plant
Safety in process	5.4	5.6	5.1
Employee safety and health	5.6	5.4	5.0
Pollution prevention and environmental protection	5.5	5.4	4.9
Awareness of local communities and emergency response	5.4	5.5	5.0
Safety in distribution and transportation	5.0	4.9	4.8
Product responsibility	5.0	4.9	4.6

RC Operation System



Safety Culture Awareness for Employees

Lotte Chemical is carrying out the spread of safety & health culture internally. The campaign results are reflected to improve the necessary system for health management for its employees and their families.

Enforcement of Emergency Drill

With its self-emergency drill, Lotte Chemical hosts one or two emergency drills by itself and the private joint drill once a year, which is the effort to establish the safety culture. By establishing an emergency scenario based on potential emergency cases, the company completes the perfection of the spreading of such awareness. Meanwhile, Lotte Chemical hosts an environment & safety workshop in order to discuss safety accident measures by worksite. These are the evidence of management without yield. On top of such efforts, the company provides exchange opportunity between worksites regarding safety personnel's knowledge share more than twice a year. This is a good opportunity to share safety culture and spread such awareness, which can also prevent potential threats in safety.



Fire drill at Ulsan Plant

Operation of Comprehensive Incident Prevention System | By operating 24 hours of comprehensive disaster prevention system, Lotte Chemical reminds employees of emergency like gas leakage or fire at manufacturing plants at an early stage. By checking old disaster prevention facilities that are scattered by worksite, the company replaces them with new ones so that the management for manufacturing site can be efficient and safe.



Best Practices of Environment and Safety Management Activities

Yeosu Plant | No Accident Campaign

In cooperation with Yeosu Plant and Gas Safety Corporation, Lotte Chemical is implementing no accident campaign to realize safety worksites. By providing safety picket and safety compliance cards, the company emphasizes the importance of safety. By conducting such campaigns with partners, the company tries to remind them of the danger of accidents so that they can promptly tackle such emergencies.

Daesan Plant | Happy 365 Safety Day Event

Daesan Plant held Happy 365 Safety Day event under the theme to create 'happy safety' for me, home and company. By sharing safety activities in 2016, the event had the theme of 'enforcing safety awareness' with the entire employees of Daesan Plant. The environment and safety team hosted the event with UCC contest for safety observation activities and awards for outstanding department and employee & partners.



Ulsan Plant | Spreading Safety Awareness Activities

Ulsan Plant carries out various activities to spread safety awareness. There are team leaders' meetings and technical committee meetings every week before which, participants remind themselves of safety through the sharing of accident cases related to the safety environment. By promoting 12 tasks of PSM, the company is equipped with prevention of any potential accidents. Furthermore, there are activities to spread safety awareness among employees like safety campaign, industrial safety 'golden bell' awards. Therefore, Ulsan Plant was introduced for its best practice by the Ulsan Branch of the Ministry of Employment and Labor during the safety emphasis week in 2016, which contributes the spread of unique but practical safety training.



Stricter Chemical Substance Control

At the company level, Lotte Chemical has been making concentrated efforts to systemically manage chemical substances and prevent chemical accidents, responding to 'Act on Concerning Registration, Evaluation, etc. of Chemical Substances' and 'Chemical Substances Control Act' that have been implemented since 2015. Regarding various facilities and investment made, major companies created a consortium and it is under discussion for joint registration. Moreover, the company is controlling and managing chemical substances by establishing and operating chemical substances management system. This is a part of action to provide stricter management to prevent any illegal incidents due to chemical substances.

and purchase of harmful substances subject to regulations are strictly controlled. For safety use of overseas employees and customers, the MSDS (Material Safety Data Sheet) is written in multiple languages and distributed, which explains what to be careful of including first aid tips in details.

Establishing Chemical Substances Management System at Global Level

To respond to overseas and domestic regulations on chemical substances, Lotte Chemical has established a world-class chemical substances management system. The company manages all chemical substances, about 24,000 chemicals which are related to our product productions, within it real time. Lotte Chemical also traces flows of chemicals, and controls the distribution network under the purpose of government reporting and internal management. In addition, sales

Strengthened Protection Facilities for Chemical Substances | Lotte Chemical strives to strengthen protection facilities to prevent leakage of chemical substances within worksite: protection wall is set around chemical substance storage and the floor is made of impermeable material. For emergency of leakage of chemicals, the whole leakage can be transferred to wastewater treatment facilities. Meanwhile, the company has installed permanent cabinets to store fire extinguishers, gas masks, protection gloves, protection gowns, protection boots and goggles, which are helpful in any emergency and prevent unnecessary relocation and chaos for tackling an emergency.



Yeosu Plant: Flow prevention bump for tank lorry



Daesan Plant: Flow prevention bump for storage tank



Daesan Plant: floor coating with impermeable materials

Chemical Substance Management System

Process Integration

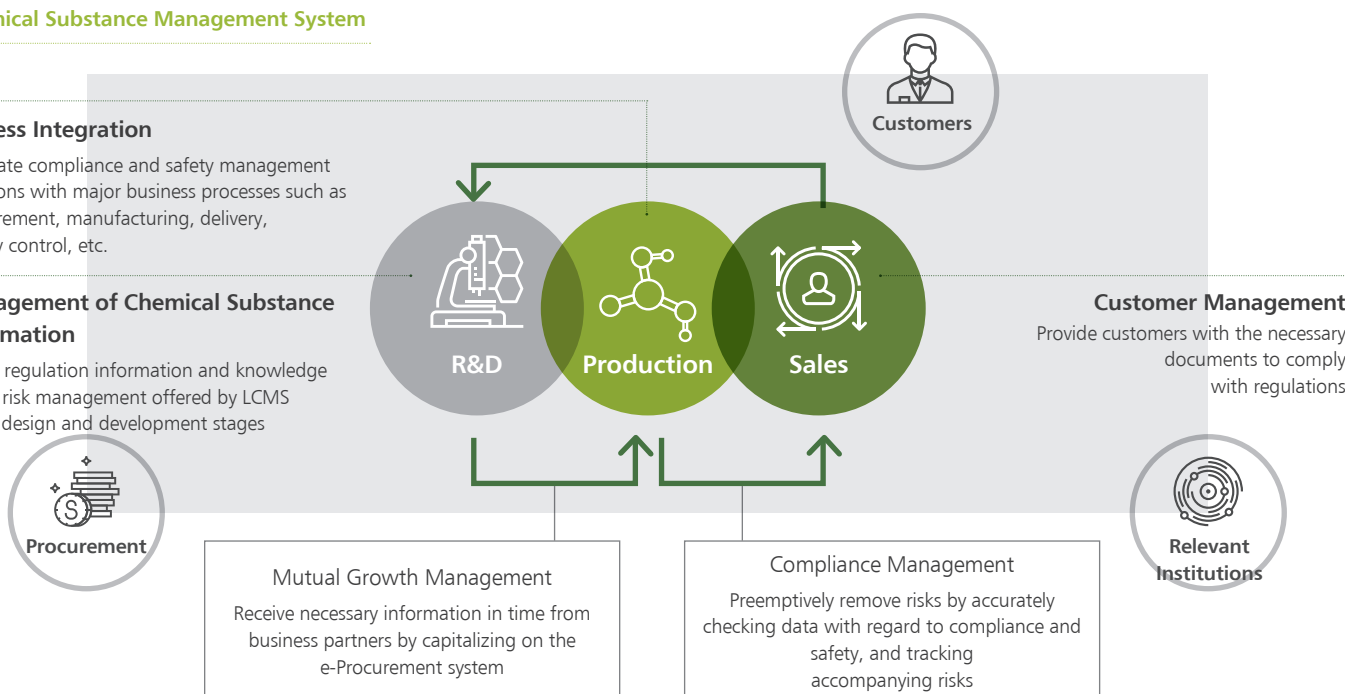
Integrate compliance and safety management functions with major business processes such as procurement, manufacturing, delivery, quality control, etc.

Management of Chemical Substance Information

Utilize regulation information and knowledge about risk management offered by LCMS at the design and development stages

Customer Management

Provide customers with the necessary documents to comply with regulations





LABOR & HUMAN RIGHT

The subject of company's sustainable growth is 'talent'. Securing and fostering talent are among the vital goals to realize a company's vision. Global companies' talent management has been emphasized as an important issue not only in terms of company competitiveness and job creation, but also social responsibility. In this regard, Lotte Chemical carries out fair recruitment of talent who are in line with company philosophy. It has been establishing career management and group culture that encourage workers' self-improvement to contribute to individuals' vision and society. Also, based on the respect and protection toward workers, various benefits packages are established to build satisfying working conditions for workers. Lotte Chemical seeks sustainable growth with all its members based on the idea that they are the driving force of the company.

Our Response

Performance in 2016

Classification	Key Issue	2016 Goal	Performance	Achievement
Development of Talent	Development of global talents to target emerging markets	Operating the 'Regional Expert Program'	Successfully completed first term (Vietnam, India, Peru) and expanded countries of interest for second term (Vietnam, India, Myanmar, Hungary)	●
	Enhancement of language skills for global business	1. Providing skills to over 70% of total-employees to work at overseas sites 2. Expanding on-site language skill support system	1. Provided skills to over 80% of total employees to work at overseas sites 2. Launched and expanded language skill pay, language fund, language study group, etc.	●
	Re-establishment of education system	Establish a company-wide system (TF) to develop talent	Organized TF activities to re-establish a system to develop talent, and established relevant guidelines	●
System Improvement	Strengthen HRD Brand	Award companies that demonstrate outstanding performance in HRD Index (within the Lotte Group)	Awarded companies that demonstrated outstanding performance in HRD Index (within the Lotte Group)	●
	1. Improvement of evaluation and compensation systems 2. Strengthen Corporate Social Responsibility activities	1. Strengthen performance-oriented incentive system 2. Fulfill social responsibility of company and secure diversity of human resources	1. Improvement of personnel evaluation systems 2. Fulfilled CSR activities by employing the disabled and veterans	●
	1. Dissemination of a creative labor-management relationship 2. Expanding employee communication	1. Stipulate and proclaim action plans of creative labor-management culture 2. Prepare a communication system that meets new needs of employees	1. Organized a ceremony to commemorate the 1st anniversary of a creative labor-management relationship 2. Won excellence award of creative labor-management relationship 3. Distributed posters on labor-management relationship, organized a Kimchi making and sharing event where both the labor and management took part, organized focus group meetings, launched new communication channels, published healing columns, hosted lectures on specific themes	●

Plans for 2017

Classification	Key Issue	2017 Goal	Achievement Index	Deadline
Development of Talent	Strengthen development of global talent	1. Support all employees to upgrade their language skills (prepare for dispatch) 2. Upgrade 2 nd term of the 'Regional Expert Program' 3. Upgrade the ability of deployed employees	1. Maintain achievement of 2016 (80%) 2. Complete term and implement knowledge sharing activities 3. Upgrade education programs provided for employees before and after deployment	By 2017
	Establish a line-up for grade education	1. Provide senior managers with leadership enhancement programs 2. Strengthen the abilities of and enhance leadership of onsite professionals	1. Run education programs	By 2017
	Launch a synergy creating program for the petrochemical industry in accordance with the founding of Lotte Group's chemical business unit (BU)	Review of programs to develop core talent in accordance to the founding of BU, Run general on-the-job BU training, Integrate education systems and policies of BU	1. Establish a plan to operate general BU education and training	By 2018
System Improvement	1. Elaborate grade programs and evaluation systems 2. Realize CSR by increasing direct employment 3. Continue to enhance and strengthen corporate culture	1. Elaborate improvement of systems 2. Realize direct employment of deployed employees and subcontractors 3. Diversify programs to enhance and strengthen corporate cultures and run programs that will strengthen self-respect	1. Improve systems 2. Operate programs to improve corporate culture	By 2017
	Respect for Human Rights	1. Disseminate a creative labor-management relationship 2. Ensure family-friendly management and realize social responsibility 3. Expand communication channels amongst employees	1. Disseminate a creative labor-management relationship and co-existence between work and family 2. Re-acquire certification as a family-friendly company and establish various family-friendly policies 3. Activate small group communication and spread a common message	1. Improve systems / Re-acquire family-friendly company certificate 2. Improve index on organization effectiveness

Recruitment of talents

In 2013, Lotte Group announced the “Declaration on Diversity” for the first time, and the first of its kind as a Korean business. The Declaration was written to respect diversity of employees and eliminate any discrimination. We have been according top priority to fair employment of talents with a slogan of “fairness (pronounced as Jeongjeongdangdang in Korean)”. The slogan represents our commitment to selecting passionate talents based on fairness without being deterred by gender, education, physical condition, area of birth, etc. Lotte Chemical will contribute to securing excellent talent through a fair and transparent process and building an ability-based society.

