POSCO E&C

# Together Towards Tomorrow

POSCO E&C Sustainability Report 2015-2016

## **COVER STORY**

The phrase 'Together Towards Tomorrow' reflects POSCO E&C's determination for sustainability, aiming to realize its future visions and growing together with various stakeholders, through graphic motif that symbolizes the company structures and the unique colors of POSCO E&C.

## **ABOUT THIS REPORT**

This report is the fifth sustainability report published by POSCO E&C. It provides all stakeholders with transparent disclosure on the activities and performance of POSCO E&C on sustainability for the past year.

**Reporting Principle** | POSCO E&C Sustainability Report 2015-2016 applies the reporting guidelines of GRI (Global Reporting Initiative) and meets the core G4 standards. Financial information has been written in accordance with K-IFRS, and non-financial information has been written in accordance with GRI G4 guidelines or POSCO E&C management criteria.

**Reporting Period and Boundary** | This report deals with the activities and performance of POSCO E&C from January 1st to December 31st, 2015. Information which may have significant influence on stakeholders, such as governance structure, includes activities up to July 2016. Some quantitative data are reported with 3-year performance in order to ensure improvement in comparability. Reporting range includes performance in domestic business sites (does not include mutual investment companies and subsidiaries) and in major overseas business sites. Special indications have been made for parts that require special notes regarding reporting range.

**Third-party Assurance** | In order to guarantee the reliability of the reported information, the accuracy of data in financial information has been confirmed by an independent auditor, and non-financial information, such as environmental and social issues, have been verified by a third-party assurance institution.

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# **CEO** Message



POSCO E&C will grow as a global E&C corporation which performs its social responsibilities and roles in order to meet the expectations of stakeholders.

#### Dear Stakeholders,

Ever since its foundation, POSCO E&C has achieved an average annual growth rate of 12% by adapting forward-thinking strategies and developing breakthrough technologies, thereby attaining the country's top-tier position as a total solution provider in the construction industry within a very short period of time. Most notably, the company succeeded in attracting investment from the Public Investment Fund (PIF), a state-owned fund of Saudi Arabia, in 2015. Through this transformative shift, the company was able to not only reform its governance to meet international standards but also to lay the basis for its remarkable expansion into the global engineering and construction market. However, the overseas construction market faces increased competition among multinational companies from Europe, USA, and China. The domestic market also faces stagnant growth of the construction industry as well as economic uncertainty, which forecast challenges for the sustainable growth of POSCO E&C. In order to address such a rapidly changing environment and to grow as a global E&C company which creates consistent value, POSCO E&C will strive to innovate its management and to foster new growth engines.

#### First, we will strengthen the foundations for global growth leveraging our technical expertise and network.

POSCO E&C will continue to foster technological advancement and broaden its breadth of business in diverse regions. The company's technological excellence had been acknowledged in a number of key markets in Asia, South America and Eastern Europe. Focusing on these key markets, POSCO E&C will establish efficient business execution systems, through coordination with strong business partners and acquisition of local talents, in order to outlay a stable growth foundation for continuous project awards. In pursuing new market penetration, POSCO E&C will utilize its global network established through the presence of POSCO affiliates in 60 countries around the world. In addition, the company will create various business opportunities in collaboration with other industry leaders and local partners, and identify business opportunities by strengthening its global sourcing capabilities. Furthermore, POSCO E&C will adapt various procurement methods, to enhance its global competitiveness in winning business orders.

#### POSCO E&C will create social values through ethics management.

POSCO E&C will engage in all management activities understanding its social responsibilities, exercising transparent and unprejudiced ethics management culture, and contribute in building social value through communication and collaboration with various stakeholders.

Through 'the Plus' Organizational Culture Campaign, which launched last June, POSCO E&C will create a culture that practices the values of 'Performance Plus for organizations, Initiative Plus for leaders, Loyalty Plus for employees and Happiness Plus for customers'. In addition, POSCO E&C will continue to engage in various community service activities for the underprivileged and the future generations, both domestic and abroad and actively invest its best efforts to resolve issues faced by the local communities and contribute in their development.

#### POSCO E&C practices safety management with life as its priority value and will continue its growth as environmentally responsible company.

Safety is fundamental at all business sites. The employees of POSCO E&C and its stakeholders will pre-empt safety risks and establish an environment that puts safety first. Furthermore, POSCO E&C will nurture the development of environmental technology and adapt the expertise to realize eco-friendly construction.

POSCO E&C supports HSE management of its business partners, providing ample assistance in establishing relative management systems.

The perpetual growth of POSCO E&C over the last twenty vears was made possible thanks to the continuous interest and endorsement of its stakeholders; especially the dedicated employees who work at project sites around the world. To return its obligation and realize the highest ideals of the stakeholders, POSCO E&C will continue to invest its utmost efforts to transform as a global E&C leader, diligently carrying out its corporate social responsibility and role.

I look forward to your continuous support, guidance and encouragement.

Thank you very much.

Chan-Kun Han President & CEO

CCH.

# **Process of Defining Report Contents**

In order to select the items to be included in Sustainability Report 2015-2016, POSCO E&C conducted a materiality assessment based on the principles for determining reported contents presented by GRI guidelines. Detailed contents are disclosed in the report, centering on material issues that have been selected by the final assessment.

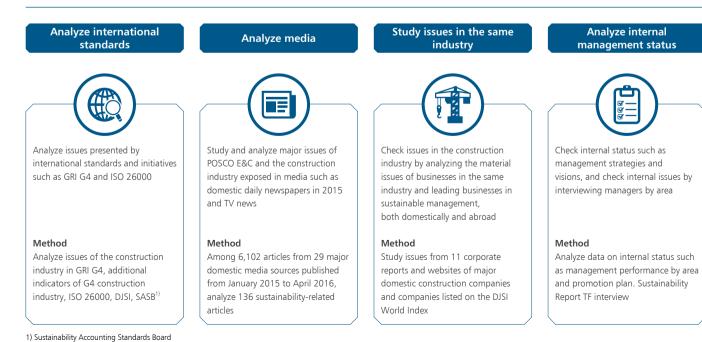
#### **Process of Materiality Assessment**

In order to identify the issues that affect the sustainability of POSCO E&C, the company derived a total of 31 issues through analyzing sustainability issues (Step 1), using analyses on international standards, media, and internal management status. In selecting material issues (Step 2), the company conducted quantitative assessments on the 31 issues derived from Step 1 using the criteria 'Level of influence on POSCO E&C (X-axis)' and 'Level of influence on stakeholders (Y-axis)', ultimately selecting 9 material issues.

#### **Result of Materiality Assessment**

Among the material issues, 'Strengthen global businesses' showed the highest level of influence on stakeholders, reflecting the high interest of stakeholders on the efforts and performance of POSCO E&C on overseas advancement. Also, 'Strengthen on-site safety management', which showed the highest level of influence on POSCO E&C, is analyzed to have relevance with its latest management trend which considers safety as its priority value.

#### Step 1. Analyze sustainability issues



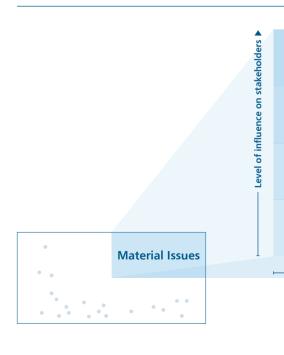
#### **Composition of Report**

Based on the material issues selected by materiality assessment, POSCO E&C is reporting its executive system, activities and outcomes, future plans, etc. in relation to aspects of GRI guidelines related to each issue. Also, regarding other sustainability issues and aspects, it is disclosing its management approaches and outcomes in 'GRI G4 Information Disclosure (p.77)' and 'GRI G4 Index (p.80)'.

Material Issue	Aspect <sup>1)</sup>	Page
Strengthen global businesses	Economic performance	24-33
Practice ethical and upright management	Anti-corruption	20-21
Strengthen on-site safety management	Occupational safety and health	46-49
Secure technology competitiveness	Environmental products and services, customer safety and health, product and service labeling	42-43
Reinforce co-prosperity and win-win growth with business partners	Anti-competitive behavior, indirect economic impacts, human rights assessment on business partners	70-73
Integrated risk management	Economic performance, occupational safety and health, emissions	18-19
Strengthen the capabilities of executives and employees	Employment, training and education	62-65
Strengthen environment management system	Energy, biodiversity, emissions, effluents and waste, environmental compliance	50-55
Contribute to the development of local communities	Local communities, indirect economic Impacts	66-69

1) Based on GRI G4

#### Step 2. Select material issues





# **Stakeholder Engagement for Defining Report Contents**

#### **Expert Discussion Meeting**

On June 2016, POSCO E&C held an expert discussion meeting for experts regarding evaluation and improvement points for its sustainability activities. Various experts' opinions from the areas of economy, environment, social contribution, corporate governance, etc., have been collected, which shall serve as the foundation for making consistent improvements on sustainability reports and activities of sustainable management.



POSCO E&C publishes reports with clear contents that can be easily understood by readers. In order to publish reports on future developments, POSCO E&C presents visions and strategies for sustainable management along with its financial goals. It also presents the execution status and level of accomplishment on goals for sustainable management, expecting to increase its power of execution.

Dong-Soo Kim Head of the Sustainability Management Center, Korea Productivity Center

POSCO E&C, which has been making rapid growth, has displayed excellent project achievements. We hope that it will continue to practice accompanied growth with its business partners, domestically and abroad, based on a close partnership. Furthermore, we wish it will make consistent efforts for improving fair trade and on-site safety management, both of which are receiving increased social attention, and provide transparent disclosure on its performance through its reports.



Sang-Ho Choi Head of the Construction Promotion Office, Construction Association of Korea



POSCO E&C has been practicing environmental management in all of its processes, such as the utilization of eco-friendly construction materials and on-site energy and waste management. Also, it is striving to manage and reduce fine dust in construction sites, an issue that is receiving increased social attention, and is disclosing relevant information through its reports. We hope that it will establish goals related to visions of environmental management and to carry out improvements.

Hyun-Jeong Im Head of the Environmental Management Office, Korea Environmental Industry & Technology Institute

POSCO E&C has successfully performed cultural exchange projects in overseas project sites, and it has been deemed to have contributed to the improvement of relationships with its stakeholders, including local communities located near the project sites. We hope that it will continue to conduct activities that contribute to housing welfare which emphasizes on the characteristics of the construction industry, and to perform social contribution activities with sincerity and consistency.





Amidst concerns over a decrease in profits from overseas projects, POSCO E&C has been effectively managing various risk factors by acquiring foreign business partners, conducting on-site management, etc. POSCO E&C will be able to emphasize its unique competitiveness in global businesses by managing overseas projects and presenting outstanding case studies. Please continue to expand your global businesses by linking them with your strengths such as steel, plant, and energy projects.

Mi-Hee Kim Senior Researcher, Korea Ratings

## **FOCUS** Communication Channel with Stakeholders

POSCO E&C defines customers, investors, employees, environment, business partners, and local communities which give direct and indirect influence on its management activities as its six major stakeholders. It operates a communication channel according to stakeholders in order to check various opinions and expectations. POSCO E&C strives to study the valuable opinions of its stakeholders and to reflect them actively in its strategies and activities for sustainable management.

Gi-Ryong Kim CEO of PlanM

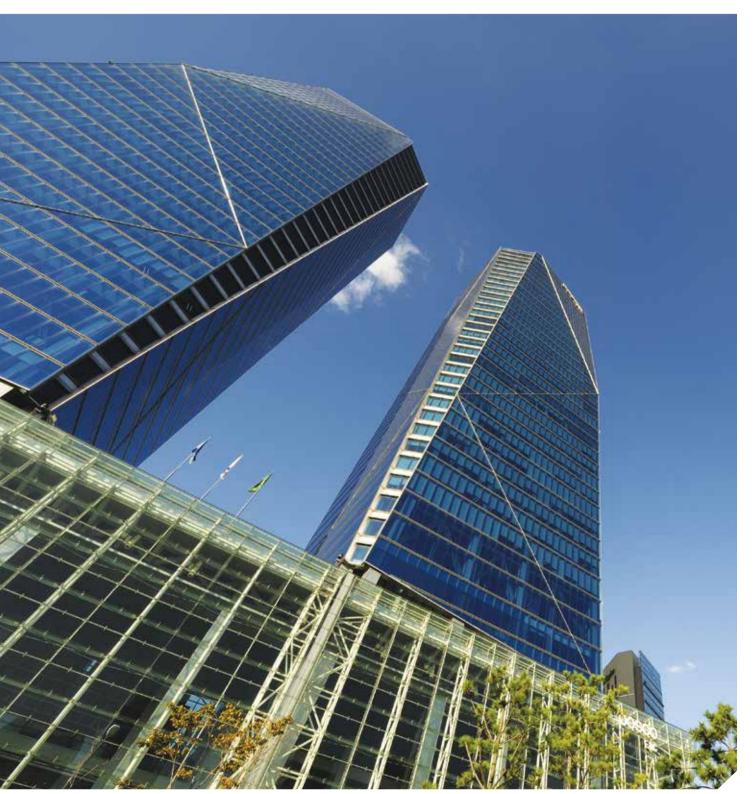
Due to the PIF equity investment in 2015, the need for establishing corporate governance that complies with global standards is rising. POSCO E&C has made efforts for reinforcing the independence and professionalism of its board of directors, such as through the appointment of non-executive directors. We hope that it will continue to perform activities for acquiring healthy corporate governance.

Jin-Su Yun Senior Researcher, Korea Corporate Governance Service



Classification	Communication channel
Customers	Operate Sharpest, housewives (frequent), Operate the website (all-year round), Conduct customer satisfaction surveys (once a year)
Investors	Corporate conference on the level of group affiliates (once a quarter), electronic notice (continuous), face-to-face meetings (continuous), response to inspections on credit rating (continuous)
Employees	labor-management council (once a quarter), Young Board (continuous), company board (continuous)
Environment	Eco-friendly construction and R&D (continuous), improvement in environmental process (continuous), environmental campaigns $(1 \sim 2 \text{ times a year})$
Business partners	Win-Win growth support group (once a month), satisfaction surveys on business partners (1~2 times a year), discussion meetings (continuous)
Local Communities	Social contribution activities (during the year), expert discussion meetings (continuous)

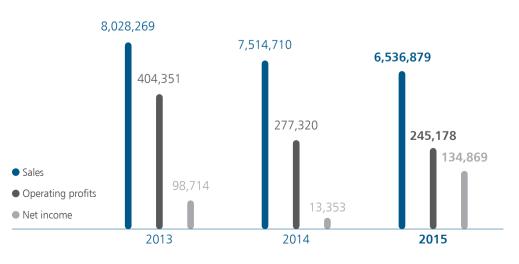
# **Company Overview**



POSCO E&C, launched in 1994, is growing as a global E&C (Engineering & Construction) company based on its global-level plant engineering technology, know-how, and experienced workforce. As a Total Solution Provider which conducts projects in a comprehensive manner, POSCO E&C possesses critical capacities in each process, including autonomous design skills. Furthermore, it provides its customers with greater satisfaction and services by reinforcing its core technical skills and expertise. Based on its organizational culture which encourages leaders to take initiatives and induce voluntary participation from its employees, POSCO E&C will address the rapidly changing management environment with wisdom and increase its technology Competitiveness in order to grow as a global E&C corporation which practices sustainability.

Company Profile				
Classification	Content			
Company name	POSCO ENGINEERING & CONSTRUCTION CC			
President & CEO	Chan-Kun Han			
Headquarters	180, Daesong-ro, Nam-gu, Pohang-si, Gyeo			
Songdo Office	POSCO E&C Tower 1, 241, Incheon tower-da			
Date of Establishment	December 1, 1994			
No. of employees	3,921 persons			
Industry	Engineering & Construction			
Business area	Steel plant, energy plant, chemical plant, wa civil infrastructure, architecture, etc.			
Credit rating	Corporate bill: A2+, Corporate bond: A+ (NICE Rating, Korea Investors Service, and Ko			

**Major Financial Performance** 



Songdo Office

	As of March 2016
).,LTD	
ngsangbuk-do, Korea	
aero, Yeonsu-gu, Incheon, Korea	
ater treatment & environmental plant,	
orea Ratings)	

Separate Standards, Unit: KRW 1 million

# **Corporate Governance**

# **Vision & Strategy**

#### **Shareholder Structure**

POSCO E&C shares are composed of 52.8% by POSCO, 38% by PIF (Public Investment Fund, a sovereign wealth fund of Saudi Arabia), 2.1% by POSTECH, and 7.1% by employees and minority shareholders.

#### The Board of Directors

**Structure and Roles of the Board of Directors I** The Board of Directors is composed of 3 executive directors and 3 non-executive directors. According to the stock transfer agreement with the Public Investment Fund (PIF) of Saudi Arabia, 2 non-executive directors recommended by the PIF are added to the previous board composition of 4 directors. The non-executive directors contribute to the increased transparency of the Board of Directors by monitoring various managerial issues such as execution of major businesses, asset disposal, and appointment of executives.

Name	Position
Chan-Kun Han	Chairman of the Board & CEO
Dong-Chul Kim	Head of Plant Division
Yong-Doo Cho	Head of Strategic Planning Division
In-Hwa Chang	Executive Vice President, POSCO
Mohammed A. Abunayyan	Chairman, ACWA Power
Ahmed A. Al-Subaey	Executive Director, Aramco
	Dong-Chul Kim Yong-Doo Cho In-Hwa Chang Mohammed A. Abunayyan

**Operations and Major Activities of the Board of Directors I** The Board of Directors deliberates and resolves managerial issues such as management principles and policies, annual operational goals, and budget approval, as well as financial issues such as share issuance and investment planning, and other issues related to the directors. In 2015, a total of 16 board meetings were held and approved 45 agenda items, including appointment of managers for fair trading voluntary compliance and approval of the management plan for 2016.

POSCO E&C extended the period for advance notice on convocation of the board meetings, to ensure substantiality by allowing the directors to have sufficient preparation for agenda items. The company held the Management Workshop with the management and the directors in order to increase the new directors' level of understanding of POSCO E&C. Matters such as company-wide management status and issues, divisional status and strategic directions, and reinforcement of future competitiveness were discussed at the workshop.

#### **Audit System**

POSCO appoints 1 auditor through the General Shareholders' Meeting in order to perform auditing operations. The auditor reviews accounting and operation of the company pursuant to Article 46 of the Articles of Incorporation. The company operates Corporate Audit Department as a separate entity for the purpose of internal audit. In order to ensure the autonomy of the auditor, the auditor is granted the authority to state opinions in board meetings, demand reports on sales activities, and examine relevant documents.

