



# LOTTE CHEMICAL

2012 Sustainability Report

## ABOUT THIS REPORT

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

### ● Reporting Period and Scope

This report covers Lotte Chemical's performance and activities from January through December 2012, and if necessary to provide time-series trends, the data of the three most recent fiscal years were utilized. As for some issues of significance, relevant data reported until March 2013 is included in this report. Year-on-year data is based on December 31 of each fiscal year and some data with period gap are reported with additional statements. Financial data in this report was derived from consolidated financial statements. The scope of this report covers sustainability management activities and performances in Lotte Chemical's Seoul head office, Daejeon Research Institute, Yeosu Plant, Daesan Plant, and Ulsan Plant.

### ● Reporting Principle

This report was written to present Lotte Chemical's performances and future plans in sustainability management as transparent as possible in accordance with the Global Reporting Initiative (GRI) G3.1 guideline. The indicators and reporting contents based on recommendations of the GRI guideline are stated on page 63 through page 66. To ensure the credibility of the contents in this report, the third-party verification was performed by an independent and objective institution, and the results are stated on page 68 through page 69.

### ● Additional Information

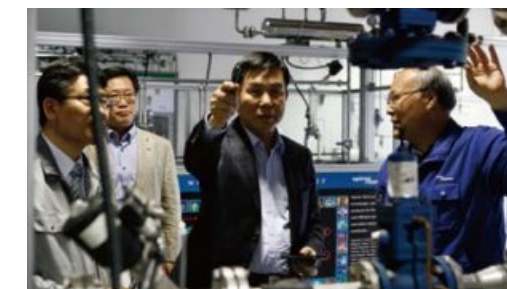
You may access the report on the website of Lotte Chemical (<http://www.lottechem.com/>) as well. If you have any inquiry or need additional information, please refer to the following contact information. We are always listening to your opinion.

### ● Corporate Communication Team of Lotte Chemical

TEL: 82-2-829-4114 E-MAIL: [csr@lottechem.com](mailto:csr@lottechem.com)  
11F, 51, Lotte Tower, Boramae-ro 5-gil, Dongjak-gu, Seoul

## CONTENTS

### LOTTE CHEMICAL 2012 SUSTAINABILITY REPORT



### INTRODUCTION

- 04\_CEO Message
- 06\_Corporate Information
- 11\_Sustainability Management at Lotte Chemical
- 16\_Sound Corporate Governance
- 17\_Ethical Management

### FOCUSED REPORT

- 20\_Merger and Company Name Change
- 22\_Expansion of Yeosu Plant
- 24\_Development of Eco-friendly PET and Long Fiber-reinforced Thermoplastics
- 26\_Mutual Growth between Large Corporations and SMEs

### ECONOMY

- 30\_Risk Management
- 30\_Future New Growth Engines
- 33\_Expansion of Production and Supply Capacity

### ENVIRONMENT

- 36\_Eco-friendly Management
- 39\_Response to Climate Change
- 41\_Prevention of Environmental Pollution
- 45\_Environmental Safety Management

### SOCIETY

- 50\_Employees
- 54\_Customers
- 56\_Partner Companies
- 58\_Local Communities

### APPENDIX

- 63\_GRI G3.1 Guideline
- 67\_ISO26000
- 68\_Independent Assurance Statement
- 70\_Consolidated Financial Statements
- 73\_Other Data
- 74\_Awards & Association Memberships

## CEO MESSAGE



**Lotte Chemical** pursues sustainable growth with its vision of evolving into “Top-tier Asian Chemical Company.”

### Dear stakeholders!

Amid the persistent global economic recession due to the financial crisis in the Euro zone and China's sluggish economic growth, many companies have difficulties in business activities nowadays. In such situation, Lotte Chemical pursues sustainable growth with its vision of “Top-tier Asian Chemical Company.”

We have secured Korea's No. 1 ethylene production facilities by successfully expanding the Yeosu Plant's NCC (naphtha cracking center) in 2012 through steady facility investment and efforts to develop technologies despite an uncertain business environment. We have also built PE and PP plants with our own technologies, exported licenses, and consequently achieved the feat of having our technological excellence recognized abroad as well. We are committed to growing as a global company through accountable and responsible management regardless of the circumstances.

Thanks to your support and encouragement, Honam Petrochemical and its subsidiary, KP Chemical, completed the merger in December 2012, and Lotte Chemical was reborn. The merger has become an opportunity to cement our competitiveness further by consolidating organizational capability and securing new growth engines. We will make the merger and change of company name a steppingstone to take off anew and bolster our status as a social company that grows together with customers and partner companies.

Lotte Chemical advances toward its vision of becoming a top-tier Asian chemical company. I believe such vision cannot be accomplished with only external growth and performance in financial management. We will pursue socially responsible management and sustainability management to realize such vision, fulfill our role in accordance with our position, and do our very best to meet your expectations.

Our sustainability management activities and performance are delivered to stakeholders through this annually published sustainability report; we collect various opinions and reflect them transparently on our management activities.

Thanks to our diverse efforts for sustainability management, we have been included in the DJSI Asia Pacific for the second consecutive year and chosen as a leading company in the raw material sector in CDP (carbon disclosure project) Korea. We operate the KRW 87 billion Mutual Growth Fund for mutual growth with partner companies and actively carry out competitiveness fortification for small and medium enterprises (SMEs) through the Mutual Growth Academy. We also engage in various sharing activities for the underprivileged within communities including offering scholarships for adolescents and home repair volunteer service as a community member. We promise to pull out all the stops in providing tangible/intangible assistance for the community's growth and development.

Lotte Chemical will contribute to humans' enriched life, based on sustainable growth under management principles such as customer-oriented mindset, creativity, cooperation, performance-based pay, and passion as our core values. We vow to develop as a company trusted and loved by various stakeholders with further consolidated efforts to fulfill our social responsibility.

I cordially ask for your unwavering encouragement and support.

Thank you.

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










# Corporate Information

## Profile of Lotte Chemical

Since its foundation in 1976, Lotte Chemical - as a general petrochemical company - has localized cutting-edge petrochemical technologies and has led Korea's heavy and chemical industry by focusing on technology development. Based on solid facility competitiveness, we come up with product lines including basic distillate, chemical synthesis, and synthetic resins, intensively research in fields such as process research, precision chemistry, and eco-friendly materials, and foster R&D competence. We at Lotte Chemical continually strive to position ourselves as a company that steadily grows and makes stable profits and contribute to human society amid the rapidly changing management environment, seeking to become a top-tier Asian chemical company.

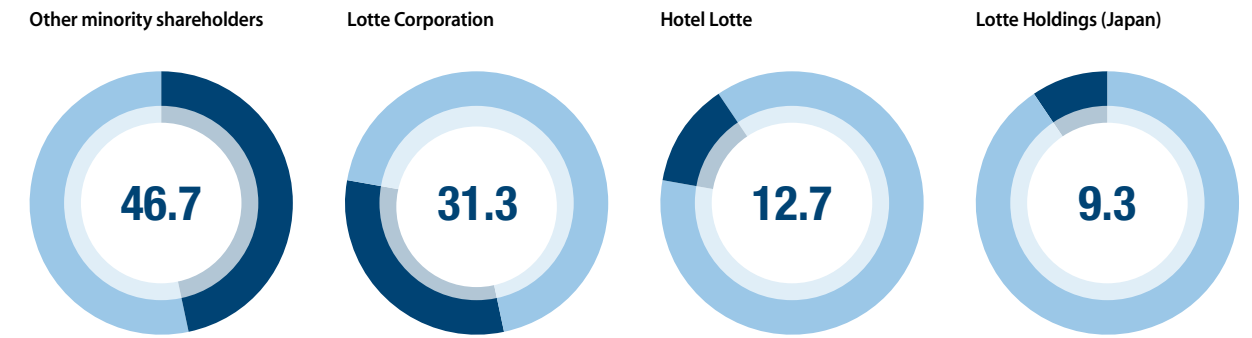
Profile (As of December 2012)

<b>Company name</b>	 Lotte Chemical Corporation
<b>Establishment</b>	 March 16, 1976
<b>Date of listing</b>	 May 30, 1991
<b>Worksite</b>	 Seoul Head Office, Yeosu Plant, Daesan Plant, Ulsan Plant, Daejeon Research Institute
<b>No. of employees</b>	 2,484 persons
<b>Total assets</b>	 KRW 10.37 trillion
<b>Credit ratings</b>	 AA+ from Korea Ratings, AA+ from Korea Investors Service (Corporate Bond)

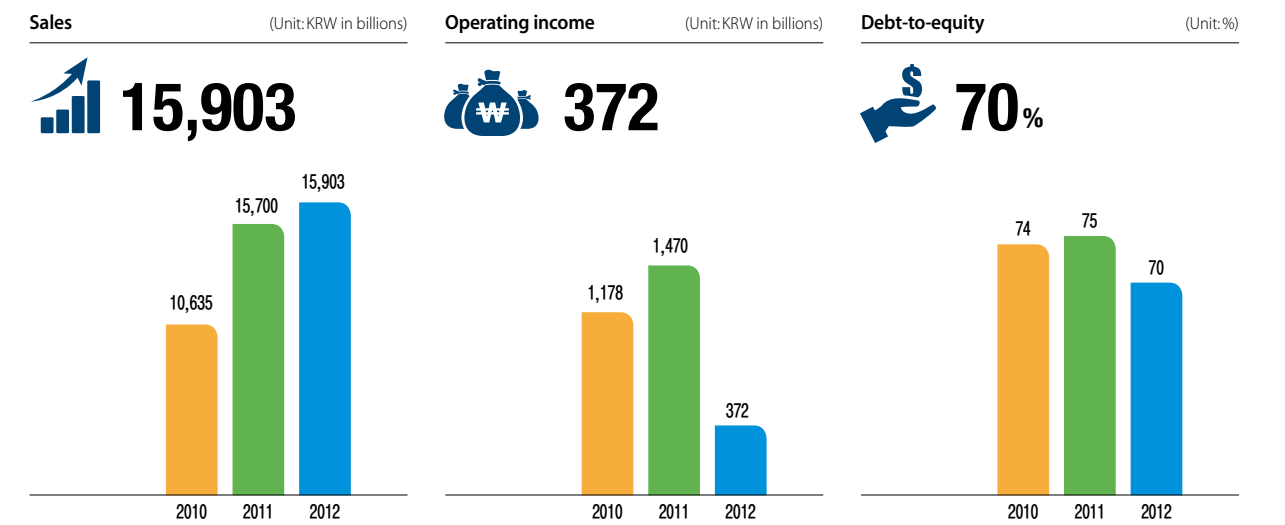
We take pride in being the largest in the Korean petrochemical industry. We strengthened the existing business, olefin sector, by acquiring Hyundai Petrochemical Corp., and expanded the aromatics business area with the merger of KP Chemical. We are equipped with world-class production facilities in Yeosu, Daesan, and Ulsan, Korea's leading petrochemical complexes. Thanks to these facilities, we can carry out business activities more vigorously targeting domestic and international customers.

## Shareholder Structure (As of the end of 2012)

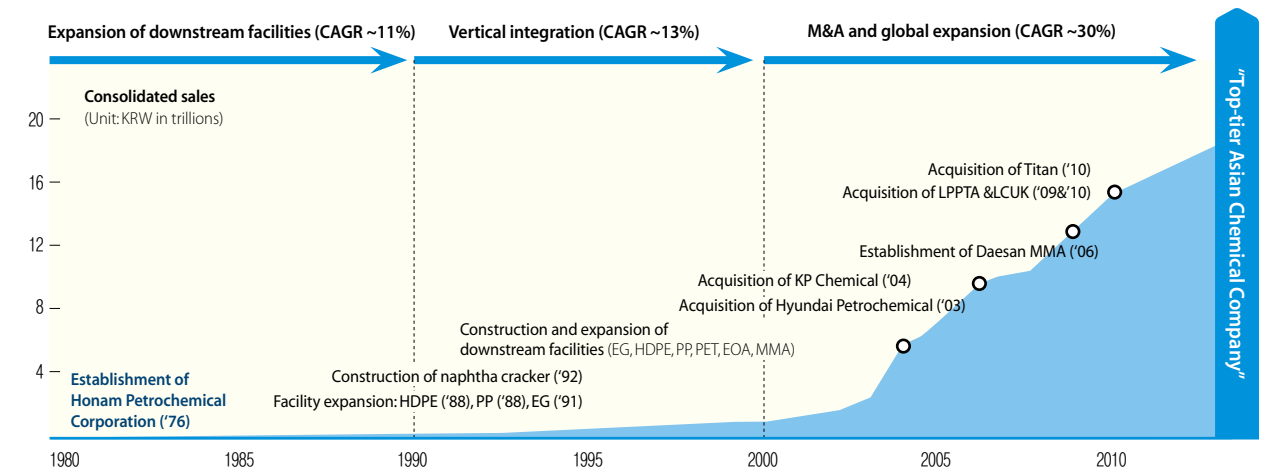
(Unit: %)



## Financial Status (As of 2012, consolidated)



## Corporate History



# Corporate Information

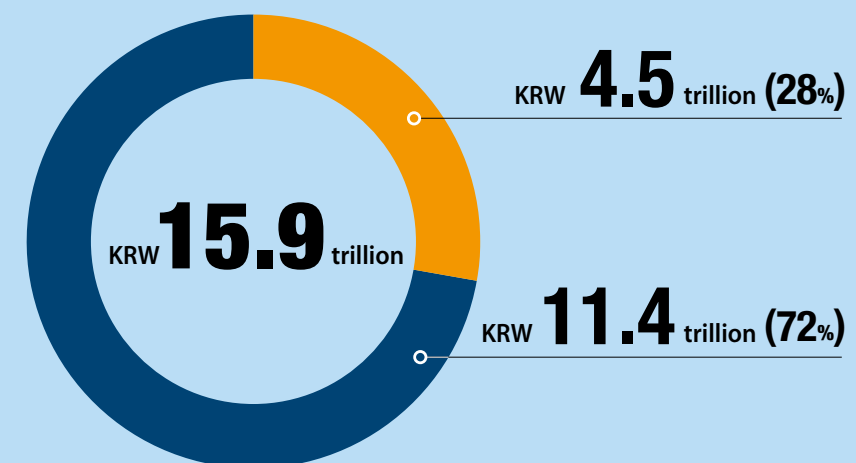
## GLOBAL NETWORK

● Overseas branch ● Overseas subsidiary



Sales Breakdown (2012 year)

■ Domestic worksites ■ Overseas worksites



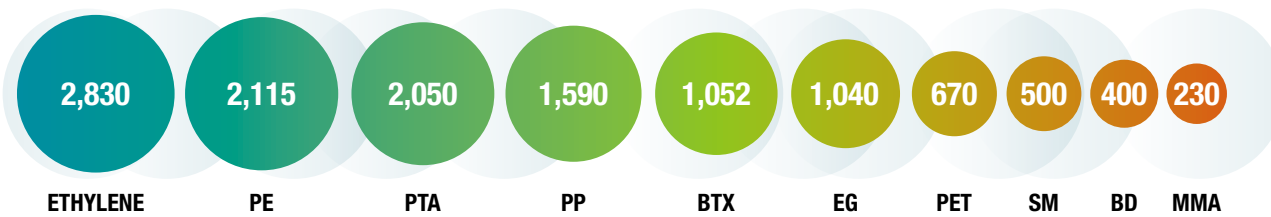
## Corporate Information

### Major Products

Our technologies and products are used wherever human's richness is, ranging from household items to products for agriculture, industry, and medical purposes to cutting-edge new materials for cars and aircraft.

#### Production Capacity for Major Products

(unit: thousand tons a year)



#### Usage of Major Products

<b>PE</b> Household item, toy, wire clothing, vessel for chemicals, car's fuel tank	<b>PP</b> Auto material, home appliances, disposable syringe, transparent vessel, hygienic non-woven fabric, film for packing	<b>PET</b> Container for beverage, container for cosmetics	<b>PC</b> Optic disc (CD, DVD), sunglasses, lens, car lamp, home appliances
<b>Functional resin</b> Auto interior material, bumper, electronic part, building material	<b>EG</b> Polyester fiber, antifreeze	<b>GE</b> Cleansing agent, machine lubricating oil, break oil, antifreeze	<b>EOA</b> Detergent, shampoo, concrete compound
<b>PIA</b> PET resin, special paint, unsaturated resin	<b>PTA</b> Polyester fiber, PET film, paint	<b>MMA</b> Adhesive for medical use, acryl film, artificial marble	<b>BD</b> ABS, raw material for synthetic rubber (SBR, BR)
<b>SM</b> PS, ABS, raw material for synthetic rubber	<b>BZ</b> Agricultural chemicals, photo chemicals, explosives, insect repellent, SM raw material	<b>TL</b> Medical supplies, paint, ink material, dye, aromatics, gunpowder	<b>XL</b> Organic pigment, paint, aromatics, agricultural chemicals, general solvent



## Sustainability Management at Lotte Chemical

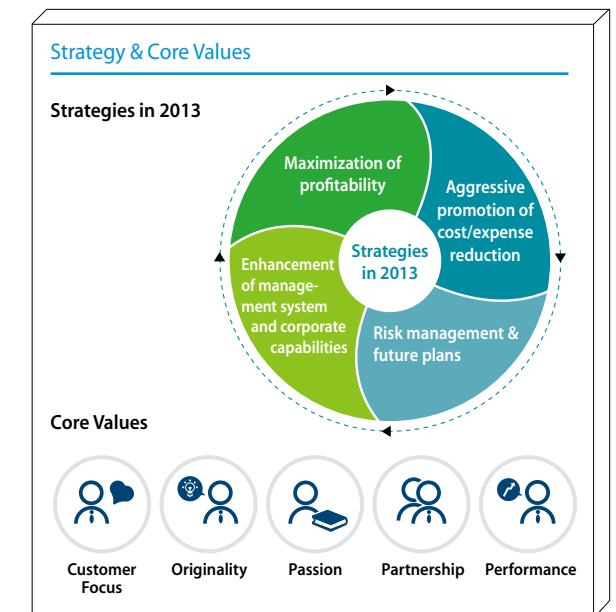
### Sustainability Management System

#### Vision and Strategy

Lotte Chemical is a leading company that has been taking one path in the petrochemical industry, pursuing the long-term, sustainable growth of the business. We will secure reliable relationships with all our stakeholders with customer-oriented mindset, creativity, passion, cooperation, and performance-based management principles and embody the abundant future society of humans through positive change-based creation.

#### Enterprise-Level Execution of Sustainability Management

Lotte Chemical operates various training programs such as ethical management, information security, customer information protection, and fair trade by developing in-house training courses to share sustainability management between employees and management. We establish detailed tasks, share our vision at the enterprise level, and strive to carry out sustainability management through all our employees' individual work. We also assess performance by selecting the relevant organization's KPI (key performance indicators) in each field of sustainability management. By regularly monitoring KPI performance in the field of sustainability management and deducing measures for improvement, we enhance execution capability with regard to sustainability management at the enterprise level. Our management particularly our CEO also endeavors to practice sustainability management.



#### Direction of Sustainability Management

Lotte Chemical sets directions in each field based on stakeholders' requirements and pursues balanced growth and development taking into account the economic, social, and environmental aspects. We have set 5 core fields: fortification of core competence, site management, talent fostering, green management, and brand management for the creation of stakeholder value.

#### Management Policy

Fortification of core competence	Site management	Talent fostering	Green management	Brand management
Concentrating competencies on the field where we excel; thus ensuring competitiveness in the flagship business field, and spreading it to linked business	Constantly listening to the opinions of customers, employees, partner companies, and communities and reflecting them on the overall business.	By recruiting outstanding talents, fostering them as the best in the industry, and nurturing them as global talents who will lead future growth	Realizing the sustainable growth of society and fulfilling the responsibility with regard to the environment by supplying eco-friendly products through energy savings and innovation	Taking off as global premium brand of our company and products by building trust and offering immense customer satisfaction

#### Organizations for Sustainability Management

Lotte Chemical implements sustainability management through the efficient systematization of overall management processes and organizations. Specifically, we practice sustainability management at the enterprise level through organic business cooperation between the economy, society, and environment-related departments. We select the organizations in charge by core field, clearly identify and define the tasks to be performed in each field, and carry out implementation activities by field.

# Sustainability Management at Lotte Chemical

## Sustainability Management Promotion System

Management principle	Enhancement of core capabilities	Field-centered management	Cultivation of talent	Green management	Brand management
Responsible organization	<ul style="list-style-type: none"> <li>Production Team</li> <li>Research Institute</li> <li>New Business Team</li> <li>Business Support Team</li> <li>Strategic Management Team</li> </ul>	<ul style="list-style-type: none"> <li>Polymer Planning Team</li> <li>HR Support Team</li> <li>Corporate Communication Team</li> <li>Global Operation Team</li> <li>Administration Support Team</li> </ul>	<ul style="list-style-type: none"> <li>HR Team</li> <li>HR Support Team</li> </ul>	<ul style="list-style-type: none"> <li>Technology Management Team</li> <li>Energy TFT</li> <li>Environmental Safety Team</li> <li>Research Institute</li> <li>Production Innovation Team</li> </ul>	<ul style="list-style-type: none"> <li>Corporate Communication Team</li> <li>Strategic Management Team</li> <li>Sales Team</li> <li>Research Institute</li> </ul>
Detailed task	<ul style="list-style-type: none"> <li>Productivity improvement</li> <li>Enhancement of research infrastructure</li> <li>Promotion of global business</li> <li>Consistent development and promotion of Mega-Trend new businesses</li> </ul>	<ul style="list-style-type: none"> <li>Betterment of work process by diagnosis</li> <li>Support for subsidiaries' management improvement</li> <li>Support for partner companies</li> <li>Identification of customer needs</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of global standard HR system</li> <li>Securing and fostering global talents and elevating their capabilities</li> <li>Securing outstanding researchers and reinforcing their capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of energy consumption and GHG emissions</li> <li>Supply of eco-friendly products</li> <li>Green management activities</li> <li>Smart innovation activities</li> </ul>	<ul style="list-style-type: none"> <li>Setup of brand management system</li> <li>Realization of customer satisfaction</li> <li>Development of products to lead Mega-Trend</li> <li>Patent application</li> </ul>

### Included in DJSI

#### Included in the DJSI Asia Pacific

We have been included in the DJSI (Dow Jones Sustainable Index) Asia Pacific -- selected by DJSI and SAM (Sustainable Asset Manager) -- for two years in a row. With our inclusion in DJSI Korea, we were named best company in 2009 and 2010.