Desired Qualities of Employees

Those who do not fear failure

- Talents who have the spirit to take risks and never give in to failure
- Those who find new hope in failure, rather than those who give up on challenges out of fear of failure

Those who make endless efforts for self-development

- Young talents who do not nurture false hope without effort, and those who develop their own knowledge and capabilities, to achieve successes out of their true strengths
- Young employees who know the value of patience and hard work, and who are able to reinforce their fundamental competences to take a leap forward

Those who know how to cooperate and coexist

- Talents who know how to cooperate with colleagues, seniors and juniors
- Those who can appreciate people and society

Securing Global Talents

Lotte Chemical strives to recruit domestic and global talents through diverse channels by arranging recruitment seminars in Korea, Japan and the US. We also conduct other activities in order to obtain talents before others do, such as selection of scholarship students according to industry-academy preferences, hiring those who hold a doctoral degree issued by overseas universities, and industry-university related employment. Other efforts to hire global talents include the open global recruitment, employment of international students, and global talent recruiting system.



Global Job Opening

Recruitment on Diversity

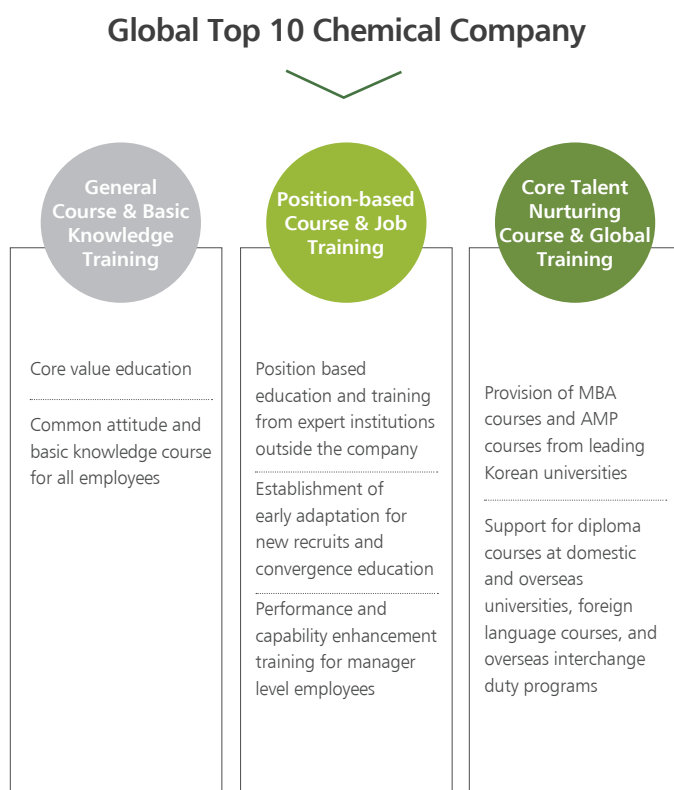
Lotte Chemical maintains fairness and diversity in selecting talents. In addition to our open recruitment program for new-employees, we have offered “Spec-Tackle” audition opportunities to applicants, those with disabilities, female ex-military officers, and those who contributed something to the nation. We are on a brisk move to boost diversity of our manpower across the company through various channels including the creative idea contest.

High-Quality Job Creation | Lotte Chemical decided to hire all the contract-based workers sent to the company as of January 1, 2017. The decision was made as part of the innovation effort driven by Lotte Group since October 2016. With this decision, a total of 10,000 irregular workers of Lotte Group will become permanent workers for the three years to come and their job quality is expected to go up. In the past, contract-based workers at Lotte Chemical were subject to internal evaluation at the end of their two-year contract period and the selected were hired directly by Lotte Chemical. Now, we have eliminated the contract-based worker program and directly hired 35 workers at the headquarters, research center, and plants in Yeosu, Daesan and Ulsan. The change is one of our efforts to provide the workers with decent jobs by clearing uncertainty and providing the corresponding pay and workplace welfare.

Global HRD

To achieve the VISION 2020 of “Global Top 10 chemical company”, Lotte Chemical strives to boost its competitiveness in human resources, which is one of the essentials in corporate competitiveness.

Roadmap for Talent Development

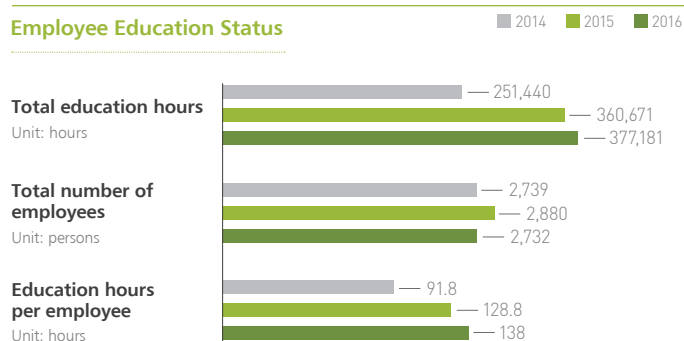


	Staff/Assistant Manager	Manager	Senior Manager	Executives
General · Basic Quality Education	Language · IT · Monthly Special Lecture · Core Values · Communication Programs · Prevention of Sexual Harassment · Ethical Education (Anti-bribery and Graft Act)			
Level · Job Ability Education	Petrochemical Academy, Accounting Academ			
	Job Capability Certification System	Essential Training by Grade		
	Job Expert Course		Team Manager Qualification	New Executives Course
Development of Core Talents · Global Competency Education	EMBA Course · Business School · MBA Course Outside the Company · Overseas Interchange Duty Program · Country Expert Course · Global School Course · Engineering/Public Relations Graduate School			

Employee Training Program

We are nurturing global top experts by providing our employees with training programs tailored to each employee depending on their job and position. We will further conduct expertise development programs and support excellent global talent.

Employee Education Status



Job training Academy for Chemical Production, Sales and Accounting |

We provide job-based training opportunities to the employees so that they can build up their capability and productivity. In the chemical engineering sector, we help the employees better understand chemical products, production process from the business perspective. In the sales sector, we refine the sales strategy for each employee and the entire organization. For all the newly-employed, we provide an accounting course and require them to acquire a certified public accountant license so that they can develop their business-wise mindset.

Support for Degrees, Diplomas and Certificates |

Lotte Chemical encourages employees to earn job certificates that are related with their mission, based on the idea that higher competitiveness of members leads to the growth of their organization. We support those who apply for master craftsman practical processes offered in connection with Korea Polytechnics with tuition and textbook expenses as well as other financial support, such as application fees and reward money when they receive admission letters from college. We also provide tuition to researchers who are in doctoral and post-doctoral course in order to foster core research staff.

Local Expert Fostering Program |

We foster local experts with global mindset based on the “Glocalization” strategy. We aim to dispatch these core talents to strategic global business posts, making them learn the local language and culture, as well as build human and business networks for the establishment of business foundation.

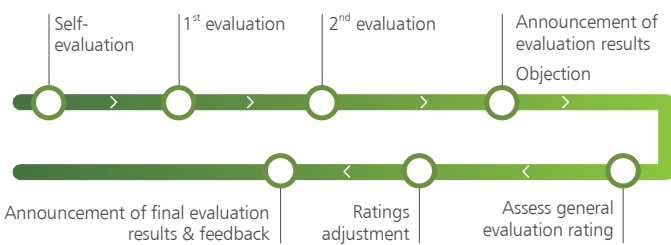
Language Learning Support |

We provide individual/group foreign language courses, including English, Chinese, and Japanese to nurture global talent. We compensate language test expenses and tuitions when our employees take a language test and attend classes outside the company or take an online course. We also run diverse incentive programs such as tuition compensation for those who earned modest test scores and allowances and for those who acquired excellent scores.

Fair Evaluation and Compensation

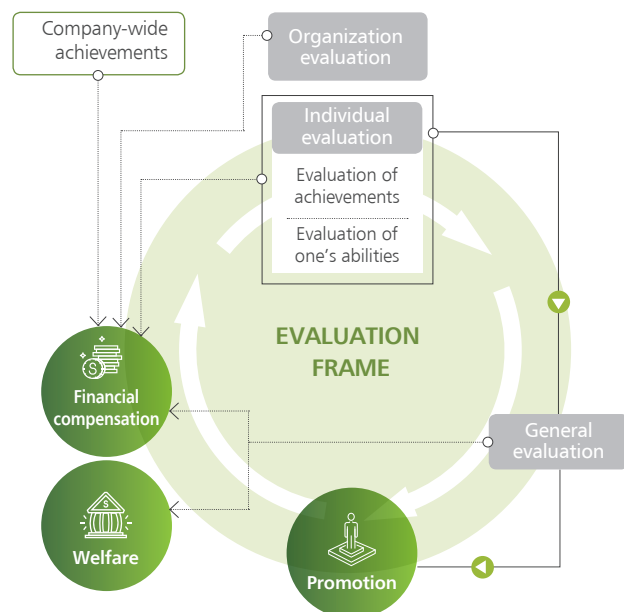
Human resource development process should be supported by accurate competency assessment and fair compensation. Lotte Chemical pursues fair capability evaluation and remuneration for all their employees. We operate different performance management systems to provide incentives for self-development. We help them strengthen their capabilities and manage their career, by regularly evaluating their abilities and providing them with adequate feedback.

Employee Evaluation Process



Performance Evaluation Process | Our performance evaluation system is divided into two parts, personal evaluation (MBO & capability) and organizational performance evaluation (KPI). For personal evaluation, every employee sets up his or her annual targets under the MBO (Management by Objectives) system and is evaluated on their career and performances twice a year. This system improves job performance because results are used for promotion and performance-based bonuses. In addition, we motivate employees to take initiatives for self-development and enjoy the sense of achievement, by running an incentive bonus system that rewards individuals and teams with excellent job performances.

Evaluation Framework



Protection of Employee Rights

Lotte Chemical is implementing and revising the corporate personnel policies to ensure more diversity in and outside the company. We spare no effort in enhancing the workplace satisfaction level of all employees by recognizing and respecting their diversity. We are sure that such enhancement will bring a better life to the employees and lay a basis for corporate growth.

Respect for Human Rights

Standing Diversity Council | We established the Diversity Council inside the company in 2016. The Council convenes regularly and the employees regardless of their position, gender, or age communicate with each other. The Council will serve as a platform to share ideas for ensuring diversity.

Ban on Child Labor and Forced Labor | We ban child labor and forced labor not just at the headquarters but also at all worksites. We conduct annual inspections and ensure there is no forced labor or child labor. In 2016, we had no issues of child and forced labor.

No Discrimination and Observance of Human Rights | In 2013, we announced the "Declaration on Diversity" that illustrates our respect of diversity in terms of gender, culture, physical condition, and age. By observing this, we respect human rights and peculiarity of individual employees, and strictly forbid discriminatory treatment due to gender, age, religion, disability, race, education, geographical background and political bent. In addition, to prevent improper actions and words, including sexual harassment, and assault and violence, we offer anti-sexual harassment and other human rights education in preparation for human rights infringement, in the event of unfortunate eventualities. We also prohibit unfair treatment due to reasons of education, geography and blood ties.

Participants in Education on Human Rights

Classification		Unit	2014	2015	2016
Prevention of sexual harassment	No. of educational sessions	Times	10	10	10
	No. of employees targeted	Persons	2,739	2,800	2,732
	No. of employees completed	Persons	2,739	2,800	2,732
Other programs	No. of educational sessions	Times	5	5	5
	No. of employees targeted	Persons	138	165	184
	No. of employees completed	Persons	132	147	182

* Other programs: Grade sessions that demonstrate respect for diversity and the Wow Forum hosted to protect the rights of female employees

Collaborative Labor-Management Relations

We aim to build a desirable relation with mutual existence and collaboration by forming a rational corporate culture between labor and management. We are bolstering mutual trust by exerting creative effort to respect the rights of employees and uphold their sense of pride through effective communication.



The First Endorsement of Bargaining Rights for Three Labor Unions

| In 2016, the Lotte Chemical Labor Union endorsed the wage bargaining rights to the management for the first time since the establishment of the company, based on mature labor-management cooperation. The endorsement holds a great significance in that it represents the advanced labor-management culture that accompanied the negotiation rights of three labor unions at the time of record high corporate performance. The historic endorsement is expected to serve as a momentum for true labor-management partnership for the 40 years to come.

1st Anniversary of Creative Labor-Management Culture Declaration |

This year marks the first anniversary of the "Declaration of Creative Labor-Management Culture" of 2015. In commemoration of the Declaration, Lotte Chemical opened the 1st Anniversary Ceremony in June 2016 and announced the Charter of Labor and Management. In the Ceremony hosted by Lotte Group, Lotte Chemical received an excellence award for the credits of affinity management and co-existence management. The award is one of the recognitions that we laid a basis for creative labor management culture based on mutual trust.