#### Mid- to Long-term Strategic Directions

Under POSCO Group's vision statement of "POSCO the Great", POSCO E&C strives to become a "Korea-based Global E&C Company". The company established Focusing, Re-framing, and Revitalizing as the strategic directions, and identified 9 strategic tasks that are currently being pursued. POSCO E&C will continue to grow as a Global E&C Leader through successful transformation of the business structure.



#### Focusing

POSCO E&C is establishing its foundation for growth by concentrating businesses around core countries and by focusing on EPC products that have been acknowledged for technological excellence. The company is also reinforcing its sales competitiveness by connecting with POSCO affiliate networks such as POSCO DAEWOO.

#### **Re-framing**

POSCO E&C is strengthening its global sourcing by acquiring FEED (Front End Engineering Design) capacity and building long-term relationships with outstanding business partners. The company is developing its workforce and organizations for overseas businesses to reinforce its global competitiveness.

#### **Re-vitalizing**

POSCO E&C strives to minimize loss by improving its risk management and commercial capabilities, and pursues consecutive orders by reinforcing its management of core customers for each product. The company is also utilizing the differentiated assets of POSCO Group to identify new business models.

e Great					
pal E&C Company					
ming	Re-vitalizing				
D capabilities bal sourcing	Improve risk management and commercial capabilities				
rkforce and or overseas	<ul> <li>Strengthen the management of core customers and partners according to products</li> </ul>				
	Differentiate project awards     through Group synergy				

# **Vision & Strategy**

#### 'the Plus' Organizational Culture Campaign

POSCO E&C is carrying out 'the Plus' Campaign for establishing an organizational culture that contributes to the accomplishment of the vision and management strategies of the company. The company established 'Performance Plus for Organizations', 'Initiative Plus for Leaders', 'Loyalty Plus for Employees', and 'Happiness Plus for Customers' as the four directions for practice, and created a consensus among employees in order to inspire changes in their thoughts and behaviors. Through such changes, POSCO E&C will internalize an organizational culture that can overcome the difficult conditions inside and outside of the company.





Happy Together communication day with executives

#### System for Sustainable Management

Under the sustainable management goal of 'Pursuit of sustainable growth based on social responsibilities and principles', POSCO E&C is executing detailed tasks according to its strategic directions, which include pursuing a sustainable business model, establishing a culture for practicing social responsibilities, and revitalizing communication with stakeholders. The company will publish a sustainability report every year in order to monitor performance to improve strategies and to strengthen executive activities.



#### Sustainable Management Performance

POSCO E&C has been establishing goals by strategic directions and carrying out relevant activities in order to improve performance in areas of sustainable management and to reinforce internal capabilities. In 2016, the company ranked 3rd place in evaluation on construction capability evaluation for domestic construction companies based on the stable growth of The Sharp Apartments and highly praised management condition and ranked 1st place in the apartment section of the Korea Standard-Quality Excellence Index for 7 consecutive years in 2015, being acknowledged of its excellent quality. Also, regarding safety management, POSCO E&C recorded a low accident rate of 0.16% in comparison to the average of domestic construction companies, and also achieved excellent performance in environmental aspects, such as its waste recycling rate.

Classification	Major Performance	Note
Evaluation on construction capabilities for domestic construction companies	3rd Place	Increase by 1 rank compared to the previous year
KS-QEI (Korea Standard-Quality Excellence Index)	1st Place	Maintained the 1st place for 7 consecutive years
Converted accident rate	0.16%	Relatively low accident rate in comparison with the average of 0.51% for domestic construction companies
Waste recycling rate	76%	Maintained the level of the previous year
Greenhouse gas emissions	31,614 tCO <sub>2</sub> e	Increase by 4.2% compared to the previous year
Total amount of donation for 'The 1% Sharing Campaign'	KRW 1.28 billion	Increase by 18.5% compared to the previous year

on social responsibilities and principles				
g a culture for al responsibilities	Revitalizing communication with stakeholders			
nics management	Increase communication     channels			
uman rights	Contribute to developing local communities			
ety and health at	Strengthen communication     with business partners			
ort for CSR in the				

# **Business Area**

#### **Plant Business**

We have improved our use of the FINEX construction method, an innovative technology in the steel industry, and achieved success both in the domestic market and worldwide. Based on such technology, POSCO E&C is rising as a Total Solution Provider which possesses comprehensive executive capability on steel plant EPC.

#### Major Performance

- Won a project order for the Uttarn steel mill in India
- Won a project order for the PKP integrated steel mill in Iran • Completed construction of the Moolarben OC (Open Cut) 4 in Australia



Unit: KRW 100 million

10,089



CSP Integrated Steelworks Site, Brazil

**Energy Business** 

Beginning with the construction of thermal power plants in the South American market, such as in Chile and Peru, POSCO E&C has been acknowledged for its excellent technology and competitiveness. The company is expanding the areas of expertise from thermal power generation to green energy and future energy.

#### Major Performance

- Won a project order for the coal-fired thermal power plant in Central Pacifico, Chile
- Started the project for the Masinloc coal-fired thermal power plant in the Philippines
- Completed construction of the gas-fired thermal power plant in Puerto Bravo, Peru

Sales

Unit: KRW 100 million

13,423



Campiche Coal-fired Thermal Power Plant, Chile



Floating breakwater construction site in Sadong port, Ulleungdo



Songdo International Business Complex

#### Infrastructure Business

Based on the experience of performing various infrastructure business activities, such as the construction of roads, railroads, and bridges, POSCO E&C is expanding its businesses from Korea to foreign countries. Furthermore, it is expanding its businesses to relevant areas such as facilities for converting waste into energy, environmental facility O&E (Operation & Maintenance), and resource development.

#### Major Performance

- Won a private investment project order for Seobu Inland Expresswav
- Completed construction of Noi Bai Lao Cai roads A1, A2, A3 in Vietnam
- Completed construction of Expressway No. 12 Damyang-Seongsan Sections 3 and 13

#### Sales

Unit: KRW 100 million

11,368

#### Architecture & Urban Development Business

POSCO E&C has been acknowledged for its technology for the city development and skyscraper construction businesses through urban development projects in the Songdo International Business Complex as well as the Haeundae LCT complex development project. Also, the company sympathizes with customers and provides a living space that improves the quality of life by building The Sharp brand residential facilities.

#### Major Performance

- Won the maintenance project order in connection to New Stay in District 2 of Sipjeong, Incheon
- Started construction for the corporate support hub in Pangyo Creative Economy Valley project
- Completed construction of the Beomeo Cathedral in commemoration of 100th anniversary of Archdiocese of Daegu

Sales

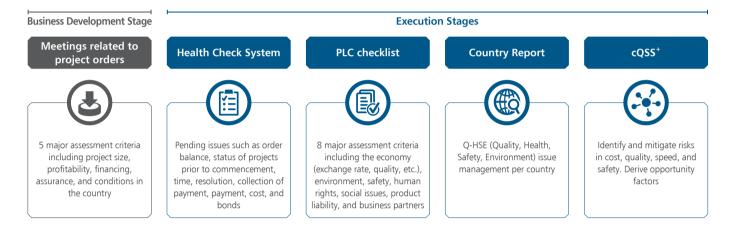
Unit: KRW 100 million



# **Risk Management**

#### **Integrated Risk Management**

POSCO E&C manages risks that can occur in all domestic and foreign businesses in a systematic manner. It manages risks by classifying them into business development stage and execution stages such as construction and operation. Also, it performs integrated risk management from a financial perspective, including Meetings related to project orders and Health Check System, as well as from a non-financial perspective such as PLC checklist, Country Report, and cQSS<sup>+</sup>.



#### **Risk Management at the Business Development Stage**

Meetings related to project orders | Before winning a project order, POSCO E&C evaluates 5 major criteria, including project size, profitability, financing, assurance, and conditions in the country, by conducting risk management meetings, business assessments, and meetings for contract review. Beginning in 2015, the company has additionally been conducting technology reviews and estimate reviews in order to prevent projects operating at a loss and to improve profitability. Notably, relevant departments in non-financial areas, such as safety and the local community, are attending risk management meetings to conduct advance reviews on non-financial risks in order to ensure the fulfillment of social responsibilities followed by executing the project.

	Pla	n for 2015	2015 Performance fo	
Classification	Number of improved cases	Price for improvement	Number of improved cases	Price for improvement
Improvement of business profits	14	900	14	912
Reducing guarantee and scaling back investment	8	530	3	659
Saving expenses spent in winning new project orders	10	30	8	45
Improving other business conditions	23	-	37	-
Total	55	1,460	62	1,616

#### **Risk Management at the Execution Stages**

Operation of Health Check System | In order to acquire financial soundness, POSCO E&C is operating a Health Check System which manages major risk factors in all processes of the project. Using the Health Check System, visual information on risk factors in each project stage are provided to the management board and site managers, and the focus of the projects is being converted from profit to cash flow. Also, big data for the past 3 years are used to establish risk criteria, and items exceeding the criteria are subject to focused review, leading to a preemptive response on financial risk factors of the project.

Global CSR risk management | In order to manage CSR risk factors in overseas projects, POSCO E&C made a list of risks in environment, safety, time, FA and guality that should be commonly managed in foreign sites using the PLC (Project Life Cycle) checklist. Also, the company has written Country Report in order to share various information and issues on local regulations, working environment, etc. that are related to Q-HSE (Quality, Health. Safety, Environment) areas by country. POSCO E&C is managing its projects according to their types and countries by putting the risk factors that have been derived from overseas projects into a database and by making regular updates on risk factors. Such data are used to recognize possible risks beforehand and to carry out preventive activities when performing new projects.

Execution of cQSS<sup>+</sup> activities | POSCO E&C developed cQSS<sup>+</sup> by connecting Quick Six Sigma activities with risk mitigation activities in construction sites. cQSS<sup>+</sup> is an activity for identifying risks and opportunity factors on Cost, Quality, Speed and Safety, the core factors of construction management. It aims to mitigate risks in each factor and to turn opportunity factors into cost reduction using VE (Value Engineering) in order to support the successful performance of the project.

## **FOCUS** Establishment of a System for Sharing Cases of Winning or Failure of Project Orders

In order to increase competitiveness in winning project orders, writes information on the project overview, executive process, POSCO E&C established a system for sharing successful orders (Best usage of order cost, causes of winning or failure, materials Practice) and failed orders (Lessons Learned) by putting the sales reviewed, outcomes of review meetings in headquarters, etc. and information and know-how that have been accumulated from the shares them. Cases of winning and failure are utilized as companybusiness development into a database and sharing them. Once wide reference for receiving orders, and will contribute to the the success or failure of an order is confirmed, the sales manager increased competitiveness of POSCO E&C in receiving orders.

# **Ethics Management**

#### System for Ethics Management

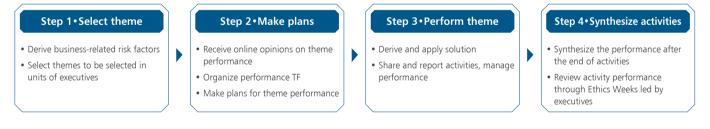
Based on its executive strategy to 'Strengthen ethics management by establishing ethical corporate culture and improving ethics management policies', POSCO E&C is carrying out innovation in ethics management by recognizing ethics management as its priority value. Notably, a Start-up Council is responsible for providing education on ethics, fair trade, and auditing cases to newly launched sites, in order to strengthen its capabilities for practicing ethics management in project sites.

#### **Improvement of Ethics Management Policies**

Amendment of ethics standards | POSCO E&C enacted and proclaimed its ethics standard in 2003 in order to practice transparent and fair ethics management, and amended it in 2015 with the purpose of increasing the level of practicing ethics management by its executives and employees. The amended ethics standard newly includes the CEO's message and ethics charter, and presents specific costs on valuables, receptions, solicitations, and recommendations, in order to provide a clear guideline for practicing ethics management. Based on such measures, POSCO E&C will make a preemptive response on legislative changes, such as in the Improper Solicitation and Graft Act, and create a healthy corporate culture.

Reinforcement of the ethics practice program | POSCO E&C is operating a program for ethical practice in order to expand the culture of voluntary ethics management by encouraging participation of executives and employees. Programs for ethical practice, in which employees participate under the leadership of executives, aim to identify and mitigate ethical and managerial risks that may occur in the organization. Notably, in 2015, POSCO E&C established a culture of having the management board to take initiatives and expanded the scope of the program to business risks in an effort to respond to potential risk factors.

#### **Process of the Ethics Practice Program**



Establishment of the Clean POSCO System | In order to prevent all excessive requests on various contracts and privileges in human relations that deviate from generally accepted procedures, POSCO E&C established its Clean POSCO System for reporting all recommendations and solicitations. All employees who are susceptible to receive solicitations are required to report any contents or people related to recommendations and solicitations which may impede fairness to the Clean POSCO System. Such contents are regulated by the amended ethics guidelines. If any solicitation occurs, its content can be registered on the ethics management website and mobile app. Also, pop-up are posted and posters are created on the company's intranet in order to promote employees' awareness on the policy in a consistent manner, and the status of registration by guarter and actions taken are being reported to the management board.

#### **Establishment of the Ethical Corporate Culture**

**Reinforcement of education on ethics management** | Ethics education for employees by departments and tasks as well as ethics education for executives by the senior auditor are being carried out in order to internalize the culture for practicing ethics management by executives and employees. In 2015, ethics education by department and tasks for 94 sites has been carried out. Also, two workshop sessions were held in order to improve capabilities of leaders for practicing ethics.

Pledging ceremony for practicing ethical compliance and fair trade | In order to establish ethical and fair trade order. POSCO E&C pledges to ensure ethical practices together with an upright management office, site managers, and business partners. In the early stages of construction, POSCO E&C clearly explains its determination for complying with ethical principles to its business partners, and the site managers take the initiative in pledging ethical practices, emphasizing the ethical culture for taking leadership in making such practices.

Improvement of assessments on the level of ethical practices | In order to expand the culture of voluntary ethical practices, POSCO E&C is conducting assessments on the level of ethical practices according to departments and project sites. In 2015, the system was changed in which executives will conduct an assessment. The assessment results are managed through officer KPI (Key Performance Indicator), with the purpose of reinforcing the power of execution in company-wide ethical practices.

Reinforcement of overseas anti-corruption activities | Along with the expansion of overseas projects, POSCO E&C established a quideline in compliance with FCPA (Foreign Corrupt Practices Act) that considers global project environment in order to manage risks of corruption. The company distributes educational materials and guidelines through ethics management website, and provides guidelines translated in Vietnamese. Chinese, and Portuguese for local employees in foreign countries. In 2015, overseas subsidiary and project sites in 8 countries, including China, Vietnam, Chile, and Indonesia, were visited to provide education to FCPA managers, and inspection and verification activities on agents and overseas business partners became more stringent.

### **FOCUS** One Strike Out Policy on 4 Major Unethical Behaviors

POSCO E&C is making consistent reinforcement on its ethics management activities. In order to prevent unethical issues Bribery such as entertained reception that occurred in 2015, it has regulated bribery, embezzlement, information manipulation, and sexual harassment as 4 major unethical behaviors and has been operating a One Strike Out policy.



Ethics management education



Combined pledging ceremony for practicing ethical compliance and fair trade

#### Briberv

giving out loans, solicitation of huma lations, request for vouching loan 4 Major quarantee, etc. Unethical

**Behaviors** 

#### Information Manipulation

Distortion of sales and profit, coverin up safety accidents, data forgery for fulfillment of KPIs, etc.

#### Embezzlement

Embezzlement or misappropriation of company funds such as deposits or advance payment for housing leases, egitimate use of company assets, etc.

#### Sexual Harassment

Actions violating sexual ethics, such as sexual harassment in the workplace

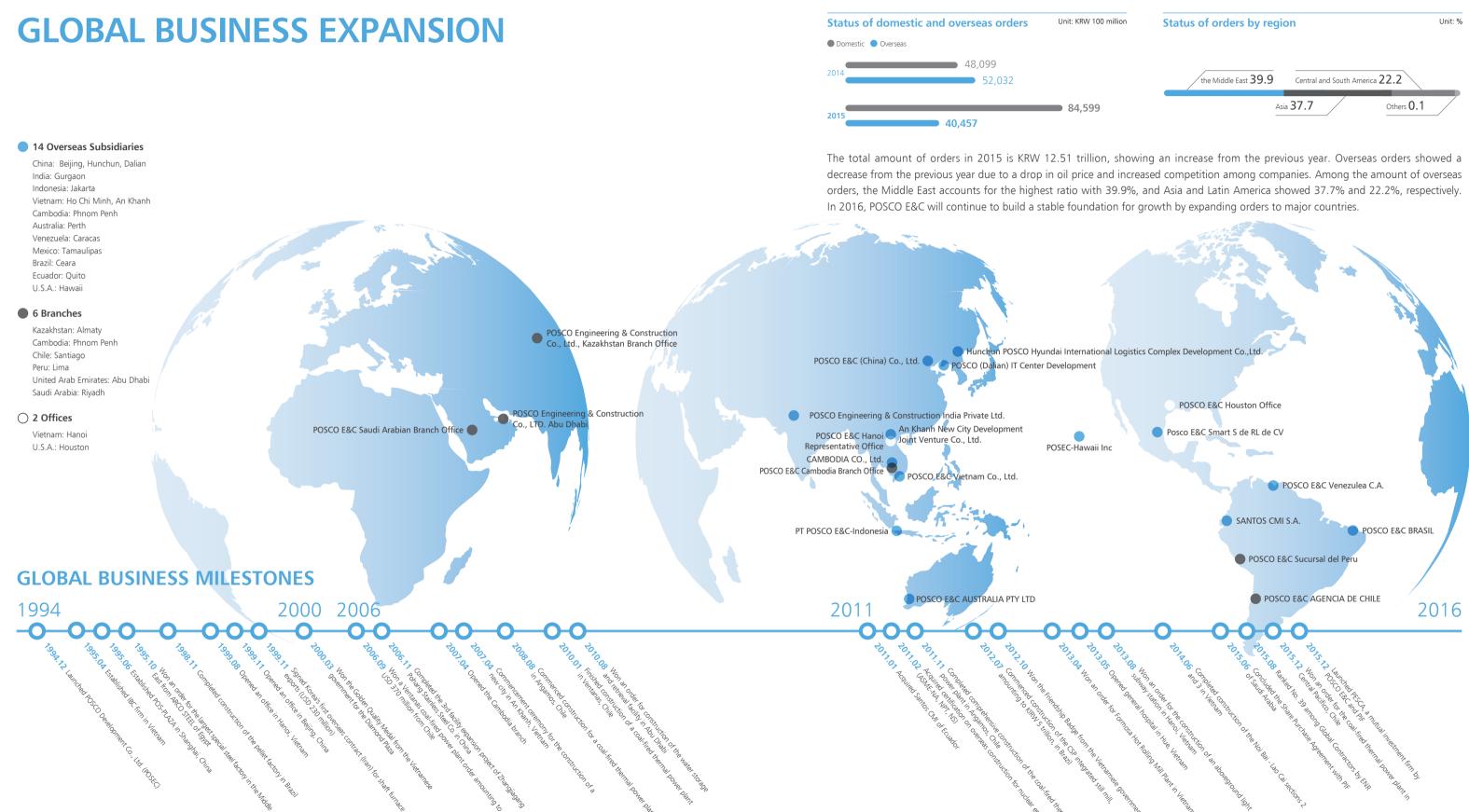
# WE ARE A GLOBAL E&C LEADER

## Reinforcement of Global E&C Competitiveness

- **24** Global Business Expansion
- 26 Myanmar
- 28 Chile
- 30 Poland
- 32 Saudi Arabia



CSP Integrated Steelworks Site in Brazil





The Daewoo Amara Hotel Project is a project for constructing a luxurious hotel with 15 floors and a long-term lodging hotel with 29 floors. The project site boasts excellent natural scenery with a lake, and features excellent traffic access with Yangon International Airport being located nearby.