Included in the DJSI Asia Pacific for two consecutive years

#### Won the Leading Company Prize in the CDP Raw Materials Sector

Lotte Chemical has been selected as the leading company in the raw materials sector for the third consecutive year in recognition of its CDP (carbon disclosure project) performance and response to climate change. As a global initiative led by financial investment institutions worldwide related to the climate change issue, CDP asks companies listed in major stock markets worldwide to offer carbon management information annually; the information is collected and used for climate change-related investments. CDP Korea has analyzed carbon disclosure information and performance -- targeting Korea's top 250 listed companies -- and selected the award winners.



Won an award from CDP KOREA in 2012

## Stakeholder Engagement

A sustainability report plays the role of a communication channel reporting the information desired the most by internal and external stakeholders. We recognize customers, partner companies, government, communities, employees, and shareholders as our main stakeholder groups directly/indirectly affecting -- or being affected by -- our business. We cyclically carry out various communication activities in line with the features of the stakeholder groups and get their inputs in setting the long-term direction of business based on their opinions and needs. The following interviews include the details communicated with external stakeholder groups' representatives expressly, and we have transparently reported our efforts to respond to their opinions in our sustainability report:

### Customer



Hyosung  
Cho Jang-shik, Section chief

Our company purchases MEG from Lotte Chemical's EG Sales Team and PET chip for bottle from the PET Sales Team. Since Lotte Chemical produces more than 80% of the MEG produced in Korea, the product is stably supplied to us; Lotte Chemical boasts of price competitiveness as well. Lotte Chemical responds well to our urgent delivery requests. Regarding the PET chip for bottle, Lotte Chemical proposes resin that applies new technology to cut our manufacturing cost. Currently, the petrochemical industry is competing with Chinese companies, and the competition is expected to be fiercer in the future. Korean companies (Lotte Chemical's customers) need to have price competitiveness so as not to lag behind in the competition with Chinese companies. Toward this end, there is a need for close cooperation with and between Korean petrochemical companies with longer-term vision, rather than short-term performance. I hope you make constant efforts in sharing activities and win-win cooperation with partner companies so that more practical and meaningful activities are implemented. ▶ p.54

### Partner Company



Spirax Scarco Korea  
Kim Sang-gon, Director

Our company and Lotte Chemical carry out process system diagnosis and mutually suggest energy savings, measures for waste energy and condensate water collection, invitation to Lotte Chemical's technology training center, and technology seminars through collaboration with the relevant departments. Lotte Chemical has shown its efforts in and dedication to briefing on business status and mutual growth through meetings; it has prepared the arena for sharing true heart based on mutual growth. Lotte Chemical's Mutual Growth Academy has helped us form insight on better energy saving means, direction recognition, and future market development thanks to the professional instructors' practice-oriented lectures on strategic management, HR organization, marketing, and finance and accounting fields. Based on mutual endeavor and trust established so far, I hope we can build mutual principles more solidly for social responsibility and enhancement of brand value by sharing values on mutual growth and by developing collaboration relations further with promising solution makers. ▶ p.56

### Relevant organization



Research & Survey Division,  
Korea Petrochemical Industry  
Association (KPIA)  
Park Jae-hyung, Dept. manager

Lotte Chemical and KPIA cooperate together on the understanding and publicity of the petrochemical industry, joint tackling of industry-related pending issues and trading issues, and work related to the measures to enhance the competitiveness of petrochemical complexes for its own competitiveness as well. Lotte Chemical is building mutual cooperative relations on the development of the green industry by participating in the Yeosu Petrochemical Complex roadmap to improve the complex's energy efficiency and cut costs to cope with low carbon, green growth and climate change together with KPIA. Actually, we are cooperating in various energy efficiency fields together. I believe Lotte Chemical needs to make more contributions to the local industries and show interest in them so as to grow into a sustainable company. In particular, I hope Lotte Chemical contributes to local talent fostering by providing assistance to the recently founded Yeosu Petrochemical Meister High School. I believe Lotte Chemical needs to present a new paradigm for the industry including the elimination of negative image of the chemical industry for the improvement of external image, creation of good jobs for positive effect, development of cutting-edge materials through innovation, and expansion of business area to medical supplies. ▶ p.36

### Community



Nambu Welfare Center for  
Disabled People  
Lee Yun-il,  
Planning & PR Team leader

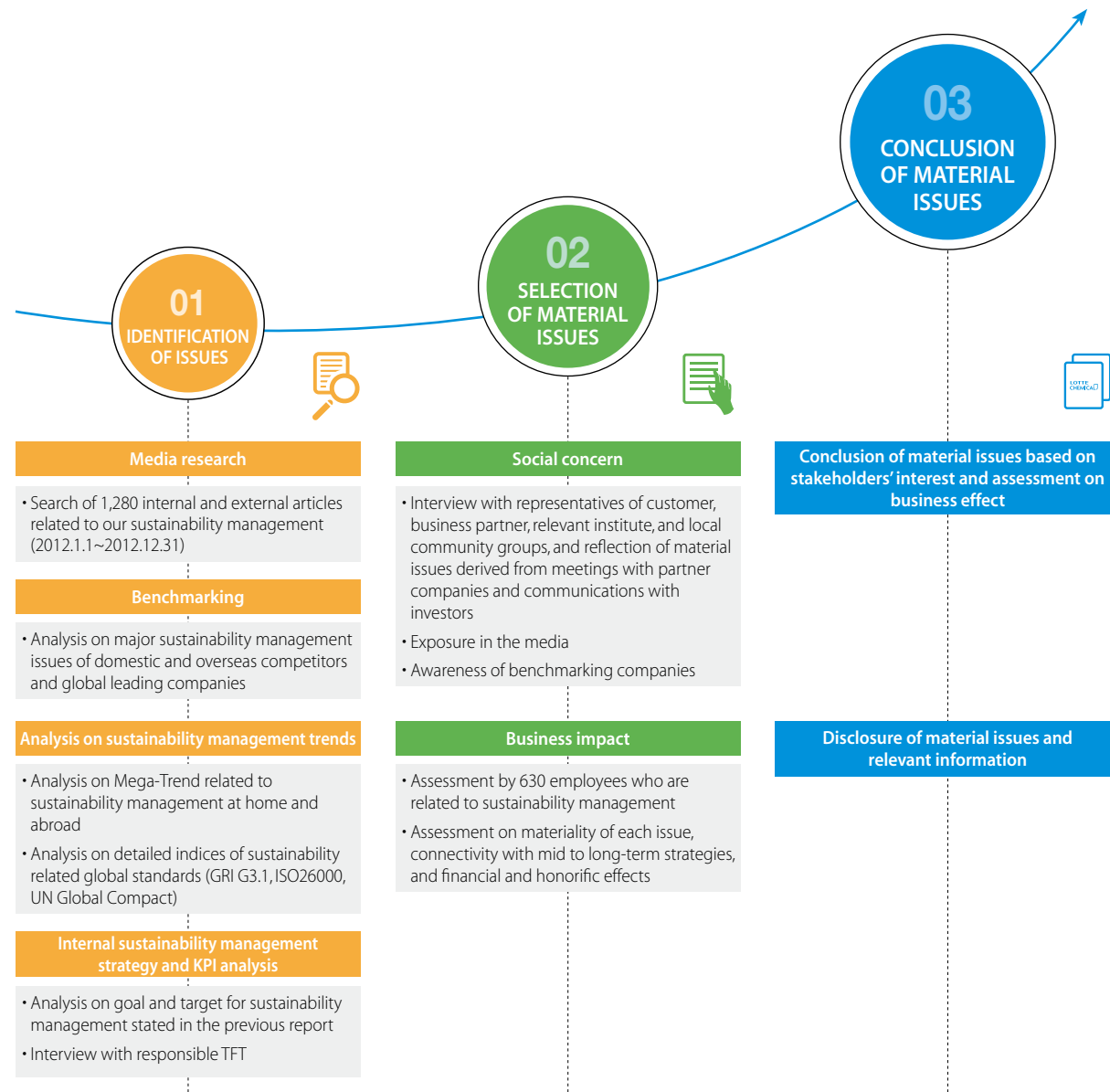
Lotte Chemical and Nambu Welfare Center for Disabled People have been working together on local social contribution activities since 2008. The employees of Lotte Chemical fulfill the company's role as corporate citizen in the community through assistance in delivering briquettes and making Kimchi for the winter to help low-income bracket homes in the community in addition to regular sponsorship. I am amazed at Lotte Chemical's social contribution spirit to expand social contribution activity domains despite the global economic crisis. Lotte Chemical supports scholarships for adolescents from low-income homes within the communities concerned. This shows the company's effort to grow together with communities. Lotte Chemical would do well to expand its social contribution activities through further scholarship offering and subsidy of treatment cost for children and adolescents having disabilities and rare and incurable diseases. I believe Lotte Chemical can grow into a better company by endeavoring for the quality improvement of residents suffering from difficulties instead of focusing on the quantitative aspect. ▶ p.58

# Sustainability Management at Lotte Chemical

## Process of Decision Making on Reporting Content

GRI (Global Reporting Initiative) presents principles through which material issues are selected and reporting content is decided. We have drawn up this report to ensure sustainability context, materiality, completeness, and stakeholder inclusiveness by faithfully reflecting GRI's process of decision making on reporting content.

### 3 Steps to Select Material Issues



## Identification of issues ▶ Issue pool comprised of 28 issues

Classification	
1	Operating performance
2	Reputation
3	Marketing
4	Development of technology and product
5	Risk management
6	Management innovation
7	Management strategy
8	Corporate governance
9	Prevention of environmental pollution
10	Reduction of GHG emissions
11	Energy saving and resource recycling
12	Low carbon and green management
13	Preservation of biodiversity
14	Ethical management
15	Mutual growth with partner companies
16	Respect for human rights
17	Labor-management relationship
18	Health and safety of employees
19	Development of employee capabilities
20	Diversity and equal opportunity
21	Improvement of working condition
22	Product responsibility
23	Health and safety of customers
24	Protection of customer information
25	Communication with customers
26	Effects on local communities
27	Social contribution
28	Stakeholder engagement

## Selection of material issues ▶ Prioritization after conducting a survey from 4 points of view

Priority	Q1. Materiality of each issue	Q2. Connectivity with mid to long-term strategies	Q3. Financial effects	Q4. Honorific effects
1	Operating performance	Operating performance	Prevention of environmental pollution	Development of technology and product
2	Prevention of environmental pollution	Ethical management	Operating performance	Risk management
3	Ethical management	Prevention of environmental pollution	Ethical management	Prevention of environmental pollution
4	Energy saving and resource recycling	Energy saving and resource recycling	Development of technology and product	Ethical management

## Conclusion of material issues ▶ Introduction of Lotte Chemical's efforts for responding to material issues in the aspect of sustainability management

Material issue	Materiality	Connectivity with strategies	Financial effects	Honorific effects	Page
Operating performance	●	●	●		P.70-73
Prevention of environmental pollution	●	●	●	●	P.36-47
Ethical management	●	●	●	●	P.17
Energy saving and resource recycling	●	●			P.39-42
Development of technology and product			●	●	P.24-25
Risk management				●	P.30



# Sound Corporate Governance

## Governance

### Composition of the Board of Directors

To realize sustainable development through value maximization for stakeholders and the company, we have organized and operated an independent board of directors (board). As the top decision-making body supervising decision making throughout economic, social, and environmental fields, our board consists of 7 directors 4 of whom are independent external directors. The board is a body resolving material issues and matters regarding the basic policy of corporate management and job execution under related laws and regulations and articles of incorporation. Therefore, the CEO -- who knows the company's management activities the most -- assumes the board chairmanship as well to operate the board efficiently.

### Operation of the Board of Directors

We hold a board meeting every quarter and a special board meeting upon the occurrence of agenda to be presented to the board meeting. The board supervises management, has authority to decide and execute major management issues and matters, and makes efforts to reflect stakeholders' opinions on management. In 2012, 9 board meetings were held, and 32 agenda were tackled including investment in Uzbekistan's Surgil joint venture and CEO appointment. Concerning the remuneration of a director, the annual pay ceiling is resolved in the regular general shareholders' meeting, and the specific amount and payment method for executive directors and executives are delegated to the CEO. The pay is given based on the company's economic, social, and environmental management performance and personal performance. A director having interest in a specific agenda to be resolved cannot exercise voting right to prevent conflict of interest beforehand. Our employees can request the board's approval for matters requiring resolution by the board through the Labor-Management Council.

Name	Position	Date of appointment	Career
Shin Dong-bin	Chairman & CEO	March 22, 2013	
Huh Soo-young	President & CEO	March 22, 2013	Former CEO of KP Chemical
Kim Chang-gyu	Executive Director	March 22, 2013	Former Chief of Lotte Chemical Research Institute
Cho Seung-shik	Outside Director, Audit Committee Member	March 23, 2012	Former Chief of Criminal Department of the Supreme Public Prosecutors' Office
Keum Dong-hwa	Outside Director, Audit Committee Member	March 23, 2012	Former Director of KIST
Suh Hyun-soo	Outside Director, Audit Committee Member	March 22, 2013	Former Commissioner of Daegu Regional Tax Office
Kim Kyung-ha	Outside Director	March 23, 2012	Former Division Director of General Product Management at LOTTE Shopping

### Board-Affiliated Committee – Audit Committee

Lotte Chemical's Audit Committee establishes a dynamic and sound organizational culture by focusing on preventive and pre-audit functions from the decision-making stage as well as post-audit on job execution and by averting the risk of corruption. The committee consists of 3 external directors, and all audit committee members are appointed during the general shareholders' meeting. Their tenure is set by the articles of incorporation. In this manner, the independence of the Audit Committee is guaranteed. The Audit Committee meeting is held at least quarterly as per the Audit Committee Regulations.

### Protection of Shareholders' Rights

Lotte Chemical respects the shareholders' right to know by accurately and quickly disclosing information on major management issues and matters as well as regular reports -- including business reports and quarterly and semiannual reports -- through the operation of the Disclosure Control System. Minority shareholders possessing at least a certain number of shares can propose some agenda involving a director or the board in the general shareholders' meeting, pursuant to the relevant laws and regulations and articles of incorporation. Likewise, they can exercise various minority shareholders' rights including request for accounting books' perusal/inspection, request to convene a special shareholders' meeting, and request to dismiss a director.

# Ethical Management

## Establishment of Ethical Management Roadmap

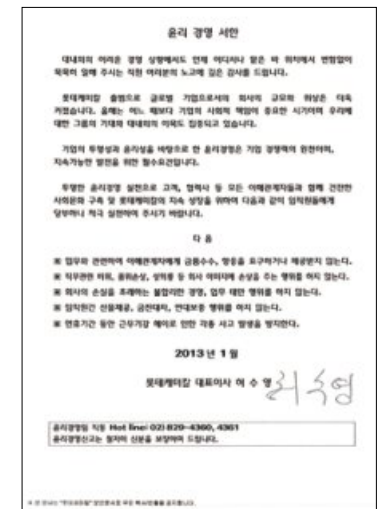
Lotte Chemical implements ethical management to ensure transparency of corporate management and fulfill its social and ethical responsibilities. To this end, we operate the Ethics Bureau we have set up, strive to practice ethical management continually, and establish a transparent organizational culture. We practice upgraded ethical management with the establishment of a roadmap in each stage to build and operate a system that assesses and supplements ethical management.

## Ethical Management Activities

We have let employees make a self-oath for ethical management since 2009 to disseminate clear principles and standards regarding ethical norms. In 2012, all our employees made an oath and signed it. We have set traditional holidays as the period for emphasizing ethical management each year, sending ethical management letters under the name of CEO to our customers. In 2012, we sent letters to 739 customer companies. We also offer Internet education on anticorruption and ethical management and operate an online Shinmungo on our homepage to collect stakeholders' opinions and complaints. We have taken quick actions, handling 18 of out of all cases received in 2012.

## Fair Trade Compliance Program (CP: Compliance Program)

Lotte Chemical adopted the fair trade compliance program in 2006 to comply with various laws and regulations related to fair trade, in keeping with management activities on preventing unfair trade. We have drawn up and distributed a fair trade manual, using it as our job handling manual; we also conduct regular training on the revisions of the relevant laws and regulations for onsite departments. Moreover, we perform in-house diagnosis of major business divisions and prevent the possibility of legal violation through prior review by in-house fair trade experts concerning overall business including new business, sales, and procurement. In other words, we are equipped with an internal system to check for any violation of the Fair Trade Act on our own. To supervise monitoring of the status of compliance with the Fair Trade Act, we appoint a manager in charge of fair trade compliance through the board, and annual operation results are reported to the board. We expand and disseminate such activities related to fair trade compliance to our affiliated companies. As a result, no violation of the Act was committed, and no fine or penalty was imposed on the company in 2012.



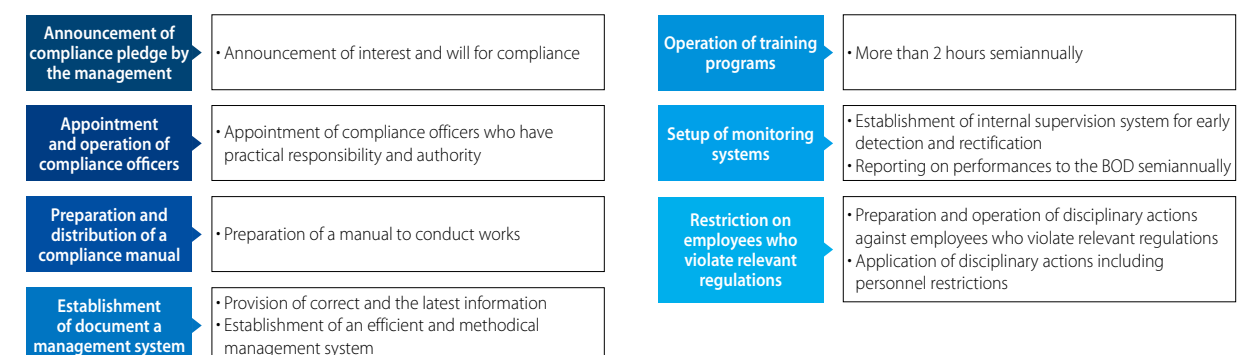
CEO's letter for ethical management

## Website for ethical management



http://ethics.lottechem.com

## Elements to Operate Compliance Program





# Focused Report

As a leading company taking only one path in the petrochemical industry, Lotte Chemical pursues long-term, sustainable growth to achieve its goal of becoming a top-tier Asian chemical company.

01

Merger and Company Name Change

02

Expansion of Yeosu Plant

03

Development of Eco-friendly PET and Long Fiber-reinforced Thermoplastics

04

Mutual Growth between Large Corporations and SMEs



FOCUSED REPORT

Our main product lines in the petrochemical markets have ranked No. 1 and No. 2 in Asia and made it to the world's top 10, thanks to more robust business competitiveness through the merger.

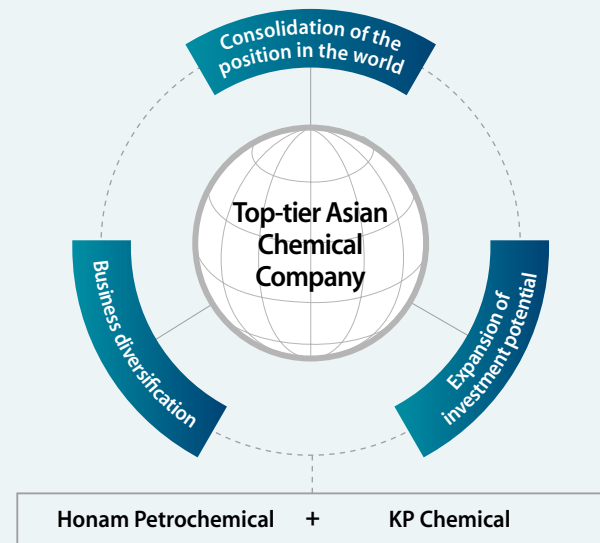
01

Merger and Company Name Change



Merger of KP Chemical

Lotte Chemical has enhanced chemical business competitiveness, which consists of two axes of the Lotte Group, together with the distribution business through the merger with KP Chemical. Thanks to the merger, we have ranked No. 1 and No. 2 in Asia and made it to the world's top 10 in terms of major product lines in petrochemical markets. We have improved long-term corporate value by actively coping with changes in the domestic and international business environments and securing competitiveness through business diversification.



Company Name Change to Lotte Chemical in 2012

Lotte Chemical decided to change its company name from Honam Petrochemical Corporation, which had been used for 36 years, to Lotte Chemical Corporation as per the resolution of the board meeting and general shareholders' meeting. Established in 1976, Honam Petrochemical had continually grown since it was incorporated as an affiliated company of the Lotte Group in 1979. It recorded KRW 15.9 trillion in consolidated sales in 2012. In this manner, Honam Petrochemical positioned itself as a typical affiliated company leading the Lotte Group. Although it has played a pivotal role as a major growth axis of the Lotte Group, the company was not recognized as an affiliated company of the Lotte Group since it did not use Lotte for its company name; this fact did not suit the global corporate image; hence the need for a new company name taking into account the future-oriented name and

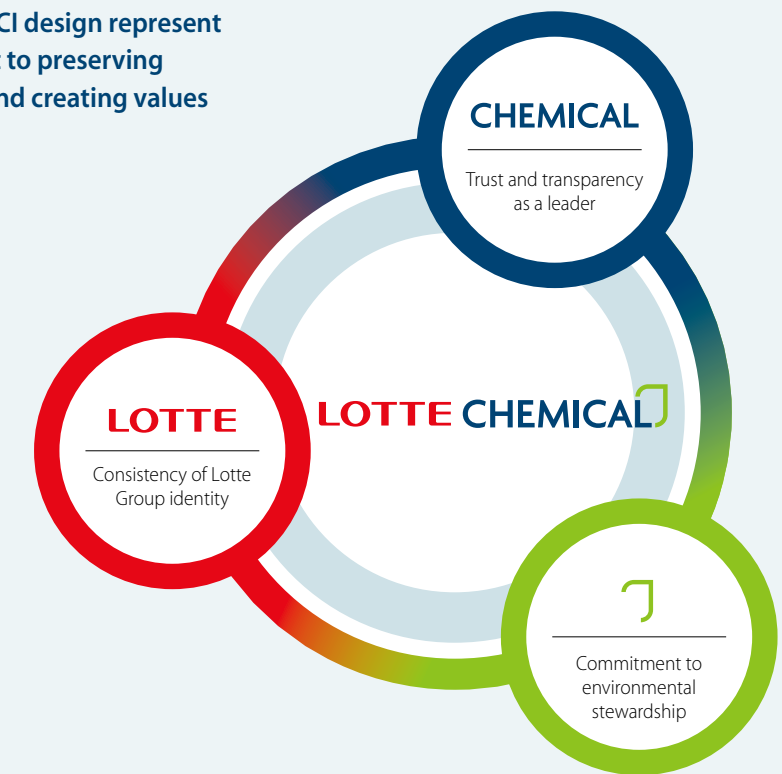
merger with KP Chemical. Lotte Chemical has strengthened the Group Identity through the change in company name and has cemented the global corporate image using the Lotte brand.