The Ceremony of the 1st Anniversary of Declaration on Creative Labor-Management Culture

Open Communication with Labor Union | Lotte Chemical has been striving to forge a sound labor-management relationship. The company operates organizations for better communication and cooperation, including Labor-Management Council and Site Operation Committee, and runs diverse channels, such as events for communication, labor-management workshops and onsite meetings, to build mutual trust and cooperation between them. As for critical changes in its businesses, it discusses with the labor union in advance to share ideas and deepen cooperation. In addition, the labor union visits overseas offices and communicates with employees and encourages on-site activities.



Overseas Site Visit

Grievance Handling Program | Lotte Chemical operates the grievance handling program of its employees for identifying the problems and difficulties of the employees and to layout immediate and concrete solutions. The company is working hard to rationally deal with diverse difficulties with regard to human rights, anti-corruption, no discrimination and workplace improvement. To this end, regular communication channels between department managers and their members have been set up to handle distress immediately. When those complaints are not addressed, they are submitted to the Labor-Management Council.



Employee Council

Retirement Support Program

Lotte Chemical operates a retirement pension plan to help employees to secure stable source of income after retirement. We offer related education programs to employees once a year, introduce the operation of retirement pension plans and provide job training and retirement process information from recruitment to retirement.

GWP(Great Work Place)

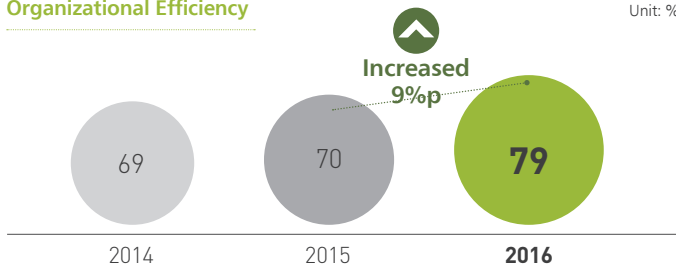
We offer various welfare benefits to our employees. Through a balance between work and life and an advanced workplace environment, we aim to help them to become more occupied and satisfied with work. We will lead in creating a desirable workplace environment as a global company.

Improved Organizational Culture

Lotte Chemical made multi-faceted efforts to build a sound organizational culture, ending up with various good results. The total organization effectiveness index scored high, which is a combination of the employee immersion index and the organizational soundness index. The immersion index of our employees regarding the balance between work and life increased 9%p from the previous year.

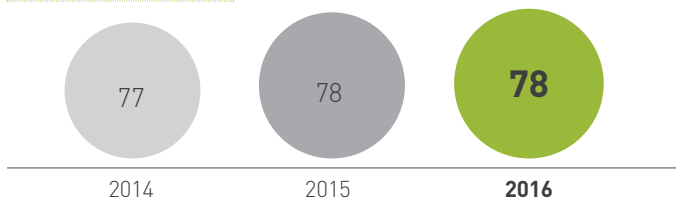
Organizational Efficiency

Unit: %



Employee Satisfaction

Unit: points



Balance between Work and Family

Knowing the need for the balance between work and family, Lotte Chemical strives to lead 'Il-ga-yangdeug' culture and family-friendly management in every aspect. The CEO believes that the company can grow only when the employees and their families are happy, and sends emails to express his wishes for family-friendly management. We increased the number of Family Loving Days to two from one every week from the year 2016. Employees at the headquarters and the research center can choose working hours depending on their life pattern. In 2016, we made the 10 pledges for work innovation with the Ministry of Employment and Labor to proclaim our will for the balance between work and life for our employees.



Poster and Pledge about 10 Things for Work Innovation



Work Innovation Pledge-signing Ceremony with the Ministry of Employment and Labor

Support for Balance between Work and Family

Mandatory paternity leave for male

We are a petrochemical company in which men still account for the majority. In this reality, we have made it mandatory for the male employees to take childcare leave to help them make use of the program in 2017. We also guarantee the 100% of the monthly pay for the first month of their leave to relieve their possible economic burden.

Two-year maternity leave for female

We extended the maternity leave period to two years to help female employees to maintain their career without retiring for child rearing.

New leave for school kids

We introduced a new leave program for the female employees who have kids yet to go to elementary school, to help them to maintain their career along with the extended period of maternity leave.

Family Invitations | As part of family-friendly management, Lotte Chemical provided various family events based on our unique corporate culture, including plant visits for employees' kids, lectures for couples, vacation activities for children and hobby classes.

CASE | Lotte Family Unity Event

The first Lotte Family Event was held at the Gocheok Sky Dome in November 2016. The event was prepared to strengthen communication among the affiliates and build a more sound and energetic corporate culture. About 8,000 people joined a variety of programs such as baseball games, gift-winning games and a large music concert.

On the day we had a final game with Lotte Department Store, we ranked 1st in the preliminary. Our team lost by 12 to 4, getting the second place. The employees and their families had a quality time during the event.



More Diversified Welfare Benefits

Lotte Chemical has introduced various welfare benefits to handle grievance and bust the stress of employees.

More Diversified Welfare with Emotional GWP | With emotional GWP, Lotte Chemical is committed to giving more diversified welfare benefits to the employees. For employees or their family members admitted to hospital, we send a fruit basket for best wishes. We provide welcome boxes for the newly employed living in the dormitory. We support the employees whose children sit for the college entrance exam. We offer gifts in the family month, striving to help the employees maintain their working morale in the hot summer.



Gifts for employees


Health Management Program | We present regular, special and external general medical check-ups on a periodic basis for health management of employees. We regularly offer comprehensive health examination to their family members as well. In addition, we have introduced company-wide non-smoking campaigns, which allow smokers to smoke only in permitted areas.


CASE | HQ Healthcare Project “好thin (so-called Ho-thin)”





The headquarters is partnering with the related organizations for programs designed to promote the health of employees such as non-smoking program, 119 campaigns for better drinking habits, and 383 walking programs. Ho-thin(好Thin) is a healthcare program related to metabolic syndrome. Since 2014, the program has been used to manage risk factors such as abdominal obesity, high blood pressure, hyperlipidemia, lowering the prevalence rates of diabetes and cardiovascular disorders. With the partnership hospitals, we measure and evaluate five areas for the project.


Five Ho-thin indices

- 

1. Reduce your waist circumference.
90 cm+ for men, 85 cm+ for women
- 

2. Lower your blood pressure.
130/85+
- 

3. Curb your blood sugar level.
100 mg/dl+ before meal
- 

4. Control your neutral fat.
150 mg/dl+
- 

5. Increase HDL cholesterol.
40 mg/dl- for men, 50 mg/dl- for women

The program is visited every 3 months for a total of 6 months. The clinic conducts visits and evaluations, and offers personalized health management methods through appropriate counseling and instant message. Lotte Chemical plan to expand the management of all employees' workplaces in order to make them work in healthier environments.

Individual Nurturing Consultation System | We have designed and operated a career development system to help employees to capitalize on their strengths and capabilities when planning their career path. After consultation about his or her mid-to-long-term career goal with the team manager, he or she shares the plan with the HR team and those who are in charge of labor. This system helps employees to develop plans of education, training and job rotation and to address grievances they face in the course of career development.

Female Talent Nurturing | Led by Lotte Group's underlying management philosophy of "mining and nurturing female talent", we are recruiting more women than before and eliminating inconveniences they underwent in their daily career life. For example, we shortened the working hours of the pregnant employees, designated a parking lot only for the pregnant. We also operate the shower booths and dayrooms for women. We release guidebooks for female talent, hold meetings and operate a grievance-handling program for more open communication with them.



Guidebook for female talent

Active Communication and Cooperation

We look forward to developing a flexible corporate culture by revitalizing communication between management and labor, and among employees. With the culture spreading, the employees will be able to solve problems more creatively and work more proactively. Various programs put communication channels for organizations in place.

Distribution of 'Communication message' and 'Healing column' | We release communication messages on office norm and manners periodically in an effort to narrow the gaps among the employees in terms of the code of conduct and communication style and enhance mutual understanding. We also invite well-known psychiatrists as speakers and publish healing columns to help the employees manage their grievances. With these programs, we will create a corporate culture where innovative ideas can be shared freely.

In-house Mentoring System | We help new entry-level employees to adjust to the company through the mentoring system. Mentors selected in consideration of their position and job share work experiences and self-development knowledge with mentees for five months. They also exchange their ideas about other topics, including hobbies, thereby forming closer ties.

Sharing Hobbies and Cultural Life | The employees joined hobby sharing activities by watching musicals, going rock climbing, and studying literature reviews. The opportunities allowed them to share their values and life philosophy and pursue growth together.



Club activities

CASE | Mentor-Mentee Sports

Mentors and mentees met together on the weekend to play their favorite sports together such as table tennis and mountain climbing. Some teams played a bowling game.





SUPPLY CHAIN MANAGEMENT

With the growth of industry and advancement of technology, competition takes place in the business network and ecosystem, not by a single company. Today, mutual growth management is essential in boosting corporate competitiveness. Businesses need to monitor productivity and quality of the entire supply chain, enhance capabilities, and build a system to secure sustainability of the supply chain. In response, Lotte Chemical practices a transparent and fair transaction culture and strengthening cooperation with the partners. In the meantime, we also work on various activities for mutual growth and come up with ways for building trust with other businesses as part of the long-term strategy.

Our Response

Performance in 2016

Classification	Core Issue	2016 Goal	Performance	Achievement
Mutual growth	Support for sales increase	Supports for sales increase of partners at home and abroad	Support exports: Expand overseas exports of domestic partners (KRW 13.7 billion for 20 companies)	●
	Financial support	Increase finance for the mutual growth fund	Raised a total of KRW 135 billion (KRW 67.5 billion from Lotte Chemical)	●
	Technological Support	Increase technological support and joint research	1. Select and implement 55 R&D projects 2. Conduct product analysis and properties measurement (1,149 times), and supported R&D workforce and technology (1,695 times)	●
	Technological Support	Increase management support to partners	1. Support innovation activities of partners 2. Support partners' participation in overseas exhibitions - Chinaplas 2016 (3 partners), K-Show (2 partners) 3. Support transportation costs of Hanjin Shipping Co., Ltd. 4. Meeting with Procurement Partners (Yeosu Plant/Daesan Plant/Ulsan Plant) - Attendance: 214 partners 5. Organized 'Stepping Stone for Employment Program' - Provided more opportunities for employment by supporting the nurturing of talents - Completion: 40 persons (5 people employed in major companies) 6. Supported on-the-job training and basic quality education for employees of business partners	●

Plans for 2017

Classification	Core Issues	2017 Goal	Achievement Index	Deadline
Mutual Growth	Support for sales increase	Support for sales increase of partners at home and abroad	Increase of supply prices and export performance	By 2017
	Financial support	Increase using finance for the mutual growth fund	Increasing finance for the fund and for use	By 2017
	Technological support	Increasing technological support and joint research	Selection of projects and technological support Support customers and/or business partners by sharing information on the latest trends of the petrochemical industry	By 2017
	Others	Increasing management support to partners	1. Direct and indirect support for management activities of partners 2. Continue to run the 'Stepping Stone for Employment Program' and support on-the-job training and basic quality educations for employees of business partners	By 2017

Fair Transaction

We have been striving to spread the culture of fair transaction to infuse a law-abiding spirit, the foundation of a corporate sustainability, into transactions with our partners. Through an overhaul of education and system, we put the cornerstone of virtuous cycle of mutual growth and strengthened our responsibility.

Compliance Program

Lotte Chemical has been running the Compliance Program since its introduction in 2006. In an effort to prevent unfair transactions and corrupt practices, we prepared and distributed fair transaction guidelines as a job manual. In particular, we decided to use a standard subcontract agreement in 2016 and plan to update fair transaction guidelines in 2017. As such, we have continuously spread the culture of compliance of fair transaction. In addition, in-house instructors who hold a certificate of compliance expert offer regular training courses. The Chief compliance officer reports overall fair transaction issues and operation results to the BoD annually to manage them at the company level. The company endeavors to raise awareness on fair transaction environment, by performing in-house reviews on transactions of major business units.

7 Factors of the Compliance Program

1. Announcement of interest and intention to follow corporate compliances of CEO
2. Appointment of a Compliance Officer responsible for CP
3. Preparation and distribution of a compliance manual
4. Operation of regular and systematic compliance training
5. Establishment of an internal supervision system
6. Punishment of employees who violate fair trade laws and regulations
7. Establishment of a documentation system

Extension of Assistance for Compliance

We distribute newsletters on corporate compliance on a regular basis and set guidelines for various circumstances to assist our employees in identifying compliance details in conducting their jobs.

Establishment of Integrity Pledge of Business partners

Lotte Chemical deeply perceives transparent management without corruption and fair completion system are critical factors in international competitiveness. Moreover, in response to effectuation of OECD Anti-bribery Convention and the global trend of stricter sanctions on corrupt companies, we set supplier integrity regulation in April 2015 with the intention of compliance with code of conduct to ourselves, our subcontractors' employees and agents. Lotte Chemical's supplier Integrity code of conduct consists of three articles including prohibition of price-fixing to maintain bidding price or successful bidding, offering bribery or unfair interest to our employees and protection of whistle blowers who report bribery or price-fixing. The integrity code of conduct regulates all basic matters that all business partners that want transactions with Lotte Chemical and business partners, must register electronic signature to agree with the code of conduct through e-procurement (ebiz.lottechem.com), Lotte Chemical's e-commerce system.