Most notably, mutual cooperation with POSCO affiliates, including POSCO Daewoo and POSCO A&C, are creating synergy in all processes, from winning an order to construction. Through the successful completion of the Daewoo Amara Hotel, which is being recognized as a landmark in Myanmar, the excellent technology of POSCO E&C will be delivered to Myanmar.

# **MYANMAR**

**Myanmar Daewoo Amara Hotel Project** 

Project Name	Daewoo Amara Hotel Project	
Owner	Daewoo Amara Company Limited	
Contract amount	KRW 195.9 billion	
Beginning of construction	February 2014	
Completion of construction	March 2017 (expected)	



#### **Sustainable Management Performance**

**Environment** | The project site of Daewoo Amara Hotel is located in the Green Zone as selected by the Myanmar's government. Stringent environmental management is being conducted on site, accommodating the situation with increased local attention on environmental protection. A Makeshift fence and double filtering device have been installed so that rainwater and wastewater cannot enter the lake, and automatic watering facilities are under operation in the upper part of the fences in order to restrain the occurrence of scattering dust. Also, the Day of the Environment is being carried out every month in order to practice environmental campaigns with voluntary participation by laborers.

**Safety** | With the focus of improving the awareness of laborers on safety, POSCO E&C is carrying out consistent education and activities for improving awareness on safety. POSCO E&C is operating voluntary safety management programs for business partners in order to expand voluntary safety management to its business partners. Also, it is identifying excellent opinions for safety practice during the weekly meetings attended by all employees and is reflecting them on site. POSCO E&C also strives to establish a culture of safety management by immediately ousting violators of safety rules, while rewarding exemplary laborers.

Employees | Level of engagement by local employees in the organization remains low due to the low level of wages in local regions. POSCO E&C is performing various measures, such as improving the working environment on site and providing incentives for long-term work, so that local employees can feel pride in POSCO E&C. Also, regular discussion meetings are being held with local employees in order to present them with visions customized to individuals and to support them to accomplish such visions.

Business partners | POSCO E&C is making efforts to identify excellent business partners in the region and to form close relationships with them. In the early stage of its projects, POSCO E&C made an accompanied entrance with outstanding business partners in Korea and acquired price competitiveness through sourcing with partner countries in a neighboring region, such as Vietnam and Cambodia. Also, for simple construction work such as makeshift construction, it cooperates with local business partners in order to build mutual trust.

Local Communities | POSCO E&C held a bilateral cultural exchange festival with Happy Builder, its college student volunteer group, and conducted various social contribution activities by sending donations, which have been collected from executives and employees, to disadvantaged neighbors. Also, in order to maintain a long-term friendly relationship, POSCO E&C signed an MOU with the National University of Arts and Culture in Myanmar and has consistently been carrying out activities for cultural exchanges and support.

#### **INTERVIEW**





Agreement ceremony for the reinforcement of safety management



Signed an MOU with the National University of Arts and Culture

With the pride and confidence as the first construction company in Korea to expand into Myanmar, all employees in Daewoo Amara Hotel Project have been overcoming numerous obstacles from the early stages of the project until now with a unified heart. There were absolutely no materials that could be procured from local regions, and the infrastructure was so lacking that electricity was cut off multiple times a day. Also, concrete placement and entry of large vehicles were allowed only during the nighttime, and there were various difficulties in the process of licensing and import clearance. Using the past experiences on overcoming numerous difficulties as our assets, POSCO E&C will continue to carry out risk management for future projects in a systematic manner. Also, we expect that the assets accumulated through this project will become the basis for receiving orders in the future.

Hyun Ik Choi, Site manager at Daewoo Amara Hotel Project



# **CHILE Cochrane Thermoelectric Power Plant Project, Chile**

Project Name	Cochrane Thermoelectric Power Plant Project, Chile
Owner	AES Gener
Contract amount	KRW 1,059 billion
Beginning of construction	April 2013
Completion of construction	October 2016

Among the difficulties such as desert construction, application of stringent seismic design, difference in labor customs, and sensitive environmental regulations, the Cochrane Thermoelectric Power Plant Project has been operated smoothly because of the experience in local construction of POSCO E&C and its advanced technology and is looking forward to the completion of construction in October 2016. The successful completion of construction will contribute not only to the local economy but also to the development of the national economy in Chile, while increasing the reputation of POSCO E&C in the region of Latin America.



#### **Sustainable Management Performance**

Environment | In order to satisfy the stringent environmental regulations in the project site, POSCO E&C is thoroughly performing environmental management activities such as minimizing the occurrence of fine dust, preventing soil pollution from oil leakage, recycling waste, and protecting biodiversity. Also, it is performing periodical monitoring on the quality of discharged water in order to examine changes in the ecosystem and coastal environment near the site. POSCO E&C plans to continue observing the environmental changes due to the operation of the power plant until the comprehensive construction of Unit 2 is completed.

Safety | POSCO E&C is performing various activities to practice voluntary safety management on site. It is appointing employees by section to examine the status of safety management on a regular basis, and is conducting detailed examinations on safety through monthly safety inspections and facility management inspections. Also, it strives to spread the culture of safety on-site using the Safety Award and hand printing event for practicing safety.

**Employees** | POSCO E&C is maintaining a close relationship with local employees by conducting supportive activities that consider local cultural characteristics. It is conducting monthly discussion meetings in order to promote mutual understanding, and is hosting an end-of-the-year event for organizational revitalization with all workers on site.

Business partners | POSCO E&C strives to establish a close relationship with local business partners based on communication. It strengthened mutual bonding that employees of POSCO E&C and business partners participated in, as well as an event for celebrating being accident-free for 6 million working hours. Also, it has been reviewing major safety and environmental issues through weekly meetings with business partners and has been performing improvement activities.

Local communities | POSCO E&C is conducting various activities for improving the welfare in regions surrounding the project site. It delivered relief supplies to city of Antofagasta for recovery from fire, and supported the city of Mejillones with soccer supplies and lunchboxes for disadvantaged neighbors in the region. POSCO E&C has been providing support for revitalizing the local community in a consistent manner, such as presenting Christmas gifts for children in public kindergartens of Mejillones.

## **CASE** Performance of Emergency Drills





Awarded the safety award



Delivered relief supplies for recovery from a fire in Antofagasta

A prompt and systematic response to emergency situations, such as fire, earthquakes, and tsunami, can minimize risks. In the project site, POSCO E&C established an integrated emergency plan for disasters and calamities, and conducted emergency contact and escape drill for earthquakes, tsunami, gas explosions, fire, and gas leakage from hazardous facilities with its workers. Furthermore, it is paying utmost attention in maintaining and managing escape routes and rendezvous points.



Krakow Waste Thermal Treatment Plant Project is the largest environmental development project in Poland for converting daily waste into energy. It is a project for constructing an ecofriendly incineration plant for utilizing daily waste into renewable energy such as heat and electricity. Using the plant, the City of Krakow can incinerate approximately 220,000 tons of daily waste per year, and can use the incineration heat to generate to produce approximately 11MWh of electricity. POSCO E&C successfully completed the project in June 2016, it has gained a foothold for preemptively occupying the environment market in Poland and Eastern Europe.

And the A start

# POLAND

Krakow WTTP (Waste Thermal Treatment Plant) Project in Poland

Project Name	Krakow WTTP (Waste Therma Treatment Plant) Project in Po
Owner	Krakowski Holding Komunalr
Contract amount	KRW 222.6 billion
Beginning of construction	November 2013
Completion of construction	June 2016



#### Sustainable Management Performance

**Environment** | POSCO E&C made efforts to satisfy the stringent environmental standards in Poland, Notably, through the thorough environmental management on site, it was acknowledged for its superior level of environmental management status from the inspection by the local environmental protection agency of Krakow (WIOS, Wojewodzki Inspektorat Ochrony Srodowiska w Krakowie). Also, POSCO E&C conducted events for the Day of Environmental Inspection on a regular basis in order to keep the site clean.

**Safety** | In order to ensure safety management in the broad range of working environments, employees of POSCO E&C engaged in voluntary safety management by keeping the safety rules on their own. A local safety manager who can ensure smooth communication with laborers was employed on site to monitor the status of safety performance. Also, efforts have been made to establish a culture of safety with voluntary participation by facilitating organic channels of communication, such as regular monthly meetings with safety managers from business partners as well as awards for laborers who exhibit excellent safety practices.

**Business partners** | Waste Thermal Treatment Plant Project is a project participated in by approximately 110 business partners. POSCO E&C minimized the inconveniences of business partners through stringent construction management, and prevented a delay in the construction period due to interference of work. Also, it built a database on outstanding business partners in Poland in order to acquire competitiveness for future projects.

**Local communities** | With the Korea Foundation for International Culture Exchange, POSCO E&C performed the 'Global Harmony' activity in Krakow for spreading the Korean Wave and fostering cultural exchange. Happy Builder, the college student volunteer group of POSCO E&C, and student volunteers from Jagiellonian University performed various social contribution activities such as a cultural exchange festival, education on Korean culture, and donation of multimedia materials. 900 citizens in Krakow participated in the cultural exchange festival, experiencing a variety of Korean culture such as K-POP dances and songs, Taekwondo, and fan dances. Also, cultural contents of Korea, such as dramas, films, and K-POP, were delivered to promote the Korean culture, and 20 computers were donated in order to improve the multimedia educational environment in Krakow.

## **FOCUS** Received the SARP Awards of the Year and Public Investment Award

Krakow Waste Thermal Treatment Plant received the 'SARP Awards of the Year 2015' from the Association of Polish Architects. Also, it received the Best Top 10 Public Investment Award in 2016 from Portal dowy, a website which posts public activities by the Polish government. Such achievements reflect the domestic and foreign acknowledgements on the excellent technical capacity of POSCO E&C, including the outstanding design of the power plant.



Awarded laborers who exhibited excellent safety practices on site



Hosted a cultural exchange festival



# SAUDI ARABIA **POSCO E&C Saudi Arabia LLC**

It is forecasted that countries in the Middle East will reduce new orders in oil refinery and petrochemical plants and to increase investments in projects other than oil projects. Notably, the Saudi Arabian government announced its plan for supplying 150,000 housings for the next 7 years, with the intention to expand investment on social infrastructure such as roads. In such environment, POSCO E&C is putting significant efforts in expanding its businesses in the Middle Eastern market, marked by the gradual increase in the ratio of order amounts in Middle East in relation to total overseas order amounts, from 5.8% in 2011 to 26.5% in 2015.

POSCO E&C signed a stock transfer agreement with PIF (Public Investment Fund), the sovereign wealth fund of Saudi Arabia, to win foreign investment amounting to KRW 1.24 trillion, and made a mutual investment at Riyadh, Saudi Arabia, in 2016 with PIF to establish PECSA (POSCO E&C Saudi Arabia). Aiming to grow as a competitive company in the technology, capital, and workforce market in Saudi Arabia, PECSA announced its vision in 2016 as 'Most Attractive E&C Solution Provider'. PECSA is accumulating the business experience in the Middle East and is promoting the reinforcement of competitiveness based on a close relationship of cooperation with the head office.

In the future, PECSA will participate in major construction projects ordered by the Saudi Arabian Government, such as the construction of hotels, new cities, and railroad infrastructure, and will expand its area of cooperation to the development and plant businesses. Through its expansion to the Middle East, POSCO E&C will acquire profitability and security, and Saudi Arabia will gain construction capabilities due to the transfer of advanced construction technology from POSCO E&C, leading to a lasting relationship of mutual cooperation.



PECSA CI launching and office opening ceremony

#### **Activities and Efforts for Solidifying Local Foundation**

Acquisition of talented human resources | PECSA is performing various activities to acquire outstanding human resources. It is employing talented new employees and experienced Saudi Arabians through recommendations from King Saud University, a prestigious university in Saudi Arabia, utilization of a job fair associated with the Saudi Cultural Bureau, and acquisition of experienced personnel. Through such efforts, POSCO E&C will strengthen its business competitiveness by acquiring talented human resources while complying with mandatory employment policy of Saudi Arabians (Saudization).

Programs for the most competent HR scheme | POSCO E&C is carrying out comprehensive programs to help Saudi Arabians to grow as PECSAnians with increased capabilities. It developed a career development program so that its employees can choose tasks that fit their aptitude, preference, and expertise. If the development of mandatory capabilities is required, POSCO E&C assigns them with career coaches and provides task education in order to provide active support for improving the expertise of its employees.

#### **INTERVIEW**





Team-Building event

As people from various countries work in PECSA, PECSA values mutual respect, understanding, and communication more than anything else. All official meetings in PECSA are conducted in English, and cooperation and communication with Korean employees are actively being carried out. Also, POSCO E&C is helping new Saudi Arabian employees to adapt to the company easily. For example, it is conducting weekly task training and mentoring activities with Korean mentors. Also, it offers teambuilding activities that provide opportunities for forming relationships of bonding among the employees and help them understand different cultures, offering its employees with a great deal of help in adapting to the company. Furthermore, POSCO E&C is utilizing CDP (Career Development Path) and IDP (Individual Development Path) programs for career task development in order to check individuals' task capabilities, which will used as foundations for making consistent improvements in capabilities and for growing as an excellent resource that plays core roles together with PECSA.

#### Asem Saleh A Alshuwirkh, PECSA Staff



Site of the Ha Tinh steel mill, Vietnam

# WE BUILD VALUE TOWARD GROWTH

# Fostering of Sustainable Growth Engine

- **36** Financial Soundness
- 38 Quality Management
- **42** Technology Competitiveness

# **Financial Soundness**



In order to cope with situations of uncertain economic conditions in and out of the country as well as increased competition, having a strong corporate financial structure is critical. Companies are striving to improve their financial soundness through methods such as acquiring cash liquidity and reducing the debt ratio. Also, efforts are being made to improve project profitability and acquiring consistent sources of profit, not just making superficial growth.

## **2015 KEY FIGURES**

Debt ratio Unit: %	95.3
Cash reserves Unit: KRW 100 million	12,654
Borrowings Unit: KRW 100 million	6,000

#### **Efforts for Acquiring Financial Soundness**

In order to prepare for a sustained trend of low-growth in the global economy and a long-term recession in the domestic construction industry, POSCO E&C is making more efforts to improve its financial soundness, rather than making superficial growth.

**Improve profitability** | POSCO E&C aims to prepare for a decrease in profitability that is caused by the drop in order volume and losses in large projects due to the trend of low growth in and out of the country. In order to improve profitability, POSCO E&C is making company-wide efforts to improve cost profitability, such as reducing labor costs and expenses in project budgets, minimizing occurrences of additional costs, and reinforcing enforcement principles for cost operation. Also, the company is identifying and making improvements in items for additional reduction in costs by rechecking any wasteful or inefficient factors in cost operation.

**Reduce account receivable** | POSCO E&C is reducing accounts receivable in order to acquire financial soundness. Notably, the company is preventing revenue from occurring in unclaimed construction and is striving to eradicate preemptive capital input for the purpose of increasing revenue.

**Maintain cash flow for operations** | POSCO E&C is responding quickly to the possibility of problematic situations by managing key indicators, such as accounts receivables and unclaimed long-term receivables. Also, the company is rewarding projects with high evaluation results in order to promote the use of the Health Check System, which manages financial risk factors in all processes of the project, at more sites.

#### Efforts to Secure Stable Revenue

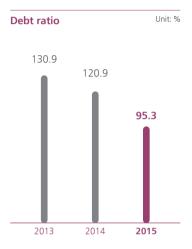
**Improve core capabilities on site** | Having a superior workforce on site is a critical factor in acquiring stable revenue. POSCO E&C is carrying out career development programs for ensuring a core workforce on site, such as PM (Project Manager), SM (Site Manager), and public affairs, and is reinforcing its training curriculum with an aim to boost capabilities.

**Prevent insolvent orders** | In order to induce consistent growth of the company through highquality project orders, POSCO E&C is conducting phased management which consists of order information (Seeding), order development (Nurturing), order performance (Cultivating), order forecast (Forecasting), etc. Using such management, the company undertakes improvement efforts such as materializing information acquisition, progress stage segmentation, aggregation of order status by HQ, department, and employees, and automated forecasting of orders.

#### Future Plans



POSCO E&C will carry out various efforts in order to maintain an outstanding financial structure. To prepare for any liquidity crisis, the company will maintain a surplus of operating cash flow and will make concentrated management on key indicators such as accounts receivable and unclaimed construction. Also, continuing its efforts in 2015, POSCO E&C will make consistent reinforcements of the Health Check System on projects to contribute to financial soundness.



# **Quality Management**



In the intensely competitive global market, excellent quality and service are critical factors for gaining an advantage over the competition. In order to gain such factors, active investments are being made on efforts for achieving organizational innovation and instilling executives and employees with a spirit of professionalism. In the construction industry, activities for maintaining excellent quality that consider a variety of factors, such as characteristics of the local environment by project and demands from the owner, are required.

## **2015 KEY FIGURES**



## System for Quality Management

With the vision 'Operating a global standard quality support system and establishment of POSTIM<sup>1)</sup> for improving profitability, POSCO E&C aims to making contributions to creating superior customer values and management outcome. In order to accomplish this, POSCO E&C is conducting various activities by setting 'enhancement of the maturity of quality management', 'operation of an advanced quality support system', and 'execution of innovative activities that focus on profitability' as its core strategies.