Ceremony to inform the merger and new CI

New Company Name and Design Identity

Our new company name and CI design represent Lotte Chemical's commitment to preserving environment and humanity and creating values based on tip-tier technology.



Milestone of Lotte Chemical

- 1970**  
Company establishment and fortification of business foundations
- March 1976** - Establishment of Honam Petrochemical Corporation  
**December 1979** - Completion of HDPE, PP, EG, and UC plants for the first time in Yecheon Petrochemical Complex
- 1980**  
Stabilization of businesses and sizable growth
- June 1986** - Setup of comprehensive research system by launching research center  
**1989** - Laid the foundation for sizable growth and business diversification by expanding Yeosu plant
- 1990**  
Vertical integration and business diversification
- April 1992** - Construction of NC plant: Elevation of corporate capability by completing the vertical integration  
**1998** - Entered special resins and fine chemistry sectors
- Since 2000**  
M&As at home and abroad
- June 2003** - Enhanced economy of scale and market dominance by acquiring Hyundai Petrochemical  
**2008 & 2012** - Became Asia's 2nd largest ethylene producer by expanding NC plants in Yeosu and Daesan



FOCUSED REPORT

Our global competitiveness has been consolidated further, and our status as a leading chemical company in the domestic market has been established, thanks to a sharp increase in ethylene production capacity with the expansion of Yeosu NCC and completion of construction of an affiliated plant.

02

► Expansion of Yeosu Plant



Expansion of Yeosu NCC and Completion of Construction of Affiliated Plant

Lotte Chemical expanded its ethylene production capacity to 1 million tons at Yeosu No. 3 Plant and held a completion ceremony for the PE/PP Plant – which was designed with our own technology – in May 2012. The newly expanded ethylene plant and PE/PP plant were completed within 2 years of commencement of construction in March 2010. For the ethylene plant in particular, its production capacity has grown by 290% with the completion of expansion in 2012, compared to the initial facility through its first-phase expansion in 2000 after it was built in 1992. Through the expansion, we have secured competitiveness through the optimization of process and large-scale plant.



Completion ceremony

No. 1 in Ethylene Production Capacity

Thanks to the expansion of the ethylene plant and completion of the PE/PP plant, Yeosu Plant's annual ethylene production capacity grew from 750,000 tons to 1 million tons. In the case of the polyethylene (PE) plant, production capacity increased from 380,000 tons to 680,000 tons. Concerning polypropylene (PP), its production capacity rose sharply from 400,000 tons to 700,000 tons. Consequently, our ethylene output has become the country's largest with annual combined output of 2.1 million tons between Yeosu Plant and Daesan Plant. Polyethylene and polypropylene outputs have also ranked no. 1 in the domestic market with 1.1 million tons and 1.2 million tons, respectively. If we add the ethylene, PE, and PP outputs of Titan, which we acquired in 2010, our annual ethylene output reaches 2.83 million tons, making us no. 2 in the Asian market next to Taiwan's Formosa and no. 12 in the global market. Annual PE and PP outputs were the 9th largest in the world with 2.12 million tons and 1.68 million tons, respectively. With these, we have seized an opportunity to be reborn as a global petrochemical company.

Commemorative Address by Lotte Group Chairman Shin Dong-bin on Occasion of Completion of the New Plant

"Today, the completion of Lotte Chemical's Yeosu New Plant will go down in Korea's petrochemical industry's history. With KRW 520 billion injected for the completion of the plant, Lotte Chemical now boasts of the country's largest ethylene production capacity with annual output of 2.1 million tons. This enabled Korea to rank no. 1 and to have competitiveness worldwide. The completed PE/PP Plant is the world's first commercialized plant built with our own technology; this means that Lotte Chemical's technology on new plant construction can be exported to Southeast Asia and Central Asia. Actually, we have laid the cornerstone to grow as a global chemical company. Lotte Chemical has led in developing the petrochemical sector into more eco-friendly, and society-friendly sector. We will pursue mutual growth with local communities through local linkage services and projects such as volunteer services within the communities and to practice such constantly."



Consolidation of Market Dominance

With Yeosu Plant's production capacity increase, our market dominance in ethylene, polyethylene, and polypropylene is expected to be reinforced considerably. The construction completion of the PE/PP Plant has been driven by our own technology for the first time in Korea; this has cemented our reputation as an advanced chemical company. We use the technological power and know-how we have accumulated for the polymer business in Uzbekistan and Indonesia, enabling us to lay the cornerstone for technology export.





**FOCUSED REPORT**

We strive to secure core manufacturing technologies of future industries including eco-friendly products and long fiber-reinforced thermoplastics materials -- demand for which is surging -- through constant R&D efforts.

**03**

**▶ Development of Eco-friendly PET and Long Fiber-reinforced Thermoplastics**



**Development of Eco-Friendly PET**

**Increase in Demand for Eco-Friendly PET**

In the market previously limited to fiber, demand for polyester (PET) has rapidly risen owing to the sharp growth of the PET container market since the 1980s. In the 2000s, new construction and expansion of plants in line with the new demand for PET bottles in Asia, Africa, and South America were carried out aggressively. With the emergence of large-scale PET resin manufacturers and new production facilities boasting of outstanding price competitiveness, the competition in the PET resin production field has become fiercer. The PET resin used for beverage bottles is colorless and transparent and is widely known as an eco-friendlier product compared to other materials because of the possibility of recycling. In this context, demand for PET containers and resin that are not harmful to the human body is on the rise given the recent increasing interest in health. In particular, demand to reduce sharply the amount of oxide metal or organic metal compound -- which is used as catalyst by most PET resin manufacturers -- or demand to shift to an eco-friendlier material, rises.

**Development of New Eco-Friendly PET**

Although research on the alternative of PET catalyst has been conducted worldwide for about 10 years, it is not easy to find a commercially successful case since the appearance of the PET container that applied a new catalyst is not good compared to the

existing PET resin. We have been developing new PET resin with excellent safety compared to the existing PET -- based on technology and know-how accumulated for dozens of years -- and we have succeeded in mass production. We have completed the development of a catalyst that can reduce catalyst content by 1/10 as well as eco-friendly PET using such catalyst. We plan full-scale mass production and sales by 2014. The eco-friendly PET resin we developed boasts of outstanding transparency, and formability as well as the advantage of being applied to the existing production line without facility change. It can also be used for containers of mineral water and health food. We expect the development and mass production of high-quality, eco-friendly PET product to raise our competitiveness in the PET business by one notch.

**Global Demand for PET by Usage** (Unit: thousand tons, %)

Classification	2008	2013 (E)	Composition Ratio	AAGR
PET Fiber	30,504	36,144	63.4	3.5
PET Container	14,560	17,468	30.6	3.7
PET Film	2,431	2,848	5	3.2
For EP	536	564	1	1
Total	48,031	57,024	100	3.5

\*Source: Statistics of relevant institutes at each country, Cischem.com

**Securing the Manufacturing Technology for Long Fiber-Reinforced Thermoplastics (LFT)**

**Acquisition of Sambark LFT**

Lotte Chemical acquired Sambark LFT, which owns LFT impregnation technology and fiber-reinforced compound manufacturing technology, in 2009. The LFT impregnation technology involves manufacturing pellets that support injection molding through the impregnation of fiber (glass fiber, carbon fiber, etc.) into resin (PP, PA). The technology is used for high-strength thermo plastic injection molding material for car, and its annual average growth is about 13%; hence the very high possibility of future market development. As sheet-type compound reinforced by long fiber in weaving state, the long fiber-reinforced compound material boasts of high likelihood of having its application expanded to industrial goods and cars.

**Development of LFT's Future Technology**

Costing about USD 30/kg, carbon fiber is a high-priced material (the price of the existing glass fiber is USD 13/kg). Carbon fiber is applied to heat thermo hardening products to be formed in casting in a limited manner rather than thermo plastic products. Carbon fiber can reduce weight by up to 78% compared to steel (40%) or to aluminum as core material for the weight reduction of cars. To date, carbon fiber is used as material for CNG cylinder for cars.

Moreover, the limit on the length of the wind power generator wing, which uses the existing glass fiber compound material, can be overcome through weight reduction by using carbon fiber. If the length of the wind power generator wing can be extended from 12m to 50m, power generation capacity can be increased by about 15 times more. Lotte Chemical plans to carry out mass production of injection molding-supported thermo plastic CF-LFT pellet soon by

developing and commercializing the technology. If the technology is applied to auto parts, we expect its application effect -- as well as our technological capability -- to be recognized worldwide.

**Effects of Developed Technology**

Amid the recent high interest in weight reduction to improve car fuel efficiency, reduce CO<sub>2</sub> emissions, and increase tire life and improve brake system performance, research on auto parts' weight reduction using carbon fiber is actively conducted.

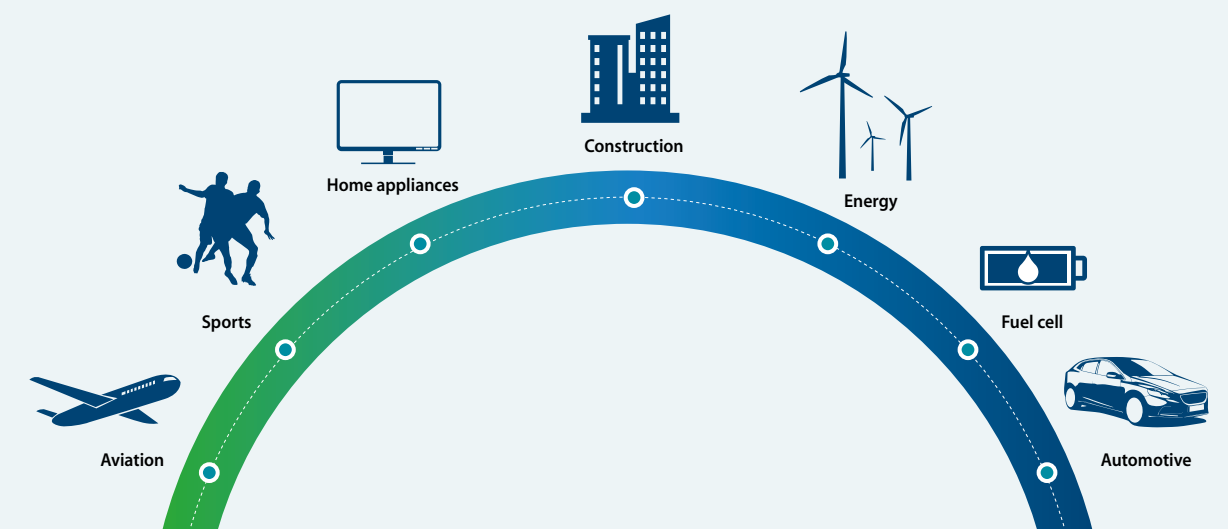
Lotte Chemical has succeeded in developing the manufacturing technology for thermo plastic CF-LFT, which can be applied to panorama sunroof frame; it plans to apply the CF-LTF material to mass-produced auto parts for the first time in the world. Through this, we have laid the foundation to lead technology and expand global markets beyond the domestic market.

\*CF: Carbon fiber

**Patent Application**

Application Number	Patent Name
2011-0126213	Polypropylene resin composition, method of preparing the same and molded product using the same
2012-0069345	Polyamide resin composition
2012-0070090	Low-density, high-elasticity and low-flexure thermoplastic long fiber polypropylene resin composition
2012-0106330	Manufacturing device and method of production for long fiber-reinforced resin
2012-0109465	Polymer resin composite and resin product

**Application Area**



FOCUSED REPORT

We contribute to the domestic economy's stable growth and job creation by vigorously carrying out five core tasks for mutual growth with small and medium enterprises (SMEs).

04

Mutual Growth between Large Corporations and SMEs



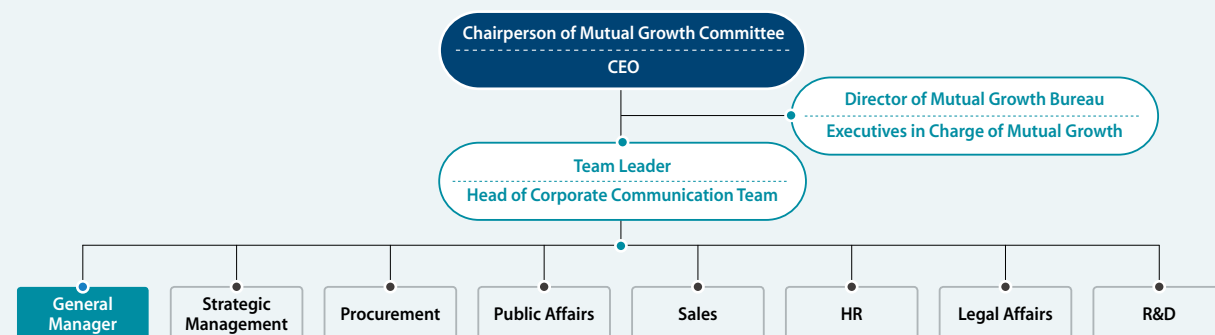
Operation of Mutual Growth Bureau

Lotte Group has set up a Mutual Bureau supervising the mutual growth of all its companies between large corporations and SMEs. The Policy Division head and an officer such as department head (or higher) serve as Mutual Growth Committee Chairman and Bureau Director, respectively, to supervise mutual growth implementation. We have also set up a Mutual Growth Bureau chaired by the CEO; the officer in charge of mutual growth is responsible for mutual growth implementation. In this manner, we monitor and improve cyclical performance. In the Bureau, the relevant departments including procurement, engineering, R&D, HR, and sales make up the task force; this way, mutual growth is pursued in all departments within Lotte Chemical.

Building a Mutual Growth Performance Assessment System

Lotte Chemical has adopted mutual growth KPI that targets officers in charge of procurement and mutual growth. For officer assessment, the performance in mutual growth implementation is included in the assessment to realize actual mutual growth. The Lotte Group reflects mutual growth performance on each affiliated company's management assessment each year by adopting assessment criteria for performance in mutual growth implementation. We perform assessment according to the business type features of affiliated companies by dividing them into distribution/service, heavy and chemical/construction, and manufacturing sectors. In the assessment of our affiliated companies, we actually reflect the performance of the five core tasks for the group's mutual growth and mutual growth implementation items required by fair trade and mutual growth agreements.

Mutual Growth Bureau



Five Core Tasks for Mutual Growth

Lotte Chemical's five core tasks for mutual growth are based on intensively implemented tasks declared in October 2010: enhancement of cash settlement rate; activation of win-win growth fund; promotion of Win-Win Growth Academy; consolidation of exchange with business partners, and; job creation. These have confirmed the matters needed to practice mutual growth, which should be commonly implemented in the core field of partnership with business partners including trade relations with business partners, communication, and management support. Those five core tasks are managed as the highest priority for the monitoring of status of mutual growth implementation and assessment.

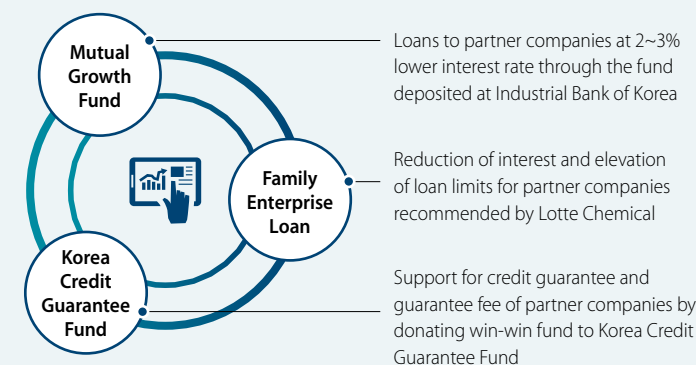
5 Key Tasks for Mutual Growth

Classification	Purpose
Increase in cash payment rate	Supporting partner companies to secure favorable cash flows by increasing cash payment rate
Activation of Mutual Growth Fund	Financial aids to partner companies through low-interest loans
Operation of Mutual Growth Academy	Provision of training courses to strengthen capabilities of partner companies' employees
Enhancement of interchanges with partner companies	Regularization of our CEO's visit to partner companies and consolidation of partnerships
Job creation	Contribution to creating youth jobs

Financial and Fund Support

Lotte Chemical enforces various financial support measures to assist small and medium business partners in their fund management and stable management activities. We not only procure the Mutual Growth Fund; we also operate a family company loan program, and we have contributed to the win-win cooperation fund for SMEs' credit guarantee. We continually make efforts to support SMEs' management activities through various types of financial support, and we will expand the support amount and type. We operate a financial support program with 2~3% lower lending interest rates for small and medium business partners by procuring the Mutual Growth Fund with ceiling of KRW 87 billion by depositing a total of KRW 43.5 billion in 2012. We also manage a credit guarantee fund to maximize the SME supporting effect through a business agreement with the Korea Credit Guarantee Fund. We use KRW 30 billion – or 15 times more than the KRW 2 billion contribution – for the credit guarantee of our business partners.

Financial Aid Programs



As a result, we provided KRW 9.2 billion in credit guarantee fund for 18 business partners in 2012.

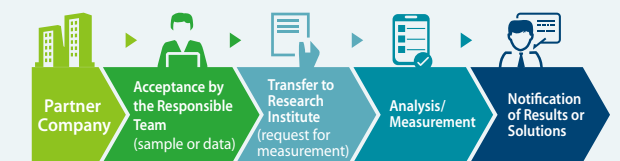
Operation of Mutual Growth Fund (Unit: KRW in billions)

Classification	2011	2012
Fund raised	50.0	87.0
Fund used	49.8	73.0

Support for Technology Development

Lotte Chemical supports product analysis and material property measurement using its research center equipment to support business partners' product development and manufacture. This has been carried out considering the situation of SMEs, which lack analysis equipment. In 2012, we supported 1,078 analyses. We conduct research on the development of products and technologies possessed by outstanding business partners and accomplish research tasks using our research personnel, including joint research. We also provide technology support by analyzing problems in the production process and dispatching research personnel to small and medium business partners.

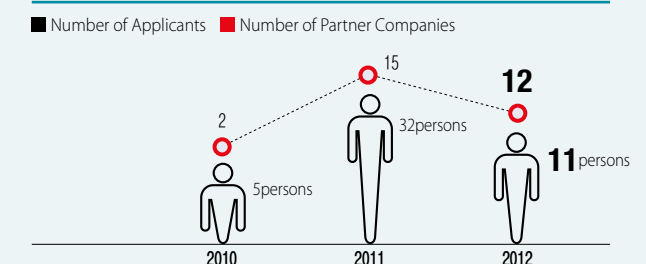
Product Analysis Application Process



Supporting Business Partners' Equipment Maintenance

Lotte Chemical assists in the maintenance of equipment and production facilities of our business partners, which lack personnel and equipment, to improve their productivity by sending specialist personnel. Such maintenance assistance activities can manage business partners' facility inspection and problems and share maintenance know-how with them. We have been conducting maintenance assistance activities since 1994; we have also provided assistance through some 400 cases of maintenance and systematically improved such system since 2011. We have expanded the support scope from the existing facility-centered maintenance to the environment and safety sectors and have fortified prior inspection sectors before business partners' problems occur. We provide practical support by identifying business partners' maintenance assistance status beforehand and deploying suitable specialist personnel according to the maintenance assistance plan.

Number of Applicants / Number of Partner Companies





# Economic Performance

We make efforts in diverse ways to create future value for business expansion and new business as a new demand market, aside from enhancing core businesses' competitiveness.

30\_Risk Management

30\_Future New Growth Engines

33\_Expansion of Production and Supply Capacity

Number of Patent Registrations in 2012



44 cases

Ethylene Production Capacity in Korea



1<sup>st</sup>



# Risk Management

## Risk Management System

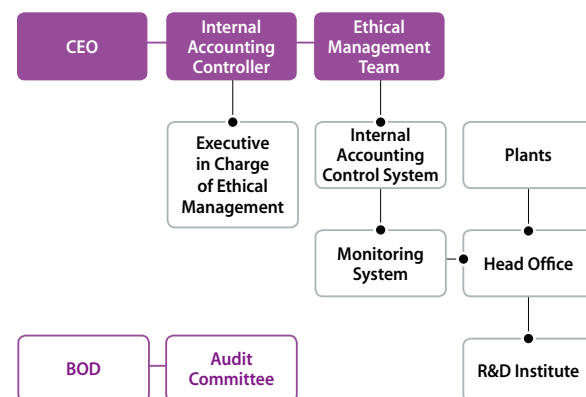
### Organizing a Specialist Organization

As the uncertainties of management environment grow and risk increases, Lotte Chemical strives to improve risk management competence on the strategic dimension concerning potential risk. To this end, we have organized CMT (Crisis Management Team) consisting of each team's staff in charge of crisis management from the Strategic Management Team, Legal Affairs Team, General Support Team, and Production Team and external experts. We also operate the Management Committee and Emergency Measure Committee. In addition, we operate the management process we have established for the integrated management of measurement, control, and actions with regard to material risk factors.