Clean Holiday Campaign

Led by the CEO decision, Lotte Chemical has implemented a campaign of 'No Giving or Receipt of Gift' during traditional Korean holidays for its employees and partners since 2012. In 2016, all employees were notified of a ban on receiving any gift or any item with monetary value, how to deal with gifts received unavoidably, and the standards of transparent performance of duty. We also sent official letters to 1,700 of our customers and partners to enable them to cooperate in this effort.

Gift Return Center

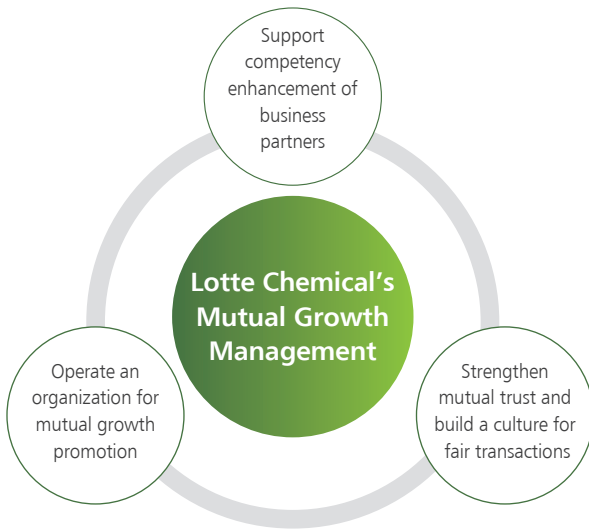
The Gift Return Center is in operation for the return of any gift received from stakeholders on traditional holidays or promotion. Gifts with no address or in risk of becoming spoilt are donated to the local communities, fundamentally preventing our employees from accepting any bribe and leading to corruption.

Mutual Growth Policy and Program

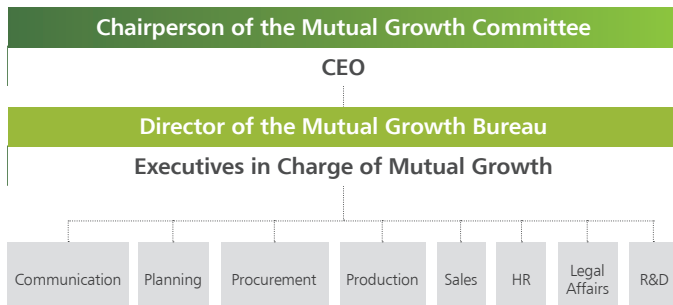
Lotte Chemical has implemented mutual growth programs in all areas of its businesses including hosting meetings for stronger communication, financial support, technical cooperation, consulting and education. By doing so, we build corporate environment where we can healthily grow together with our partners.

Mutual Growth System

Since 2011, we have promoted a mutual growth office for systematic activities. Meanwhile, we reflect mutual growth KPI including mutual growth performance, compliance of fair transaction and communication with partners to executive evaluation to encourage them to actively work on building mutual growth and cooperative relations with partner companies.



Mutual Growth Bureau | Mutual Growth Bureau whose commissioner is the CEO, implements close cooperation with relevant departments such as purchase, planning, manufacturing, education and research to set and execute consistent mutual growth strategy. In addition, through core performance monitoring and improvement activities, it executes systematic mutual growth activity.



Overview on mutual growth activity

We promote various mutual growth activities including supporting human resource empowerment, strengthening competitiveness, supporting entry into foreign markets and financial aid for partner companies. Besides, we encourage diverse communication with partners to build stronger trust and spread the culture of win-win growth. In 2017, we will continuously complement the program and implement responsible mutual growth along with creating a healthy industrial ecosystem.

Financial Support to partners | The company has been operating a mutual growth fund from 2010 and provides loans at 2-3% lower interest rate than market interest rate to relieve the financial burden of small and medium-sized partner companies. Through the mutual growth fund that amounts to KRW 135 billion in total as of the end of 2016, 138 partner companies received financial support. In particular, by signing a MOU on warranty with the Trust Guarantee Fund for mutual growth of large companies and small and medium one, we raised the third round of fund following in 2008 and 2011, and guaranteed trust of KRW 63 billion to support small and medium-sized companies' liquidity and, hence actively practice mutual growth.

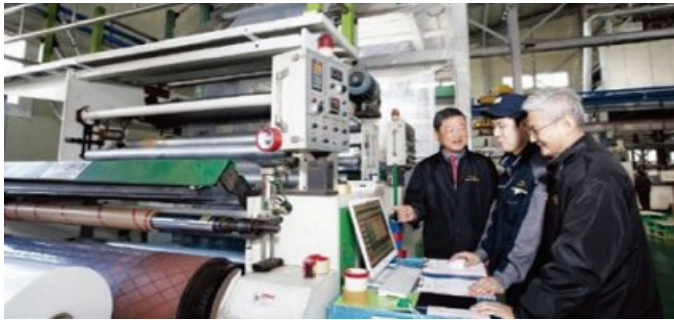


Financial support MOU for mutual growth

Supporting Human Resource Empowerment | To secure competitiveness of our partners, we operate a mutual growth academy to help human resource empowerment in various areas including management, job execution, and foreign languages and nurturing leaders. Especially, according to the needs of partners, we regularly open technical education and polymer school to enhance education satisfaction.

Industrial Innovation Movement | Lotte Chemical has participated in the Industrial Innovation Movement, promoted by The Korea Chamber of Commerce & Industry from 2013, providing customized consulting services to business partners. In 2016, the company secured competitiveness by achieving sharp reduction of costs and dramatic yield increase through smart plant with the introduction of MES (Manufacturing Execution System) and product-specific barcode with Prepac Korea.

* Industrial Innovation Movement: A mutual growth program in the private sector where large companies help small and medium-sized enterprises innovate management and production technology as well as make technological innovation and seek and share improvement in production process and workplace.



Prepac Korea Ltd.

CASE | Prepac Korea Ltd.

Prepac Korea is a flexible plastic packing material manufacturer. It was selected as an excellent company in industrial innovation movement in 2016 through industrial innovation movement with Lotte Chemical. The company achieved productivity improvement including cost saving and stock reduction by introducing MES and online work processing, and it led to KRW 260 million of financial effect for a year. Industrial innovation movement served as an opportunity to raise the awareness on cost saving for company-wide profit making and recognized the importance of the innovation spirit of employees, quality improvement and on-time delivery. Moreover, a safe work environment was created and employees' innovation capability was strengthened.

Task	Introduction of MES and online processing	Introduction of productivity improvement facilities	Education, change management
Details	<ul style="list-style-type: none"> · Shed hand-work · Database systemization · Computerized production and management 	<ul style="list-style-type: none"> · MES system · Construction of barcode scanner 	<ul style="list-style-type: none"> · Education on innovation awareness, innovation cases, innovation techniques

Safety Environment Management | Lotte Chemical supports safety environment improvement to secure work safety of employees of its partners and fulfill its responsibility for their health. We hold regular safety meetings with our partners every month to emphasize the importance of safety environment management at worksite. Meanwhile, we prevent accidents in partner companies through regular checkup and strengthen mutual communication.

Supporting overseas market expansion



GOAL 8. Decent Work and Economic Growth

Lotte Chemical is actively supporting the overseas expansion of its business partners with superior competence. In order to secure product competitiveness in overseas markets, we provide technical test opportunities at overseas sites, and we are helping to open overseas markets by utilizing our network. In addition, Lotte Chemical has provided excellent bidding opportunities for excellent business partners, guaranteed long-term transactions, and dealt with export activities, enabling our partners to settle down on the spot.



2016 Meetings with business partners

Plastic Technology Innovation Forum | The first Plastic Technology Innovation Forum where executives of 50 plastic processing companies in Busan and Gyeongnam region, as well as the head of Lotte Chemical Polymer Business, and the head of the research institute participated, provided the introduction of the overall status of petrochemical products, solutions to customers' difficulties through technological education and consultation, and opportunities of co-development. The meeting is expected to extend its scope of invitation to all parts of the nation on a regular basis, and share details of market situation of the product and detailed information of technology between business partners and consumers, thus establishing a true mutual growth relationship and setting a cornerstone for long-term partnership.



CUSTOMER VALUE

For corporations, it is critical to perceive that its future depends on customers' trust and success and offer the best product to customers. Moreover, corporations need to listen to customers' voice to realize customer satisfaction and offer products suited to customers' needs. Lotte Chemical operates various communication channels to collect opinions of interested parties and takes the initiative in quality improvement through technical development to create value which is helpful for customers' development. We consider customers' health and safety as top priorities in providing products and services. Also, we thoroughly protect customers' information in compliance with relevant regulations.

Our Response

Performance in 2016

Classification	Core Issue	2016 Goal	Performance	Achievement
Customer Communication	Customer satisfaction survey	Regular monitoring of customer satisfaction	Continued satisfaction surveys, receiving feedback on quality improvement	●
	Awards to best customers	Invitation of customers and continuous communication	Established a relationship based on mutual trust through customer communication	●
	Invited customers for green communication event by region	Customer communication by region	Keeping close contact through customer service	●

Plans for 2017

Classification	Core Issues	2017 Goal	Achievement Index	Deadline
Customer Communication	Customer satisfaction survey	Regular monitoring of customer satisfaction	Continued satisfaction surveys, receiving feedback on quality improvement	By 2017
	Awards to best customers	Invitation of customers and continuous communication	Continuous execution	By 2017
	Invitation of customers for green communication event by region	Customer communication by region	Continuous execution	By 2017

Customer Satisfaction Management

Lotte Chemical intends to create customer value, led by customer-centered thinking and activity. The company aims to realize customer values through providing products suited to customers' needs and implementing various customer satisfaction activities.

Customer Satisfaction Activities

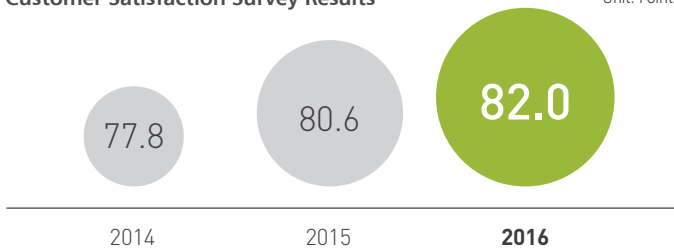
Lotte Chemical has worked on empowerment of customer satisfaction capability, customer support activity and brand image improvement including continuous communication activity with its customers. Through strengthened communication with customers, we will create customer value and position ourselves as a trusted company.



Customer Satisfaction Enhancement | We conduct customer satisfaction surveys throughout the entire process such as quality and packaging of material, delivery and aftersales management to domestic companies that consume our products. Customers' opinions gathered through specific opinion-collecting activities are delivered to the relevant division and actively reflected in product quality improvement. In 2016 customer satisfaction survey, we scored 82.0 achieving continuous growth of customer satisfaction.

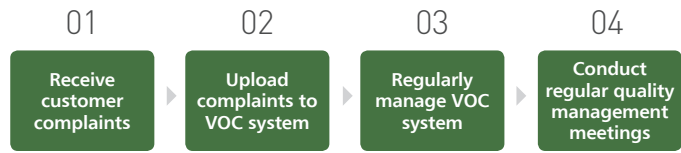
Customer Satisfaction Survey Results

Unit: Points



VOC system | Lotte Chemical runs a customer support organization that records and manages customer complaints from breakdowns. As such, we have a systematic VOC handling process. In addition, we hold regular quality meetings so that divisions related to customer complaints can rapidly address the complaints and set preventive measures; thus, we respect and actively respond to voice of customer.

VOC Process



Enhanced Communication with Customers | Lotte Chemical regularly arranges venues for communication meets, including technical assistance activity or customer invitational events. In 2016, we exchanged information on the trend of chemical industry and high tech industry and formed cooperative relations by utilizing various customer communication channels such as the best customer award ceremony in celebration of 40 years of founding, meetings and technology seminars.



2016 Best Customer Appreciation Event



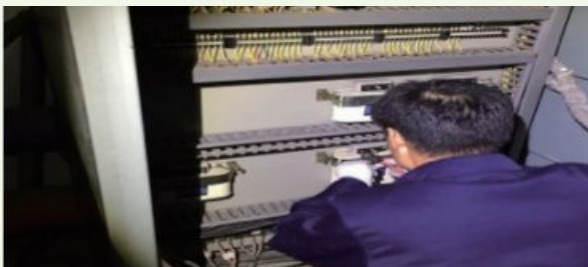
Polymer school

Maintenance Service for Customers | Lotte Chemical carries out maintenance assistance service and presents specific solutions suitable for customer's circumstances such as equipment inspection, diagnosis and replacement of consumables as well as providing facility maintenance know-how. Since 2016, we have established an all-time supporting system throughout the year. By doing so, we were able to increase customer satisfaction by regularly managing customers' records and helping them strengthen self-maintenance capabilities.