#### 1) POSTIM (POSCO Total Innovation Methodology): An integrated methodology for innovation by POSCO affiliates

#### **Enhancement of the Maturity of Quality Management**

Execute quality management strategies | In order to practice 'The POSCO Quality', the quality charter of POSCO affiliates, POSCO E&C is carrying out improvement tasks by sector of 3 major core values (Customer Inside, Basic Inside, Synergy Inside), conducting 8 tasks such as improvement of wasteful business processes and establishment of voluntary quality improvement activities in all sites. Based on such efforts, POSCO E&C gained 876 points in maturity of quality management, receiving the Excellence Award in POSCO Affiliates Quality Management.

Improve level of quality management on site | POSCO E&C is carrying out early-stage education for newly opened sites in order to support the stable establishment of an on-site quality management system, and is examining the level of quality management by making regular diagnoses. Biannual quality diagnoses are being made on all domestic sites, and their results are reflected in HR evaluations, with awards being given to excellent sites once every year. In 2015, POSCO E&C gained 84.5 points on the POSCO affiliate quality level assessment, an increase from the previous year, due to its efforts on educating accident case studies, such as the collapse of supports and use of defective materials by other companies, and making preemptive quality diagnoses.

## FOCUS Enable Improvements in Wasteful Business Processes

conducted education on process owners, improvements on made improvements in a total of 336 cases. wasteful factors, inspections on operation status of core processes,

Total 336

Business improvement 11

POSCO E&C is identifying wasteful factors and is making proactive and performance evaluation, in sequence. In 2015, POSCO E&C improvements by examining the validity of company-wide business identified company-wide wasteful processes according to principles, standards. In order to identify wasteful factors, the company of nullification, reduction, simplification, and standardization, and

	Standard absence 22		Unit: cases
Standard error 140		Redu	indancy 56

#### **Operate an Advanced Quality Support System**

Nurture professional workforce with global quality | POSCO E&C is nurturing a professional workforce with global guality in order to gain the eligibility of having a guality management officer employed as required by advanced owners abroad (AES. Aramco, etc.): It currently possesses a professional workforce with international certifications, including 17 internationally certified certification evaluators<sup>1)</sup>, 15 project management experts<sup>2)</sup>, 16 foreign language experts, and 4 international welding inspectors<sup>3)</sup>.

1) IRCA (International Register of Certificated Auditors) 2) PMP (Project Management Professional) 3) CWI (Certified Welding Inspector)

**Deployment of on-site professional workforce on quality** | In order to satisfy the requirements by advanced owners, such as the application of the ASME<sup>1)</sup> Code, POSCO E&C is supporting stringent quality management on site by deploying experts affiliated with quality management groups. Quality managers are responsible for establishing and operating quality management plans on site, managing defective goods and processes, and making technological reviews on international standards and codes being applied.

1) American Society of Mechanical Engineers

Special support on sites in early stages | POSCO E&C is providing special support activities on sites in their early stages so that on-site quality management can be operated systematically according to international standards like ISO. When a business site launches, an exclusive organization which supports the writing of quality documents, such as quality management proposals, is created. Also, education on capability improvement is provided to newly recruited quality managers.

#### **Innovative Activities Focusing on Profitability**

Employ POSTIM | POSCO E&C is carrying out POSTIM (POSCO Total Innovation Methodology), an innovation system that is common throughout the POSCO affiliates, with the purpose of overcoming crises and making consistent growth. Based on POSTIM, the company performs activities in the areas of PWS<sup>1</sup>, cQSS<sup>+2</sup>, and SWP<sup>3</sup>, revitalizing innovation activities and contributing to improvements in financial performance. In 2015, POSCO E&C gained achievements such as the Excellent Project Award on PWS and Excellent Group Award on cQSS<sup>+</sup>.

#### History of innovative activities

		2010
	2008	$\rightarrow \rightarrow \rightarrow \rightarrow$
1995		cQSS <sup>+</sup> on-site
$  \mathbf{b} + \mathbf{b} + \mathbf{b}  $	VP activities	improvement activities
Proposed activities,		00.000

#### Maior outcomes of innovative activities in 2015

Classification	Content	Major performance
PWS	Conducted the Innovation POSCO Project for improving order ratio and profitability	Created financial performance of KRW 42.6 billion by conducting 53 IP projects
cQSS <sup>+</sup>	Risk mitigation activities in cost, quality, speed, and safety in construction sites	Contributed to cost reduction of KRW 124.3 billion by conducting 4,370 performance suggestions
SWP	Streamlined business by improving wasteful practices	Improved 336 cases of wasteful business processes

1) Project-based Working System: Business method that works based on projects 2) Cost, Quality, Speed, Safety: Cost reduction and risk mitigation activities in areas of cost, quality, time, and safety 3) Smart Workplace: Activities for creating a Smart business environment

## CASE Special Support for the Saudi Aramco Project

In order to actively respond to the requirements of foreign owners, POSCO E&C has formed special support for the Saudi Aramco Project using its professional workforce with gualifications on evaluating international certifications. The professional workforce made evaluations according to international standards, wrote planning and outcome reports, identified problems and suggested improvement in order to prevent the risk of breaching the contract. Also, it supported Pre-Qualification (PQ) evaluations for overseas business partners, minimizing delays in processes and ensuring the trust of the owners.



Support for the Saudi Aramco evaluation

#### **Future Plans**



In order to quickly respond to amendments for international standards regarding quality management systems, POSCO E&C plans to carry out certification conversion on ISO 9001. It also plans to reinforce preliminary assessments on testing institutions in order to prevent forgery and falsification of testing reports on defective materials, which have been increasing as of late, and to enhance the reliability of quality. Furthermore, POSCO E&M will encourage participation by all executives and employees on POSTIM activities in order to exceed the company-wide operating profit target and to maximize management performance.



# **Technology Competitiveness**



POSCO E&C is acquiring core technology related to its businesses and is making long-term investments in order to make consistent growth and to acquire future competitiveness. Furthermore, it is preparing the methods for developing new growth engines and for pioneering new markets. Regarding the overseas construction market, POSCO E&C is achieving cost reduction by developing new technology and methods among the intense competition for new orders, and is making differentiated competitiveness for orders and improvements in profitability. Pohang Iron and Steel Co. FINEX 3 factory

47

## **2015 KEY FIGURES**

R&D investments Unit: KRW 100 million	437
Cost reduction using developed technologies Unit: KRW 100 million	, 148

Registration of new patents Unit: cases

#### **R&D Strategies**

POSCO E&C is establishing 'Acquire a differentiated competitive advantage based on technology' as its mid-term technological target. The company is reinforcing market initiatives in its leading areas that have been acknowledged for their excellent technological capability based on consistent R&D investments. In addition, the company actively reflects customer's demands, working to develop new technology such as the convergence of eco-friendly, high-efficiency technology and ICT technology.



#### **Major R&D Achievements**

**Localize technology for cable construction and control for cable-stayed bridges** | POSCO E&C is the first company in Korea to localize an MS (Multi-Strand) tension cable system<sup>1)</sup> for construction of cable-stayed bridges, a technology that had previously been relied on advanced companies located overseas, thereby achieving successful technological independence. The result of applying the technology on projects showed that it produced superior precision, work performance, and operation stability compared to those of foreign technology. This technology is being applied on the Gwangyang Taegeum Bridge and Nohwa - Gudo Bridge for cost reduction.

1) Device and construction technology which controls equal tension to be applied on multiple strands that compose the cables in cable-stayed bridges

Apply new technology in urban construction | For urban construction which faces a high floating population, many civil complaints from the local community arise regarding the stability of surrounding buildings as well as the occurrence of noise and dust. In order to address such issues, POSCO E&C successfully applied a top-down method<sup>2)</sup> that uses high-strength concrete filled steel tubes<sup>1)</sup> in the site of 'Busan The Sharp City Avenue' for the first time in Korea. The improved performance of the materials reduced construction costs by 35%, and the construction period was reduced without any delays caused by civil complaints. 1) Concrete Filled Steel Tubes: Composite column (Synthetic pillar) with increased material strength and stiffness(hardness) by filling concrete in a cylindrical steel tube 2) Construction method (Technique) which performs underground and ground constructions at the same time in order to reduce construction period and secure the stability of surrounding buildings.

**Establish a system for utilizing the construction steel solutions** | In order to expand the construction steel<sup>1)</sup> market, POSCO E&C has established a close coordination system with POSCO affiliates and is actively utilizing construction steel solutions. The company published a POSCO construction steel solution guidebooks and distributed them to its employees in order to expand its application on site, identified specialized companies for structural steel design, and provided technical education. In 2015, POSCO E&C successfully utilized 85,000 tons of construction steel on 38 projects.

#### **Future Plans**



In order to enhance the competitiveness of the parent company and to build the foundation for future growth engines, POSCO E&C established technological strategies including differentiation of competitiveness by the parent company, improvement of project profitability, and enhancement of technological coordination. POSCO E&C will accomplish differentiation of competitiveness by the parent company by concentrating core engineering capabilities for steel structure and by acquiring design capabilities that have high added value. Also, it will improve profitability by expanding the application of a test bed for specialized technology on steel structures and by commercializing the technologies developed for cost reduction. Furthermore, POSCO E&C will enhance technological coordination by establishing mid-term technological strategies among POSCO affiliates and Implementation of technology management system for sharing R&D Infra.



Concrete Filled Steel Tubes



# WE BUILD VALUE FOR GREEN TOMORROW

# Fulfillment of Safety and Environmental Responsibilities

- **46** Safety and Health Management
- **50** Environment-friendly Management

# Safety and Health Management



As characterized by the Corporate Manslaughter and Corporate Homicide Act in the UK and Protecting America's Workers Act in the US, the governments and the private sectors in developed countries make efforts to impose liabilities on companies with industrial accidents and to make systematic activities to fundamentally reduce the occurrence of accidents. The Korean government newly created the Ministry of Public Safety and Security as well in order to reinforce policy management for ensuring safety and health. We need to recognize that safety accidents in construction sites can pose significant impacts on the survival of the company and need to make efforts for establishing voluntary management on safety and health by spreading a culture of safety.

## 2015 KEY FIGURES

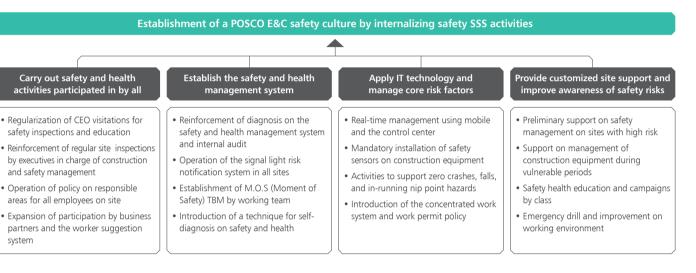


70

Performance assessment on activities for preventing industrial accidents Unit: Point

### System for Safety and Health

Recognizing 'Respect for humanity' as its utmost value, POSCO E&C is striving to create a workplace free of accidents. With the goal of 'Establishment of a POSCO E&C safety culture by internalizing safety SSS activities (Self-directed Safety Spread)', POSCO E&C is carrying out various activities for creating clean and safe working environments.



## **Culture for Practicing Safety**

**Exemplary safety activities by the management board |** The CEO is promoting safety activities by demonstrating his intention on executing solid safety measures. In 2015, he visited construction sites at least once a month, conducted safety inspections and education and encouraged the employees to actively participate in safety and health improvement activities. The executives in charge of construction management also regularly performed activities for supporting sites with high risk and vulnerabilities for safety management.

**On-site safety management** | POSCO E&C is practicing on-site safety management which is voluntarily participated in by all classes, including workers on site. Safety inspections and education administered by the site manager is being held repeatedly at least once a week. All managers are assigned with responsible safety areas to reinforce daily safety patrols during vulnerable periods. Also, POSCO E&C is practicing safety management led by the workers, where workers directly check and minimize risk factors before working. They can request that the manager install or reinforce safety facilities, and can refuse to work if no actions are taken.

**Establishment of the coordination system for accident prevention** | POSCO E&C has established a cooperation system with POSCO affiliates, including POSCO, POSCO Engineering, POSCO Plantec, POSCO ICT, and POSCO A&C, and is holding information exchange meetings on a regular basis. In 2015, POSCO E&C made presentations on excellent cases, such as the development of a safety management mobile app and segmentation of management criteria for construction equipment, and shared outcomes and self-reflection points of safety activities, contributing to an enhanced level of safety management for group affiliates.

#### Safety and Health System

Self-directed Safety Spread (SSS) activity participated in by all | The SSS (Self-directed Safety Spread) activity, an activity for spreading the culture of safety practices, is in progress, directed by all people from the management board to workers in business partners. Breaking away from passive safety activities directed by instructions, all people, including the management board, site managers, support departments in headquarters, and workers in business partners, are taking the initiative to involve themselves in the safety activities.

Worker-directed M.O.S TBM | TBM (Tool Box Meetings) led by workers are being held in order to check issues related to safety on their own and to make it a habit to work with safety, all with the purpose of creating workplaces free of accidents. Before commencing work every morning and afternoon, all workers conduct a self-diagnosis on risks through 'daily checks on the risk diagnosis and safety rules', and engages in M.O.S TBM, which means 'Moment of Safety', to check individual safety and health equipment.

#### M O S TBM



Introduction of process-centered safety assessment policy | To create an environment which makes safety practices necessary, POSCO E&C introduced a safety assessment policy that focuses on process, in order to spread the awareness that safety depends on efforts for preventing accidents, not on luck. In order to consider the level of daily safety management and the specificity of plans for preventing recurrence, additional to the previous focus on sanctions as a result of accidents, POSCO E&C is checking the fulfillment of safety activities through biannual surprise site visitations for all sites.

Education customized by class | POSCO E&C is conducting customized education by class so that all employees will practice safety management in a voluntary and self-directed manner. In 2015, 109 site managers (SM) and project managers (PM) received education for sharing cases of safety culture and for reinforcing leadership, and 249 management supervisors received education on reinforcing safety mindsets and execution skills. Also, education on safety management was provided to managers in areas with poor management, including model house assembly/disassembly and defect repair.

Establishment of the health management system | Construction sites, which deal with various risks including exposure to chemical substances, treatment of heavy goods, and work in closed areas, require special care for workers' health. POSCO E&C appointed health managers in all construction sites to conduct on-site health management tasks, such as managing dangerous substances, improving working environments, and providing first aid and health counseling.

#### **Outcome of developing safety** education contents

Classification	Number of cases
Awareness on safety risks	13
Safety policies and activities	15
Safety businesses	88
Other	51

Management of Safety and Health for Business Partners

Support for safety and health for business partners | Industrial accidents that occur in construction sites may threaten the precious lives and health of workers of business partners. With the determination to ensure that all workers can return to their families safely after completing their work, POSCO E&C is focusing all of its capabilities on creating a clean and safe workplace, and is creating various forms of support to establish a system for conducting safety and health activities directed by business partners in their early stage. Separate expenses for safety management are being provided according to the cost and difficulty of construction by business partner. For business partners with a subcontracting amount larger than a certain criteria, safety managers, whose labor costs are provided by POSCO E&C, are appointed in order to prevent financial burdens on business partners.

Constant assessment of safety activities of business partners | POSCO E&C provides incentives to companies with outstanding safety management in order to stimulate engagement in safety activities. Safety managers in their responsible areas are evaluating items for safety management, including monthly plans for safety work, fulfillment of TBM, management of unsafe actions, and activities by head offices of business partners. Based on the assessment results, rewards are provided and plus points are given upon bidding. POSCO E&C plans to perform stringent assessments on capabilities of business partners on safety management so that only companies that possess fundamental capabilities on safety management can participate in construction.

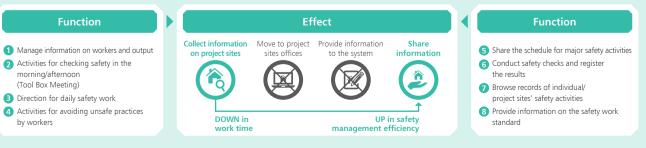
#### Future Plans



POSCO E&C plans to expand its safety activities to be participated in by all classes from the CEO to on-site workers, and to enhance the level of executing safety and health practices. Notably, in order to establish a culture of safety, business partners will be required to possess basic capabilities on safety management before participating in construction. Also, structural safety management will be enhanced by reinforcing the safety roles and process of construction managers so that safety management will be internalized in the business process. Furthermore, POSCO E&C will efficiently operate M.O.S TBM so that all workers on site will be able to make it a habit to perform a self-diagnosis on risks and practice of safety rules. The company also plans to upgrade its safety management system using IT technology such as drones, CCTV, and a mobile app.

#### **FOCUS** Establishment of the Real-time Safety Management System Using IT

management. Daily safety instructions for workers, improvements contributions to prevent accidents.



POSCO E&C is operating a mobile app on safety management as in unsafe actions and facilities, results and schedule of safety an effort to create an environment that practices real-time safety inspections, etc., are shared in real-time in order to make practical

# **Environment-friendly Management**



Eco-friendly soundproof panels in the construction site of Hana Bank's head office

Social concerns of stakeholders on environmental issues, such as climate change, resource depletion, and environmental pollution, are rising, and governments of countries around the world are strengthening their environmental regulations. The construction industry can make a significant impact on social changes through ecofriendly buildings. Notably, since a lot of equipment is used in construction processes, efforts for energy reduction and environmental protection are in demand.

## **2015 KEY FIGURES**

CO2

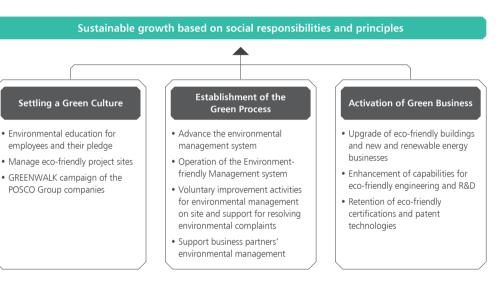


31,614

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

System for Environment-friendly Management

POSCO E&C complies with the 'POSCO Group Environmental Management Policy', which was announced with its group affiliates. The environmental management policy reflects the determination to accomplish sustainable development which considers the environment not only in the production of goods but also throughout corporate activities. Based on its environmental management vision 'Sustainable growth based on social responsibilities and principles', POSCO E&C has set 'Settling a Green Culture', 'Establishment of the Green Process', and 'Activation of Green Business' as its core strategies and is carrying out activities for Environment-friendly Management.