### Internal Control System

Lotte Chemical currently operates the internal control system it has established to cope with restriction-related laws and regulations and systems efficiently. To this end, our management and the organizations concerned analyze the job process, classify risks wielding serious impact on business activities, and evaluate and check the status of internal control for such risks. The evaluation results are reported to the Audit Committee and the board and subsequently reviewed and certified by the external auditor and the Audit Committee. As a result of regular and frequent special audits by the Ethical Management Team in 2012, there were no internal control violation and corruption cases. Lotte Chemical strives to improve the effectiveness and efficiency of compliance with business operation laws and regulations and enhance the reliability of financial reporting.

### Internal Control System



# Future New Growth Engines

## Future New Growth Engines

### Three Core Businesses

Guided by its vision of "Top-tier Asian Chemical Company" by 2018, Lotte Chemical implements business model diversification by searching for future new businesses and expanding strategic overseas business. To this end, we have selected basic chemicals, advanced materials, and megatrend new businesses as three core businesses. We endeavor to realize our vision centered on business expansion into new markets through core businesses, enhancement of cost competitiveness for existing businesses, and development of technological prowess for new businesses.

- Consolidation of Basic Chemicals' Competitiveness

In May 2012, Lotte Chemical completed the expansion of NCC at Yeosu Plant; thus, we have secured Korea's top ethylene production facilities. To cope with the increasing demand for PP within China, we expanded the annual production scale of China PP compound resin to 25,000 tons. By establishing Lotte Mitsui Chemicals jointly with Mitsui Chemicals, we completed the PP catalyst plant construction in May 2013; thus securing PP product competitiveness through the self-procurement of PP catalyst. We plan to expand the overseas production ratio of basic chemicals continuously based on such competitiveness. Through this, we seek to penetrate and develop new markets.

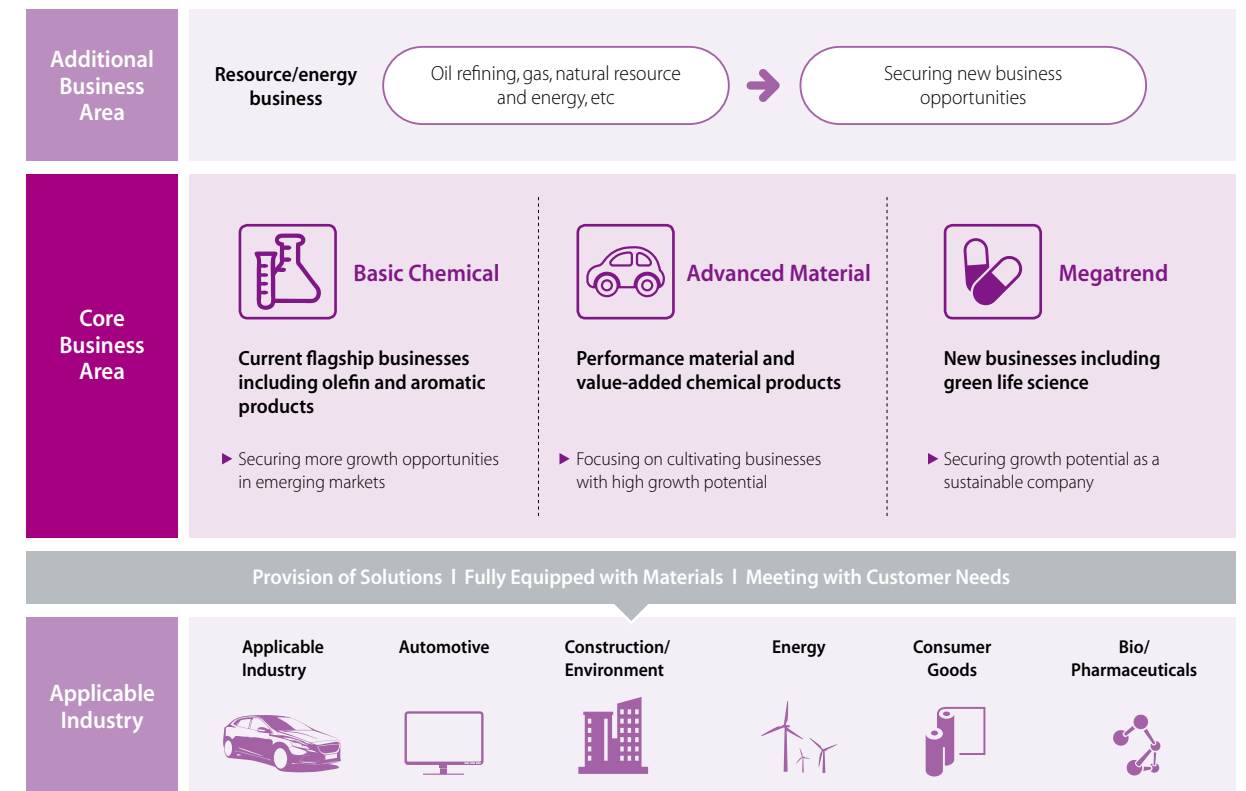
- Intensive Development of Advanced Materials

Lotte Chemical completed the EO (ethylene oxide) plant with annual production capacity of 100,000 tons in Jiaying City, Zhejiang Province, China jointly with China Sanjiang Chemical Co., Ltd., in the second half of 2012. We have completed the expansion of ETA (ethanolamine) production plant on our own using the EO produced by the plant in China. We also plan to build a synthetic rubber production plant with annual production capacity of 50,000 tons in Lotte Chemical Titan Plant in Malaysia jointly with a Japanese company. In Yeosu Plant, we are propelling the special rubber business jointly with an Italian company. Furthermore, we concentrate on the development of plastic material for weight reduction of cars; thus, we focus on the development of material for low air-polluting, lighter cars, steel, and alternative material of glass. We also strive to secure advanced materials' technological prowess and develop engineering plastic (EP).

- Operation of the Megatrend Business

Lotte Chemical researches on various new megatrend businesses to ensure its growth and produce high value-added products, making technical achievements with steady investment and support. New megatrend businesses include the following: First, we develop chemical flow battery (CFB), a next-generation storage device that can store electric energy as chemical energy, and convert it into electric energy again to use. Second, we carry out businesses for bio polymer, platform chemicals, and microalgae in the bio chemical sector. Lastly, in the water treatment sector, we conduct research on

membrane -- a core material of the membrane filtering process -- and module and optimization of the applied system, in addition to the water treatment process sector. Through R&D on the manufacture of hollow fiber membrane, flatsheet type of microfiltration, ultrafiltration, and reverse osmosis, we conduct system research and process development suitable for various water treatment types including membrane bioreactor for water purification, sewer and wastewater treatment, reused water, and seawater desalination. With all these, we endeavor to contribute to the welfare of mankind by providing clear and clean water.





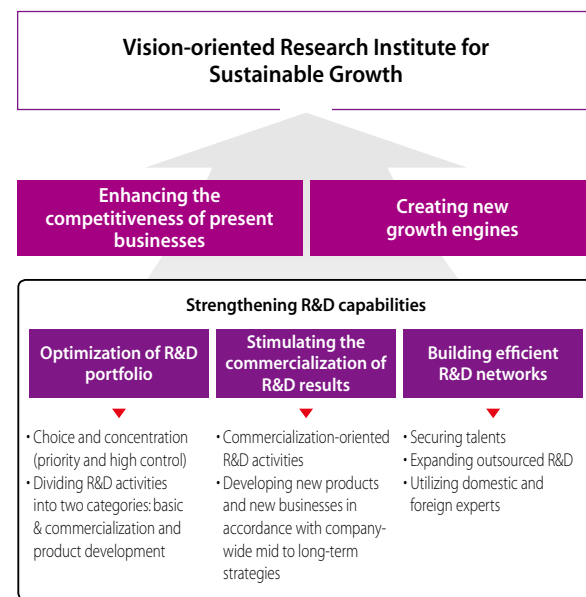
# Future New Growth Engines

## Future New Growth Engines

### Fortification of R&D Capability

Pursuing constant R&D for a better future together with customers, Lotte Chemical Research Center was founded within Yeosu Plant in 1986 and was relocated to INNOPOLIS Daedeok in 1991. The research center plays the role of a think tank focusing on new technology R&D. We fortify our capabilities for cutting-edge new technology development and R&D through joint research with the government and domestic and international research institutes having specialist expertise by task, including our own R&D. Major research sectors include polyolefin resin development & catalyst research, various research studies on new advanced chemicals, research on chemical synthesis in the monomer field, and megatrend research as a future growth engine. We make efforts to acquire source technologies and develop new markets for sustainable growth.

### Vision of R&D Institute



### R&D of New Technologies

Lotte Chemical conducts R&D in the fields of basic chemicals, advanced materials, and megatrend in linkage with three core business strategies.

Specifically, we focus on R&D in the advanced materials field, i.e., development of eco-friendly materials, electrical and electronic materials, renewable energy materials, and materials for cars. As a result, we applied for 90 patents and registered 44 patents as of 2012.

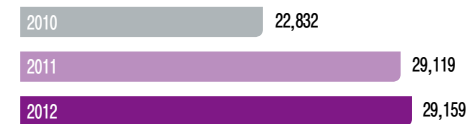
### Patent Application and Incidental Sales

Classification	Unit	2010	2011	2012
Patent application	Case	36	53	90
Patent registration		18	18	44
Sales revenue of patented products	KRW in billions	373.3	558.4	500.9
Sales volume of patented products	Thousand tons	275	322	330

### R&D Investments

(Unit: KRW in millions)

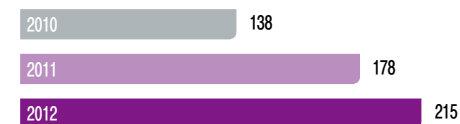
**29,159**



### Research Personnel

(Unit: persons)

**215**



### Field of Research

#### Basic Chemical



Research in polymer process/actylast  
 • Polymer processing technology  
 • Basic chemical research

#### Advanced Material



• Automotive materials  
 • New and renewable energy materials  
 • Electric and electronic materials  
 • Construction materials  
 • High value added chemicals

#### Megatrend



• Energy storage  
 • Biochemistry  
 • Water treatment

# Expansion of Production and Supply Capacity

## Expansion of Production and Supply Capacity

### Korea's No. 1 in Ethylene Production Capacity

Lotte Chemical expanded its ethylene plant and completed the construction of the PE/PP plant in Yeosu Plant by investing KRW 520 billion for 2 years from 2010 to May 2012. In particular, the ethylene plant has secured about 290% production capacity vs. the initial facilities from the first construction in 1992 until now. Yeosu Plant expanded its annual ethylene production capacity from 760,000 tons to 1 million tons, from 380,000 tons to 680,000 tons for polyethylene, and from 400,000 tons to 700,000 tons for polypropylene. We boast of the highest annual production capacity in Korea with 2.1 million tons, 1.1 million tons, and 1.2 million tons of ethylene, PE, and PP, respectively, combining the output of Yeosu and Daesan Plants. We built the PE/PP plant with our own technological prowess from design to construction; we plan to enter overseas markets -- including Uzbekistan and Indonesia -- in the future based on such know-how.

### Active Promotion of the Overseas Resources Development Business

With polyethylene production plants newly built or expanded on a large scale using low-priced ethane gas as raw material in the Middle East recently, such poses a threat to the world petrochemical markets. We actively propel the overseas resources development business for the consolidation of cost competitiveness by securing the supply capacity for low-priced raw materials and stable production of high value-added petrochemical products. The Uzbekistan Surgil project -- which is currently underway -- is a project that integrated Surgil gas field development and gas production wherein 130 billion m<sup>3</sup> (96 million tons when converted into LNG; 830 million barrels when converted into crude oil) of reserves have been confirmed near Aral Sea, including the construction and operation of gas chemical plants. We have a 24.5% stake. When the Surgil complex is completed by 2015 or 2016, 400,000 tons of ethane cracker, a large-scale natural gas, 400,000 tons of HDPE (high-density polyethylene), and 80,000 tons of polypropylene will be produced annually. The locally produced products and byproducts are planned to be sold in Uzbekistan, Western Europe, CIS, and China to facilitate our entry into overseas markets.

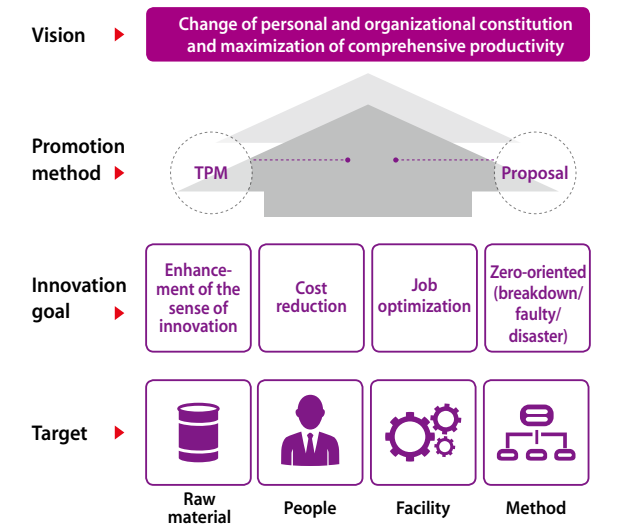
### Process Improvement and Stability Enhancement

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



10th PRIME plant competition

### Vision of PRIME





# Environmental Performance

To realize our green management vision of "Top-tier Asian Chemical Company that pursues harmony between nature and humans," we have built a greenhouse gas and energy management system (GEMS), and we conduct green management activities at the enterprise level.

- 36\_ Eco-friendly Management
- 39\_ Response to Climate Change
- 41\_ Prevention of Environmental Pollution
- 45\_ Environmental Safety Management

Environmental Investment Expenses in 2012



KRW **76.9** billion

Reduction of GHG emissions (CO<sub>2</sub>) in 2012



**165,475** tCO<sub>2</sub>



# Eco-friendly Management

## Efforts for Eco-Friendly Management

### Establishment of Green Management Vision

Lotte Chemical makes various efforts to practice low carbon, green management guided by its vision of "Top-tier Asian Chemical Company pursuing harmony between nature and humans." The Management Committee chaired by the CEO establishes the strategic direction for green management; the Technology Committee proposes measures to cope with climate change by plant. We deduce 4 strategic directions, consolidate the green process, secure new growth engines, upgrade green infrastructure, build a green culture, and establish and practice detailed strategic implementation tasks. We propel green management at the enterprise level by building GEMS to implement systematic green management.

### Vision and Goal of Green Management

**VISION**

Asia's Top Chemical Company that aims for harmony between nature and humanity

“ With Green for the Future ”

**Strategic direction**

- Improving green process
- Securing new growth engines
- Advancing our green infrastructure
- Building a green corporate culture

**Strategic tasks**

<ul style="list-style-type: none"> <li>Increase resources and energy efficiency</li> <li>Reduce greenhouse gas and pollutant emissions</li> <li>Expand green procurement</li> </ul>	<ul style="list-style-type: none"> <li>Enter the green support business structure</li> <li>Develop green products and technologies</li> <li>Commercialize emissions trading</li> </ul>	<ul style="list-style-type: none"> <li>Build green management structure</li> <li>Establish and maintain an IT management system</li> <li>Monitor and evaluate performance</li> </ul>	<ul style="list-style-type: none"> <li>Foster communication</li> <li>Strengthen social and ethical responsibility</li> <li>Respond to regulations and policies</li> <li>Strengthen green brand</li> </ul>
---	--	--	---

### Building a Green Management System

Lotte Chemical has built a green management system (GMS) to manage environmental factors efficiently according to the adoption of low carbon, green management. Through GMS, we have established a system for efficiently using resources and energy, minimizing greenhouse gas (GHG) emissions and environmental pollution, and conducting regular monitoring of mid- and long-term improvement activities.

### External Certification of GMS

We currently operate the GMS we have built in keeping with global standards. To this end, we acquired certifications such as ISO 14001 (environmental management system), ISO/TS 16949 (vehicle quality management system), OHSAS 18001 (health and safety management system), and KS I 7001/KS I 7002 (GMS), starting with ISO 9001 (quality management system) in 1993. We inspect the management systems through internal and external audits each year and reflect the deduced areas for improvement on our environmental management strategies.

### Certifications

Classification	Certification	Certifying Institution	Remarks
Yeosu Plant	ISO 14001	KFQ	Environmental management system
	OHSAS 18001	KFQ	Occupational safety and health management system
	KOSHA 18001	Korea Occupational Safety and Health Agency	Occupational safety and health management system
	ISO 9001	KFQ	Quality management system
	ISO/TS 16949	KFQ	Automotive quality management system
	KSI 7001/KSI 7002	KFQ	Green management system
Daesan Plant	ISO 14001	KFQ	Environmental management system
	OHSAS 18001	KFQ	Occupational safety and health management system
	ISO 9001	KFQ	Quality management system
	KOSHA 18001	Korea Occupational Safety and Health Agency	Occupational safety and health management system
Ulsan Plant	KSI 7001/KSI 7002	KFQ	Green management system
	ISO 9001	KFQ	Quality management system
	ISO 14001	KFQ	Environmental management system
	OHSAS 18001	KFQ	Occupational safety and health management system
	R&D Institute	KOLAS	Korea Laboratory Accreditation Scheme
R&D Institute	ISO 14001	KFQ	Environmental management system
	ISO 9001	KFQ	Quality management system
	ISO/TS 16949	KFQ	Automotive quality management system
	KSI 7001/KSI 7002	KFQ	Green management system

## Efforts for Eco-Friendly Management

### Adoption of Environmental Performance Assessment

Lotte Chemical has adopted and operated environmental management assessment to improve the core business achievement rate by managing performance in green management activities through quantification. The assessment results are reflected on the rewarding of excellent departments and MBO (management by objectives), based on the environmental performance index by worksite.

### Structure of the Environmental Performance Evaluation Index

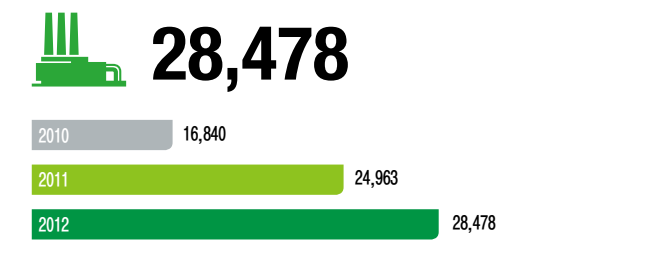
Index	Index details	Evaluation scope
Internal MPI	Environmental management system	Compliance of environmental management system according to ISO requirement
	Compliance	Fulfillment of basic responsibilities by performing environmental regulations
	Eco-friendly management method	Enhancement of corporate value and internal competencies through the introduction of advanced management methodologies
	Relation with local communities	Fulfillment of social responsibilities through community development and good relations with the residents
OPI	Input	Improvement activities for efficient usage of raw materials, energy and cost reduction
	Output	Efforts and performances in pollutant discharge reduction and production of eco-friendly products
External ECI	Pollution status of surrounding areas	Establish pollutant control targets by assessing the pollution status of the surrounding areas

### Environmental Expenditure and Investment

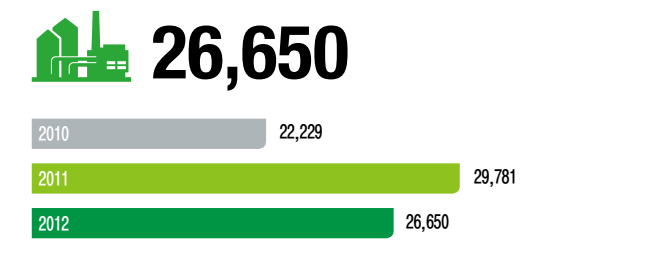
We classify environment investment cost by cost/expense through the adoption of environmental accounting, identify investment flow, and reflect it on the establishment of business plan for the following year. Calculated as expenditure for preventive and post-handling activities, coping with stakeholders in terms of laws and regulations, and restoration activities, the environmental investment cost was KRW 76.9 billion in 2012. As a leading petrochemical company that loves the environment, we have established green procurement regulations to minimize impacts on the environment by actively propelling green procurement. We search for green products suppliers through market research and make an effort to expand green procurement items and activate green procurement. Our green procurement cost was KRW 3.09 billion in 2012; we purchased recycled, MRO, and energy-saving certified PC products as green procurement items.

### Environmental Investment Expenses

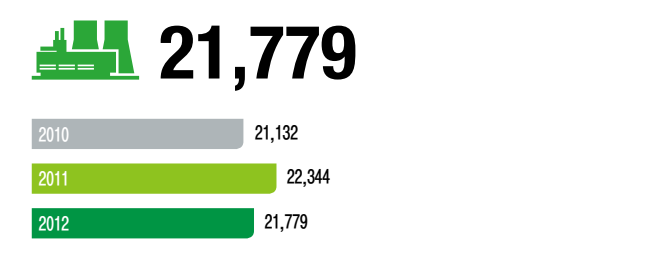
Yeosu Plant (Unit: KRW in millions)



Daesan Plant (Unit: KRW in millions)

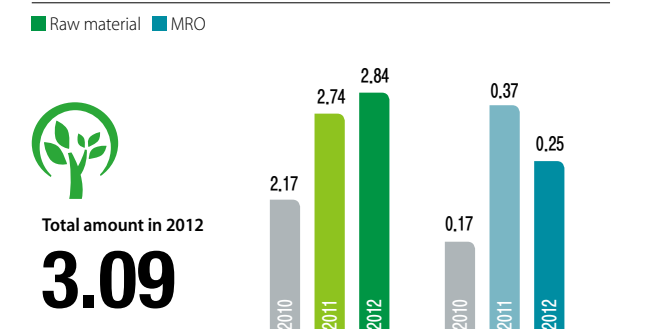


Ulsan Plant (Unit: KRW in millions)



### Green Procurement

Amount of Green Procurement (Unit: KRW in billions)



## Eco-friendly Management

### Building a Green Culture

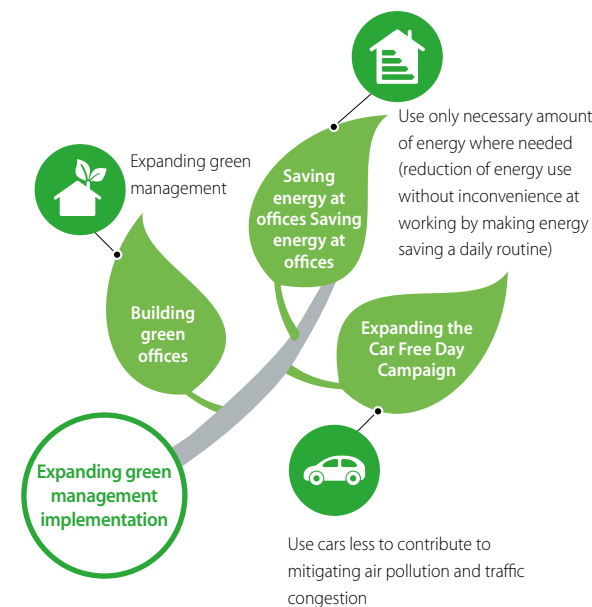
#### Enterprise-wide Practice of Green Management

Lotte Chemical expands the execution of the Car-Free Day campaign at the enterprise level to propel green management. We make low carbon energy -- such as office energy savings and green office embodiment -- a daily habit. We minimize unnecessary energy waste to save office energy and prevent power wastage by replacing lights with energy-saving lights and performing switch separation work. We also wage a Car-Free Day campaign to induce participation in the government's no-car operation weekday system and to promote the practice of green management among all our employees. To embody a green office, we bring plants to the office since they have air purification and natural humidity effects and green interior effect and enhance employees' eco-friendly environment awareness.