Classification	Contents and Achievements
Subject	- 24 customers (7-9 customers per plant)
Period	- In accordance with prior consultation with customers (customer-oriented service)
Field of Support	- Provided inspections on equipment and facilities of support for mutual growth, and emergency support to restore areas flooded by typhoon Chaba - Dispatch 1-2 employees each for rotational machineries, electricity and relaying
Number of employees dispatched	- Total of 77 employees (personnel from Yeosu, Daesan and Ulsan plants) - Identified in advance where support is needed and made necessary preparations - Senior members included to identify customer needs

CASE | KOMAX Industrial Co., Ltd

KOMAX Industrial Co., Ltd., a partner of Lotte Chemical, is a PET container manufacturer with more than 70 employees. In November 2016, our M/S support team visited KOMAX and not only conducted safety inspection on overall facilities in operation using environmental safety technology we own, but also proposed facility improvement matters contributing to enhance safety of the worksite. We will continue to provide practical inspection and improvement assistance to our partners to strengthen technology exchange.



Inspection of KOMAX Industrial

Brand Image Enhancement | Through various marketing activities, we raise our employees' self-confidence and create a friendly image to customers to promote our brand. We also post image advertisements at the airport where our worksite is located and carry out sports marketing including sponsoring LPGA LOTTE Championship, marathon games and professional baseball team in the expectation of improving brand awareness and sales capacity.



Sports Marketing



Lotte Giants Baseball Festival

Airport Billboard Advertisement | To promote a positive corporate image and deliver corporate ideas, we have installed advertisement billboards of our company in Yeosu and Ulsan Airport since 2013. By continuously displaying advertisements, we intend to strengthen the positive image of Lotte Chemicals at home and abroad.

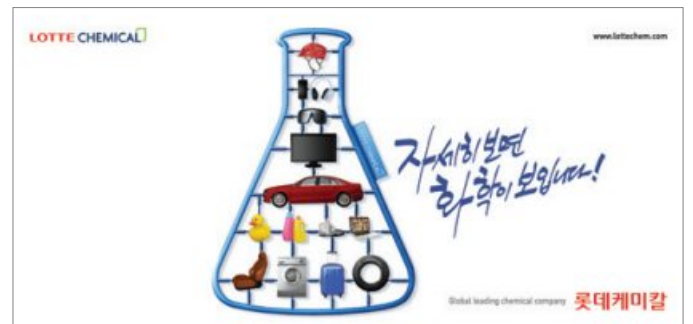


Image advertisement at the airport

Quality Management

Lotte Chemical concentrates all its capability to convey new values to customers by providing the best products and services. We carry out preemptive quality management throughout entire processes and steady quality innovation activity to supply products optimized for customers.

Product Safety

Throughout entire product processes, we secure safety of the targets that use our product. First, we establish product liability rules, protect consumers from damages or defective products, and purchase product liability insurance. In addition, we provide the information on documents required by the laws of the country to which our products are exported, so that ways and means of transportation and handling are clearly conveyed.

CASE | Melt Blend LLDPE Quality Improvement



Lotte Chemical is the only maker of Melt Blend LLDPE in Korea, and it is highly respected in the high-transparency film market. Melt Blend LLDPE is the first product developed by Lotte Chemical in Korea and has superior transparency and mechanical properties equivalent to that of dry blend LLDPE. Recently, the quality of the LLDPE film market has been upgraded and, especially due to lack of field personnel, customers' needs for high productivity have begun to arise. Through the active R&D in 2016, the institute succeeded in developing products that increased the production per hour by 7% while maintaining the existing transparency and mechanical properties compared to existing products. Customers prefer this product, which is used as packaging film for toilet paper, fresh food, clothing and so on.

Strengthened Information Protection

In an environment where the risk of information leakage is increasing, Lotte Chemical recognized customer information protection is the basis of customer reliability and corporate obligation, hence, implanted systematic information protection activities. In addition, we also have made various efforts such as establishment of information protection policy and intellectual property management to effectively protect and manage our information asset. We obtained the ISO 27001 certification, an international standard for information security management system which means we have global level of information security level preemptively.

* ISO 27001: This is an international information security management system drawn up by the ISO. The certificate is one of the world's most authorized recognitions in the field of information security, and is given only to those companies that meet 114 controls in 14 groups, including those on the organization's information security policies, intellectual asset management, and physical and environmental security.

Strengthened Information Security Level

Lotte Chemical presents its employees with information management guidelines to help them thoroughly manage personal information they obtained while performing their jobs. We voluntarily monitored personal information we own and deleted unnecessary information and ask customers the minimum personal information in the business process. We are also obliged to give prior notice to customers on information storage. In particular, in October 2016, we strengthened the customer information management system and established a multiple security system that enables all-time monitoring and encrypted storage of information. Besides, only authorized staff can access information to minimize the risk of information leakage. In addition, we expanded information protection activities to external partner companies. We ask them to monitor the status of owning personal information and change in information amount, and personal information processing work and provide personal information protection education aiming at stricter information security. We formed an information protection and management committee for more systematic information protection activities. Through the committee, we identify a company-wide information protection policy and specific tasks to raise employees' awareness on information security and strengthen customers' trust.



Information security education



SOCIAL CONTRIBUTION

There are increasing demands for corporations to fulfill social responsibility by considering sustainable social development for a more prosperous life of humans as a part of citizen society. Moreover, recently, the interest in strategic social contribution activities connected to business area in solving social issues has increased. Based on our technology and competence, Lotte Chemical makes a variety of efforts to contribute to the actual value creation of local residents. In addition, we strive to improve the quality of life of local residents through active cooperative relations with organizations in local communities and voluntary participation in volunteer work by our employees.

Our Response

Performance in 2016

Classification	Core Issue	2016 Goal	Performance	Achievement
Engagement in the development of local communities	Employees' engagement	Encourage employees to engage in sharing activities	1. Developed and implemented new programs (Habitat, volunteer activities of new recruits) 2. Implemented talent donation activities (badminton, bowling, etc.)	●
	A Program to improve the residential environment of needy people	Identify and take measures for improvements of the residential environment of Yeosu, Daesan and Ulsan	Offered painting, papering, floor replacement, and electric device and drainpipe repair services to 30 families in need	●
	Green sharing activity	Develop green sharing programs at all worksites	1. Delivered approximately 5,000 trees 2. Organized 1 company 1 stream volunteer work	●

Plans for 2017

Classification	Core Issues	2017 Goal	Achievement Index	Deadline
Engagement in the development of local communities	Employees' engagement	Encourage employees to engage in sharing activities	Develop new programs and set up a talent donation pool	By 2017
	Improve the residential environment of families in need	Identify and take measures in areas for improvement of the residential environment of Yeosu, Daesan and Ulsan	Implementation	By 2017
	Green sharing activity	Develop green sharing programs at all worksites	Implementation	By 2017

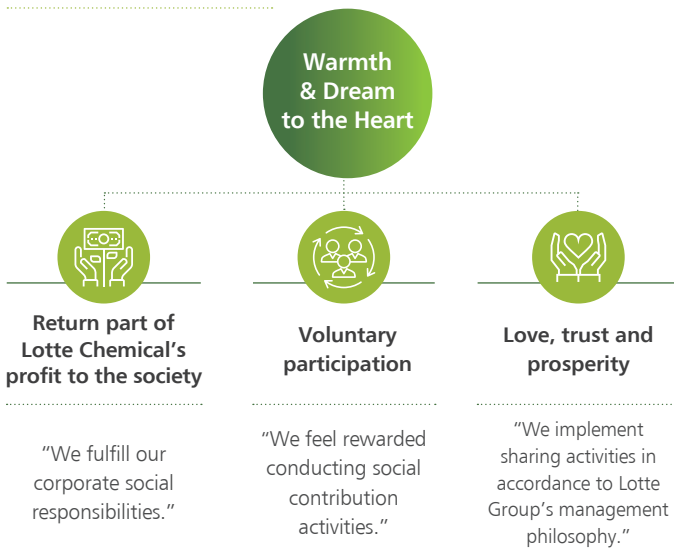
Strategic Social Contribution Activities

We are conducting company-wide activities, based on mid and long-term social contribution strategies, and are also developing and executing other actions specialized to each domestic and overseas worksite. By doing so, we contribute to the development of local communities.

Social Contribution Implementation System

Based on our social contribution slogan "To the people with a warm heart, to the future with passion", we fulfill our social responsibility as a global corporation. Centering on social welfare, charity events, collaboration and improving the living environment, we listen to expectations of interested parties and conduct company-wide social contribution activities.

Social Contribution Slogan



CSR Activity Roadmap

2008	2013	2016
Consensus on the necessity of CSR and introduction Established a matching grant system	Increased CSR activities such as sisterhood relationships Set up sisterhood relationships with major organizations	Anchored existing activities and expanded strategic activities Set up a talent donation pool Implemented talent donation activities (learning, job mentoring, etc.) Established a mid-to-long-term strategy (development of specialized activities)

Social Contribution Program

Lotte Chemical develops and continuously carries out wide range of social activities, grouping them into four areas - social welfare, charity event, collaboration, improving the living environment.

Social welfare	Charity events
Set up sisterhood relationships with social welfare facilities near our worksites and made regular sponsorships	Identify and support multicultural families, elderly people living alone, and adolescents from North Korea
Collaboration	Improving residential environments
Joint sharing activities with environmental organizations local community centers	Talent donations for repairing shabby houses around our worksites

Vitalization of Charlotte volunteer group | In 2015, we unified different names of diverse volunteer service groups into the Charlotte Volunteer Corps to carry out various sharing activities for the underprivileged of the community, on the occasion of the announcement of a creative labor-management culture of Lotte Group. This event was an opportunity that laid the foundation for well-arranged volunteer services.



Charlotte volunteer group

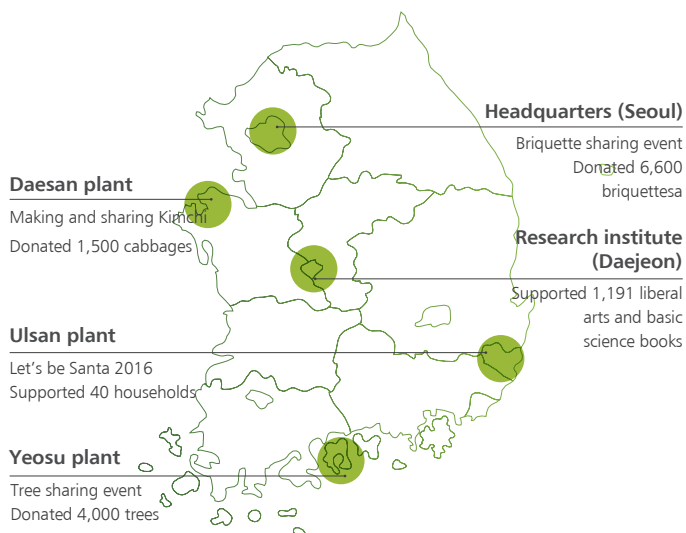
Evaluation on Social Contribution Activities

Lotte chemical has established a systematic process that identifies things to improve and continuously complement through evaluation on strategic social contribution program linked with its management activities. We developed 'social contribution effect index' and regularly evaluate economic and social value of our representative social contribution program. We will reflect on matters to be improved, identified through evaluation to future programs to implement more effective social contribution activities and by doing so, will increase provision of positive value to the entire society.

Social Contribution Activities Specific to Each Worksite

The headquarters, the research institute, and each worksite practices social contribution activities like joint charity bazaar and improving the living conditions for the underprivileged and local residents in local communities on a regular basis. For beneficiary-oriented social contribution, Lotte Chemical promotes voluntary participation of volunteer groups consisting of our employees and their family members and runs strategic programs through region-wise volunteer services with integrity. We will dedicate ourselves to develop local communities surrounding our work sites by solving social issues of each community.

Social Contribution Activities by Worksite in 2016



Headquarters

Lotte Chemical headquarters has organized a volunteer service corps to continuously implement social contribution activities for the local community. For example, we have carried out the briquette sharing event, book donation and especially in 2016, immediately sent a restoration team to the area affected by Typhoon Chaba and donated 1 billion won to realize the value of sharing.



Book donation event at head office

Briquette Sharing Event | In November 2016, more than 120 employees working at the headquarters participated in briquette sharing event in Samsung-dong, Gwanak-gu, Seoul. The event which started in 2012 has handed down heart-warming feelings to underprivileged people. In this event, our employees carried over 6,600 briquettes to 33 underprivileged households and they felt rewarded doing volunteer work and fulfilled the value of sharing with the local community.