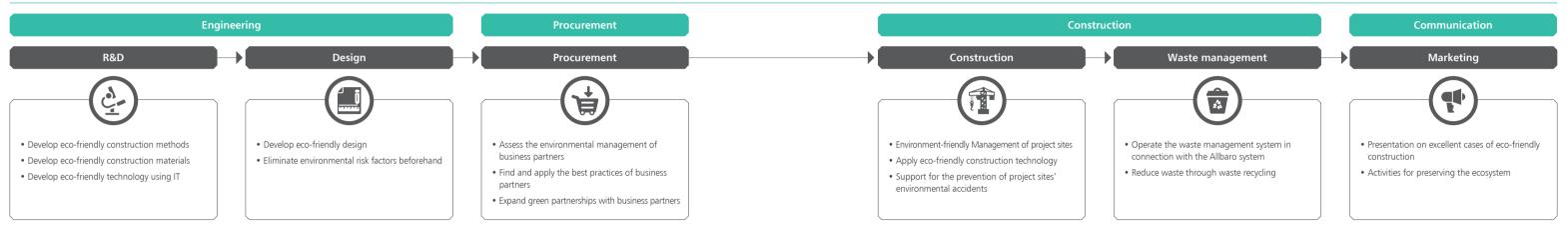


#### **Environment-friendly Management system**

Environment-friendly management system | POSCO E&C renewed and acquired ISO14001 certification amended in 2015, establishing an environmental management system which conforms to international standards, and is operating the POSCO E&C Environmental Management System that is optimized to the construction industry. Using the environmental management system, POSCO E&C performs activities such as making plans, managing performance, collecting and analyzing environmental data, and identifying trends of environmental regulations, and is using the system as a channel for sharing information and enabling communication between the head office and project sites.

Environmental management on overseas projects | Environmental legislation and standards applied in overseas sites are different from those that are applied in domestic sites. Beginning in the stage of receiving the order, POSCO E&C is carrying out stringent environmental management on construction by identifying the environmental legislation and requirements of the country. Furthermore, it has appointed environmental managers in overseas project sites, and is providing education on environmental legislation for employees planning to work abroad.

## Process



#### **Designs on Enhancing Environmental Efficiency**

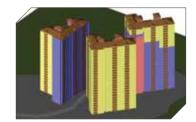
Development of the system for environmental performance and energy analysis | Along with the increase in customers' interests in clean residential environments and air conditioning/ heating costs, POSCO E&C developed a BIM-based<sup>1)</sup> system that analyzes environmental performance and energy in buildings. Using BIM, two-dimensional, planar information can be converted to 3-dimensional designs to put all building information into a database. Such database can be used to make efficient analysis on the environmental performance of the building and to conduct an energy analysis for optimizing air conditioning and heating. In 2015, the system received technology certification from the Korea Green Building Council.

1) Building Information Modeling: Technology which manages building information in an integrated manner

Utilization of eco-friendly design | POSCO E&C is utilizing eco-friendly design to boost energy efficiency and to prevent damage from environmental pollution. For residential complex designs, it applies HEMS (Home Energy Monitoring System) to reduce energy by blocking standby electricity in houses and to create landscape spaces in residential complexes, improving residential environments and reducing urban heat island phenomena. For plant designs, POSCO E&C is utilizing DfE (Design for Environment) which prevents environmental pollution factors such as the leakage of chemical substances and reflects such processes in design. Also, education on environmental regulations and the latest trends are consistently being provided to design managers as an effort to improve awareness of the environment.

#### **Procurement through Green Partnership**

Distribution of guidelines on eco-friendly construction to business partners | In order to improve the level of environmental management by its business partners, POSCO E&C has been producing and distributing guidelines on eco-friendly construction since 2013. The guidelines include information on environmental issues by construction type, criteria for managing the issues, and outstanding cases. Based on the guidelines, POSCO E&C is striving to minimize environmental effects that occur on site by spreading awareness of eco-friendly construction by its business partners.



3D modeling on environmental performance and energy analysis

Support for environmental management for business partners | POSCO E&C is striving to reduce energy usage in the production of construction materials as well as greenhouse gas emissions on site, and to spread Environment-friendly Management to its business partners. Also, it is providing a video education program on environmental management so that executives and employees in business partners can practice voluntary environmental management, and is committing to compliance with environmental management.

## **Construction for Reducing Environmental Effects**

Application of eco-friendly construction method in the urban area | Urban construction may cause damage to residents, such as the occurrence of scattering dust and noise, occupation of roads for pedestrians, and entry of construction vehicles in the urban area. In the construction site of Hana Bank's head office, POSCO E&C successfully applied eco-friendly methods such as soundproof panels<sup>1</sup>, waterscreen<sup>2</sup>, and Complex Top-Down method<sup>3</sup>, minimizing damage to the surrounding community and reducing construction costs by approximately KRW 400 million. 1) Makeshift structure that has an excellent level of safety and soundproof capability as well as an outstanding external appearance 2) High-pressure sprinkling device which suppresses the occurrence of scattering dust 3) Method which uses existing structures to skip backfill process

Application of eco-friendly construction using LED lights | For tunnel construction sites, the appropriate lighting brightness can reduce safety accidents and enable accurate checks on site conditions. POSCO E&C developed LED lights for tunnel construction and successfully applied it on site, improving the working environment by increasing brightness on site. Also, LED lights for construction can reduce energy usage by 71% compared to mercury-containing lights, and can be reused with its excellent dustproof and dampproof properties. The use of LED lights in 4 domestic sites has an expected effect of reducing electricity costs by KRW 150 million per year, and their uses will be expanded in sequence.



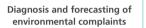
Illuminance simulation using LED lights

# **Response to Climate Change**

#### **Communication for Spreading Eco-friendly Awareness**

Management of environmental complaints through communication with local residents | POSCO E&C is making active communication with local residents living in sites that may experience a high number of complaints due to vibration, noise, blasting, etc. The company holds regular discussion meetings with residents, explaining construction plans and its efforts for accepting and minimizing complaints, and is asking for active cooperation and understanding from the residents in order to alleviate complaints related to the environment.

#### Process for managing environmental complaints



Advance notice and briefing sessions

Proactive solutions for environmental disputes

#### **Future Plans**



In 2016, POSCO E&C will make active efforts to prevent environmental accidents and reduce greenhouse gases by reinforcing its environmental management. The company will make consistent improvements to its environmental management system so as to make preemptive responses towards global standards, and will make more stringent efforts to prevent environmental accidents through voluntary environmental management and preventive activities. Furthermore, in order to reduce greenhouse gases, which is currently receiving increased social attention through climate change agreements, POSCO E&C will practice energy reduction in the head office and in construction sites, and will make efforts to improve methods with the overconsumption of energy.

#### CASE Efficient Response to Civil Complaints through Environmental Improvement

Beomeo Cathedral in commemoration of the 100th anniversary of archdiocese, the first special religious building to be constructed by POSCO E&C, is located in an urban area with a concentrated residential complex such as schools and apartments. During the construction process, POSCO E&C made efforts to comply with environmental regulations on site and to reduce environmental harm to the local community. Beginning with the stage of winning the order, it performed a stringent analysis on the construction site and nearby regions for possible environmental damages. For constructions with possible damages from noise and scattering dust, such as earthwork and frame construction, POSCO E&C notified such information to residents beforehand and received their opinions. Also, it tried to minimize environmental damages by applying eco-friendly methods, installing facilities for reducing noise, and operating facilities for preventing scattering dust, and announced such efforts to the local community. Thanks to such active communication and efforts for reducing environmental effects, POSCO E&C was able to minimize civil complaints and complete the construction without any delays.



Beomeo Cathedral in commemoration of the 100th anniversary of archdiocese

POSCO E&C is leading greenhouse gas reduction using green buildings, renewable energy, and Finex steel plants, and has introduced carbon management in all areas including construction, design, R&D, and procurement. Furthermore, it plans to make preemptive responses on climate change from greenhouse gases by expanding the boundary of carbon management to its business partners.

## **Develop Technology in Response to Climate Change**

**Construct eco-friendly houses** | POSCO E&C is taking the lead in constructing eco-friendly houses in order to accomplish its target energy reduction rate for buildings. Since 2015, the company coordinated with the University of Cambridge to develop an optimal design proposal for zero-energy building, which will be used on designs and projects with scheduled constructions to create zeroenergy buildings. POSCO E&C will continue to develop and apply various eco-friendly technologies in order to enhance eco-friendly housing standards.

Expansion of the POSCO green building | In order to comply with the policies for expanding green buildings and to actively utilize eco-friendly construction methods, POSCO Group developed the POSCO Green Building, an energy-reducing building model. In the future, POSCO E&C will monitor energy usage in buildings to make detailed evaluation on technologies that reduce energy, and will utilize technologies with verified effectiveness on carbon reduction for actual projects.

#### **Program for Spreading Carbon Management to Business Partners**

POSCO E&C was selected by the Ministry of Trade, Industry and Energy for 'Green partnership program'. POSCO E&C is utilizing various support programs to support the establishment of carbon management systems by business partners, and is making efforts to spread awareness on responding to climate change throughout the construction industry.



Establishment of carbon management Development of tools for calculating -@2 greenhouse gas emissions strategies POSCO E&C developed and distributed a greenhouse POSCO E&C established strategies for identifying and improving the level of carbon management in business gas calculation tool so that its business partners can partners. It reviewed a diagnosis checklist for 10 calculate and manage greenhouse gas emissions on their companies, and utilized the results to derive detailed own. Using the tool, the business partners can utilize execution tasks and to support the establishment of lowinformation on business sites, activity data, and data on process by KRW in order to check emission reports and carbon strategies and a roadmap. statements on their own. Methods for reducing carbon in Carbon management performance presentation construction sites and discussion conference with CEOs POSCO E&C performed diagnoses on the sites and systems In order to spread awareness of carbon management by of its business partners to derive energy reduction plans CEOs of business partners and to listen to their opinions



and to support their practical utilization. The company encouraged the practice of carbon management by applying the methods for carbon reduction on site, such as use of devices for preventing anti-idling (Jinduk Construction) and support for writing procurement criteria and manuals for using eco-friendly materials.

on the status of carbon management, POSCO E&C held a carbon management performance presentation and discussion conference. The cases of the Shinil Foundation, Jinduk Construction, Sambo were selected as excellent cases, and relevant information was shared to spread the practice of environmental management.

# WE BUILD SOCIAL VALUE TOGETHER

# **Creation of Social Values**

- 58 Customer Centered Management
- 62 Human Resource Management
- 66 Social Contribution
- 70 Win-win Growth



'Global Harmony' social contribution activities in Poland

# **Customer Centered Management**



Along with diversifying customer needs on products and services, the company is making efforts to provide products and services with better values based on a preliminary analysis of customer needs.

Customers of the construction industry are considering safety and convenience as their priority, and the company is carrying out management activities for customer satisfaction by making preemptive responses to customer complaints.

## **2015 KEY FIGURES**



#### System for Customer Centered Management

In order to enhance customer satisfaction, POSCO E&C is performing various activities with its core values 'Best Efforts (Best)', 'Warm Heart (Warm)', and 'Always On (On)'. Notably, from the stage of winning an order to moving in, the company is conducting activities for achieving customer satisfaction by identifying customers' requirements beforehand.



#### **Preventive Activities for Minimizing Customer Complaints**

**Perform preventive activities** | POSCO E&C classifies projects into the stages of winning an order and sales, construction, and move-in and maintenance, and is performing programs and activities to prevent customer complaints that may occur at each stage. During the stage of winning an order and sales, POSCO E&C provides accurate information to customers in order to prevent embellished advertisements. In the construction stage, the company provides superior products by providing stringent quality management and by reflecting cases of defects and complaints on its Technical Standards. During the move-in and maintenance stage, the company conducts stringent quality inspections and provides move-in management services to allow for convenient move-in.

Quality check process before moving in | In order to ensure superior quality for customers who move in, POSCO E&C is reinforcing its quality inspections prior to move-in. It analyzes cases by processes which yield repetitive or significant defects to select target processes, and performs concentrated defect-prevention inspections on the target processes. Furthermore, POSCO E&C performs quality inspection processes participated in by customers before moving in in order to minimize the discrepancy between customers' expectations and actual quality and to prevent possible defects.

#### **Quality Check Process before Moving in**



58

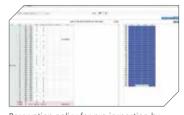


#### **Post-management Activities for Customer Satisfaction**

Efforts for improving the move-in satisfaction level | POSCO E&C is performing various activities in order to improve the move-in satisfaction level for the early stage of move-in for the first three months. Using the 'a pre-inspection reservation system for occupant', customers can examine new houses on the scheduled date with their managers and listen to their explanations. Also, the 'Mobile inspection system' is used to handle defects in the early stages of move-in in a prompt manner. Thanks to such efforts, POSCO E&C achieved 93.4 points in the move-in satisfaction level for 7 complexes in 2015.

Carry out customer-oriented post-management activities | In order to improve the customer satisfaction level within 1 year after move-in, POSCO E&C is identifying customers' requirements and is handling them promptly from the customers' point of view. It is conducting the '24-hour feedback service' which delivers feedback on AS (After Service) within 24 hours, 'Zero-defect campaign' for prompt processing of defects that remained idle for a long time, and 'Call Center CTI (Computer Telephony Integration)' which responds to customers' requirements promptly and accurately in connection with a defect-processing system. Due to such programs, the AS customer satisfaction level on AS achieved 90.8 points in 2015, an increase from the previous year.

Notably, an 'Integrated defect diagnosis system', where relevant departments make a joint diagnosis on sites with significant defects, is in operation, deriving solutions promptly based on diagnosis results to perform repair of defects. Also, the prompt feedback process contributes to minimizing customer complaints, and the feedback results are delivered to the company in order to prevent a recurrence of defects.



Reservation policy for pre-inspection by residents



Establishment of the Call Center CTI

#### CASE 'Onmaum' Service that Reflects Customers' Perspective

POSCO E&C is operating the 'Onmaum service' in order to deliver convenience and relaxation to customers' lives. It provides the Onmaum Clean Service, Daily Service, and Sharing Service to provide services with detailed care and sincerity from a customer's point of view. In 2015, POSCO E&C provided the Clean Service to 4 complexes, Sharing Service to 2 complexes, and Daily Service to 6 complexes.

#### Composition of the Onmaum service

Classification	Content
Clean service	UV-ray sterilization on bed mattresses, cleansing the kitchen oven hood, sterilized cleansing on the bathroom floor drain
Daily living services	Bike repair and knife-sharpening services
Sharing service	Carts situated in underground parking lot



Sharing service

#### **Design Considering Customer Health and Convenience**

**Operate amenities for customers** | POSCO E&C is operating amenities that reflect various customer needs in order to increase daily conveniences for its residents. It is providing spaces like 'The Sharp Kid's Pool', a water activity space for children which provides unique ideas of The Sharp brand, 'Mom's Cafe', a shelter for moms facilitating exchange with neighbors, 'The Sharp Farm Garden' where educational effects and emotional stability can be reaped through the joy of harvesting, and 'Camping Garden', a unique resting space amid a forest.

**Create a clean residential environment |** Based on the brand philosophy of 'Consideration' which truly understands the customers, POSCO E&C is creating a 'value landscaping' where its values increase as time goes by. It provides The Sharp Healing Park, a complex culture park which heals the weary bodies and minds of the residents. Healing Park consists of The Sharp Field, a wide grass plaza located in the center of the complex, falls and brook that bring nature into the apartment area, and a healing trail decorated with flowers and plants. Also, a clean and safe residential environment is created by using eco-friendly floor materials, which pose no harm to the human body, and barrierfree trail.

#### **Protect Personal Information**

Enhance the level of information security | In order to enhance its level of information security. POSCO E&C established an information security system which complies with international standards, acquired ISO27001, an international standard on international security, and passed its post-evaluation. Also, it conducted mock hacking and source code diagnosis on websites related to POSCO E&C in order to identify vulnerable points and to make improvements.

Reinforce the protection and management of personal information | In conducting maintenance on common housing, POSCO E&C manages the personal information of its customers including residents. It is utilizing a stringent level of security policy in order to prevent the leakage of personal information in resident management. Also, in order to comply with the Act on Promotion of Information and Communications Network Utilization and Information Protection, etc as well as the Personal Information Protection Act, POSCO E&C notifies the history of using personal information to its customers and destroys information that remains unused for a long period of time. In 2015, approximately 860,000 items of personal information stored in systems and individual PCs were deleted through information security checks. Security solutions of an equal level to those used for internal employees were applied to personal information consignees, such as pre-sales offices and resident support center, in order to reinforce the level of information security.

#### Future Plans



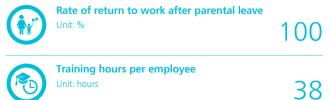
POSCO E&C plans to focus on enhancing competitiveness in preparation for market changes. POSCO E&C will expand activities for preventing customer complaints by reinforcing preliminary inspections in residential sites (Before Service), such as CCS check activities and exhaustive inspections. Also, in order to increase customer satisfaction, the company will strengthen its follow-up management system (After Service) and process defects in a prompt manner by adding new functions in the mobile management system and expanding its boundaries. Through such activities, POSCO E&C will make efforts to maintain its No. 1 status in the Korean Standard-Quality Excellence Index of the apartment sector.

# **Human Resource Management**



HR management is critical in the construction industry where a large injection of workforce and supplies, as well as knowledge from experience, is required. Efforts for making consistent improvements in policy, including impartial employment and assessments as well as HR development are being conducted notably in order to acquire talented. POSCO E&C is making various efforts to develop core capabilities such as expertise, leadership, communication skills, and global skills for all employees.

## **2015 KEY FIGURES**



9.250

Education hours to prevent sexual harassment Unit: hours

## System for Human Resource Management

With the HR management goal 'Creating Another Success Story', POSCO E&C is developing talented human resources with expertise who produce positive changes and innovations.

#### **Creating Another Success Story Global person Creative person** Global person refers to a person with Creative person refers to a person who global capabilities for working on the global stage and with an open mind that respects diversity.

#### **Employment and Assessment of Talented Human Resources**

Impartial employment process | POSCO E&C is operating an impartial employment process in order to build a foundation for the company's long-term growth by acquiring talented human resources. The company evaluates the applicants impartially without making any discrimination based on nationality, gender, religion, race, and age. POSCO E&C conducts public employment for new recruits once a year as well as constant employment for experienced employees.