#### Energy Savings through Efficiency Improvement of Transport Vehicles

Lotte Chemical transported the products to be delivered to customers using hired vehicles. Note, however, that directly controlling and managing those vehicles were not easy; hence the difficulty of precisely measuring and cutting the energy use amount and greenhouse gas emissions for logistics transportation. For this reason, we participate in the government's energy and GHG emissions

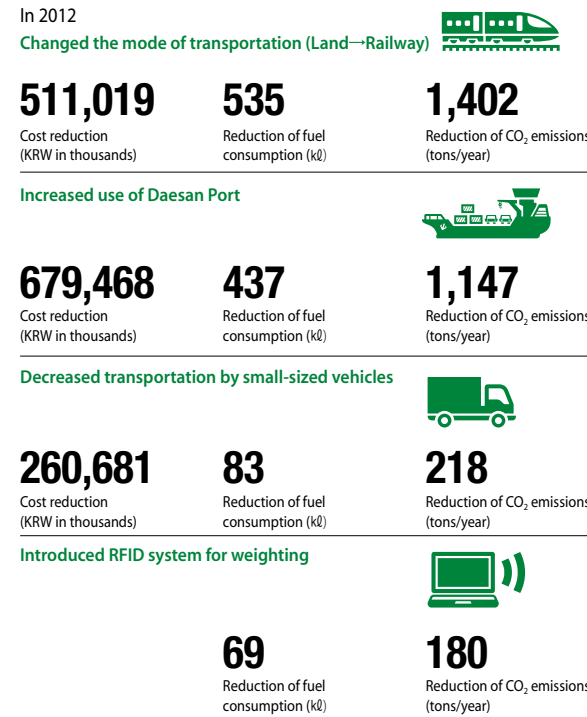
#### Activities Aimed at Fostering a Green Culture throughout the Company



reduction project in the transport sector and execute means to reduce energy and GHG emissions of transportation means. For major energy and GHG emissions reduction, Daesan Plant reduced the inland transport distance by shifting from land transport to railway transport, upgrading small cars to large vehicles, and activating the use of the nearby Daesan Port.

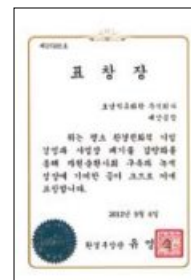
For large-scale vehicles for transport, we changed the vehicle operation mode and routes and improved the vehicle weight measuring system to reduce standby time, logistics costs, and fuel/GHG emissions.

#### Reduction Performance in Transportation Sector (Daesan Plant)



#### Won the Environment Minister's Award in the Leading Zero Waste Company Awards

Our Daesan Plant won the Environment Minister's Award in the 2012 Leading Zero Waste Company Awards held by the Ministry of Environment. A leading zero waste company means an eco-friendly company recognized for its contribution to the improvement of corporate productivity and low carbon, green growth through the control of waste generation in advance in the product production process or through waste recycling expansion via the development of eco-friendly technology and process improvement.



## Response to Climate Change

### Response to Climate Change

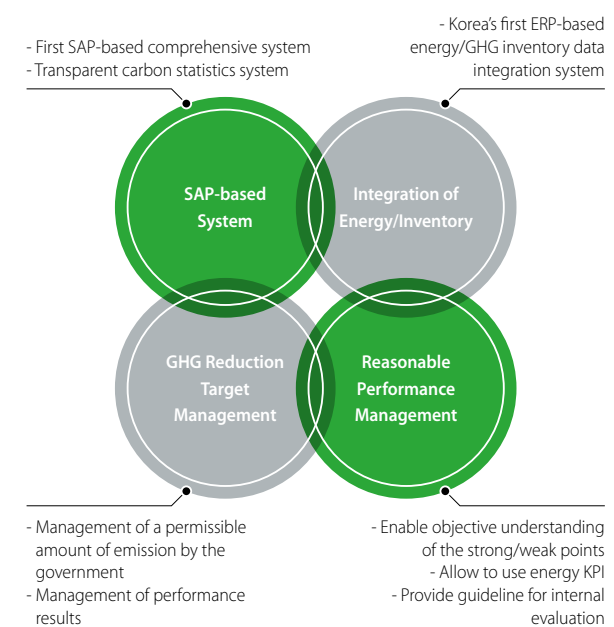
#### System to Respond to Climate Change

Lotte Chemical has prepared a strategic and active system to respond to climate change since it is likely to be subject to regulation as per the global regulation on climate change and the Low Carbon, Green Growth Basic Act. To tackle climate change, we have seized an opportunity to enter the energy storage industry through R&D on large-capacity cell technology by reflecting new business areas such as renewable energy and development of high-efficiency energy products on our business strategies.

#### Establishment and Operation of GEMS (Greenhouse Gas & Energy Management System)

In 2010, Lotte Chemical built the SAP-based GEMS; it analyzes climate change risks to save cost and make efforts for low carbon, green growth. GEMS is operated as an ERP (enterprise resource planning)-based online monitoring system, a general control system that analyzes and manages data on potential GHG emissions reduction, inventory, performance management, and compliance with the relevant laws and regulations.

#### Lotte Chemical's GEMS



### Greenhouse Gas (GHG) Emissions Management

According to the execution of the energy target management system, Lotte Chemical calculates the energy use amount and GHG emissions by government standards. We divide the energy use amount into direct and indirect energy sources, establish annual use plans, and regularly monitor use amounts. We manage GHG emissions through the GEMS built in 2010 and continue to perform external energy diagnosis and GHG emissions and energy reduction activities. To reduce the energy consumption amount, our employees (two persons per unit) -- by department, centered on each energy task force team -- check the status of steam water loss and power saving status of heating & cooling and office equipment. We have improved the basic energy unit with energy-saving activities through constant investment in energy savings and process improvement.

#### Reduction of GHG Emissions

We target a 30% reduction of GHG emissions by 2018 based on basic unit. Toward this end, we carry out various activities based on increased recognition of existing reduction items and search of new ones. The result on GHG emissions reduction -- achieved via GHG emission reduction projects -- has been certified by the government through the completion of independent third-party assurance.

#### Energy Consumption

(Unit: TJ)

Classification	2010	2011	2012
Yeosu Plant	30,398	29,803	32,393
Daesan Plant	38,214	34,322	37,425
Ulsan Plant	11,327	11,747	10,778
Total	79,939	75,872	80,596

#### Indirect Energy

Classification	2010	2011	2012
Yeosu Plant	5,076	6,207	8,019
Daesan Plant	11,096	10,159	11,292
Ulsan Plant	7,398	7,794	7,812
Total	23,570	24,160	27,123



## Response to Climate Change

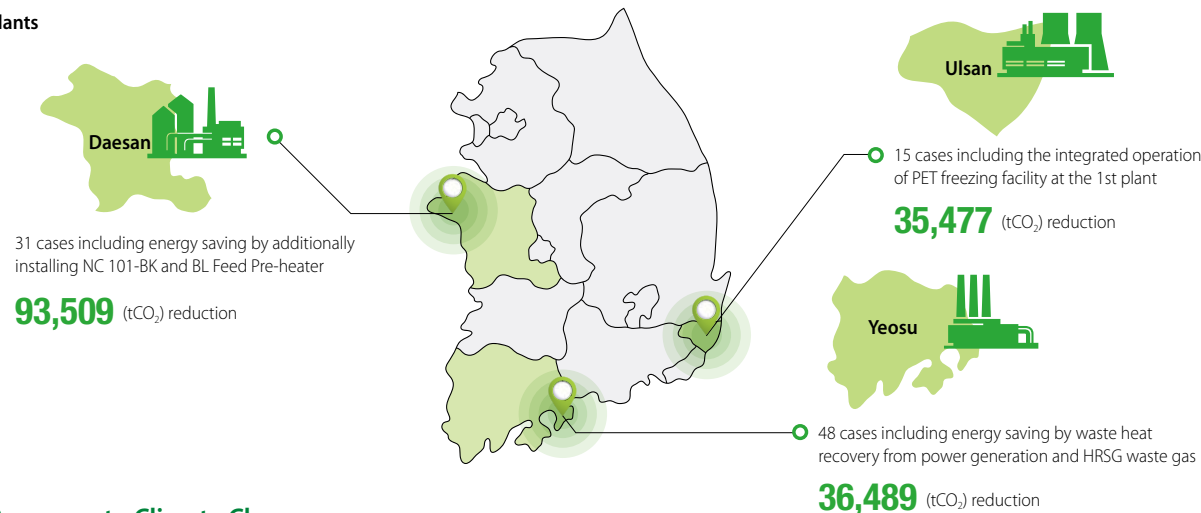
### Greenhouse Gas Emissions

(Unit: tCO<sub>2</sub>e)

Classification	2010			2011			2012			
	Yeosu	Daesan	Ulsan	Yeosu	Daesan	Ulsan	Yeosu	Daesan	Ulsan	
Total GHG emissions	2,081,835	2,481,893	1,195,919	2,049,066	2,251,113	1,192,808	2,132,990	2,423,690	1,067,758	
Direct GHG emissions	Stationary combustion	1,605,018	1,746,623	717,345	1,558,343	1,564,513	680,422	1,647,493	1,688,604	585,386
	Transportation combustion	434	1,079	76	313	699	72	319	722	90
	Emissions during production	164,444	80,549	97,867	120,039	72,114	108,602	100,057	56,937	102,860
	Others	84	50	483	96	50	0	-	-	0
Indirect GHG emissions	Selling of steam	28,676	43,409	-	18,895	50,253	-	8,120	59,840	-
	Selling of electricity	6,232	20,447	380,148	6,716	19,482	403,713	2,452	20,754	379,423
Other indirect GHG emissions	276,947	653,591	-	344,665	613,736	-	385,121	677,427	-	

### GHG Reduction Performance in 2012

#### Plants



### Response to Climate Change

#### Received the Knowledge Economy Minister's Award for the Emission Trading Scheme Pilot Project

Lotte Chemical undertook the GHG ETS Pilot Project for the Ministry of Knowledge Economy – wherein 78 worksites participated – in keeping with the Emission Trading Scheme. ETS is a system wherein rights to emit GHG are set beforehand and emission rights are issued so that participants can mutually trade them to achieve the reduction target for GHG emissions effectively. Our Yeosu, Daesan, and Ulsan Plants have participated in the ETS pilot project, accumulated experience on the



scheme, and carried out prior feasibility study. As a result, our Yeosu and Ulsan Plants received the Knowledge Economy Minister's Award for the 2012 ETS Pilot Project.



## Prevention of Environmental Pollution

### Environmental Management

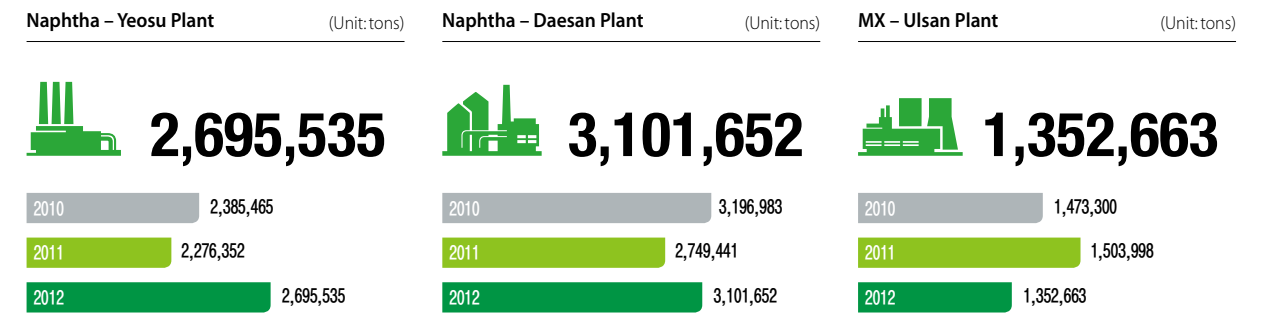
#### Environmental Management System

Lotte Chemical conducts routine monitoring to minimize environmental impacts generated in the product production processes through our own inspection activities by setting up environment organizations in each worksite and through TMS (tele-monitoring system). We also apply stricter in-house standards for environmental pollutants than emission permission standards and comply with domestic and international environmental laws and regulations.

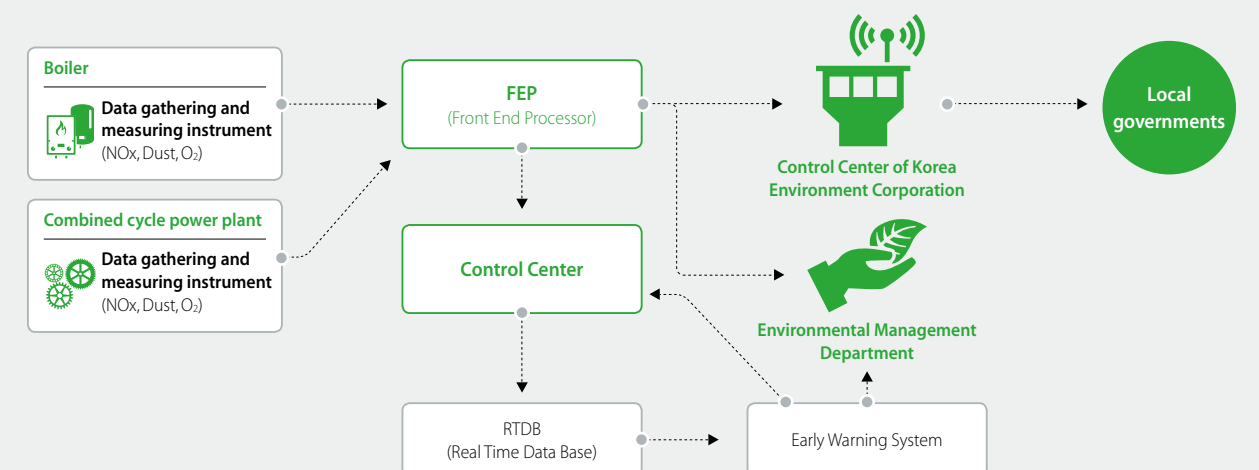
#### Raw Materials

Lotte Chemical procures the basic raw materials for petrochemical – naphtha and mixed xylene – from Korean oil refineries and overseas companies. Our use amounts for naphtha and mixed xylene in 2012 were 5,797,187 tons and 1,352,663 tons, respectively. In our production process, recycled raw materials except naphtha are not used. We carry out various innovative production activities for the efficient use of resources.

### Raw Materials Consumption



### Transit Structure of the TMS (Tele Monitoring System)



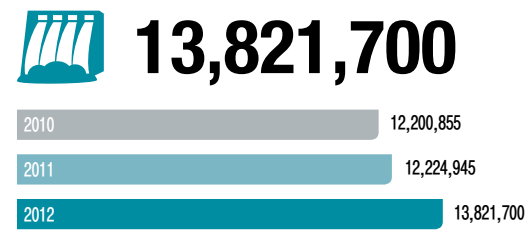
# Prevention of Environmental Pollution

## Water

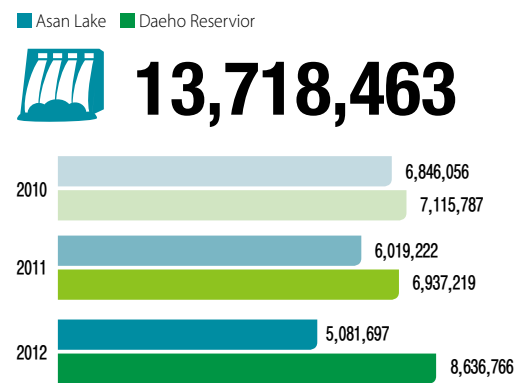
Lotte Chemical manages the water consumption of all worksites. In Yeosu Plant, water is supplied from Juam Dam, Daeho Reservoir and Asan Lake supply water to Daesan Plant. On the other hand, Daeam Dam and Nakdong River supply water to Ulsan Plant. Our total water consumption in 2012 was 38,337,535 tons. We systematically manage water through the adoption of a wastewater recycling process, improvement of rain water inflow, and wastewater recycling system.

### Water Consumption

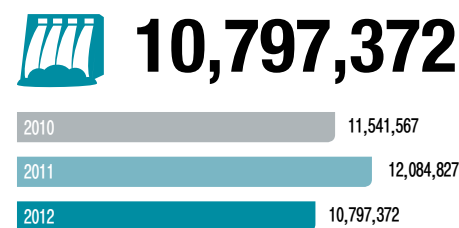
Yeosu Plant – Water Intake (Juam Dam) (Unit: tons)



Daesan Plant – Water Intake (Asan Lake, Daeho Reservoir) (Unit: tons)

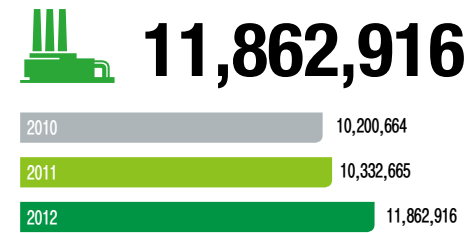


Ulsan Plant – Water Intake (Daeam Dam, Nakdong River) (Unit: tons)

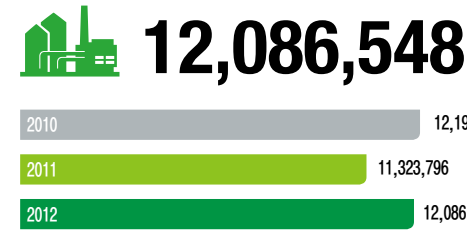


## Recycled Water

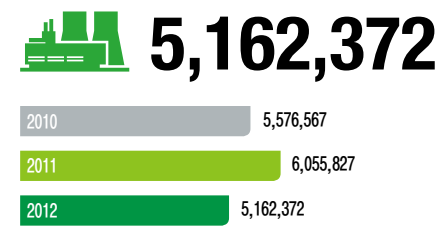
Yeosu Plant (Unit: tons)



Daesan Plant (Unit: tons)



Ulsan Plant (Unit: tons)



\*Recycled water = water intake – discharged waste water

## Discharge of Air Pollutants

Lotte Chemical has set up an air pollution tele-measuring system for the systematic management of air pollutants' discharge, applying stricter discharge standard than the legal discharge permission standards. In Yeosu and Daesan Plants, we have set up air pollution tele-measuring system in the main discharge openings; thus, 24-hour environmental surveillance activities are conducted. Air pollutants are processed through pollution prevention facilities, and we endeavor to reduce air pollutants' discharge by regularly checking prevention facilities. In addition, we reduce the use of materials that destroy the ozone layer. Specifically, we replace the refrigerant with one having a low ozone destruction index.

## Environmental Management

### Discharge of Harmful Materials

We thoroughly manage harmful chemical materials to prevent their discharge through regular inspection and assessment. To this end, we have set up detectors and interruption facilities for all discharge sources to prevent the leak of harmful chemical materials. We have also entered into a voluntary agreement to reduce the discharge of chemical materials with the Ministry of Environment. By adopting the LDAR (leak detection and repair) system to prevent the leak of harmful chemical materials, we solve problems fundamentally through the detection of the leak point.

### Discharge of Water Pollutants

Lotte Chemical has set stricter internal standards than the legal standards to prevent water pollution, managing water pollutants through regular monitoring. We process in-house all wastewater within the discharge standards or commission a specialist treatment company. As a result, there is no water zone affected by wastewater discharge within the vicinity of the company.

### Wastewater Discharge and Water Quality

Classification	2010			2011			2012			
	Yeosu	Daesan	Ulsan	Yeosu	Daesan	Ulsan	Yeosu	Daesan	Ulsan	
Total wastewater discharge by destination (m <sup>3</sup> )	2,000,191	1,766,454	5,965,000	1,891,373	1,632,645	6,029,000	1,958,784	1,631,915	5,635,000	
* Water quality (ppm) (biochemical oxygen demand (BOD), total suspended solids (TSS), etc.)	BOD	41	3	3	44	2	9	42	3	6
	COD	61	22	29	65	24	30	60	24	29
	SS	40	6	14	38	7	17	41	5	13

### Wastewater Discharge (Unit: tons)

Classification	2010	2011	2012
Yeosu Plant			
Dust	71	68	70
SO <sub>2</sub>	71	68	55
NO <sub>2</sub>	1,527	1,464	1,844
CO	68	136	58
Daesan Plant			
Dust	15	14	11
SO <sub>2</sub>	-	-	-
NO <sub>2</sub>	4	5	4
CO	4	4	1
Ulsan Plant			
Dust	19	14	12
SO <sub>2</sub>	830	521	229
NO <sub>2</sub>	1,341	1,193	986

### Discharge of Toxic Substances (Unit: tons)

Classification	2010	2011	2012
Yeosu Plant			
Ethylene	6	8	12
Propylene	7	5	5
Others (33 kinds)	66	67	84
Subtotal	78	79	100
Daesan Plant			
Ethylene	18	14	14
Propylene	25	17	19
Others (22 kinds)	59	67	73
Subtotal	102	98	106
Ulsan Plant			
Paraxylene	14	14	14
Acetic acid	5	5	5
Others (10 kinds)	17	18	16
Subtotal	36	37	35

## Prevention of Environmental Pollution

### Waste

Lotte Chemical's waste-generating departments conduct waste volume reduction activities by source with the improvement of process facility and operation method through the intensive management of waste-generating sources. Actually, we strengthen responsibility awareness with regard to the separate discharge of waste via the real name system for waste discharge. We will do our very best to increase the recycling rate and minimize waste volume through the consolidation of all employees' waste management and reduction awareness, continuous operation of real name system for waste discharge, and process improvement.