Briquette Sharing Event

Euollim Kimchi sharing event | In December 2016, 45 subsidiaries of Lotte Group gathered for Euollim Kimchi sharing event. It was a joint voluntary work by labor and management. More than 1,000 employees of Lotte Group made Kimchi for underprivileged households. 30 employees of Lotte Chemical consisting of a packing team, Kimchi-making team and ingredient carrying team made 700 cabbages of Kimchi. 15,000 tons of Kimchi made in this event was delivered to the marginalized people across the country.



Euollim Kimchi sharing event

Matching Grant | Since 2008, Lotte Chemical has run a matching grant by which the company donates the same amount of the funds voluntarily raised by employees all year round. The fund set up by this program is used for social contribution activities at each worksite, and regular donations to institutes with sisterhood ties, including Korea Children's Foundation and community center for those with disabilities.

Housing Improvement Program for the needy neighbors: Yeosu, Daesan, Ulsan Factory



GOAL6. Clean Water and Sanitation

Since 2009, Lotte Chemical have been implementing residential environment improvement programs for the underprivileged in Yeosu, Daesan, and Ulsan, where our production plants are located. A public duties division specializing in the maintenance and repair of machinery in the workplace participated in the program and donated individual talents by providing repair and maintenance services for the electric facilities and kitchen facilities of the marginalized class.

Classification	Details and achievement
Target	Yeosu, Ulsan, Daesan nearby neighborhoods, the elderly living alone, and the underprivileged class of people
Details	Improving the residential environment through preliminary investigation of inconveniences of residents Improvements on what can threaten the safety of residents Improvement of aesthetics through exterior wall painting, changing room, interior decoration
Achievements	Improving the quality of life by improving the living environment of beneficiaries Improve our external image and build bonds with the community Promoting self-esteem by donating talents to employees

1 Company 1 Stream Volunteer Work | In collaboration with Jeonnam environmental movement center (Yeosu), we executed 1 company 1 stream volunteer work. We also continuously implement water conservation campaigns to reduce water temperature by 1 degree in response to climate change of Korean peninsula to subtropical settings. In this event, we released native fresh water fish like carp, mud fish and freshwater tortoise to Haesan stream.

Red Food Truck Event | On every Friday of the third week of a month, Lotte Chemical offers Red Food Truck free meal to seniors in cooperation with Yeosu Senior Welfare Center. In addition, the company conducts diverse volunteer activities for the marginalized in the region, such as provision of daily necessities and donation of talent to local children's centers or orphanages.



Red food truck event

Yeosu Plant

Volunteer corps of Yeosu Plant go along with local residents through regular activities for local community. They work to improve the nearby environment through tree-sharing event and 1 company 1 stream program. In addition, they distribute necessities and free meals at red food truck for the marginalized in the region.

Regular Tree Sharing and Donation | Since 2014, the plant has held tree-sharing events with those living in the neighborhood and working in public offices. In 2016, some 4,000 trees, such as Osmanthusfragrans var. aurantiacus, O. asiaticus and rhododendron schlippenbachii, were handed out to them. Lotte Chemical also donated trees for planting near Yecheon-dong Community Service Center and Yeosu Exhibition area, to participate in efforts of making the local environment green.



Tree sharing event

The Women's volunteer group in Yeosu plant won the Minister's award at the Korea National Sharing Grand Award | In October 2016, the women's volunteer group in Yeosu plant won the Health and Welfare Minister's award at Korea National Sharing Grand Award. It is an event jointly held by Ministry of Health and Welfare, Community Chest of Korea and Korea Broadcasting System. Since 2012, it recognized and granted award to corporations and individuals contributing to spread the culture of sharing in our society. The volunteer group regularly donates to orphanages in the local community and supports single-parent families, women's shelter and regional child centers. In addition, it also frequently carries out various and continuous voluntary work. Lotte Chemical will actively support the volunteer groups to eliminate difficulties in executing sharing activities, thus contribute to building a happier community.



Korea National Sharing Grand Award Ceremony

Daesan Plant

Daesan Plant categorized volunteer services into four different sub-groups (residential environment, support to the underprivileged, social welfare and cooperation with outside parties) to deliver more systematic and practical support. The plant also awards scholarship to students from underprivileged households, donates necessities to children's centers and institutes for the disabled, offers volunteer services at welfare centers and supplies heating oil to marginalized families.

Joint Charity Bazaar | Lotte Chemical and the association of women residing at Daesan Plant's housing facility held a joint charity bazaar. More than 2,000 employees and their family members participated in this event of selling food, clothes and other items, and the total amount of the money raised was donated for underprivileged people in the region. This charity fair shows the plant's will to prosper with its communities.



Joint Charity Bazaar

Making and Sharing Kimchi | Over 150 employees of Daesan Plant, members of the women's association whose spouses work at the plant, and in-house volunteer groups made Kimchi of 1,500 cabbages and handed them out to the needy neighborhood, including households with multicultural background and seniors living alone.



Making and Sharing Kimchi

Ulsan Plant

Ulsan Plant divided volunteer services into three sub-groups i.e. support to the underprivileged, facility maintenance and residential environment improvement. The unit of residential environment improvement works in collaboration with local volunteer communities to upgrade housing conditions of those in need in rural areas. The facility maintenance unit visits senior care hospitals and welfare centers every month to fix out-of-order electricity systems, replace facilities with new ones, and becomes a friend to the inmates with whom they carry out easy and comfortable conversations. The unit for supporting the marginalized selects 60 households, visits these homes, and provides daily necessities every two months.

Areum Atti Daddy Longlegs Study Mentoring | Charlotte volunteer group in Ulsan plant provides regular study mentoring to middle school students once a week. The study mentoring is education donation activity that provides learning guidance for English and Mathematics as well as career counseling and study coaching to support healthy growth of teenagers.



Areum Atti Daddy Longlegs Study Mentoring

Let's be Santa | Volunteer service groups in Ulsan Plant launched "Let's be Santa" event, together with Ulsan regional headquarters of ChildFund Korea. The program distributed Christmas cards and presents to children from 40 low-income families.



Let's be Santa

Research Institute

Lotte Chemical Research Institute carries out systematic and diverse activities such as scholarship and social welfare projects to establish healthy corporate culture making contribution to local community dreaming of the world of co-prosperity.

Education Assistance Project

GOAL 4.
 Quality Education



Scholarship assistance | As a part of Hope Sharing Scholarship Project that provides the foundation for independence for students who study hard without losing hope under unfavorable conditions, we signed MOU of office worker sharing campaign with Fruit of Love (Daejeon Community Chest of Korea). In compliance with Lotte Chemical's corporate philosophy, we will join in relieving social polarization, a social issue, and actively practice the culture of hope sharing and win-win to marginalized people in our society.

Supporting liberal arts and basic science books to local schools | Our science book support project aims to provide children and teenagers, who are our future talents, with an opportunity to study science in an easy and interesting way by supporting basic science books to them. In addition, we continuously select and donate quality books to encourage teenagers to major natural science and engineering and nurture global science talent.



Donation of liberal arts and basic science books

Operating field experiential learning center in connection with local schools | To foster key talents in science and engineering, the institute runs Hope Camp with local schools to provide field-based experiential learning to help students make career decisions and set specific goals. Through direct and indirect field experiences, we encourage students to be motivated and spare no effort to advise them for their career decision-making.

Secondhand PC Donation Project | We provide underprivileged children in the local community with secondhand PCs to mitigate the information education gap. We offer online education through secondhand PCs enabling the children obtain a wide range of knowledge and contributing to vitalized information use. Besides, we reduce environmental pollution and practice resource saving through recycling of PCs.

Social Welfare Project

Visit to Nursing Home for New Employees | Field experience program in social welfare organizations aims to enhance community spirit and build right values, responsibility and consideration of new employees as members of our society who are familiar with one-sided knowledge acquisition and school education. We selected field experience in social welfare organizations as a compulsory subject for new employee education and let them participate in cleaning, equipment arrangement and meal preparation and feeding assistance work.



New employees' field experience study at Seoul Southern Welfare Center for the Disabled

Sponsorship of Yuseong District Welfare Foundation | The research foundation supports scholarship and fund to Yuseong District Welfare Foundation funded by Yuseong-gu office, a local government organization. In January 2016, we donated 80 comforters (amounting to KRW 5 million) for winter heating for low-income group. With the fund raised by more than 350 employees of the institute who donate a certain amount of their monthly wage, the institute will take the lead in addressing the blind spot of welfare in local community and sharing hope and happiness with neighbors.



Heating supplies donation for low-income group

Global Social Contribution Activities

Lotte Chemical has been actively making locally specialized social contributions, at its overseas worksites. We will go forward, fulfilling social responsibilities as a global chemical company.

Social contribution through poverty eradication

Goal 1. End poverty in all its forms everywhere



As a global chemical company, Lotte Chemical does not merely contribute to overseas operations. We are carrying out various activities to build infrastructures that can fundamentally solve problems in local society. We provide tailored support to local communities to overcome the vicious cycle of poverty in the circumstance. In particular, in 2016, we strengthened the educational infrastructure of the local community where LC Titan is located, thereby laying the foundations for self-reliance and growth. In addition to providing scholarships to 200 students, we also support the lives of local residents to ensure that we are able to provide high-quality education reliably and to be self-sufficient.

LC Titan in Malaysia

Support to Local Communities | LC Titan in Malaysia has provided food and other donations to the marginalized. The company also continues support for those who were affected by floods and typhoons, to help them lead a normal life. In addition, people working at the site regularly participate in blood donation camps thereby, lending a big hand to areas with short blood supply. In 2016, twelve underprivileged households received aid. In addition, our employees fulfilled the sharing spirit through facility improvement such as electricity and water pipe repair.



Educational Support | We picked up 200 preliminary and junior high school students from 20 schools and gave them prizes, in the hope that they become an incentive for better performance. In addition, we chose 9 students from 3 universities to award them with Lotte scholarship. The annual amount of USD 3,800 per person will help them to focus on their studies alone, relieved from the burden of tuition expenses. In 2016, 6 students among those scholarship holders finished 4-year study with excellent performances and entered LC Titan.

Support for Local Employees | LC Titan continues investment and support for empowerment of its employees. In 2016, we sent more than 20 technicians to South Korea, Republic of South Africa and Singapore for training and education in line with implementation of new project. In addition, we introduced Apprentice Program to establish cooperation system with local colleges and hired more than 30 plant operation engineers. We will continuously strive to secure operation engineers through scholarship work, professor exchange and increasing cooperation with schools.

LC Pakistan

Earth Day | On April 22, 2016, 108 employees voluntarily gathered for the Earth Day event and planted 200 trees in the area surrounding the plant despite 37-38 degree hot weather to create more refreshing area on a regular basis.

Free Eye Medical Camp | On March 22, 2016, we opened an EYE CAMP in Abdullah Goth where LC Pakistan is located. In the EYE CAMP, 2 doctors and 3 nurses provided free medical service to 350 local residents. Mainly diagnosed symptoms are women's sight loss, glaucoma and cataract. The camp transported emergency patients who need surgery to nearby hospitals. EYE CAMP provided medical service in villages near LC Pakistan on a quarterly basis in June, September and December.



LC Pakistan Free Eye Medical Camp

LC Gaheung in China

The company is actively taking part in the activity of the city government that builds a society with harmony by eliminating the gap between the rich and the poor. In October 2016, it awards USD 1,000 of annual scholarship to 10 university students through the Lotte Foundation. LC Gaheung encouraged college students to study and promote the company to actively attract talented students to LC Gaheung.