Operation of the Matrix Assessment System | POSCO E&C is operating a Matrix assessment policy for organizations with high business connectivity that require a close coordination system among departments. Results of Matrix assessments are reflected in the performance assessment, contributing to boosting coordination among departments such as the sales department and PMO (Project Management Office).

#### **Development of Global Human Resources**

Leadership training | POSCO E&C is conducting leadership training in order to develop employees' capabilities required for roles according to position. It offers e-learning education, leadership certification tests, and strategic tasks in order to support the employees in gaining capabilities required for their positions in a preemptive manner.

Global PM (Project Manager) curriculum | From sales to EPC (Engineering, Procurement, Construction) POSCO E&C is operating a global PM development course in order to select and nurture PMs who are capable of working in all stages with a long-term perspective. The course consists of theories, role exercises, and assignments for management of global projects. A total of 31 prospective PMs completed this course in 2015.

Construction management academy | POSCO E&C operates a construction management academy, consisting of 78 courses, by separating business headquarters according to tasks by products and positions. The academy contributes to the development of experts by task, such as sales, E&C technology, PM theme, and management.



makes endless challenges with invincible determination and passion in order to accomplish goals of the highest level and creates new values with unique perspectives and approaches.



#### **Practical person**

Practical person refers to a person who completes his/her task to the end with professional technical skills and insight for the job, as well as healthy awareness of the field.

#### Respect for Human Rights and Communication between Labor and the **Management Board**

Practice harmony between labor and the management board | POSCO E&C is maintaining a healthy and stable labor-management relationship based on Communication, Competency (reinforcement of capabilities), and Care (preemptive management). Aside from operating the labormanagement council, the company actively listens to employees' opinions through regular discussion meetings, and promotes a healthy labor-management relationship through mutual respect and understanding. The ratio of employees subject to application of the collective bargaining agreement in 2015 is 100% to<sup>1)</sup>

1) Ratio that excludes executives not subject to collective bargaining



Operation of a communication channel between labor and management board | POSCO E&C is operating various channels for communication in order to promote a labor-management communication and to spread a positive organizational culture. It is receiving employees' opinions from regular meetings with the labor-management council; a representative organization for employees, and the labor union. Notably, issues related to corporate management and working conditions for employees are being discussed through regular labor-management council meetings. Also, POSCO E&C is conducting activities such as the joint labor-management site visit conference and joint labor-management organization revitalization events in order to create harmony between labor and the management board which focuses on the actual sites of business.

#### **FOCUS** Practicing Respect of Human Rights for Employees

Monitoring on respecting human rights | POSCO E&C Expansion of awareness for protecting human rights | POSCO is monitoring issues on human rights in order to establish an E&C is providing education in order to improve employees' organizational culture which values respect for humanity. It awareness on human rights and its organizational culture. Also, it performs monitoring in the first and the second half of every stipulated the 'duty of due diligence for respecting human rights' year, and identifies people with disadvantaged or uncommon in its guidelines for practicing ethical standards and striving to performances using multidimensional assessments and surveys to prevent the infringement of human rights that may occur from take consequent actions.

the management activities of the company.

#### **Organizational Culture**

Standardization of Position system | In order to realize 'Global One POSCO', POSCO E&C introduced a groupwide common position system. In 2015, it created its P-position system to unify positions, ranks, and tasks, and is utilizing it as a basis of the group's HR management such as transfer and remuneration.

Introduction of the PCP policy | POSCO E&C introduced PCP (POSCO Certified Professional) so that its employees can grow as experts of core technology in their areas, such as legal affairs and accounting. Employees possessing excellent capabilities and professionalism in each area of office work and technical work are selected as PCPs, who are responsible for conducting assignments that can create financial results or managing businesses in specific areas with expertise. In 2015, 8 PCPs on office works and 12 PCPs on technical works were selected.

Extension of the retirement age | Keeping pace with the legislation on the extension of the retirement age, POSCO E&C is conducting a policy on the extension of retirement age under the agreement of its employees. The policy extends employees' retirement age to 60 and utilizes a wage peak system starting at the age of 56. Also, a interim payment system of retirement pension is being operated in order to prevent the decrease in the value of pensions provided. Furthermore, a task conversion system for aged employees is being conducted in order to support aged employees in performing their tasks with effectiveness.

Reinforced support for employees working abroad | In an effort to enhance the satisfaction of employees working in business sites abroad, POSCO E&C is offering various support programs such as support for vacation, housing costs, education expenses for children, medical expenses and incentives for HR assessment. Also, the employees dispatched abroad are converted to employees of local firms so as to boost their sense of belonging as well as their awareness on goals and to

reinforce responsible management by the firms.

#### **Programs for Supporting Employees Working Abroad**

Classification	Content
Vacation and benefits	Vacations for commencing and returning rewards for unused holidays
	• Remuneration paid to employees appoir
Accompanying family members	• Family accompaniment supported for er than 1 year
members	• School expenses supported for children a
Housing and medical	• Housing expenses paid in regular amounts
expense	• Support of medical expenses for the em
Incentives on HR assessments	Additional point granted for promotion     performance assessments

#### Future Plans



In 2016, POSCO E&C plans to proactively respond to changes in the labor environment, such as maintenance of the working policy in preparation to reduce working hours per week and rationalization of an operating system for employing temporary workers. Furthermore, POSCO E&C plans to establish site-centric policies in pursuit of 'the Plus Organizational Culture Campaign', and to reinforce a collaborative system among organizations by establishing and operating the Moving Office.

ng work, regular vacations, family invitations,

- inted alone in overseas sites, working more than two years employees living in commuter areas and working for more
- accompanied abroad
- ts in consideration of standards for housing rent fees by city nployee and accompanied family members
- n during HR assessment and advantages provided in

# **Social Contribution**



Companies are facing demands not only for economic responsibilities, such as the enhancement of profitability and employment, but also on its social responsibilities. As a result, POSCO E&C is carrying out strategic social contribution activities that focus on its strengths and the characteristics of the industry. Creating a relationship of trust with the local community is important for the construction industry, which produces various direct and indirect effects on the local community by operating project sites in a variety of regions. Companies in such an industry need to make active efforts for solving problems and making developments in the local community with a long-term perspective.

K-POP dance education for youth in Uzbekistan

32.1

359

12.8

2015 KEY FIGURES		
	Hours of volunteer activity per employee Unit: hours	
	Number of participants in the talent	



Total amount of donation for 'The 1% Sharing Campaign' Jnit: KRW 100 million

**System for Social Contribution Activities** 

POSCO E&C is performing its social responsibilities as a member of the local community through long-term, not just one-off, strategic social contribution activities. It aims to gain stakeholders' trust by conducting sincere social contribution activities through promoting employee engagement throughout such activities.



### Internalize a Sharing Culture among Employees

1% Sharing Campaign | POSCO E&C is actively engaging in the 1% Sharing Campaign which is participated in by all group affiliates. In 2015, 85% of all employees engaged in voluntary participation, funding a total of KRW 640 million, and the company donated a matching grant with the same amount, donating a total of KRW 1.28 million to the POSCO 1% Sharing Foundation. The donated funds are used for activities for supporting various disadvantaged classes in and out of the country after undergoing a process of reflecting opinions from the steering committee of the 1% Sharing Fund in the company.

Volunteer activities led by the leader class | Since 2015, POSCO E&C has set the volunteer activity target time for executives in order to spread the culture of sharing led by the management board. In 2015, its executives engaged in volunteer activities with an average of 39.8 hours per person. While providing help to the local disadvantaged, the regular volunteer activities, performed along with employees, are also contributing to increased communication among employees.



personal talents. In 2016, a total of 359 people from 12 volunteer team, in order to practice sharing.

Volunteer team	Content	Volunteer team	Content
Little PM	Support career development for youth in Incheon using PM (Project Management) techniques	Improvements in housing environment	Renovation of the housing environment and production of DIY furniture for disadvantaged classes
Basketball	Basketball education for the healthy growth of youth	Clean Ocean	Underwater and waterfront cleaning activity in Incheon and Gangneung regions
Rugby	Rugby experience for disabled children and youth, managed by the POSCO E&C Rugby team	Construction education	Career exploration and career experience education related to the construction industry
Band	Support for cultural exchange festivals in the local community	Drones	On-site education and drone experience for disadvantaged classes
Choir	Choir class for children and cultural performance for disadvantaged classes in the local	Announcers	Host volunteer activity events and participate in TV shows for sharing gratitude
chon	community	Specialized volunteer	
Videos & photos	Longevity photos for elderly people	group	Education and lectures on areas of expertise, including IT, accounting, and legal affairs

partnership

operation nt
nters in

Expand Social Contribution Activities for Overseas Project Sites Support

• Operate Happy Builder, a college student volunteer group Social contribution activities in foreign contries by public-private

## CASE Launching of the Talent Donation Volunteer Group 'Happiness leum'

In April 2015, POSCO E&C launched its 'Happiness leum' talent teams demonstrated their talents in various areas, including Little donation volunteer group, which aims to help neighbors with PM, basketball, choir, videos & photos, improvements in housing difficulties in the local community through using employees' environment, drones, announcers, and a specialized volunteer



#### **Contribute to Local Coordination and Development**

Support for local children's centers in Incheon | Starting with the MOU with Incheon City and Child Fund in 2010, 50 departments of POSCO E&C have made 1 on 1 sisterhood relationships with 50 local children's centers and have been providing consistent support for programs like mentoring, tutoring, and cultural leisure activities. In 2015, POSCO E&C held a memoir contest and children's choir competition for local children's centers and prepared gifts for Children's Day.

Activities for fire prevention and improving the housing environment | Starting in 2013, POSCO E&C has been conducting activities for improving housing environments with the Central Fire Service of the Ministry of Public Safety and Security in order to help people who are vulnerable to risks of fire. In 2015, 30 disadvantaged households across ten regions were provided with safe and sound housing environments.

Support for multicultural families | POSCO E&C has supported various activities so that multicultural families can successfully settle in Korean society and prepare a foundation for economic independence. With the Incheon Metropolitan Police Agency, it is operating 'Dugeun-dugeun Driving', an online educational website that supports obtaining driver's licenses for multicultural families in 7 languages. Furthermore, POSCO E&C is hosting activities for experiencing Korean cultural holidays, in order to facilitate understanding of Korean society among the youth of multicultural families, in effort to create a healthy multicultural society.

01 Education on producing Youth UCC from social contribution activities in Uzbekistan

- 02. Mural drawing activity from social contribution activities in Laos
- 03. Teaching children through 'One & One' activity for supporting local children's centers
- 04. Purification activity of the aquatic environment by the POSCO F&C Clean Ocean talent donation volunteer aroup

Performance of Overseas Social Contribution Activities in 2015

Country		Support	Major p
		• Donated educational equipment and supplies	• Donate in 3 sc
Laos	i	<ul> <li>Cultural education and cultural exchange festivals</li> </ul>	<ul> <li>Provide citizen</li> </ul>
		Medical aid	<ul> <li>Provide kits to</li> </ul>
Thai	le se el	<ul> <li>Supported the multimedia room and renovated school facilities</li> </ul>	<ul> <li>Suppo</li> <li>1 scho</li> </ul>
Inal	land	<ul> <li>Cultural education and cultural exchange festivals</li> </ul>	• Provide by 320
(		• Supported the multimedia room	<ul> <li>Suppo</li> <li>1 scho</li> </ul>
Uzbekistan	Cultural education and cultural exchange festivals	• Provide by 800	
★ Viet	nam	<ul> <li>Supported supplies to disadvantaged classes</li> </ul>	<ul> <li>Suppo by floc</li> </ul>

#### **Expand Social Contribution Activities for Overseas Project Sites Support**

**Operate Happy Builder, a college student volunteer group** | Every year since 2011, POSCO E&C has selected and operated members for 'Happy Builder', a volunteer group that consists of college students, in order to develop global manpower that practices sharing. In 2015, 50 group members who possess foreign language skills, special talents, and high volunteer activity records, participated in cultural exchange activities in Thailand, Laos, and Uzbekistan, as well as in various volunteer activities such as activities for improving housing environments.

Social contribution activities in foreign contries by public-private partnership | POSCO E&C is carrying out vigorous social contribution activities in regions near its overseas project sites by coordinating with Government ODA (Official Development Assistance) organization and embassies in each country. Near the site of hydroelectric power plant in Nam Lik, Laos, POSCO E&C supported the multimedia room, held cultural education and a cultural exchange festivals with Korea Foundation from Ministry of Foreign Affairs, and conducted medical support activities by cooperating with Inha University Hospital. Also, in Thailand and Uzbekistan, POSCO E&C carried out cultural education for youth, provided support for multimedia room, and conducted school maintenance and cultural exchange festivals with the Korea Foundation for International Culture Exchange from the Ministry of Culture, Sports and Tourism.

#### Future Plans



To assist the government's free-semester policy for middle schools, POSCO E&C will carry forward the social contribution such as education programs which emphasize the characteristics of the construction industry and foster future talents through activities such as a children's choir competition. Furthermore, we will fulfill our social contribution overseas as a global company.

#### performance

- ted materials for art, science, and music education chools
- ded education for 280 youth, participated in by 1,000 ens in Vientiane
- ded medical diagnoses, medical supplies, and hygiene o 1,500 residents in 3 villages of Phon Hong
- orted the computer room and cultural contents in ool
- ded education for 192 young people, participated in 20 citizens in Rayong
- orted the computer room and cultural contents in ool
- ded education for 160 young people, participated in 0 citizens in Bukhara
- orted 9,000 items to residents living in areas damaged ooding in the Quang Ngai Province

# Win-win Growth



The government has been emphasizing the coexistence of major corporations and small businesses through legislation and policies like the Fair Trade Act and Subcontracting Act. Also, along with the diversification of business structures in global companies, the importance of networks among companies is rising. For construction companies which conduct projects with multiple business partners, business partners, coexistence, and strategic partnership are critical factors for performing successful projects.

## **2015 KEY FIGURES**

**(** 

Annual support for Industry Innovation Unit: KRW 100 million	<sup>3.0</sup>
Support for the Win-Win Growth Fund (loan performance) Unit: KRW 100 million	284

.2

.3

42.9

Support for performance compensation Unit: KRW 100 million

System for Win-Win Growth

POSCO E&C aims to achieve win-win growth through win-win growth programs targeting to enhance the competitiveness of its business partners as well as fair trade programs that seek to build a lasting relationship of cooperation.

Win-win Growth Program			Fair trade program
Financial Support • Support for performance compensation • Exemption of the warranty claim on contract performance • Network Loan • Win-win Growth Fund	<ul> <li>Technical Support</li> <li>Benefit Sharing System</li> <li>Support for new product development with conditional purchase options</li> <li>Joint patent applications and registrations</li> <li>Techno-partnership</li> </ul>	<ul> <li>Education and management support</li> <li>Consortium education for small businesses</li> <li>Industry Innovation 3.0</li> <li>Win-Win growth support group by executives</li> </ul>	<ul> <li>Introduction and operation of 4 major guidelines</li> <li>Usage of standard subcontracting agreements</li> <li>Operation of the electronic contract system</li> </ul>

#### Major Results of the Win-win Growth Program

Financial Support | POSCO E&C launched its Win-Win Growth Fund in order to support lowinterest loans for business partners with financial instability. Also, in order to promote capital liquidity for its business partners, POSCO E&C makes construction payments, including interim payments, within 10 business days, and is making full payments in cash for small businesses.

Technical Support | Excellent technological capabilities owned by business partners lead to strengthened technological competitiveness for POSCO E&C. POSCO E&C is providing support for enhancing the technological capacities of its business partners, such as joint R&D of techno partnerships, joint application and registration of patents, and technology transfer of its patents.

Education and management support | In order to ensure autonomy and stable management for its business partners, POSCO E&C is operating management support programs such as Industry Innovation 3.0. Also, it is offering various educational programs, such as consortium education for small businesses and education on corporate ethics and safety management, in order to reinforce the capabilities of executives and employees from its business partners.

#### Major results of the Win-Win growth Program

Classification	Details	Performance Support
	Support commission for guarantee	KRW 780 million
Financial Communit	Support performance compensation	KRW 4.29 billion
Financial Support	Win-win growth fund	KRW 28.43 billion
	Application of investment funds for win-win growth	KRW 420 million
Technical Support	Joint R&D of techno partnerships	16 cases for 21 companies
	Joint application and registration of patents	20 cases
	Technology transfer of patents	22 cases for 24 companies
	Operate Benefit Sharing System	8 cases for 8 companies
	Provide free technology consulting and research facilities	2 cases for 2 companies
	Consortium education for small businesses	2,514 persons
Management and educational support	Training for corporate ethics	1,056 persons
	Training for safety management	2,737 persons

#### **Programs for Fair Trade**

POSCO E&C is carrying out programs for fair trade in order to ensure a fair trade system with its business partners. It has introduced and operated 4 major guidelines on fair trade as well as standards for subcontracting agreements. Also, in order to ensure fairness and transparency in contracts, it is utilizing an electronic contract system which systemizes all stages of purchase.

4 major guidelines on fair trade				
Guideline on Signing Contract	Guideline on selecting and operating business partners	Guideline on implementing and operating the internal evaluation council	Guideline on issuing and preserving documents	
<ul> <li>Reflect major items in contractual agreement guidelines, such as the standards on price adjusting and discussion of unit cost, in the contract</li> <li>Make adjustments according to any reasons for change in unit cost, such as increase in the price of raw materials</li> <li>Set the selection criteria for methods of signing the contract</li> </ul>	<ul> <li>Comply with the guideline when registering or canceling agreements with business partners</li> <li>Provide fair trading opportunities</li> </ul>	<ul> <li>Sign contracts for subcontracts accounting for more than 1% of total subcontract amount in the previous year. Evaluate fairness and compliance with the Subcontracting Act in the process of price calculation</li> <li>Evaluate the appropriateness of criteria and procedures for registering and canceling businesses</li> </ul>	Reflect work-related regulations for subcontracting	

#### **CSR Management for Business Partners**

Reinforce the CSR management capabilities of business partners | POSCO E&C is providing active support for the CSR management of its business partners. It is performing examinations in advance on violations of the Fair Trade Act by business partners and is performing activities for supporting the utilization of CP (Compliance Program) by its business partners. Also POSCO E&C supports customer centered management activities and labor management activities.