### Soil Pollution

Lotte Chemical has devised the relevant internal guidelines to prevent soil pollution and has paved all floors of facilities targeted for soil pollution management with concrete so that pollutants cannot permeate into the soil. For some facilities forecast to cause soil pollution, we endeavor to prevent soil pollution through prior review such as additional issuance of environmental work permit.

### Waste Discharge

#### General Waste Discharge

(Unit: tons)

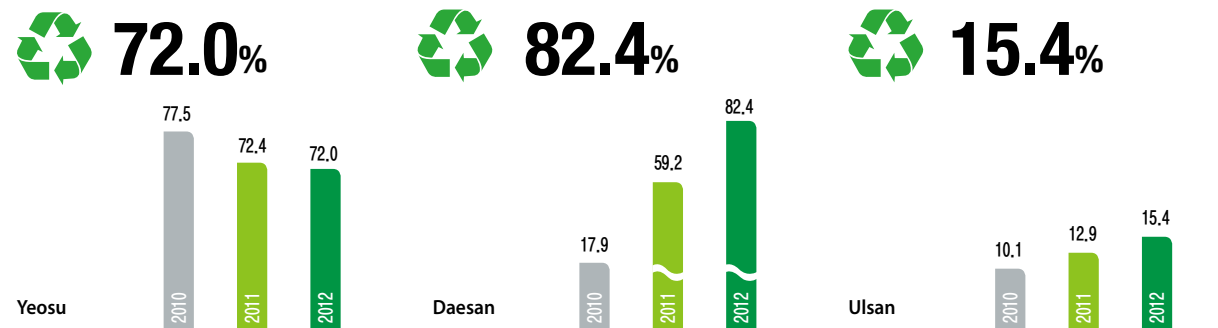
Classification	2010			2011			2012		
	Yeosu	Daesan	Ulsan	Yeosu	Daesan	Ulsan	Yeosu	Daesan	Ulsan
Incineration	1,143	909	370	1,833	1,470	340	2,437	935	540
Landfill	1,230	3,058	650	1,522	2,829	795	2,096	1,758	1,080
Sea dumping	978	2,514	31,891	1,407	539	30,675	1,167	-	32,377
Recycling	11,545	1,410	3,700	12,496	7,024	4,700	14,690	12,567	6,200

### Recycling Rate

(Unit: %)

(Unit: %)

(Unit: %)



### Designated Waste Discharge

#### Yeosu Plant

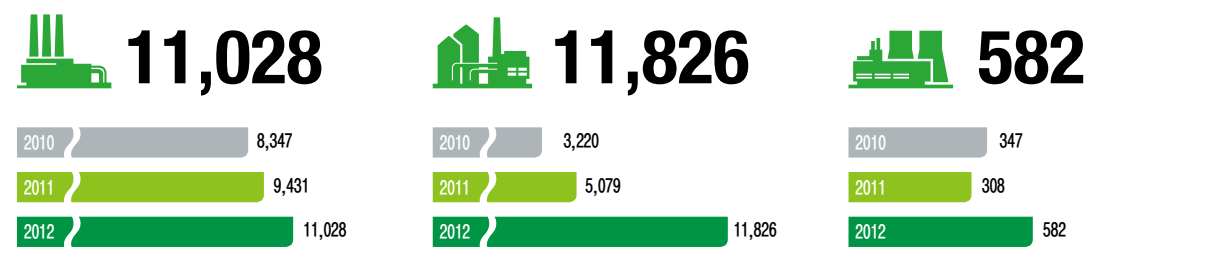
(Unit: tons/year)

#### Daesan Plant

(Unit: tons/year)

#### Ulsan Plant

(Unit: tons/year)



\*Increase in designated waste discharge due to the construction of GE plant in 2012

## Environmental Safety Management

### Safety and Health Management

#### Occupational Safety and Health Committee

Our Occupational Safety and Health Committee, which consists of the same number of labor union and company representatives, collects onsite workers' suggestions and reflects them on improvement activities through quarterly meetings. We also set up an environmental safety management organization, which is operated for accident prevention and safety management, under the immediate control of each plant head. We ensure the efficiency and stability of safety management through the improvement of worn-out, dispersed disaster prevention facilities using a general disaster prevention system by each plant. We have designated the fourth day of the month as "Safety Inspection Day"; thus enhancing employees' safety awareness and fortifying autonomous environmental safety management through each department's safety inspection. By organizing environmental safety inspection units, we propel activities to search and improve potential risk at the sites.

#### Environmental Safety Management

Lotte Chemical conducts various trainings for capability improvement with regard to environmental safety management -- including online training, onsite training, and collective training -- using the EH&S (environmental health and safety) system through which all employees share training information on environment, health, and safety. We also offer safety training to our partner companies' employees and actively support partner companies in conducting training on their own.

### Situational Anti-Disaster Drills

1	3	4
2	5	6

- ① Fire-fighting drill of new employees
- ② Safety inspection by honorary industrial safety inspector
- ③ Training on emergency treatment
- ④ Disaster drill against toxic substances
- ⑤ Safety empirical education facility
- ⑥ Ceremony to proclaim safety vision

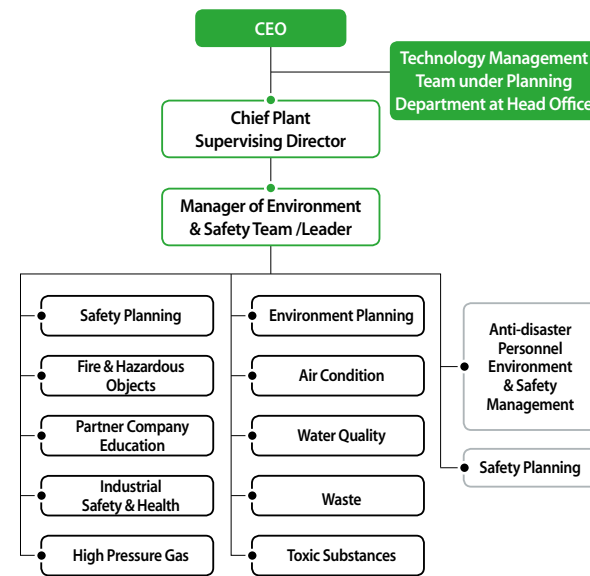




# Environmental Safety Management



## Environment and Safety Management Structure



## RC (Responsible Care)

Lotte Chemical carries out diverse responsible care (RC) activities -- such as self-assessment of all worksites, aside from holding regular workshops -- by organizing TFT for in-house RC. By building an integrated RC operational system, each worksite evaluates the execution of RC codes consisting of process safety, health and safety, prevention of pollution, community recognition and emergency responsiveness, distribution, and principle of liability for all processes. As an officer company of Korea RC Council, we assist in the operation of SMEs' Environment, Safety, and Health Academy to improve SMEs' environment, safety, and health level.

## Responsible Care Self-Assessment

Classification	Yeosu Plant			Daesan Plant			Ulsan Plant		
	2010	2011	2012	2010	2011	2012	2010	2011	2012
Process safety	4.8	4.8	4.9	4.8	4.8	5.0	-	3.9	4.8
Employee health and safety	4.8	4.8	4.8	4.9	4.9	5.0	-	3.9	4.2
Anti-pollution	4.7	4.7	4.7	5.2	5.2	5.3	-	3.1	4.6
Community awareness and emergency response	4.7	4.7	4.7	4.2	4.2	4.5	-	3.6	3.9
Distribution	4.7	4.7	4.7	1.9	3.0	3.3	-	-	3.9
Product stewardship	4.7	4.7	4.7	3.1	3.3	3.6	-	-	3.9

## Coping with the Regulation of Chemical Materials

With the regulation of chemical materials consolidated worldwide including EU-REACH, the need for improvement of the level of chemical material management within companies increases. We strive to cope systematically with the regulation of chemical materials through routine monitoring and management of information on chemical materials.

## Voluntary Disclosure of Information on Chemical Products

GPS (Global Product Strategy) is intended to enable a company to assess the safety of chemical materials by voluntarily disclosing information on chemical products and share handling information, harmfulness, and hazard management for each material through such assessment. Currently, some 1,400 companies have registered the GPS Safety Summary on the GPS Portal of ICCA (International Council of Chemical Association). In 2011, we provided product safety information befitting our status as a global company and participated in the GPS pilot project in keeping with the principle of liability for all processes of products. Through the pilot project, we have conducted various activities such as participant activities, technology consulting, development of Korean-style GPS guidelines, and opening of regular training courses. Through cooperation with stakeholders, we will do our utmost to realize the principle of liability for all processes of products

such as global guidelines development and engagement in research activities to solve new health and environmental problems.

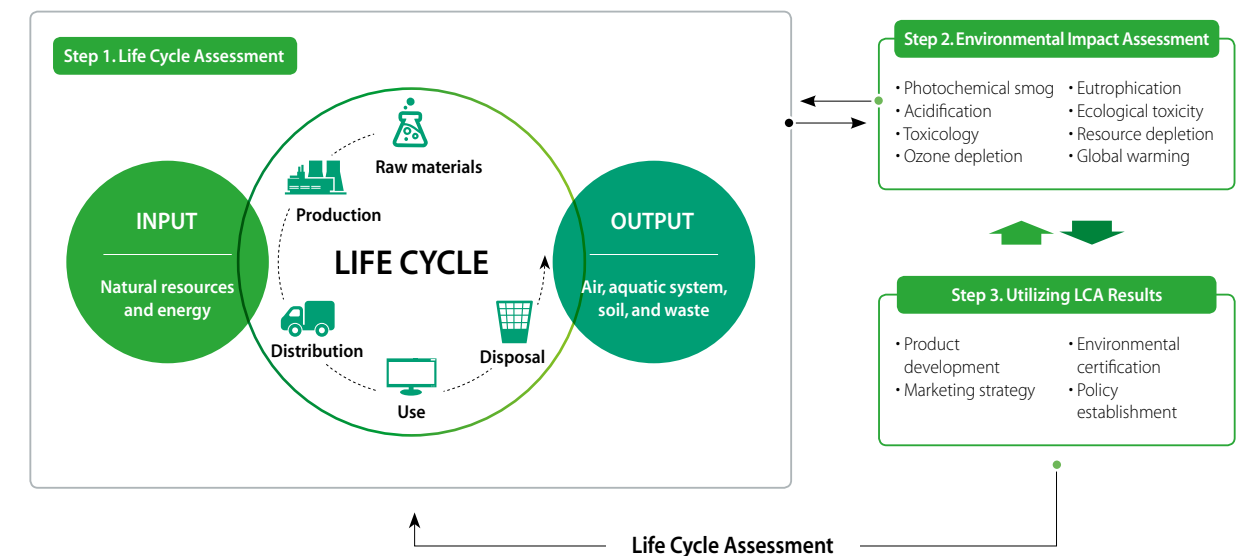
## LCA (Life Cycle Assessment)

Lotte Chemical predicts and analyzes the environmental impacts generated by product manufacturing activities, minimizes the environmental impacts through LCA, and assesses the significance of environmental impact factors and manages them according to priority. At the early stage of plant expansion and new business, we assess impacts on the community and cope with them accordingly. In designing such expansion and new construction of plants, we apply eco-design and prevent negative environmental and social impacts in advance.

## Development of Green Products

In 2011, Lotte Chemical established guidelines for the development of green products to strengthen products' environmental competitiveness and induce the development and production of green products. We plan to support systematically the development of green products with outstanding eco-friendly effects, such as establishment of research plan and strategy for the development of green products, recycling through procurement expansion for green products, and reduction of pollutants discharge.

## Life Cycle Assessment





# Social Performance

Based on its core value of "Cherishing people and placing the highest priority on investment in people," Lotte Chemical carries out various activities to fulfill its corporate social responsibility.

50\_Employees

54\_Customers

56\_Partner Companies

58\_Local Communities

Investments in Social Contribution in 2012



KRW **3.5** billion

Mutual Growth Fund Raised for Financial Aids to Partner Companies



KRW **87.0** billion



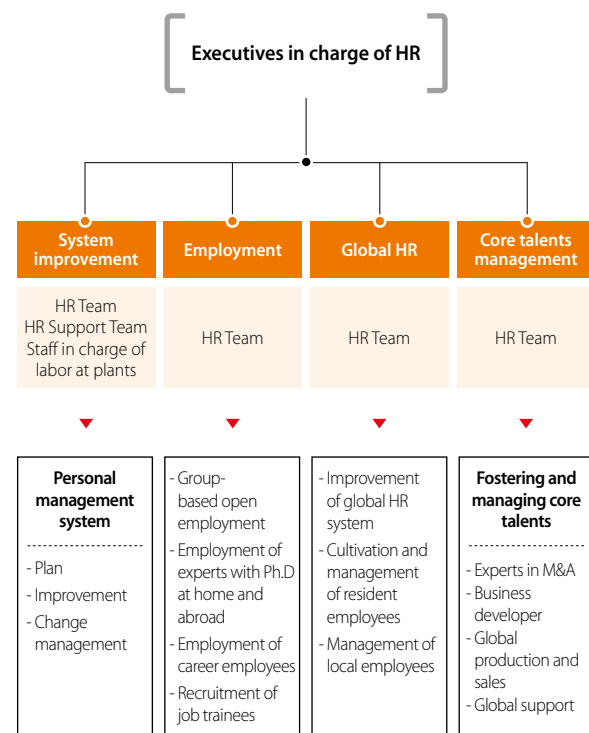
# Employees

## Status of Employees

### Employment of Talents

As of 2012, Lotte Chemical's employees total 2,484, including HQ, research center, and Yeosu, Daesan, and Ulsan worksites. We divide our employees into regular position and contractual position and employ them according to the job features and need for the continuous retention of competences. As of 2012, 54 of the total employees are contractual employees. We have an officer who is exclusively in charge of HR for efficient HR strategies and operate an HR management system encompassing the system improvement, employment, global HR, and core talent management sectors.

### Company-wide HR Structure



## HR Management System

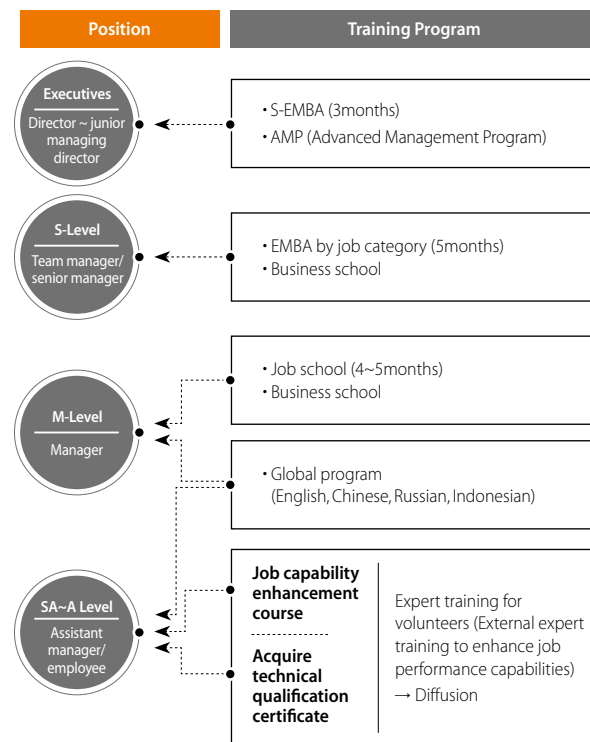
### Talent Fostering

Lotte Chemical's training system for fostering talents consists of job training, education on basic quality and foreign language, and special training. We offer a variety of training programs such as external commissioned training, cyber education to nurture job capabilities, foreign language education, and support for self-development improvement. Specifically, we operate fostering programs for specialist personnel through the curricula in each sector such as finance, tax affairs, HR, and logistics and hierarchical training suitable for the role and job by position/rank. Training hours per employee of Lotte Chemical numbered 91.3 in 2012.

### HR Management System that Respects Human Rights

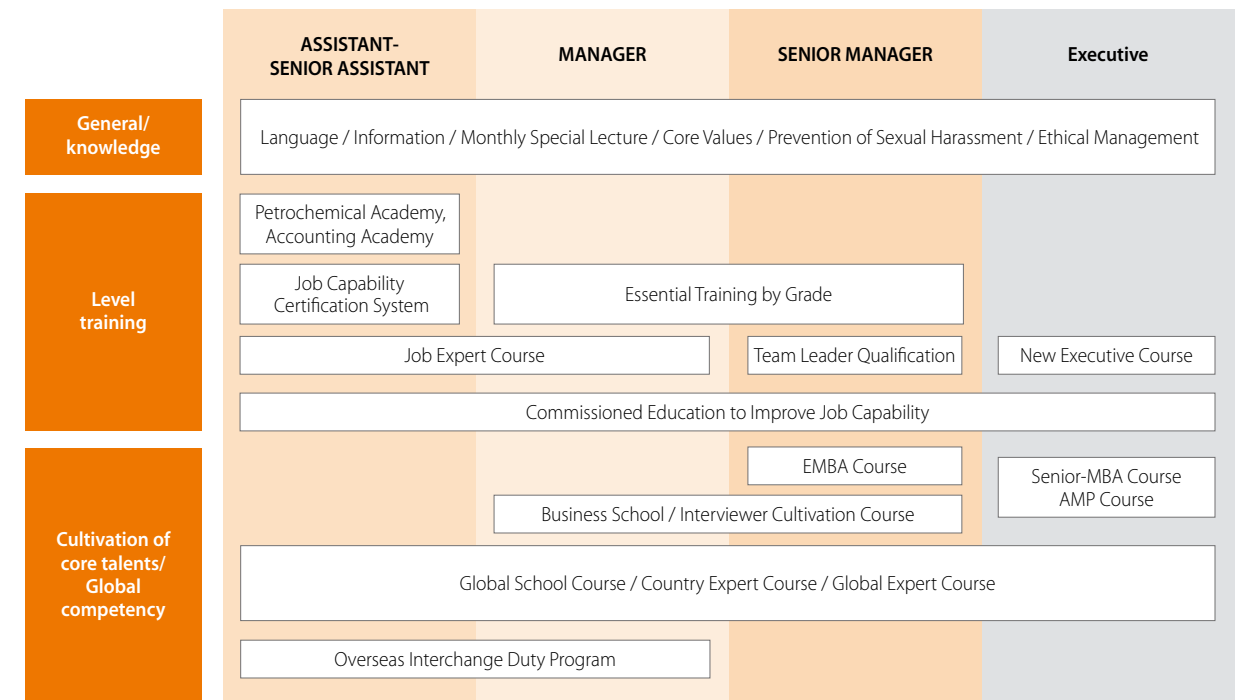
Lotte Chemical complies with labor laws and regulations in all its domestic and overseas worksites and prohibits child labor and forced labor. We strive to enhance labor-related human rights and welfare for all our employees. We also offer education to prevent sexual harassment.

### Roadmap for Cultivating Talents



## Fostering Core Talents

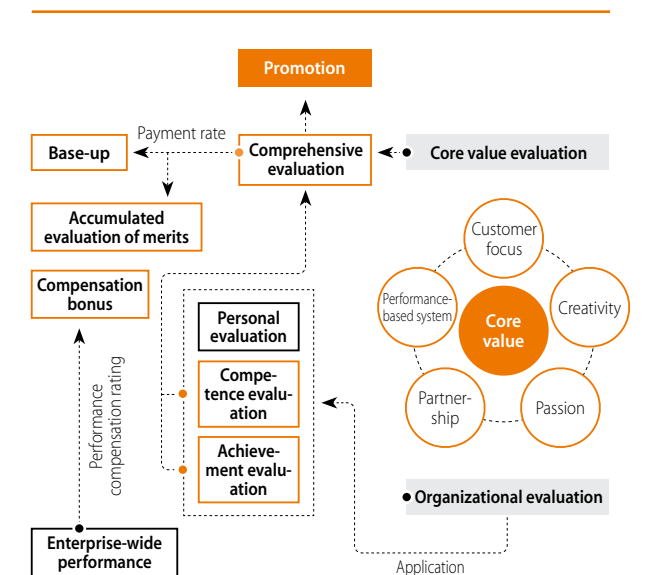
Lotte Chemical has established a talent fostering roadmap to nurture specialist talents and secure outstanding talents as early as possible. We constantly secure and foster outstanding talents as our future growth engine.



## Fair Assessment and Compensation

Lotte Chemical's performance management system consists of personal assessment (MBO+capability) and organizational performance assessment (assessing KPI). For employees' systematic career management, we set objectives according to MBO (management by objectives) each year and conduct assessment on work experience and performance once or twice annually. By offering promotion and paying performance-related pay according to the assessment results, we boost job achievement. To individual employees and teams whose job performance is excellent, reward is given; we also execute the group performance-related pay system according to the management results. In case employees are in the same job category, equal basic pay is given regardless of gender.

## Evaluation Process





# Employees

## Welfare Benefits for Employees

### Various Welfare Benefit Systems

In addition to basic legal pension support, Lotte Chemical implements a wide array of welfare benefit systems for the improvement of employees' quality of life. We have set up various auxiliary facilities including fitness center, indoor swimming pool, culture and event hall (lecture hall), and restaurant within the employees' housing complex so that our employees can enjoy sound leisure. We also offer an education camp wherein employees' children participate with their fathers and various types of training assistance, tour of plants, and baseball watching are

held. We fully subsidize the admission fees and tuition fees for the elementary, secondary, and tertiary education of our employees' children.

### Childcare Leave

Lotte Chemical provides childbirth leave, maternity leave, and spouse's delivery leave in compliance with the government's policy of promoting childbirth. We include the childcare leave period in the number of years of continuous service, and 100% of employees who have an intention to return to work have done so. Those who took childcare leave are not treated unfairly in terms of promotion, pay raise, etc.

### Welfare Benefit System

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

### Health of Employees and their Families

Lotte Chemical regularly offers general examination, special examination, and external comprehensive medical checkup for all its employees. To our employees' spouses, we also offer free comprehensive medical checkup every two years. Each worksite's health management office offers health counseling and medical service and carries out individual examination and examination history management. By adopting a smoking area permission system in all worksites, we do non-smoking activities at the enterprise level. We also improve the working environment through the investigation on harmful musculoskeletal factors every 3 years.