LC Gaheung Scholarship Awarding Ceremony

APPENDIX

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Lotte Chemical's Declaration of Human Rights	86
Accolades and Membership of Association	87
Third Party Assurance Report	88

GRI G4 Index

General Standard Disclosures

Indicators	Contents	Reporting	Page	Remarks
Strategy and Analysis				
G4-1	Statement from the most senior decision-maker of the organization (such as the CEO, chair, or an equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability	●	4-5	
G4-2	Key impacts, risks and opportunities	●	4-5, 36-37	
Organizational Profile				
G4-3	Name of the organization	●	6	
G4-4	Primary brands, products, and services	●	8, 10-15	
G4-5	Location of the organization's headquarters	●	6	
G4-6	Number of countries where the organization operates, and names of countries whether either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report	●	8-9	
G4-7	Nature of ownership and legal form	●	33	
G4-8	Markets served (including geographical breakdown, sectors served, and types of customers and beneficiaries)	●	8-9	
G4-9	Scale of the organization	●	8-9, 83-85	
G4-10	Total number of employees by employment contract and gender	●	9, 85	
G4-11	Percentage of total employees covered by collective bargaining agreements	●	85	
G4-12	Description of supply chain	●	64-66	
G4-13	Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain	●	2	
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	●	36-37	
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	●	2, 87	
G4-16	Memberships in associations (such as industry associations) and/or national/international advocacy organizations	●	86-87	
Identified Material Aspects and Boundaries				
G4-17	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	●	8-9	
G4-18	Process for defining report content and the Aspect Boundaries and explanation of how the organization has implemented the Reporting Principles for Defining Report Content	●	40-41	
G4-19	List all the material Aspects identified in the process for defining report content	●	40-41	
G4-20	Aspect Boundary within the organization for each material Aspect	●	2	
G4-21	Aspect Boundary outside the organization for each material Aspect	●	2	
G4-22	Explanation of the effect of any restatements of information provided in previous reports, and the reasons for such restatements	●	2	N/A
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	●	2	N/A
Stakeholder Engagement				
G4-24	List of stakeholder groups engaged by the organization	●	38	
G4-25	Basis for identification and selection of stakeholders with whom to engage	●	38	
G4-26	Organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group	●	40	
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting (report of stakeholder groups that raised each key topics and concerns)	●	41	
Report Profile				
G4-28	Reporting period (such as fiscal or calendar year) for information provided	●	2	
G4-29	Date of the most recent previous report (if any)	●	2	
G4-30	Reporting cycle (such as annual, biennial)	●	2	
G4-31	Provide the contact point for questions regarding the report or its contents	●	2	
G4-32	Table identifying the location of the Standard Disclosures in the report	●	2	
G4-33	Organization's policy and current practice with regard to seeking external assurance for the report	●	88-89	
Governance				
G4-34	Governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts	●	30-31	
Ethics and Integrity				
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	●	34-35	
G4-58	Internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organization integrity	●	34-35	

Specific Standards Disclosures

Economics

Indicators	Contents	Reporting	Page	Remarks
Economic Performance DMA (Disclosures on Management Approach)		●	22	
G4-EC1	Direct economic value generated and distributed	●	83-84	
G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	●	45-47	
G4-EC3	Coverage of the organization's defined benefit plan obligations	●	85	
G4-EC4	Financial assistance received from the government	●	85	
Indirect Economic Impacts DMA(Disclosures on Management Approach)		●	71	
G4-EC7	Development and impact of infrastructure investments and services supported	●	72-77	
G4-EC8	Significant indirect economic impacts, including the extend of impacts	●	72-77	

Environments

Indicators	Contents	Reporting	Page	Remarks
Materials DMA(Disclosures on Management Approach)		●	44	
G4-EN1	Materials used by weight or volume	●	47	
G4-EN2	Percentage of materials used that are recycled input materials	●	49	
Energy DMA(Disclosures on Management Approach)		●	44	
G4-EN3	Energy consumption within the organization	●	46	
G4-EN5	Energy intensity	●	46	
G4-EN6	Reduction of energy consumption	●	47	
G4-EN7	Reductions in energy requirements of products and servies	●	20-21	
Water DMA(Disclosures on Management Approach)		●	44	
G4-EN8	Total water withdrawal by source	●	48	
G4-EN10	Percentage and total volume of water recycled and reused	●	48	
Emissions DMA(Disclosures on Management Approach)		●	44	
G4-EN15	Direct greenhouse gas (GHG) emissions (scope 1)	●	46	
G4-EN16	Energy indirect greenhouse gas (GHG) emission (scope 2)	●	46	
G4-EN18	Greenhouse gas (GHG) emissions intensity	●	46	
G4-EN19	Reduction of greenhouse gas (GHG) emissions	●	46-47	
G4-EN20	Emissions of ozone-depleting substances (ODS)	●	80	No cases
G4-EN21	NOx, Sox, and other significant air emissions	●	48	
Effluents and Waste DMA(Disclosures on Management Approach)		●	44	
G4-EN22	Total water discharge by quality and destination	●	48	
G4-EN23	Total weight of waste by type and disposal method	●	49	
G4-EN24	Total number and volume of significant spills	●	48	
Products and Services DMA(Disclosures on Management Approach)		●	44	
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	●	21, 47, 50	
Compliance DMA(Disclosures on Management Approach)		●	44	
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations No violations	●	80	No violations
Overall DMA(Disclosures on Management Approach)		●	44	
G4-EN31	Total environmental protection expenditures and investments by type	●	47	

Labor

Indicators	Contents	Reporting	Page	Remarks
Employment DMA(Disclosures on Management Approach)		●	55	
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region	●	56, 85	
G4-LA2	Benefits provided to full time employees that are not provided to temporary or past-time employees, by significant locations of operation	●	57-62	
G4-LA3	Return to work and retention rates after parental leave, by gender	ⓘ	85	
Labor-management Relations DMA(Disclosures on Management Approach)		●	55	
G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	ⓘ	59	
Occupational Health and Safety DMA(Disclosures on Management Approach)		●	51	
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advice on occupational health and safety programs	●	85	
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	ⓘ	85	
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	ⓘ	85	
G4-LA8	Health and safety topics covered in formal agreements with trade unions	●	52	
Training and Education DMA(Disclosures on Management Approach)		●	55	
G4-LA9	Average hours of training per year per employee by gender, and by employee category	●	57	
G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	●	57, 59	
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	●	85	
Diversity and Equal Opportunity DMA(Disclosures on Management Approach)		●	55	
G4-LA12	Composition of governance bodies and breakdown of employees per employee category	●	56, 85	
Equal Remuneration for Women and Men DMA(Disclosures on Management Approach)		●	55	
G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	ⓘ	58	
Labor Practices Grievance Mechanisms DMA(Disclosures on Management Approach)		●	55	
G4-LA16	Number of grievance about labor practices filed, addressed, and resolved through formal grievance mechanisms	●	59	

Human Rights

Indicators	Contents	Reporting	Page	Remarks
Investment DMA(Disclosures on Management Approach)		●	55	
G4-HR2	Total number of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	●	58	
Non-Discrimination DMA(Disclosures on Management Approach)		●	55	
G4-HR3	Total number of incidents of discrimination and corrective actions taken	ⓘ	58	
Freedom of Association and Collective Bargaining DMA(Disclosures on Management Approach)		●	59	
G4-HR4	Operations and business partners identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	●	59	
Child Labor DMA(Disclosures on Management Approach)		●	55	
G4-HR5	Operations and business partners identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	●	58	
Forced or Compulsory Labor DMA(Disclosures on Management Approach)		●	55	
G4-HR6	Operations and business partners identified as having significant risk for incidents or forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	●	58	

Society

Indicators	Contents	Reporting	Page	Remarks
Local Communities DMA(Disclosures on Management Approach)		●	71	
G4-S01	Percentage of operations with implemented local community engagement, impact assessments, and developmental programs	●	72-77	
G4-S02	Operations with significant actual or potential negative impacts on local communities	●	52	
Anti-Corruption DMA(Disclosures on Management Approach)		●	34	
G4-S03	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	●	82	Company-wide evaluation (100%)
G4-S04	Communication and training on anti-corruption policies and procedures	●	35, 64	
G4-S05	Confirmed incidents of corruption and actions taken	●	35	

Product Responsibility

Indicators	Contents	Reporting	Page	Remarks
Customer Health and Safety DMA(Disclosures on Management Approach)		●	67	
G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	●	70	
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	●	82	No violations
Product and Service Labeling DMA(Disclosures on Management Approach)		●	67	
G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	●	68	
G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	●	82	No violations
G4-PR5	Results of surveys measuring customer satisfaction	●	68	
Marketing Communication DMA(Disclosures on Management Approach)		●	67	
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communication, including advertising, promotion, and sponsorship, by type of outcomes	●	82	No violations
Customer Privacy DMA(Disclosures on Management Approach)		●	67	
G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	●	82	No loss of or complaints regarding customer privacy
Compliance DMA(Disclosures on Management Approach)		●	67	
G4-PR9	Monetary value of significant fines for non-compliances with laws and regulations concerning the provision and use of products and services	●	82	No violations

Consolidated Financial Statements

Consolidated Financial Position

Item	Unit	2014	2015	2016
Assets				
I .Current assets	KRW	4,321,552,617,111	5,405,499,989,622	5,851,675,895,722
1.Cash and cash equivalents	KRW	949,302,735,384	1,942,218,655,868	2,202,944,465,224
2.Short-term financial instruments	KRW	313,606,363,436	841,697,947,914	425,756,558,256
3.Accounting for assets	KRW	-	-	6,685,073,198
4.Available-for-sale financial assets	KRW	20,348,875,000	45,639,020,000	20,588,275,000
5.Trade and other receivables	KRW	1,268,432,981,044	1,016,335,868,734	1,551,920,459,156
6.Inventories	KRW	1,528,109,897,449	1,162,746,555,678	1,477,157,254,043
7.Financial lease receivables	KRW	222,114,588	138,598,084	138,598,084
8.Current income tax assets	KRW	22,334,476,557	18,567,576,319	16,403,225,181
9.Other current financial assets	KRW	14,566,144,494	16,740,348,522	13,242,873,191
10.Other current non-financial assets	KRW	204,629,029,159	361,415,418,503	136,839,114,389
II .Non-current Assets	KRW	6,001,103,002,178	6,062,308,909,152	10,015,158,274,179
1.Long-term financial instruments	KRW	50,512,000,000	67,509,500,000	67,515,500,000
2.Available-for-sale financial assets	KRW	167,436,011,673	193,646,663,061	304,235,250,235
3.Financial lease receivables	KRW	3,181,118,858	3,139,735,572	3,014,310,692
4.Investments in associates	KRW	738,665,448,363	846,144,172,015	1,288,114,096,686
5.Investments in joint ventures and associates	KRW	783,561,064,648	800,374,671,919	848,082,771,318
6.Tangible assets	KRW	3,975,810,386,927	3,964,852,431,989	5,546,663,157,027
7.Investments in real estate	KRW	84,247,016,415	81,298,743,603	99,471,563,871
8.Goodwill	KRW	3,196,151,567	3,196,151,567	723,796,856,918
9.Intangible assets	KRW	20,362,884,418	34,442,559,894	1,068,600,007,244
10.Other non-current financial assets	KRW	9,071,325,009	8,277,637,186	20,898,712,615
11.Other non-current non-financial assets	KRW	7,670,050,071	4,655,761,108	5,552,909,940
12.Deferred income tax assets	KRW	157,389,544,229	54,770,881,238	39,213,137,633
Total Assets	KRW	10,322,655,619,289	11,467,808,898,774	15,866,834,169,901
Liabilities				
I .Current liabilities	KRW	2,057,809,967,357	2,146,107,848,882	3,448,810,302,356
1.Trade and other payables	KRW	724,825,882,322	934,257,282,162	1,126,697,903,644
2.Accounting for liabilities	KRW	8,773,074,559	179,284,262	-
3.Short-term borrowings	KRW	1,092,991,431,061	911,337,908,046	1,745,873,962,485
4.Current income tax liabilities	KRW	48,498,991,290	157,692,458,677	365,609,755,774
5.Other current financial liabilities	KRW	77,642,098,427	57,933,582,156	99,934,087,464
6.Other current non-financial liabilities	KRW	101,698,203,745	75,530,844,307	91,154,064,043
7.Current provisions	KRW	3,380,285,953	9,176,489,272	19,540,528,946
II .Non-current liabilities	KRW	1,795,846,882,669	1,766,114,975,036	3,017,206,697,113
1.Long-term borrowings	KRW	1,510,857,226,709	1,500,781,746,218	2,439,574,476,416
2.Retirement benefit liabilities	KRW	26,207,544,854	30,263,275,849	23,195,912,697
3.Deferred income tax liabilities	KRW	220,408,408,379	204,218,459,079	524,809,517,144
4.Other non-current financial liabilities	KRW	26,064,100,154	17,651,966,771	14,558,572,798
5.Other non-current non-financial liabilities	KRW	4,365,665,480	3,398,126,882	7,735,920,277
6.Non-current provisions	KRW	7,943,937,093	9,801,400,237	7,332,297,781
Total liabilities	KRW	3,853,656,850,026	3,912,222,823,918	6,466,016,999,469
Equity				
I .Equity attributable to the owner of the parent	KRW	6,437,098,705,381	7,524,751,244,619	9,363,112,350,552
1.Share capital	KRW	171,377,095,000	171,377,095,000	171,377,095,000
2.Other share capital	KRW	476,522,242,395	476,522,242,395	478,576,150,133
3.Retained earnings	KRW	5,790,777,027,820	6,739,344,145,893	8,486,992,508,654
4.Other reserves	KRW	(1,577,659,834)	137,507,761,331	226,166,596,765
II .Non-controlling interests	KRW	31,900,063,882	30,834,830,237	37,704,819,880
Total equity	KRW	6,468,998,769,263	7,555,586,074,856	9,400,817,170,432
Total liabilities and equity	KRW	10,322,655,619,289	11,467,808,898,774	15,866,834,169,901