Reinforcement of Human Rights Management by Business Partners | In order to facilitate oversight of human rights by the employees of its business partners, POSCO E&C is incorporating clauses for human rights protection from global standards, such as the Universal Declaration of Human Rights, corporate guidelines on human rights fulfillment, ILO<sup>1</sup>, and ISO 26000, in all of its contracts. The clauses for human rights protection are applied equally on all projects signed by domestic and foreign firms, branches, and offices of POSCO E&C with its business partners. 1) International Labor Organization

## CASE Industry Innovation 3.0 - Samwon E&B

As a part of the Industry Innovation Campaign 3.0, a program for supporting small businesses that is managed by the Ministry of Trade, Industry and Energy, POSCO E&C performed the QSS (Quick Six Sigma) innovation activity, a customized support Expected increase in sales program, for Samwon E&B Co., Ltd. The QSS innovation activity, which was conducted twice, consisted of programs for improving environmental performance and activities for improving the morale for all employees. At the same time, various methods for enhancing process efficiency and productivity, such as reduction of time for product assembly, were produced.



Improvement before (16 points) and after (52 points) QSS innovation activities

### Vitalize Communication with Business Partners

POSCO E&C hosts a new year's meeting in order to promote mutual understanding and partnership with outstanding business partners. In 2016, the management board of POSCO E&C invited 36 CEOs from outstanding business partners from the areas of construction, facility, and material attended the meeting, sharing its purchasing plans and awarding certificates of contribution. Also, POSCO E&C is employing a counseling center which conducts satisfaction surveys on business partners and processes grievances by small businesses, identifying grievances of its business partners and making prompt improvements. By facilitating active communication with its business partners, POSCO E&C will continue to reinforce mutual trust and establish strategic partnership with them.

## **Select Business Partners Impartially**

**Operation of open-type sourcing policy** | Recognizing that its previous policy on business partner registration has limitations and reduces competitiveness in the purchasing process, POSCO E&C is operating an open-type sourcing policy which increases the size of Sourcing Groups. Considering the quantity of orders made, POSCO E&C sharply increased the number of business partners for recruitment related to facility and material. Also, it alleviated the entry barrier for partner construction companies by increasing the registration opportunities and the number of business partners for recruitment. Furthermore, POSCO E&C is reducing purchasing risks by raising the basic eligibility for partner registration and reinforcing the verification process after registration.

#### **Process on Business Partner Registration**



#### Future Plans



POSCO E&C will ensure that all of its employees who come into contact with its business partners comply with the 4 major agendas for fair trade. It plans to reinforce programs for technological support, such as joint R&D for enhancing the competitiveness of business partners, performance sharing system, etc., as well as programs for management and educational support, such as the executive group for supporting win-win growth.



New year's meeting with business partners

# APPENDIX

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# **Financial Information**

#### **Consolidated Statement of Financial Position**

Item
Assets
Current assets
Cash and cash equivalents
Account receivable
Other financial assets
Unclaimed construction property Inventories
Current income tax assets
Other current assets
Non-current assets
Investments in associates
Non-current account receivables
Other non-current financial assets
Tangible assets
Investments in real estate
Intangible assets
Deferred income tax assets
Other non-current assets
Total assets
Liabilities
Current liabilities
Account payables
Borrowings
Other financial liabilities
Prepaid construction property
Current income tax liabilities
Provisions
Other current liabilities
Non-current liabilities
Non-current account payables
Non-current borrowings
Other non-current financial liabilities
Net defined benefit liabilities
Provisions
Deferred income tax liabilities
Other non-current liabilities
Total liabilities
Capital
Equity attributable to the owner of the parent
Issued capital
Capital surplus
Reserves
Retained earnings
Non-current interests
Total equity
Total capital and liabilities

2014

Unit : KRW 2015

2015	2014	2015
6,709,778,205,609	5,829,020,082,106	6,068,631,404,635
1,021,637,150,821	370,766,199,255	1,411,552,573,868
1,834,813,198,062	2,067,723,471,591	1,773,134,693,119
529,600,229,206	531,935,460,000	625,346,471,594
1,300,544,788,799	1,180,734,916,886	1,049,223,735,709
1,124,817,872,500	1,070,019,039,431	744,402,047,174
13,923,523,918	22,420,872,525	18,232,107,250
884,441,442,303	585,420,122,418	446,739,775,921
1,931,843,181,998	2,537,244,632,908	2,270,567,394,662
117,876,566,517	112,651,783,891	224,567,094,198
3,287,389,213	6,633,520,813	52,824,598,380
454,162,477,047	557,126,006,444	404,070,401,857
439,046,779,354	196,550,542,427	250,309,863,778
265,186,808,866	787,721,293,971	481,587,935,419
310,540,415,687	473,918,546,327	427,484,108,133
302,469,191,939	361,159,954,466	385,179,863,179
39,273,553,375	41,482,984,569	44,543,529,718
8,641,621,387,607	8,366,264,715,014	8,339,198,799,297
4,735,004,281,122	4,059,558,170,297	3,995,164,297,312
1,047,492,876,800	1,072,218,046,110	1,223,478,650,962
776,137,902,605	595,769,132,046	600,005,692,173
709,883,828,175	763,452,596,469	645,958,053,930
811,189,530,794	898,885,985,466	711,459,222,945
98,930,254,577	14,322,641,744	40,820,673,256
44,762,078,425	9,965,069,522	10,177,174,594
1,246,607,809,746	704,944,698,940	763,264,829,452
960,138,162,532	1,320,802,991,667	911,467,476,230
558,676,585	88,469,261,204	10,948,383,388
542,811,665,744	907,095,440,245	695,596,207,502
29,770,976,405	43,976,587,597	12,610,249,859
67,864,942,364	65,392,712,603	72,930,608,987
101,133,905,334	93,046,351,017	102,765,539,016
16,565,928,900	14,326,636,807	13,181,966,274
 201,432,067,200	108,496,002,194	3,434,521,204
5,695,142,443,654	5,380,361,161,964	4,906,631,773,542
 2,894,059,135,717	2,948,386,191,999	3,392,672,291,055
 183,615,000,000	183,615,000,000	209,033,470,000
 757,934,439,797	749,388,414,043	1,121,177,275,047
 -48,307,688,274	-46,224,243,306	-30,038,156,643
 2,000,817,384,194	2,061,607,021,262	2,092,499,702,651
 52,419,808,236	37,517,361,051	39,894,734,700

2,946,478,943,953

8,641,621,387,607

2013

3,432,567,025,755

8,339,198,799,297

2,985,903,553,050

8,366,264,715,014

#### Consolidated Statements of Comprehensive Income

			Unit: KRV
Item	2013	2014	2015
Sales	10,131,367,040,236	9,580,583,545,954	8,965,271,883,215
Cost of sales	-9,263,811,875,157	-8,853,762,616,913	-8,331,468,786,889
Gross profit	867,555,165,079	726,820,929,041	633,803,096,326
Selling and administrative expenses	-432,208,694,601	-403,827,231,663	-386,089,341,252
Administrative expenses	-387,890,358,492	-347,290,156,050	-342,008,037,338
Selling and logistics expenses	-44,318,336,109	-56,537,075,613	-44,081,303,914
Operating profits	435,346,470,478	322,993,697,378	247,713,755,074
Gain (loss) on investments in associates (net)	-11,376,675,031	-8,471,404,052	-22,774,441,158
Financial income (loss, net)	-71,090,872,246	-115,080,962,118	-138,935,024,250
Financial income	284,742,869,201	177,414,173,924	158,835,128,956
Financial cost	-355,833,741,447	-292,495,136,042	-297,770,153,206
Other non-operating income (loss, net)	-123,958,132,680	-145,984,584,841	-19,269,704,523
Other non-operating income	48,006,068,640	41,473,644,847	95,180,979,827
Other non-operating costs	-171,964,201,320	-187,458,229,688	-114,450,684,350
Profit for the period from continuing operations before deducting corporate tax	228,920,790,522	53,456,746,367	66,734,585,143
Corporate tax for continuing operations	-91,283,662,057	-44,040,418,764	-40,441,216,815
Net profit for continuing operations	137,637,128,465	9,416,327,603	26,293,368,328
Net profit for interrupted operations	9,529,867,287	63,341,600,450	-
Net income	147,166,995,752	72,757,928,053	26,293,368,328
Other comprehensive income and loss (net)	-2,816,715,735	11,951,094,885	16,681,441,131
Items that will not be reclassified to profit or loss	-289,650,910	190,425,530	-24,757,223
Actuarial gains and losses on post defined benefit pension plans	-289,650,910	190,425,530	-24,757,223
Items that will be reclassified to profit or loss	-2,527,064,825	11,760,669,355	16,706,198,354
Net gain and loss on available-for-sale financial investments	-4,112,709,377	2,011,086,629	1,324,262,118
Net income reclassification adjustment	21,020,741,139	4,199,295,148	-
Equity adjustments in equity method	-80,751,177	1,019,595,272	80,157,447
Exchange differences on translation of foreign operations	-19,354,345,410	4,530,692,306	15,301,778,789
Total comprehensive income for the year	144,350,280,017	84,709,022,938	42,974,809,459
Net income attributable to:	147,166,995,752	72,757,928,053	26,293,368,328
The owner of the parent	143,416,083,317	78,619,786,148	34,582,596,327
Net profit of continuing operations	137,853,712,236	18,566,103,213	34,582,596,327
Net profit of interrupted operations	5,562,371,081	60,053,682,935	
Non-controlling interests	3,750,912,435	-5,861,858,095	-8,289,227,999
Net losses of continuing operations	-216,583,771	-9,149,775,610	-8,289,227,999
Net profit of interrupted operations	3,967,496,206	3,287,917,515	
Total comprehensive income attributable to:	144,350,280,017	84,709,022,938	42,974,809,459
The owner of the parent	140,574,269,148	88,667,608,281	50,943,367,883
Non-controlling interests	3,776,010,869	-3,958,585,343	-7,968,558,424
Earnings per share of the owner of the parent	5,0,010,000	2,20,00,000	.,500,550,424
Basic and diluted earnings per share	3,905	2,141	914
Operating profits of continuing operations for basic and diluted earnings per share	3,754	506	914
Operating profits of continuing operations for basic and diluted earnings per share	151	1,635	914

# **GRI G4 Information Disclosure**

POSCO E&C discloses information on sustainable management activities and performance in accordance with the core standards of GRI (Global Reporting Initiative) G4 Guidelines.

#### **Ethics Management**

Ethics management education | POSCO carries out on-site visits and cyber training, etc. in order to internalize ethics management. In 2015, the total hours of education and the number of participants showed a decrease because Ethics Week and online ethics education were not conducted. The training on ethics management which was not conducted will be included in the ethics management education program in 2016.

Current Status of the implementation of ethical education Un				
Classification	2013	2014		
Hours of education	18,938	20,517		
Number of participants	15,994	17,308		
Hours of education for business partners	1,558	1,108		
Number of participants for business partners	1 558	1 108		

#### Technology Competitiveness

**R&D system** | The R&D center closely coordinates with business headquarters, focusing on developing technology for reinforcing the intrinsic competitiveness.

R&D status	l	Unit: KRW 100	
Classification	2013	2014	
R&D investments	152	447	
R&D specialists	59	54	

#### **R&D** performances

-		
Classification	2013	2014
New National Technology Certification	3	7
Green Technology Certification	3	3
Number of Registration of new patents	43	64
Number of Registration of patents (accumulated)	310	374

Status on utilization of developed technologies		Unit: KRW 10
Classification	2013	2014
Amount contributed by developed technologies	-	365
Cases of technological support on overseas projects	63	80

#### Safety and Health Management

**Occupational safety and health** | POSCO E&C is undertaking consistent management of OHSAS18001 and KOSHA18001 certifications for safety and health management system after acquiring them. Also, the company is operating an online system which enables systematic management on planning, execution, assessment, and measurement on safety and health. Furthermore, the company is offering classes to monitor and educate employees whose health is vulnerable and who face an increased risk of accidents due to old age.

t: hour, person
2015
8,629
8,586
1,056
1,056

iiiion, person
2015
437
65
Unit: case
2015
<b>2015</b> 2
2
2

00 million, case

L	2015
	148
	113

#### **Environment-friendly Management**

Raw Material | Through green procurement, we will reduce the environmental impact of current construction sites.

Usage of non-renewable raw materials

Classification	Unit	2013	2014	2015
Rebar	1000 Ton	228.0	186.0	275.0
Cement	1000 Ton	126.7	114.4	133.0
Ascon	1000 Ton	180.9	166.6	234.2
Ready-mixed concrete	1000 m³	1,950.0	2,115.0	2,463.0
Sand	1000 m³	111.8	157.7	97.1
Gravel	1000 m <sup>3</sup>	38.8	109.5	80.3

Water resources | POSCO E&C is making active use of recycled water in order to respond to the depletion of water resources around the world.

Water usage			Unit: Ton
Classification	2013	2014	2015
Waterworks	-	560,409	655,010
Underground water	-	227,876	275,742
Recycled water	-	17,136	23,359
Total	1,130,113	805,421	954,111

**Energy and Greenhouse gas** | POSCO E&C is making company-wide efforts for reducing energy, such as managing the energy of construction equipment and using LED lights in construction sites.

Amount of use for each type of energy			Unit: TJ
Classification	2013	2014	2015
Fuel	93.63	75.63	68.154
Gasoline	21.48	21.64	19.334
Diesel	43.79	31.72	25.724
Kerosene	10.29	6.98	10.531
LPG	5.54	2.73	2.004
LNG	12.54	11.56	10.561
Electricity	507.43	512.36	501.884
Steam	16.15	17.27	11.402
Total <sup>1)</sup>	617.21	605.26	581.44

1) Emission intensity of energy by KRW(2015): 8.89 TJ / KRW 1 billion

Energy usage by major business sites			Unit: TJ
Classification	Fuel	Electricity	Steam
Pohang head office, Songdo office, etc. <sup>1)</sup>	19.384	115.247	11.402
Domestic construction sites	48.779	386.638	-
Total	68.163	501.885	11.402

1) Energy intensity in Songdo office: 0.05 TJ/m<sup>3</sup>

|--|

Classification	2013	2014	2015
Scope 1	6,027	4,205	5,639
Pohang head office, Songdo office, etc.	1,504	1,489	1,139
Domestic construction sites	4,523	2,716	4,500
Scope 2	25,719	26,113	25,975
Pohang head office, Songdo office, etc.	6,194	6,516	5,988
Domestic construction sites	19,525	19,597	19,987
Total (Scope1+Scope2) <sup>2)</sup>	31,746	30,318	31,614
Scone3	76 370	57 522	63 365

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

1) Greenhouse gas emissions were calculated in accordance with the government policy on the operation of greenhouse energy goal management. Data modified by adjustment in criteria

2) Greenhouse gas intensity in Songdo office: 2.58 tCO<sub>2</sub>e/m<sup>3</sup>

Greenhouse gas emissions by KRW <sup>1)</sup>		Unit: tCO2e/KF	RW 100 million
Classification	2013	2014	2015
Scope1	0.75	0.56	0.86
Scope2	3.20	3.47	3.97

1) Greenhouse gas emissions / Sales (Separate criteria)

Effluents and waste | Wastewater produced on site is handled with appropriate methods in order to minimize its effects on the local ecosystem. Waste produced is associated with the 'Allbaro System' of the Ministry of Environment, allowing for real-time management of waste in all domestic sites.

Wastewater discharge				Unit: Ton
Classification		2013	2014	2015
Wastewater discharge		276,897	198,256	201,833
Waste generation			Unit: Ton, %,	KRW 1 million
Classification		2013	2014	2015
Waste generation		688,740	418,076	589,149
	Recycled	-	318,178	447,624
By treatment method	Incinerated	-	29,969	8,116
	Landfilled	-	69,929	133,409
	Designated	-	110	20
By type	Onsite	-	12,556	8,676
	Construction	-	405,410	580,453
Recycling rate		73	76	76
Cost for waste treatment		11,841	14,221	11,596

Preservation of biodiversity | In order to protect animals and plants in accordance with environmental impact evaluations, POSCO E&C is undertaking activities for preserving the ecosystem. In domestic sites, the company conducted activities for plants and wildlife, such as otters and oystercatchers, and plants, such as a Ganghwa Maehwamarum Habitat. If wildlife or plants are discovered in foreign sites, POSCO E&C protects them and moves them to safe places in order to minimize its effects on the local ecosystem.

Respond to Environmental Standards, Laws, and Regulations | POSCO E&C is responding to changes by monitoring environmental standards and regulations in and out of the country.

Status on the violation of environmental regulations Unit: KRW 1 million, case

Classification	2013	2014	2015
Fine	0	0	0
Non-financial sanctions	8	10	7

Assess environmental management of business partners | POSCO E&C is evaluating the status of environmental management by its business partners in order to minimize risks from violations of environmental regulations by the business partners. Violations are notified to the department in charge of contracts every month to be reflected on an assessment of the business partner. POSCO E&C encourages its business partners to participate in 'Voluntary environmental improvement activities' so that they can identify and mitigate risk factors in advance.

#### Assess the environmental management of

business partners	Unit: company
Classification	2015
Business partners are subject to assessment on environmental impact	588
Business partners identified as having a negative environmental impact	233
Business partners that made improvements and discussions on its negative environmental impact	23
Business partners with contracts terminated due to a negative environmental impact	0

#### **Customer Centered Management**

Customer satisfaction education | POSCO E&C conducts customer satisfaction education for business headquarters and relevant departments in order to create a positive brand image and to enhance customer satisfaction.

Status of education for customer satisfaction		Unit:	hour, person
Classification	2013	2014	2015
Hours of education	8,848	9,128	8,472
Number of participants	1,106	1,032	1,059
Hours of education for business partners	513	528	448
Number of participants for business partners	64	66	56

#### Human Resource Management

Current status of personnel <sup>1)</sup>		Unit: person
Classification		2015
Total employees		3,921
Employees		3,878
Employment type	Full-time <sup>2)</sup>	3,456
	Contract <sup>3)</sup>	422
Gender	Male	3,655
	Female	223
Age	Under 30	184
	30 to 50	3,115
	Over 50	579
Executives		43

2) Male: 3,246. Female: 210 3) Male: 409. Female: 13

Status of new employees and retirees	Unit: person, %
Classification	2015
Number of new employees <sup>1)</sup>	80
Number of retirees <sup>2)</sup>	96
Rate of new employees	2.0
Turnover Rate	2.4
1) Male: 78. Female: 2	

1) Male: 94. Female: 2

Fair performance assessment | POSCO E&C improved its policy of a fair assessment index so that its performance management can be operated in a transparent and correct manner. The process assessment index is an operation indicator for the regular performance management system, consisting of compliance with fairness, fidelity of contents, and evaluator capability. The results of data analysis, monitoring, and surveys of each item are converted into indices in order to allow for an increase in assessment capabilities by evaluators and to support fair assessment.