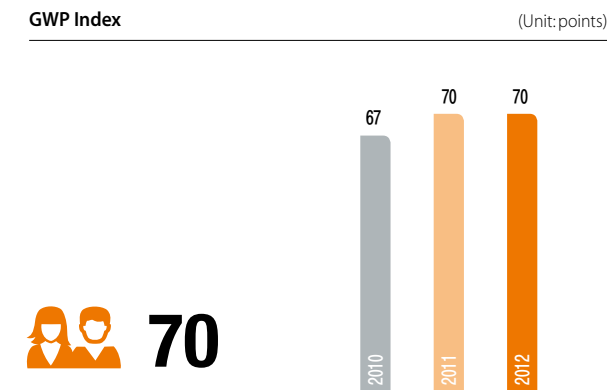
### Retirement Support Programs

We award a certain period of paid holiday to would-be retirees prior to retirement so as to provide a preparation period for their stable life after retiring earlier than the legal retirement age. We also offer a retirement pension system for stable severance pay.

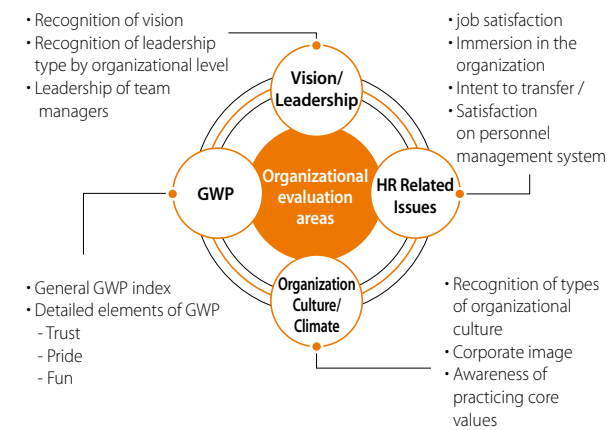
### Employee Satisfaction Survey

Lotte Chemical conducts an employee satisfaction survey annually to assess the organizational culture and reflects the survey results on its HR management direction. In particular, an employee satisfaction survey on GWP (great workplace) is carried out to evaluate employees' satisfaction and status in 4 major areas of organizational diagnosis – organizational issue, HR issue, leadership, and constituents' perception.

## Results of Employee Satisfaction Survey



## Organizational Evaluation Frame



## Mutual Labor-Management Culture

### Labor-Management Relations

Lotte Chemical maintains sound labor-management relations by guaranteeing the company's managerial rights and labor union's labor rights equally in multi-labor union fashion (1 company-3 labor unions), wherein each individual labor union has been established in Yeosu, Daesan, and Ulsan Plants. We debate on employees' working conditions and welfare benefit system through labor-management negotiations with labor unions and strive not to violate the freedom of association and right to collective bargaining. For major business changes, management always discusses with labor unions. We operate the Labor-Management Council quarterly by worksite and solve the grievances of individuals and each department through the permanent establishment of substructure of the Labor-Management Council.

## Various Labor-Management Communication Programs

Lotte Chemical runs various labor-management communication programs for the establishment of rational, productive labor-management culture and smooth communication between management and employees. The communication programs aim to present solutions and establish the development direction of labor-management relations by collecting the grievances and bottlenecks of employees and sites through the grievances handling system, Labor-Management Council, and Site Operation Commission. The grievances handling system contains details of overall company life including respect for human rights, anti-corruption, prohibition of discrimination, and task improvement. The system is efficiently operated in linkage with ethical management and education on sexual harassment prevention. We have also set up a labor-management communication system by holding Communication Hanmadang, labor-management workshop, and site meeting. Through the activation of labor-management communication, we help foster smooth labor-management relations and enhance corporate competitiveness.

### System for Handling Employee Grievances

Lotte Chemical solves grievances immediately -- or through the activation of site communication -- upon receipt at the site for the invigoration of the system for handling employee grievances. We also conduct regular interviews between the department head and department members and solve grievances by referring them to the Labor-Management Council. As a result, we have immediately solved site employees' grievances by actively listening to them. We enhance employee satisfaction through proactive grievances handling and complete grievances handling at the sites.

### Status of Execution of Grievances Handling

#### Site Operation Commission & Labor-Management Subcommittee

- Suggesting grievances cyclically (quarterly, bimonthly)
- After collecting and documenting the grievances, those that can be handled on its own by the department concerned are solved in such manner.
- Matters for which actions need to be taken should be referred to the department in charge.



#### Interviews between Dept. Head and Dept. Members

- Counseling on bottlenecks and grievances through interviews with all Dept. members



# Customers

## Customer Satisfaction

### Enhancement of Customer Satisfaction

Each year, Lotte Chemical assesses customer satisfaction in each sector including raw material quality, packing, order, delivery, sales activities, follow-up management, and price and establishes and executes means to improve them; thus enhancing customer satisfaction. Customer complaints are quickly identified and reflected on quality improvement; we establish follow-up prevention measures according to the result. The Customer Support Dept. manages records ranging from the occurrence of customer complaints to the establishment of measures for preventing recurrence, reports them regularly, and reflects customer requests (needs) continually. Through customer pre-management activities including customer invitation and customer visiting programs, customers who will receive benefits from productivity and quality improvement are identified. This way, we contribute to the enhancement of customer satisfaction.

### Customer Information Protection

Lotte Chemical has established a policy on the management and operation of customer information to prevent their loss, theft, disclosure, alteration, and damage in advance, and it also operates the relevant organizations. In addition, we conduct training to improve employees' information protection awareness. As a result, there were no complaints regarding the violation of customer information protection and personal information loss in 2012.

### Product Liability for Customer Safety

Lotte Chemical strives to ensure product safety throughout all processes ranging from product development stage to end user service. To cope efficiently with any customer's claim for product liability, we have stipulated product liability regulations and subscribed to product liability insurance. We also induce the handler's proper handling in the product transport or handling process by indicating on the label the information stipulated by the relevant laws and regulations of the country concerned.

## Lotte Chemical's Participation in Chinaplas



Strengthening the position as a global company



Cohesive 3 companies to lead the petrochemical industry



Improving the image as a specialized petrochemical company



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

2006

2007

2008

2009

2010

2011

2012

2013

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



Challenging spirit and growth potential of petrochemical companies of Lotte Group



Embodying the convergence and takeoff of petrochemical companies of Lotte Group



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



## Corporate Brand PR targeting Overseas Customers

### Chinaplas 2013

Lotte Chemical participated in Chinaplas 2013 -- one of the world's top 3 plastic exhibits together with Germany's K-Fair and US's NPE -- and Asia's top plastic trading expo. We conducted consulting to activate business and used the expo as an opportunity to publicize the new corporate brand. The total number of visitors to Chinaplas 2013 went up 9% compared to 2012, with about 8,000 people visiting our exhibition pavilion. In this exhibit, we focused on building a new corporate brand image among overseas customers and meeting with them.



Lotte Chemical's exhibition room at Chinaplas 2013

### Exhibit of Excellent Products and Introduction of New Technology

The Lotte Chemical Pavilion at Chinaplas consisted of 4 zones by product. In the Basic Chemicals Zone, we introduced specialized products such as PE/PP/PC/PTA, PIA, and PET; in the Advanced Materials Zone, we exhibited the raw materials of EG/EOA, GM, PM, and ADPOLY. In the Megatrend zone, we introduced new technologies. Finally, in the Performance Materials Zone, we mainly displayed materials for cars.



Introduction of Lotte Chemical's top-tier products



# Partner Companies

## Mutual Growth

### Efforts for Transparent Trade

Lotte Chemical has introduced and operated four guidelines for establishing fair trade order and reflected them on its company regulations, formulating the relevant policy. We actively adjust the product delivery unit price to support partner companies in order to boost their sales. We endeavor to enhance our partner companies' competitiveness through financial assistance, improvement of cost payment conditions, technology support and protection, and training and personnel support.

- Selection of Transparent Partner Companies and Prevention of Unfair Trade

In selecting partner companies, Lotte Chemical transparently discloses standards and procedures for partner company selection and their results on the e-procurement system. We actually offer equal participation opportunity to all companies and sign contracts based on fair procedures. We strive to eliminate unfair trade and activities by operating the online Shinmungo system. We have also established the ethical norm to instill ethical awareness in employees' minds and offer fair trade education.

- Various Types of Communication with Partner Companies

Lotte Chemical carries out regular assessment of the companies with which it has a business relationship for procurement and decides whether to continue the business relationship. Assessment standards include ethical management and environment and safety management. We also assess in advance partner companies' risk in linkage with the credit rating system in the aspect of ensuring supply stability. To identify partner companies' bottlenecks, our CEO visited partner companies' worksites twice and held four meetings.

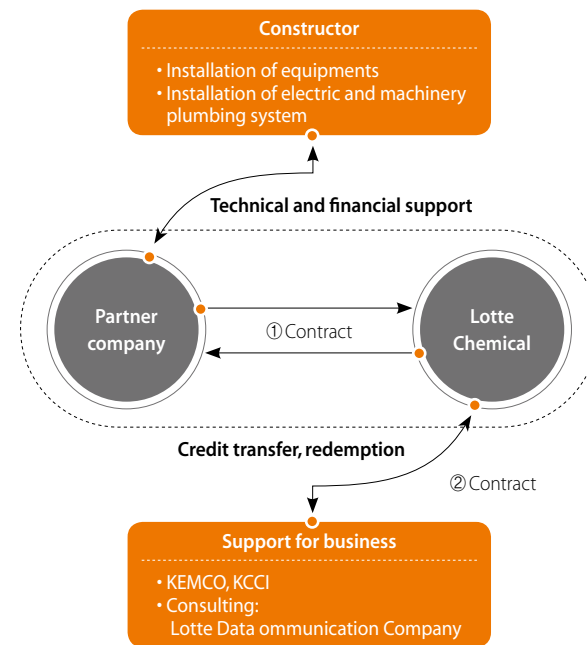
### Green Credit Process



### Green Credit Service

Since 2011, we have been engaged in green credit service wherein large corporations provide support in the form of funds and technologies for SMEs' GHG emissions reduction as part of mutual growth between large corporations and SMEs. In this service, large corporations receive some credit from the GHG emissions reduction. Similarly, Lotte Chemical provides financial and technological support for SMEs' reduction of GHG emissions and receives some credit for the GHG emissions reduction in return. Such green credit service can be included in the large corporation's performance in objectives management as well as mutual growth between large corporations and SMEs. We have provided the service after signing an MOU for green credit cooperation with SPG Chemical and Chang Shin Chemical as our partner companies.

### Green Credit Service Structure



### Procurement of Mutual Growth Fund

Lotte Chemical procured an 87 billion won Mutual Growth Fund as of 2012 as part of financial assistance for partner companies. We have also operated a program supporting low interest-bearing working capital for small and medium partner companies, and we are gradually expanding the fund size. Using this Mutual Growth Fund, our partner companies can receive loans having 2~3% lower interest rate than the market rate for use as working capital. This Fund is a continually operated system rather than a one-off thing, and many partner companies enjoy actual financial benefits using this Fund.

### Holding a Safety Council with Partner Companies

Lotte Chemical shares major health and safety management issues as well as the enactment and revision of the relevant laws and regulations through the monthly regular safety council with partner companies. It also runs the health and safety community with partner companies to fortify mutual communication. In addition, we regularly conduct joint health and safety inspection of partner companies to prevent accidents, reflect the results on improvement activities, and practice them.

### Technology Cooperation with and Training Support for Partner Companies

To enhance cooperative relations through joint technology projects with partner companies, we offer a Hand-in-Hand Program. We reinforce partnership by implementing a joint technology cooperation project targeting partner companies possessing excellent new technology items but lacking insufficient fund and development capabilities. Accordingly, we provided KRW 2.5 billion worth of support through the Hand-in-Hand Program. Furthermore, we assist in various activities including programs to support product development and mass production and product analyses, dispatch of specialist personnel to the site, and holding of technology seminar. For this, we select partner companies possessing excellent technologies to strengthen partner companies' competitiveness. We also offer curricula for the education on job, management, and foreign languages for our partner companies' employees through the Mutual Growth Academy.

### Number of Trainees from Partner Companies (Unit: persons)

Classification	Number of Trainees
Polymer School	58
Mutual Growth Academy	17
Technical Training	62
Total	137

### Areas and Methods of Technical Support to Partner Companies

Area	Contents	Method
Joint development	• Development of new products • Energy-saving projects	• Support for researchers and equipments • Mutual Growth Fund
Commercialization	• Commercialization of excellent technologies • Application of new technologies in production	• Support for patent registration • Support for researchers and training programs
Facilities	• Expansion of production facility • Improvement of working environment at plants	• Loans for building facilities • Support for production facilities

### Performance in Training and Personnel Support for Partner Companies

- Held the Polymer School twice** • 58 participants from 56 companies
- Mutual Growth Academy** • 17 employees of partner companies (management, finance, job capability, and language courses)
- Technical Training** • 62 participants (conducted 10 times)
- Maintenance Support** • Dispatched 11 maintenance experts to 12 partner companies

### Fund Management Support

Lotte Chemical runs a family company loan system, an indirect financial support program to support partner companies' fund management. Actually, we provide 0.5% lower interest rate for loans up to KRW 300 million with a one-year loan period to small and medium partner companies. We aid in partner companies' fund management through 100% cash settlement within 10 days of cost occurrence for small and medium partner companies.

### Supporting Excellent Partner Companies' Export

Lotte Chemical introduces equipment and materials as well as the relevant information applicable to its overseas subsidiary, Lotte Chemical Titan, to partner companies and awards a test opportunity to apply to overseas plants for export. We guarantee bid opportunities and long-term trade relations for excellent partner companies and assist in the procurement and sales procedures for small and medium partner companies with overseas subsidiaries through expatriates staying abroad. As a result, those partner companies exported KRW 1.1 billion in 2012.

## Local Communities



### Warmth & Dream to the Heart

In the 21C planet where we live, corporate activities taking into account the community's profits and benefits -- beyond the pursuit of corporate profits -- are required. Lotte Chemical performs various activities to fulfill its social responsibility as a corporate citizen based on its core value of "putting the highest priority on valuing and investing in people." As a leading petrochemical company, we will promote community-wide growth, value innovative common development, and establish an image of a socially responsible company.

### Social Contribution Vision

Lotte Chemical has "Together 50" as a sharing activity vision based on the mantra "Warmth & Dream for the Heart." To realize such vision, we practice strategic and systematic sharing activities centered on 3 axes -- social welfare, education scholarship, and environment culture -- through the establishment of optimized strategies for social contribution activities. To implement social contribution activities systematically, we expand enterprise-level sharing activities with the support organization system by worksite together with the Social Contribution Deliberation Committee.

### Warmth & Dream to the Heart

To the people with a warm heart, to the future with passion

## Together 50

50

together with all the 5 billion people in the world  
with a 50% breadth of mind  
let's see and think of the 50%

01

Returning part of the profits to society

We fulfill our corporate social responsibility.

02

Voluntary participation

We feel a sense of satisfaction through social contribution activities.

03

Integrity, service, and passions

We love volunteering in accordance with Lotte Group's management philosophy.

### Enterprise-wide Volunteer Service Activities

Lotte Chemical is committed to contributing to community development through various sharing activities and expansion of mutual exchange with communities. A total of 14 volunteer service groups consisting of employees from HQ, research center, Yeosu, Daesan, and Ulsan Plants and their families continue to carry out various social contribution activities in the social welfare, education scholarship, and environment culture fields to fulfill their social responsibility. The voluntary service groups economically assist the elderly living alone, welfare centers for disabled people, unfortunate children of low-income homes, and adolescents of multicultural families and regularly visit them and deliver daily necessities, kimchi for winter, and briquettes. In this manner, we put volunteer services into practice.

### Employees Matching Grant

Lotte Chemical has been operating a matching grant system to disseminate the enterprise-wide donation culture since 2008. The Matching Grant is a system wherein the company donates the same amount of fund voluntarily donated by employees. The type of donation by employees can be divided into two: an odd money system to accumulate less than a certain amount from employees' salaries/wages, and; a donation system wherein employees can freely donate any amount in unit of KRW 1,000.

Worksite	Sponsorship	Contents
<b>Support for local children</b>		
All worksites	Sponsorship for local children's center	Cultural activity, provision of books, learning guidance, and consolatory visit
Seoul	Regular sponsorship for overseas children	
<b>Support for multicultural families</b>		
Seoul	Support for study room for children of multicultural families	learning guidance and all-together festival
	Sponsorship for foreign worker's center	Delivery of lunch box
Yeosu	Event for multicultural families	Kimchi-making and Korean paper art
Ulsan	Support for North Korean defectors	Donation of living expenses
<b>Improvement of living environment at farming and fishing villages</b>		
Yeosu	Support for sisterhood villages	Improvement of living environment, disinfection activity, and donation of fitness equipments
	Environmental cleanup in rural areas	Painting of walls
Daesan, Ulsan	Voluntary home repair service	Painting and wallpaper change
<b>Environmental cleanup</b>		
Seoul	Environmental cleanup around the worksite	Cleaning neighboring streams
Yeosu, Daesan, Ulsan	One Company, One River campaign	Cleaning neighboring streams
	Coastal area cleanup	Cleaning neighboring coastal areas
	Caring local mountains	Planting, pruning, and cleanup
<b>Support for the disabled</b>		
Seoul	Sponsorship for social welfare facilities	Voluntary food distribution service/alternative duty
Seoul, Yeosu	Support for elders who live alone	Consolatory visit and delivery of goods
<b>Other sharing activities for local communities</b>		
Seoul	Sponsorship for neighboring social welfare centers	Voluntary cooking and food distribution services and donation of rice
Seoul, Daejeon, Yeosu	Group volunteer service for elders who live alone	Consolatory visit and delivery of goods
Yeosu	Volunteer service for the 2012 Yeosu Expo	Parking guidance, crackdown of illegal parking, and street cleanup
	Returning funds raised by carbon point system to the marginalized in the region	Donation of rice
Daejeon, Ulsan	Kimch-making event	Supporting needy families in the region
Daejeon, Daesan, Ulsan	Briquette-sharing event	Supporting needy families in the region
Daesan	Lectures on energy saving	Middle schools in Daesan



# Local Communities



Voluntary service at a nursing home

## Major Social Contribution Activities

### Sponsorship for Children at Local Welfare Centers

Dreaming of a world of dreams and hopes, Lotte Chemical has been providing sponsorship services such as free meal services, support for students' studies, and various cultural experience activities for children who need protection in communities. We participate in picnics, excursions, and sports activities together with children from welfare centers with which we have forged sisterhood relations. In linkage with local children's centers catering to low-income bracket students in the community, we implement support activities such as pottery and dyeing experiences, birthday party celebrations, tutoring, and meal services.

### Improvement Project for Farming and Fishing Villages' Residential Environment

Among the volunteer service teams of our three plants (Yeosu, Daesan, and Ulsan Plants), engineering personnel continuously provide volunteer services by repairing house and buildings located close to their worksites using their expertise. In this manner, we spearhead the improvement of residential environment, one of the most important facets of life. For example, in 2012, Yeosu Plant performed interior repair for the house of a student suffering from a rare disease by sending a volunteer service team to the student's home. In such emergency situation, all the volunteer service members perfectly repaired the house, which was on the verge of collapse; thus resulting in high satisfaction for both our employees and community residents. Daesan and Ulsan Plants also practice talent donation by continually repairing houses of villages with which they established sisterhood relations, centered on the engineering team personnel.



Caring natural environment



Briquette delivery



Making and sharing Kimchi



Environmental cleanup

### Multicultural Support Services

We offer services to facilitate multicultural families' adaptation to society and growth as social members. We make efforts so that multicultural families have opportunities to adapt to life in Korea and understand Korean culture more easily through Korean culture experiences, winter Kimchi making, and assistance for study rooms in communities.

### Environmental Cleanup Activities

Lotte Chemical is committed to environmental protection by being proactive in caring mountains and cleaning coastal areas around each plant. Detailed activities include installing birds' nests, planting flowers along trails, and cleaning around hiking tracks where local residents visit frequently. Environmental cleanup activities for adjacent beaches and coastal areas are also implemented. Through all these, we strive to create a pleasant environment together with local residents and communities.

### Services in Aid of Disabled People

Disabled people are also citizens just like normal people. We do not hesitate to help the disabled people regularly so that they can live with dignity as a social member, based on a warm heart for those who have physical or mental disabilities caused by accidents or innate disability.