Consolidated Statements of Comprehensive Income

Item	Unit	2014	2015	2016
I.Sales	KRW	14,858,969,270,208	11,713,338,201,119	13,223,540,873,785
II.Cost of sales	KRW	14,058,561,842,108	9,646,291,210,590	9,956,835,878,305
III.Gross profit	KRW	800,407,428,100	2,067,046,990,529	3,266,704,995,480
Selling and administrative expenses	KRW	449,478,910,448	455,927,525,047	722,451,059,395
IV.Operating income (loss)	KRW	350,928,517,652	1,611,119,465,482	2,544,253,936,085
Financial income	KRW	129,490,442,812	145,410,485,658	156,147,422,909
Financial cost	KRW	187,535,208,115	204,624,157,754	241,023,186,030
Gain (loss) from investments in associates and joint ventures	KRW	1,408,253,889	[23,405,936,491]	71,447,129,465
Other non-operating income (loss)	KRW	[16,990,525,014]	[107,131,849,529]	[43,452,202,472]
V.Net income before income tax	KRW	277,301,481,224	1,421,368,007,366	2,487,373,099,957
Income tax expense	KRW	133,648,428,872	430,712,512,057	650,188,180,879
VI.Profit (loss) for the year	KRW	143,653,052,352	990,655,495,309	1,837,184,919,078
VII.Other comprehensive income (loss)	KRW	71,054,245,713	129,623,841,284	85,909,192,018
1.Items that will not be reclassified subsequent to income (loss)	KRW	[4,617,515,096]	[10,256,055,223]	[3,949,772,132]
Re-measurement factor on defined benefit plans	KRW	[4,543,836,146]	[8,064,009,146]	[5,608,108,254]
Retained earnings using the equity method	KRW	[73,678,950]	[2,192,046,077]	1,658,336,122
2.Items that will be reclassified subsequent to income (loss)	KRW	75,671,760,809	139,879,896,507	89,858,964,150
Pre-tax comprehensive income of AFS financial assets	KRW	[3,167,559,095]	20,375,203,607	[6,609,388,327]
Changes in capital variation of equity method	KRW	6,877,349,862	10,651,905,170	[2,207,049,932]
Pre-tax comprehensive income of cash flow risk hedge	KRW	[491,760,179]	2,946,242,373	591,062,562
Foreign currency translation differences of foreign operations	KRW	72,453,730,221	105,906,545,357	98,084,339,847
VIII.Total comprehensive income	KRW	214,707,298,065	1,120,279,336,593	1,923,094,111,096
Net income attributable to:				
Owners of the group	KRW	146,855,718,145	992,512,355,206	1,835,812,632,200
Non-controlling interest	KRW	[3,202,665,793]	[1,856,859,897]	1,372,286,878
Comprehensive income attributable to:				
Owners of the group	KRW	215,432,681,034	1,121,344,570,238	1,920,537,275,695
Non-controlling interests	KRW	[725,382,969]	[1,065,233,645]	2,556,835,401
IX.Earnings per share				
Basic and diluted earnings per share	KRW	4,359	29,458	54,488
Earnings per share from continuing operations	KRW	4,359	29,458	54,488

Major Products

Sector	Item	Unit	Sales
Olefin	Ethylene, propylene, benzene, toluene, para xylene, ortho xylene, etc.	KRW in millions	1,520,404
Monomer	Styrene monomer, butadiene, ethylene oxide adduct, ethylene oxide glycol, purified isophthalic acid, purified terephthalic acid, methyl methacrylate monomer, etc.	KRW in millions	3,536,869
Polymer	High density polyethylene, polypropylene, low density polyethylene, polyethylene terephthalate, linear low density polyethylene, polycarbonate, LFT, EPP, etc.	KRW in millions	8,752,803
Others	By-products, etc	KRW in millions	171,847
Elimination of internal transactions		KRW in millions	[758,382]
Total Sales		KRW in millions	13,223,541

Sustainability Data

Economy

Sales

Classification	Unit	2014	2015	2016
Sales of domestic worksites	KRW in trillions	10.9	8.6	10.2
Sales of overseas worksites	KRW in trillions	3.9	3.1	3.0
Total	KRW in trillions	14.8	11.7	13.2

Retirement Pension Plan

Classification	Unit	2014	2015	2016
Defined Benefit Retirement Pension	%	99.6	97.9	95.8
Defined Contribution Retirement Pension	%	0.4	2.1	4.2

* As of December 31 of each year

Financial Assistance Received from the Government

Classification	Unit	2014	2015	2016
Financial assistance received from the government	KRW in millions	4,423	3,866	3,315

* Limited to R&D subsidies only

Related Organization Dues

Classification	Unit	2014	2015	2016
Related organization dues	KRW in millions	153.4	165.0	183.5

Society

Employees

Classification	Unit	2014	2015	2016
Number of domestic sites	Sites	11	11	11
Number of employees at domestic sites	Persons	2,739	2,800	2,917
Number of overseas sites	Sites	18	18	18
Number of employees at overseas sites	Persons	2,427	2,365	2,462

Employment Status

Classification	Unit	2014	2015	2016
Total number of employees	Persons	2,739	2,800	2,917
By employment type	Full-time employees	2,646	2,728	2,834
	Part-time employees	93	72	83
By gender	Male	2,468	2,483	2,571
	Female	271	317	346
By age	Under 30	634	612	465
	30s – 50	1,642	1,658	1,746
	Over 50	463	530	706

* Limited to employees of Lotte Chemical

Turnover Rate

Classification	Unit	2014	2015	2016
Turnover rate	%	2.9	2.3	2.1

Parental Leave

Classification	Unit	2014	2015	2016
Number of employees on parental leave	Persons	14	18	40
Number of employees who returned to work after parental leave	Persons	10	12	20
Number of employees who have worked for 12 months or more after their return	Persons	8	14	29

Employees Covered by Collective Bargaining

Classification	Unit	2014	2015	2016
Number of employees covered by collective bargaining	Persons	1,232	1,316	1,377
Total number of employees	Persons	2,739	2,800	2,917
Percentage	%	45	47	47

Employees Represented by the Joint Labor-Management Safety and Health Committee

Classification	Unit	2014	2015	2016
Number of target employees	Persons	1,794	1,802	1,918

Incident Rates

Classification	Unit	2014	2015	2016
Incident Rate	%	0	0.03	0.03
Total number of incidents	Cases	0	1	1

Employees Subject to Regular Performance Evaluation and Career Development

Classification	Unit	2014	2015	2016
Percentage	%	47	41	41
Number of employees subject to performance evaluation	Persons	1,152	1,145	1,192

Investments into Social Contribution

Classification	Unit	2014	2015	2016
Investments into social welfare (improvement in residential environment, investment into social welfare facilities, etc.)	KRW in millions	765	937	1,294
Investments into educational scholarships (investments into children's center, etc.)	KRW in millions	71	80	57
Investments into environmental culture (natural purification, etc.)	KRW in millions	103	28	36
Others	KRW in millions	9,307	9,561	8,618

Lotte Chemical's Declaration of Human Rights

As a global chemical company that is looking forward to a prosperous future, led by trust of stakeholders, Lotte Chemical aims to realize its social responsibilities and ensure sustainable growth. Lotte Chemical hereby declares that it will support international standards with regard to human rights, including the United Nations Universal Declaration of Human Rights and UN Guiding Principles on Business and Human Right (Ruggie Framework) endorsed by the UN Human Rights Council, and fulfill its responsibilities in relation to it.

Lotte Chemical hereby publicly announces that it will do its utmost to prevent any possible human rights infringement from occurring in the course of management, and respect and protect the human rights and free will of all its stakeholders, including customers, employees, local communities and business partners, as mentioned below.

Human rights of employees

- Prevention of unfair discrimination based on gender, race, religion, disability, regionalism, etc.
- Fundamental prevention of wrong labor practices, such as child and forced labor
- Comply with all principles regarding labor – safety and healthy and working hours – recommended by the International Labor Organization and ratified by each country.

Human rights of customers

- Demanding minimum personal information, recording and saving to comply with laws
- Optimal security system for preventing leaks of information, including data encryption
- Limited and responsible use of personal information for service/marketing purposes

Human rights of local communities

- Identify our social responsibility and actively take part in social contribution activities to ensure local development
- Consider and manage the impacts of activities that might cause environmental and social issues

Human rights of business partners

- Establish a fair and equal business relationship as partners for coexistence
- Prevention of forced/child labor as well as discrimination against members of business partners

Lotte Chemical will fully carry out our human rights policy to be followed by subsidiaries and partners as a responsible corporate citizen in global business environment and will put in maximum efforts to stabilize and disseminate human rights management.

Thank you.

June 2017
President & CEO, Lotte Chemical Corp.
Kim Gyo-hyun



Accolades and Membership of Association

Accolades in 2016

Award	Date
'Iron Order of Industrial Service Merit' commemorating Commerce & Industry Day	March 16, 2016
'Executive of the Year' Award	May 27, 2016
'Ministry of Environment Commendation' at the 2016 Green Company Ceremony (Yeosu Plant)	June 23, 2016
Certified for the DJSI Asia Pacific for six consecutive years, Dow Jones	September 08, 2016

Membership of Association

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

Third Party's Assurance Statement

To the Readers of Lotte Chemical Sustainability Report 2016:

Foreword

Korea Management Registrar Inc.(hereinafter "KMR") has been requested by of Lotte Chemical to verify the contents of its Sustainability Report 2016(hereinafter "the Report"). Lotte Chemical is responsible for the collection and presentation of information included in the Report. KMR's responsibility is to carry out assurance engagement on specific data and information in the assurance scope stipulated below.

Scope and standard

Lotte Chemical describes its efforts and achievements of the corporate social responsibility activities in the Report. KMR performed a Type 2, moderate level of assurance using AA1000AS (2008) as an assurance standard. KMR's assurance team(hereinafter "the team") evaluated the adherence to Principles of Inclusivity, Materiality and Responsiveness, and the reliability of the selected GRI G4 indices as below, where professional judgment of the team was exercised as materiality criteria.

- G4 Reporting Principles
- General Standard Disclosures
- Specific Standard Disclosures
 - Generic DMA of each of following material Indicators of Aspects
 - Economic Performance: EC1, EC2, EC3, EC4
 - Indirect Economic Impacts: EC7, EC8
 - Materials: EN1, EN2
 - Energy: EN3, EN5, EN6, EN7
 - Water: EN8, EN10
 - Emissions: EN15, EN16, EN18, EN19, EN20, EN21
 - Effluents and Waste: EN22, EN23, EN24
 - Products and Services: EN27
 - Compliance: EN29
 - Overall: EN31
 - Employment: LA1, LA2, LA3
 - Labor/Management Relations: LA4
 - Occupational Health and Safety: LA5, LA6, LA7, LA8
 - Training and Education: LA9, LA10, LA11
 - Diversity and Equal Opportunity: LA12
 - Equal Remuneration for Women and Men: LA13
 - Labor Practices Grievance Mechanisms: LA16
 - Investment: HR2
 - Non-discrimination: HR3
 - Freedom of Association and Collective Bargaining: HR4
 - Child Labor: HR5
 - Forced or Compulsory Labor: HR6
 - Local Communities: SO1, SO2
 - Anti-corruption: SO3, SO4, SO5
 - Customer Health and Safety: PR1, PR2
 - Product and Service Labeling: PR3, PR4, PR5
 - Marketing Communications: PR7
 - Customer Privacy: PR8
 - Compliance: PR9

This Report excludes a data and information of joint corporate, contractor etc. which is outside of the organization, i.e. Lotte Chemical, among report boundaries.

Our approach

In order to verify the contents of the Report within an agreed scope of assurance in accordance with the assurance standard, the team has carried out an assurance engagement as follows:

- Reviewed overall report
- Reviewed materiality test process and methodology
- Reviewed sustainability management strategies and targets
- Reviewed stakeholder engagement activities
- Interviewed people in charge of preparing the Report

Our 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 included in the verification scope 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 could not find any critical stakeholder Lotte Chemical 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 could 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 could not find any evidence that Lotte Chemical's counter measures to critical stakeholder issues were inappropriately recorded in the Report.

We could not find any evidence the Report was not prepared in accordance with the 'Core Option' of GRI G4.

Recommendation for improvement

KMR recommends that the report published by Lotte Chemical will be actively used as a tool for stakeholder communication and continuous improvement.

Use audit report data when recording financial performance: The business report is to be reported to the Financial Supervisory Service in accordance with the Securities Regulations, and it is required to additionally report on the business outlook, business status and shareholder status of the company other than the contents of the audit report. Therefore, if the numbers, terms, and forms differ between business and audit reports, we recommend that you first follow the contents of the audit report.

Strengthen inclusiveness of stakeholders: This year's report focuses primarily on internal stakeholders. The following reports are encouraged to be designed to improve stakeholder inclusiveness to meet the rational expectations and concerns of internal and external stakeholders.

Our independence

KMR has no involvement in Lotte Chemical business activities other than providing third party assurance services and maintains independence to avoid conflicts of interest.

May, 26, 2017



AA1000
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