# Appendix

63\_ GRI G3.1 Guideline

67\_ ISO26000

68\_ Independent Assurance Statement

70\_ Consolidated Financial Statements

73\_ Other Data

74\_ Awards & Association Memberships

## GRI G3.1 Guideline

● Reported ● Partially Reported ○ Not Reported

G3.1	Description	Reporting	Page	Remarks
<b>Profile Disclosures</b>				
<b>Strategy and Analysis</b>				
1.1	Statement from most senior decision-maker in organization	●	4, 5	
1.2	Description of key impacts, risks, and opportunities	●	4, 5	
<b>Organizational Profile</b>				
2.1	Name of organization	●	6-10	
2.2	Primary brands, products, and/or services	●	6-10	
2.3	Operational structure	●	6-10	
2.4	Location of organization's headquarters	●	6-10	
2.5	Location of overseas branch offices and sites	●	6-10	
2.6	Nature of ownership and legal form	●	6-10	
2.7	Markets served	●	6-10	
2.8	Scale of the reporting organization	●	6-10	
2.9	Significant changes during reporting period regarding size, structure, or ownership	●	6-10	
2.10	Awards received in reporting period	●	74	
<b>Report Parameters</b>				
3.1	Reporting period	●	2	
3.2	Date of most recent previous report (if any)	●	2	
3.3	Reporting cycle (annual, biennial, etc.)	●	2	
3.4	Contact point for questions regarding the report or its contents	●	2	
3.5	Process for defining report content	●	14-15	
3.6	Boundaries of report	●	2	
3.7	State any specific limitations on the scope or boundary of report	●	2	
3.8	Basis for reporting on comparability from period to period and/or between organizations	●	2	
3.9	Data measurement techniques and bases of calculations for data, including performance index	●	39-42	
3.10	Explanation of the effects of & reasons for any re-statements of information provided in earlier reports	●	2	
3.11	Significant changes from previous reporting periods applied in the report	●	2	
3.12	Table identifying the location of the Standard Disclosures in the report	●	63-66	
3.13	Policy and current practices with regard to seeking external assurances for the report	●	68-69	
<b>Governance, Commitments, and Engagement</b>				
4.1	Governance of organization	●	16	
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	●	16	
4.3	No. of members of highest governance body that are independent and/or nonexecutive members	●	16	
4.4	Mechanisms for shareholders and employees to provide recommendations or directions to highest governance body	●	16	
4.5	Compensation for members of highest governance body, senior managers, and executives	●	16	
4.6	Processes in place for highest governance body to ensure conflicts of interest are avoided	●	16	
4.7	Process for determining the qualifications and expertise of the members of the highest governance body	●	16	
4.8	Internally developed statements of mission or values, codes of conduct, and principles	●	16	
4.9	Procedures of highest governance body for management of economic, environmental, and social performances	●	16	
4.10	Processes for evaluating highest governance body's own performance	●	16	
4.11	Whether and how the precautionary approach or principle is addressed by the organization	●	30, 39-44	
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives	●	74	
4.13	Membership in associations and/or national/international advocacy organizations	●	74	
4.14	List of stakeholder groups engaged by the organization	●	13-15	
4.15	Bases for identification and selection of stakeholders with whom to engage	●	13-15	



## GRI G3.1 Guideline

● Reported ● Partially Reported ○ Not Reported

G3.1	Description	Reporting	Page	Remarks
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and stakeholder group	●	13-15	
4.17	Key topics and concerns raised through stakeholder engagement, and responses to them	●	13-15	
<b>Economy</b>				
<b>Economic Performance</b>				
EC1	Direct economic value generated and distributed	●	70-72	
EC2	Financial implications and other risks and opportunities for organization's activities due to climate change	●	39-40	
EC3	Coverage of organization's defined benefit plan obligations	●	52	
<b>Market Position</b>				
EC4	Significant financial assistance received from governments	●	-	KRW 16.87 billion
EC5	Range of ratios of standard entry-level wages compared to local minimum wage at significant locations of operation	○	-	Ratio of entry-level wages compared to legal minimum wage was not reported.
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	●	56-57	
EC7	Process of hiring local workers preferably and percentages of locally-hired highranking managers	●	73	
<b>Indirect Economic Effect</b>				
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	●	58-61	
EC9	Understanding and describing significant indirect economic impacts	●	70-72	
<b>Environment</b>				
<b>Materials</b>				
EN1	Materials used by weight or volume	●	41	
EN2	Percentage of materials used that are recycled input materials	●	41	
<b>Energy</b>				
EN3	Direct energy consumption by primary energy source	●	39	
EN4	Indirect energy consumption by primary energy source	●	39	
EN5	Energy saved due to conservation and efficiency improvements	●	38	
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives or services more widely used	●	38	
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	●	38	
<b>Water</b>				
EN8	Total water withdrawal by source	●	42	
EN9	Water sources significantly affected by withdrawal of water	●	42	
EN10	Percentage and total volume of water recycled and reused	●	42	
<b>Biodiversity</b>				
EN11	Location and size of land owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity managed by us	●	47	
EN12	Description of significant impacts of activities, products, and services on biodiversity biological diversity	●	47	
EN13	Habitats protected or restored	●	-	No case
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	●	47	
EN15	No. of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk and the government and living in the areas affected by our business activities	●	-	No endangered species within our worksites
<b>Air Emissions, Wastewater-Waste</b>				
EN16	Total direct and indirect greenhouse gas emissions by weight	●	40	
EN17	Other relevant indirect greenhouse gas emissions by weight	●	40	
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	●	39-40	
EN19	Emissions of ozone-depleting substances by weight	●	43	
EN20	NOx, SOx, and other significant air emissions by type and weight	●	43	
EN21	Total water discharge by quality and destination	●	43	
EN22	Total weight of waste by type and disposal method	●	44	
EN23	Total No. and volume of significant spills	●	-	None

● Reported ● Partially Reported ○ Not Reported

G3.1	Description	Reporting	Page	Remarks
EN24	Weight of transported, imported, exported, or treated wastes deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII Annex of Basel Convention	●	-	No relevant waste
EN25	Name of water bodies significantly affected by the reporting organization's discharges of water and runoff protection states, protection levels and biological diversity value of related habitats	○	-	
<b>Product-Service</b>				
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	●	45-47	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	●	-	Packaging materials can be completely recycled.
<b>Compliance</b>				
EN28	Monetary value of significant fines and total No. of non-monetary sanctions for noncompliance with environmental laws and regulations	●	-	None
<b>Transporting</b>				
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations and transporting members of the workforce	○	38	
<b>Total</b>				
EN30	Total environmental protection expenditures and investments by type	●	37	
<b>Labor</b>				
<b>Labor</b>				
LA1	Total workforce by employment type, employment contract, and region	●	73	
LA2	Total No. and rate of employee turnover by age group, gender, and region	●	73	
LA3	Benefits provided to full-time employees that are not provided to temporary employees	●	52-53	
LA15	Ratio of basic salary of men to women by employee category	●	73	
<b>Labor-Management Relations</b>				
LA4	Percentage of employees covered by collective bargaining agreements	●	73	
LA5	Minimum notice period(s) regarding significant operational changes	●	53	
<b>Health and Safety</b>				
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committee	●	73	
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and No. of work-related fatalities	●	73	
LA8	Staff composition by site obtaining the HSE management system certification	●	52-53	
LA9	Disease and safety control programs to assist workforce members, their families, and community members	●	53	
<b>Training</b>				
LA10	Health and safety topics covered in formal agreements with labor unions	●	73	
LA11	Average hours of training per year per gender and employment type	●	52	
LA12	Programs for skills management and lifelong learning for continued employability and managing career endings	●	73	
<b>Diversity and Equality</b>				
LA13	Percentage of employees receiving regular performance and career development reviews	●	16	
LA14	Composition of governance bodies and breakdown of employees per category by indicators of diversity	●	-	No difference in basic wage between male and female employees
<b>Human Rights</b>				
<b>Investment and Procurement</b>				
HR1	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including percentage of employees trained	●	-	No screening on human rights when signing investment agreements and selecting suppliers
HR2	Total No. of incidents of discrimination, and actions taken	●	17	
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including percentage of employees trained	●	17	
<b>Prohibition of Discrimination</b>				
HR4	Total No. of incidents of discrimination, and actions taken	●	-	No discrimination
<b>Collective Bargaining</b>				
HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk	●	53	

## GRI G3.1 Guideline

● Reported ● Partially Reported ○ Not Reported

G3.1	Description	Reporting	Page	Remarks
<b>Child Labor</b>				
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken	●	50	
<b>Forced Labor</b>				
HR7	Operations identified as having significant risk for incidents of forced labor, and measures taken	●	50	
<b>Security</b>				
HR8	Percentage of security personnel trained in the organization's policies concerning human rights relevant to operations	●	-	All security personnel completed training.
<b>Indigenous Peoples</b>				
HR9	Total No. of incidents of violations involving rights of indigenous peoples, and actions taken	●	-	No violation
<b>Assessments</b>				
HR10	Percentage and total No. of operations that have been subject to human rights reviews and/or impact assessments	●	-	Impact assessment was not conducted.
<b>Revision</b>				
HR11	No. of complaints related to human rights that are filed, dealt with, and resolved through the official complaint registration channel	●	-	No complaint
<b>Society</b>				
<b>Local Communities</b>				
SO1	Return to work and retention rates after parental leave	●	58-59	
SO9	Monetary value of significant fines, and total No. of non-monetary sanctions for non-compliance with laws and regulations	●	-	No worksite that affects bad influences
SO10	Operations with significant potential or actual negative impacts on local communities	●	58-59	
<b>Corruption</b>				
SO2	Percentage of operations with implemented local community engagement, impact assessments, and development programs	●	-	No worksite related
SO3	Percentage and total No. of business units analyzed for risks related to corruption	●	17	
SO4	Percentage of employees trained in organization's anti-corruption policies and procedures	●	-	No corruption
<b>Public Policy</b>				
SO5	Actions taken in response to incidents of corruption	●	-	No lobbying activity
SO6	Public policy positions and participation in public policy development and lobbying	●	-	No donation
<b>Anti-competitive Behavior</b>				
SO7	Total value of financial and in-kind contributions to political parties, politicians, and related institutions, by country	●	-	No legal action
<b>Compliance with Laws</b>				
SO8	Total No. of legal actions for anti-competitive behavior and monopoly practices	●	-	No penalty and legal action
<b>Product Responsibility</b>				
<b>Customer Health and Safety</b>				
PR1	Countermeasures to move local inhabitants by business developments	●	47	
PR2	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	●	-	No violation
<b>Product and Service Labeling</b>				
PR3	Type of product and service information required by procedures	●	-	100%
PR4	Total No. of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling	●	-	No violation
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	●	54-55	
<b>Marketing Communication</b>				
PR6	Programs for adherence to laws and standards related to marketing communications	●	-	No program
PR7	Total No. of incidents of non-compliance with regulations, standards and voluntary codes concerning marketing communications	●	-	No violation
<b>Customer Privacy Protection</b>				
PR8	Total No. of substantiated complaints regarding breaches of customer privacy and losses of customer data	●	-	No complaint
<b>Compliance</b>				
PR9	Monetary value of significant fines for noncompliance with laws and regulations concerning provision of products and services	●	-	No penalty

## ISO 26000

Core subjects	Issues	Page
<b>Organizational governance</b>		
Decision-making processes and structures		16
<b>Human rights</b>		
Due diligence		53
Human rights risk situations		58-61
Avoidance of complicity		26-27
Resolving grievances		53
Discrimination and vulnerable groups		50-51
Civil and political rights		53
Economic, social and cultural rights		58-61
Fundamental principles and rights at work		50-53
<b>Labour practices</b>		
Employment and employment relationships		50-53
Conditions of work and social protection		50-51
Social dialogue		53
Health and safety at work		45-47
Human development and training in the workplace		50-51
<b>The environment</b>		
Prevention of pollution		41-44
Sustainable resource use		24-25
Climate change mitigation and adaptation		39-40
Protection of the environment, biodiversity and restoration of natural habitats		38
<b>Fair operating practices</b>		
Anti-corruption		17,30
Responsible political involvement		40
Fair competition		17
Promoting social responsibility in the value chain		26-27,56-57
Respect for property rights		-
<b>Consumer issues</b>		
Fair marketing, factual and unbiased information and fair contractual practices		17
Protecting consumers' health and safety		54-55
Sustainable consumption		24-25
Consumer service, support, and complaint and dispute resolution		N/A
Consumer data protection and privacy		N/A
Access to essential services		N/A
Education and awareness		N/A
<b>Community involvement and development</b>		
Community involvement		58-61
Education and culture		58-61
Employment creation and skills development		51
Technology development and access		24-25
Wealth and income creation		70-72
Health		58-61
Social investment		58-61



## Third Party's Assurance Report

To the Readers of Lotte Chemical 2012 Sustainability Report:

### Foreword

The Korea Management Association Registration and Assessments (KMAR) has been requested by Lotte Chemical verify the contents of its 2012 Sustainability Report (the Report). Lotte Chemical is responsible for the collection and presentation of information included in the Report. Our responsibility is to carry out assurance engagement on specific information in the assurance scope stipulated below.

### Our independence

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

### Assurance scope and standard

Lotte Chemical describes its efforts and achievements of the sustainability activities in the Report. KMAR performed a Type 1, moderate level of assurance using AA1000AS (2008) as an assurance standard. That is, the assurance team assessed whether inclusivity, materiality, and responsiveness were observed, and does not include any assertion or reliability of achievements specified in the report. However, the team included the confirmation of the application level of GRI G3.1 utilized as the report criteria in the scope of assurance.

### Assurance process

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

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

### Conclusion

Based on the results we have obtained from material reviews, relevant department visits, 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 did not find any inappropriate contents related to the compliance with the principle in the Report.

### Inclusivity

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

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

### Materiality

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

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

### Responsiveness

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

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

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

### Recommendation for improvement

We hope Lotte Chemical's publication of the Report is actively used as a communication tool with stakeholders and recommend the following for improvements.

- Lotte Chemical is communicating in various forms and at various levels with stakeholders. However, it is required to enlarge stakeholder's engagement in the process of the establishment and execution of strategy, evaluation of performance and improvement in order to obtain sustainable management performance more effectively. In addition, the approach of stakeholder engagement strategy is needed to be differentiated depending on the maturity of relationship with each stakeholder. This approach will help raising the understanding of sustainability issue.
- In this Report, a number of performances related to sustainability were reported. However, there are still more opportunities to enhance the transparency by disclosing the performance along with the mid- and long term goals focused on KPI associated with the sustainability management strategy of Lotte Chemical.
- Materiality test is a very important process that decides the quality of the Report. The process is needed to be improved into an original one according to the situation and characteristics of Lotte Chemical.
- We recommend Lotte Chemical to enhance the completeness of the Report by expanding the current report boundary as a global corporation.



August 9, 2013  
CEO **Ki Ho Park**

*K. H. Park*

## Consolidated Financial Statements

### Consolidated Financial Statements

Lotte Chemical's consolidated financial statements are included in this report from this year in order to help stakeholders understand management status of the company. The following consolidated financial statements are based on the independent auditors' report as of 2012. Please refer to DART system (<http://dart.fss.or.kr/>) for more details.

As of December 31, 2012 and 2011

#### Consolidated Financial Position

(Unit: Korean Won)

Item	2012	2011
<b>Assets</b>		
I. Current assets	4,178,674,705,431	4,888,629,545,257
1. Cash and cash equivalents	744,816,589,107	1,251,251,599,062
2. Short-term financial instruments	191,600,034,538	558,274,533,190
3. Fair value financial assets	-	13,066,560
4. Available-for-sale financial assets	232,110,000	186,330,000
5. Trade and other receivables	1,634,473,228,473	1,675,637,293,781
6. Inventories	1,500,592,461,088	1,266,628,348,441
7. Financial lease receivables	123,857,902	123,341,088
8. Current income tax assets	21,292,096,839	10,627,990,985
9. Other financial assets	16,219,176,632	9,652,988,801
10. Other current assets	69,325,150,852	116,234,053,349
II. Non-current assets	6,193,639,541,797	5,857,978,359,030
1. Long-term financial instruments	44,905,760,000	25,309,773,263
2. Available-for-sale financial assets	113,326,841,993	102,795,789,497
3. Financial lease receivables	3,527,610,907	3,651,468,806
4. Investments in associates	1,002,268,250,575	771,101,371,514
5. Investments in joint ventures and associates	331,628,513,514	314,041,283,942
6. Tangible assets	4,420,854,213,194	4,307,764,920,004
7. Investments in real estate	44,810,637,784	46,226,352,619
8. Goodwill	8,421,663,619	19,226,441,107
9. Other intangible assets	24,573,553,345	20,216,550,541
10. Other financial assets	8,595,251,159	12,741,525,227
11. Other non-current assets	22,658,458,713	94,641,346,030
12. Deferred income tax assets	168,068,786,994	140,261,536,480
<b>Total assets</b>	<b>10,372,314,247,228</b>	<b>10,746,607,904,287</b>

As of December 31, 2012 and 2011

(Unit: Korean Won)

Item	2012	2011
<b>Liabilities</b>		
I. Current liabilities	2,672,664,693,872	2,728,479,989,429
1. Trade and other payables	1,855,030,525,733	2,032,023,023,009
2. Fair value financial liabilities	1,867,232,400	584,365,600
3. Borrowings	640,358,154,452	303,059,256,064
4. Current income tax liabilities	52,351,153,466	211,778,551,912
5. Other financial liabilities	52,207,622,561	103,582,737,412
6. Other current liabilities	65,415,162,660	74,330,236,472
7. Provisions	5,434,842,600	3,121,818,960
II. Non-current liabilities	1,615,534,766,738	1,860,352,742,967
1. Borrowings	1,294,678,949,431	1,554,702,273,479
2. Retirement benefit liabilities	27,542,367,337	22,913,519,602
3. Deferred income tax liabilities	203,451,719,369	208,758,444,259
4. Other financial liabilities	84,198,116,558	68,588,356,525
5. Other non-current liabilities	5,544,110,276	4,649,615,156
6. Provisions	119,503,767	740,533,946
<b>Total liabilities</b>	<b>4,288,199,460,610</b>	<b>4,588,832,732,396</b>
<b>Equity</b>		
I. Equity attributable to the owner of the parent	6,043,424,852,327	5,462,573,293,138
1. Share capital	171,377,095,000	159,300,000,000
2. Other share capital	472,058,339,430	15,403,073,116
3. Retained earnings	5,427,874,760,228	5,188,270,590,287
4. Other reserves	(27,885,342,331)	99,599,629,735
II. Non-current interests	40,689,934,291	695,201,878,753
<b>Total equity</b>	<b>6,084,114,786,618</b>	<b>6,157,775,171,891</b>
<b>Total liabilities and equity</b>	<b>10,372,314,247,228</b>	<b>10,746,607,904,287</b>

\*Lotte Chemical Corporation (former Honam Petrochemical Corporation) and its subsidiaries



## Consolidated Financial Statements

For the years ended December 31, 2012 and 2011

### Consolidated Statements of Comprehensive Income

(Unit: Korean Won)

Item	2012	2011
I. Sales	15,902,803,025,026	15,699,439,575,484
II. Cost of sales	15,109,197,299,993	13,805,330,865,347
III. Gross profit	793,605,725,033	1,894,108,710,137
Selling and administrative expenses	421,874,257,265	424,007,307,129
IV. Operating profit	371,731,467,768	1,470,101,403,008
Financial income	118,990,254,912	94,831,661,249
Financial costs	142,418,364,487	114,429,300,863
Gain on equity method investment	7,535,793,899	55,007,477,736
Gain on disposal of investment in associates	1,443,659,971	-
Other non-operating income	205,046,192,958	286,597,539,186
Other non-operating costs	175,460,639,849	264,657,716,754
V. Profit before income tax	386,868,365,172	1,527,451,063,562
Income tax expense	60,407,846,243	393,877,961,358
VI. Consolidated net income from continuing operations	326,460,518,929	1,133,573,102,204
VII. Consolidated net loss from suspended operations	(10,315,714,395)	(1,019,551,633)
VIII. Consolidated net income	316,144,804,534	1,132,553,550,571
IX. Other comprehensive income, net	(163,160,844,489)	20,204,400,409
Actuarial loss on defined benefit plans	(11,064,910,179)	(9,901,299,412)
Retained earnings from equity method investment	(9,774,909,032)	813,178,778
Gain on evaluation of available-for-sale financial investments, net	942,258,567	2,771,367,789
Changes in equity from equity method investment	(9,111,565,037)	(22,028,594,916)
Gain on evaluation of derivatives, net	8,707,078,250	719,474,202
Exchange difference of overseas sites	(142,858,797,058)	47,830,273,968
X. Consolidated comprehensive net income	152,983,960,045	1,152,757,950,980
Net income attributable to:		
The owner of the parent	314,537,434,708	978,146,488,697
Non-controlling interests	1,607,369,826	154,407,061,874
Total comprehensive income attributable to:		
The owner of the parent	167,874,197,875	1,000,834,704,936
Non-controlling interests	(14,890,237,830)	151,923,246,044
Earnings per share		
Basic and diluted earnings per share	9,865	30,701
Earnings per share from continuing operations	10,046	30,719
Earnings per share from suspended operations	(181)	(18)

\*Lotte Chemical Corporation (former Honam Petrochemical Corporation) and its subsidiaries

## Other Data

### Number of Employees by Employment Type

Classification	Unit	2010	2011	2012
Total		1,592	1,698	2,484
Regular workers	Persons	1,534	1,653	2,430
Contract workers		58	45	54

### Employee Turnover Rate

Classification	Unit	2010	2011	2012
Turnover rate	%	5.2	4.9	6.1
Number of turnovers	Persons	77	83	152

### Labor Union Status

Classification	Unit	2010	2011	2012
Labor union participation rate	%	48	52	45
Labor union members	Persons	765	878	1,106

### Incident Rate

Classification	Unit	2010	2011	2012
Incident rate	%	0	0	0.05
Number of incidents	Cases	0	0	1

### Employee Training Hours

Total or by Category	Unit	2010	2011	2012
Average annual training hours per employee	Hours	88.7	91.2	91.3
Total training hours		141,190	155,013	226,693
Total participants	Persons	1,592	1,698	2,484

### Performance Evaluation

Classification	Unit	2010	2011	2012
Rate of employees to receive regular performance and career development reviews	%	34	35	36
Number of employees to receive regular performance and career development reviews	Persons	540	589	898

### Parental Leave Status

Classification	Unit	2010		2011		2012	
		Male	Female	Male	Female	Male	Female
Number of employees who took parental leave (by gender)		0	7	0	9	0	10
Number of employees who returned to work after parental leave ended (by gender)	Persons	0	1	0	5	0	2
Number of employees who have still work for more than 12 months after parental leave ended (by gender)		0	1	0	5	0	0

## Awards

Date of Award	Title	Hosted by
2012.10.	Included in 2012 DJSI Asia-Pacific Division (DJSI)	SAM
2012.10.	Raw Material Leader at the 2012 CDP (Carbon Disclosure Project) Korea	CDP Korea
2012.11.	Prime Minister Citation at the 19th Corporate Innovation Award	Prime Minister
2012.09.	Minister Prize at the Leading Resource Recycling Company Award	Ministry of Environment
2012.01.	Excellent Company in Comprehensive AEO Certification	Korea Customs Service
2012.01.	Accreditation Plaque for Achieving 7 Multiples of Accident-Free Record at Plants	Korea Occupational Safety and Health Agency
2012.09.	Excellent Workplace for Emission Trading Pilot Project	Ministry of Knowledge and Economy
2012.12.	Obtained the 3rd NET (New Excellent Technology) Certification "Manufacturing Technology for Excellent Heat-Releasing Polycarbonate Composite Materials Including Polysilicon for Heat Insulating Board of LED Lighting"	Minister of the Ministry of Knowledge and Economy

## Association Memberships

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





This report is printed on eco-friendly paper using non-chlorine bleached pulp (ECF), and with soybean oil-based ink.