#### Rate of implementing regular performance assessment

Classification		2013	2014
Gender	Male	79.8	95.9
	Female	82.8	92.9
Employment type	Full-time	92.6	98.6
	Contract	69.1	73.9

**Clutivating human resources** | POSCO E&C is conducting systematic education by position so that its executives and employees can grow as experts in their respective fields of work.

Status of Employee Training	of Employee Training Unit: hour,	
Classification	2013	2014
Hours of education per employee	43	60
Education cost per employee	77	86

Organizational culture | In order to ensure a balance between work and life, POSCO E&C is operating a family-friendly program by guaranteeing executives and employees with time to spend with their family.

#### Return to work after parental leave leave and years of service

feare and years of service		
Classification	2013	2014
Number of targets for parental leave rights1)	10	12
Number of employees who used parental leave <sup>2)</sup>	8	12
Number of employees who did not return after parental leave	1	0
Number of employees working for over one year after returning to work	13	9
1) Based on the number of people giving birth in the perta	ining vear	

2) All people in 2015 were women

#### Welfare benefits | POSCO E&C is providing a variety of welfare benefits in order to ensure rich and stable lives for its employees.

Classification		
Welfare benefit programs	<ul><li>Educational expenses for children</li><li>Optional benefits</li></ul>	<ul> <li>Family events, funeral</li> <li>Compensation durin absence due to injury</li> </ul>
	<ul><li>Living assistance</li><li>Medical expenses</li></ul>	<ul> <li>Compensation for ne accidents</li> </ul>
Work System	<ul><li>Flexible working</li><li>Half-day leave</li><li>Smart work</li></ul>	<ul> <li>Family care leave</li> <li>Working hour reduct parenting period</li> <li>Survey of Happiness</li> </ul>
Other support	<ul> <li>Support for medical checks</li> <li>Leisure facilities/Fitness centers</li> <li>Workplace Nursery/Infant Nursing/Breast-feeding room</li> </ul>	<ul> <li>In-company Weddin Theater</li> <li>Social contribution a</li> </ul>

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Unit: person	
2015	
20	
19	
0	
17	

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activities

Prevent sexual harassment | POSCO E&C has regulated the prohibition of sexual harassment in its ethical charter, which must be abided by all executives and employees, and is managing it with stringency. Employees who violated this code are summoned by the personnel committee, and disciplinary actions such as dismissal and suspension are imposed, depending on the level of behavior. At the same time, when victims want to protect their identities, we protect the executives and employees' human rights by presenting alternatives such as transfer of department. Disciplinary actions due to sexual harassment over the past three years were taken in two cases in 2013, one case in 2014, and one case in 2015.

Status of education for preventing sexual

harassment			Unit: person, hour
Classification	2013	2014	2015
Hours of education	9,176	9,914	9,250
Number of participants	5,070	5,478	5,371

Retirement pension plan | POSCO E&C provides both defined benefit (DB) and defined contribution (DB) retirement pension plans so that its executives and employees can continue to lead stable lives even after retirement.

Deal with Grievances from Executives and Employees | Using the online Sinmungo, POSCO E&C receives reports on corruption and irregularities related to the company or its executives and employees, various complaints regarding sales or poor construction, violations of fair trade in subcontracts, etc., unfair relationships between departments, and unfair relationships with business partners. Reports are made anonymously, and the identities of the reporters are protected. Also, a pseudonym bulletin board is operated within the company with the purpose of receiving employees' opinions on complaints, suggestions for improvement, questions, advice for company development, etc. In 2015, 198 opinions have been posted in various fields, such as administration, HR, and IT, with responses given within an average of 1.9 days.

Current status of dealing with grievances from

executives and employees	Unit. Case, day(s)
Classification	2015
Number of complaints by executives and employees that have been received	198
Response time on average	1.9

#### Win-win Growth

Status of agreements and contracts in consideration of human rights | In order to reinforce the management of human rights by business partners, POSCO E&C includes clauses for human rights protection, which reflect international standards such as the Universal Declaration of Human Rights and guidelines on human rights practices, to be applied in all of its contracts.

Status of agreements and contracts considering human rights

Classification	2015
Number of contracts that include clauses on human rights	1,041
Total number of contracts <sup>1)</sup>	2,685
Ratio of contracts that include clauses on human rights	38.8

1) Based on important agreements and contracts in terms of size or strategic aspects

Unit: case, %

# **GRI G4 Index**

## **General Index**

Category	Indicator	Indicator description	ISO 26000	Page
Strategy and Analysis	G4-1	CEO Message	4.7, 6.2, 7.4.2	5
	G4-3	Name of the organization		11
	G4-4	Primary brands, products, and services		16-17
	G4-5	Location of the organization's headquarters		11
	G4-6	Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report		11, 24, 25
	G4-7	Nature of ownership and legal form		11-12
	G4-8	Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)		16-17, 24-25
Organizational	G4-9	Scale of the organization	6.3.10,	11
Profile	G4-10	Status of employment type, contract, and region	6.4.1-6.4.5, — 6.8.5, 7.8	78
	G4-11	Percentage of total employees covered by collective bargaining agreements	. 0.0.3, 7.0	64
	G4-12	Major characteristics of the supply chain with regard to major activities, products, and services by the reporting organization		70-73
	G4-13	Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain		70-73, 79
	G4-14	Precautionary approach or principle is addressed by the organization		18-19
	G4-15	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses		85
	G4-16	Memberships of associations (such as industry associations) and national or international advocacy organizations		86
	G4-17	List of all entities including the organization's consolidated financial statements or equivalent documents		11, 24-25
	G4-18	Process for defining the report content and the Aspect Boundaries.		6-7
Identified Material	G4-19	Material Aspects identified in the process for defining report content		6-7
Aspects And	G4-20	Aspect Boundary within the organization		80-81
Boundaries	G4-21	Aspect Boundary outside the organization		80-81
	G4-22	Effect of any restatements of information provided in previous reports, and the reasons for such restatements		2
	G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries		2
	G4-24	List of stakeholder groups engaged by the organization		G
	G4-25	Basis for identification and selection of stakeholders with whom to engage		G
Stakeholder Engagement	G4-26	Organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process	5.3	8-9
	G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting		8-9
	G4-28	Reporting period (such as fiscal or calendar year) for information provided		2
	G4-29	Date of most recent previous report (if any)		2
	G4-30	Reporting cycle (such as annual, biennial)	7.5.3, 7.6.2	2
Report Profile	G4-31	Contact point for questions regarding the report or its contents		87
	G4-32	The 'in accordance' option the organization has chosen		80-81
	G4-33	Organization's policy and current practice with regard to seeking external assurance for the report	6.2, 7.4.3, 7.7.5	82-83
Governance	G4-34	Governance structure of the organization, including committees of the highest governance body		12
Ethics and Integrity	G4-56	Internally arranged mission, core value, code of conduct, and principles regarding economic, environmental, and social performance and activities	4.4, 6.6.3	20, 21

#### Index Detail

Category	Index	Description	ISO 26000	Reporting page or contents	Boundary
Economy					
Freezewia	DMA	Generic DMA	6.8.1-6.8.3, 6.8.7, 6.8.9	36-37	
Economic Performance	G4-EC1	Direct economic value generated and distributed		75-76, Business Report	POSCO E&C
Indirect Economic	DMA	Generic DMA	6.3.9, 6.8.1-6.8.2, 6.8.7, 6.8.9	66-67	POSCO E&C, Local
Effect	G4-EC7	Development and impact of infrastructure investments and services supported		67-69, 71-72	communities

Category	Index	Description	ISO 26000	Reporting page or contents	Boundary
Environment					
	DMA	Generic DMA		50-51	
Energy	G4-EN3	Energy consumption in organization	6.5.4	77	POSCO E&C, Business
Lifelgy	G4-EN7	Reduction in energy demand for products and services	6.5.4, 6.5.5	52-53	partners
	CRE1	Intensity of building energy	6.5.4	77	P
	DMA	Generic DMA		50-51	POSCO
Biodiversity	G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	6.5.6	78	E&C, Local
	G4-EN13	Habitats protected or restored	6.5.6	78	communities
	DMA	Generic DMA		50-51	
	G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	6.5.5	78	POSCO E&C,
Emissions	G4-EN16	Indirect greenhouse gas (GHG) emissions (Scope 2)	6.5.5	78	Business
	G4-EN18	Building greenhouse gas emission intensity	6.5.5	78	partners
	CRE3	Building greenhouse gas emission intensity	6.5.5	78	
	DMA	Generic DMA		50-51	POSCO E&C,
Effluents and Waste	G4-EN23	Total weight of waste by type and disposal method	6.5.3	78	Business partners
Environmental	DMA	Generic DMA		50-51	
products and	G4-EN27	Alleviation of impacts by products and services on environment	6.5.3-6.5.5, 6.7.5	52-53	POSCO E&C, Customers
services					
Compliance	DMA	Generic DMA		50-51	POSCO E&C
Compliance	G4-EN29	Amount of significant fines and number of non-financial sanctions due to violation of environmental legislation and regulations	4.6	78	FUSCU EQC
Labor customs and	quality jobs				
	DMA	Generic DMA		62-63	
	G4-LA1	Number and ratio of new recruits and people changing jobs	6.4.3	78-79	POSCO E&C, Employees
Employment	G4-LA2	Welfare not provided to temporary or part-time workers but only to regular workers by major business site	6.4.4, 6.8.7	79	
	G4-LA3	Ratio of return to work and continuing work after maternity leave by gender	6.4.4	79	
	DMA	Generic DMA		46-47	POSCO E&C.
Occupational Health	G4-LA6	Type of injury, ratio of injury occurred, ratio of disease from work, ratio of holidays, ratio of absence, number of death related to work	6.4.6, 6.8.8	46	Employees, Business
and Safety	CRE6	Ratio of business sites operating global safety health system		77	partners
	DMA	Generic DMA	-	62-63	partiters
	G4-LA9	Annual average training time per worker (by gender and laborer category)	6.4.7	79	
Occupational Health		Task education and lifelong learning program which ensures consistent employees and helps post-	0.4.7		POSCO E&C,
and Safety	G4-LA10	retirement management	6.4.7, 6.8.5	78-79	Employees
	G4-LA11	Ratio of laborers receiving regular review on work performance and career development (by gender and laborer category)	6.4.7	79	
Human rights					
Supplier Human	DMA	Generic DMA		70-71	POSCO E&C,
Rights Assessment	G4-HR10	Ratio of new suppliers going through evaluation by criteria of human rights	6.3.3-6.3.5, 6.6.6	79	Business partners
Society					
	DMA	Generic DMA		66-67	
Local Communities	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	6.3.9, 6.5.1-6.5.3, 6.8	67-69	POSCO E&C, Local
	CRE7	Number of cases for voluntary or non-voluntary immigrants	-	None	Communities
	DMA	Generic DMA		20	
Anti-corruption	G4-SO4	Notices and training on anti-corruption policies and procedures	6.6.1-6.6.3, 6.6.6	20-21, 77	POSCO E&C,
	DMA	Generic DMA		70-71	Employees,
Anti-competitive	64.607	Number of legal measures and outcomes of unfair trade activities such as actions impeding			Business partners
Behavior	G4-S07	competition and monopoly	6.6.1-6.6.2, 6.6.5, 6.6.7	72	purchers
Product liability	DIA	Court DMA		50.50	_
Customer Safety and	DMA	Generic DMA	C71C72C74C7E	58-59	
health	G4-PR1	Percentage of significant product and service categories for which safety and health impacts are assessed for improvement	6.7.1-6.7.2, 6.7.4-6.7.5, 6.8.8	59	
	DMA	Generic DMA		58-59	
	G4-PR5	Results of surveys measuring customer satisfaction	6.7.1-6.7.2, 6.7.6	60	POSCO E&C,
Product and Service Labeling	CRE8	Certification regarding sustainable management		As of 2016, the company possesses 6 LEED certifications and	Customers
				39 green building certifications.	

# **Statement of Third-party Assurance**

This Statement of Third-Party Assurance is for readers of sustainability reports, and was written according to the mutual agreement with POSCO E&C.

#### **Terms of Engagement**

Lloyd's Register Quality Assurance Ltd. (LRQA) was requested by POSCO E&C to provide independent assurance on its 'Sustainability Report 2015-2016' (hereinafter referred as "Report"). This assurance was carried out in Moderate Level using AA1000AS(2008) of AccountAbility in accordance with the following criteria of assurance, within the scope of Type 2.

Our assurance engagement covered POSCO E&C's operations and activities in Korea and specifically the following requirements:

- Evaluation on compliance with principles of comprehensiveness, materiality, and responsiveness of AA1000
- Verification on whether the Report was written in accordance with GRI G4 Guidelines (Core Option) and guidelines on construction and real estate areas of GRI G4 Guidelines
- Evaluation on accuracy and reliability on data and information regarding the following indices
- Economy: Economic outcome(EC1), indirect economic effect(EC7)
- Environment: Energy(EN3, EN7, CRE1), Biodiversity(EN12, EN13), Emissions(EN15, EN16, EN18, CRE3), Wastewater and waste(EN23), Products and services(EN27), Compliance(FN29)
- Society: Employment(LA1, LA2, LA3), Industrial safety and health(LA6, CRE6), Education and training(LA9, LA10, LA11), Human rights assessment for suppliers(HR10), Local community(SO1, CRE7), Anti-corruption(SO4), Activities impeding competition(SO7), Customer safety and health(PR1), Product and service labelling(PR5, CRE8)

Data and information on suppliers, contractors, and other third party members of POSCO E&C have been excluded from the scope of assurance. LRQA's responsibility is only to POSCO E&C. As explained in the last comment, LRQA does not have any liability or responsibility to other persons or organizations on relevant issues.

Responsibility on collection, gathering, analysis, and presentation of all data and information in the report, as well as maintaining effective internal control of the report publication system reside with POSCO E&C. Ultimately, the report has been approved by, and remains the responsibility of POSCO E&C.

#### LROA's Opinions

Based on LRQA's approach nothing has come to our attention that would cause us to believe that POSCO E&C has not:

• Met the requirements above

- Disclosure of accurate and reliable performance data (All errors or omissions identified in the assurance process were corrected)
- Includes all issues important for stakeholders and readers of the Report

This opinion is based on assurance of Moderate Level, and is derived from Professional Judgment by the assurance evaluator with the criterion of Materiality

Note: The extent of evidence-gathering for a moderate level of assurance engagement is less than for a high level of assurance engagement. Moderate level of assurance engagements focus on aggregated data rather than physically checking source data at sites.

#### LRQA's Approach

LRQA's assurance engagements are carried out in accordance with AA1000AS (2008). The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing POSCO E&C's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly.
- We reviewed the POSCO E&C's process for identifying and determining material issues to confirm that the right issues were included in their report. LRQA compared the POSCO E&C's report against a report of its peers in order to determine if certain issues are reported in a manner that they can be juxtaposed. LRQA also tested the filters used by POSCO E&C in determining material issues to evaluate whether POSCO E&C makes informed business decisions that may create opportunities that contribute towards sustainable development
- The data management system of POSCO E&C was evaluated in order to check for any significant errors, omissions, or incorrect items in the Report. In order to do this, LRQA reviewed the effectiveness of internal assurance as well as procedures, guidelines, and systems for processing data. LRQA also interviewed core personnel who collect and edit data and write the drafts of the Report.
- LROA visited Songdo office and Songdo The Sharp First Park, located in Incheon, in order to review additional data provided by POSCO E&C.
- Checking that the GRI Content Index allows stakeholders to access sustainability performance indicators.

#### Observations

Further observations and findings, made during the assurance engagement, are:

Stakeholder Inclusivity | We are not aware of any key stakeholder groups that have been excluded from POSCO E&C's stakeholder engagement process.

Materiality | It should be noted that POSCO E&C has established extensive criteria for determining material issues/ aspects and that these criteria are not biased to POSCO E&C's management. We are not aware of any material issues concerning POSCO E&C's sustainability performance that have been excluded from the report.

Responsiveness | POSCO E&C has developed their sustainability management strategies in a broad spectrum. POSCO E&C uses the Report to report the progress of its strategies for sustainable management.

Reliability | POSCO E&C owns a reliable data management system such as POEMS (POSCO E&C environmental management system). However, in order to enhance the reliability of some data, it needs to conduct documentation of reporting criteria, such as criteria for data calculation.

#### LRQA's Competence and Independence

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent. LROA is POSCO E&C's certification body for ISO 9001, ISO 14001 and OHSAS 18001. We also provide POSCO E&C with a range of training services related to Management Systems. The verification and certification assessments, together with the training, are the only work undertaken by LRQA for POSCO E&C and as such does not compromise our independence or impartiality.





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Assurance Team Leader, Tae-Kyoung Kim

LROA Lead Verifier On behalf of Llovd's Register Ouality Assurance Limited 17th Floor, Sinsong Building, 67 Yeouinaru-ro, Yeongdeungpo-gu, Seoul, Korea. LROA Reference: SEO6020386

## **Statement of Assurance Report of Greenhouse Gas Emissions**

#### **Terms of Engagement**

This Assurance Statement has been prepared for POSCO E&C.

Lloyd's Register Quality Assurance Ltd. (LRQA) was commissioned by POSCO E&C to assure its Greenhouse Gas (GHG) Inventory Report for the calendar year 2015 (hereafter referred to as "the Report") and the GHG data summarized in Table 1 below. The Report has been prepared in accordance with GHG Target Management Scheme for quantification and reporting of GHG emissions in Korea. The Report relates to direct GHG emissions and indirect GHG emissions.

#### **Management Responsibility**

The management of POSCO E&C is responsible for preparing the Report and for maintaining effective internal controls over all the data and information. LRQA's responsibility was to carry out an assurance engagement on the Report in accordance with our contract with POSCO E&C. Ultimately, the Report has been approved by, and remains the responsibility of POSCO E&C.

#### LRQA's Approach

Our verification has been conducted in accordance with GHG Target Management Scheme and GHG Emissions Trading System in Korea: Specification with guidance for verification of greenhouse gas assertions to reasonable level of assurance. In order to form our conclusions we have:

- Visited sites and reviewed processes to control the data and records regarding GHG emissions and energy uses
- Interviewed the relevant persons responsible for managing and maintaining raw and consolidated data
- Verified the historical data and information back to source for the calendar year 2015.

#### Level of Assurance & Materiality

The opinion expressed in this Assurance Statement has been formed on the basis of a reasonable level of assurance and at a 5% level of materiality.

#### LRQA's Opinion

Based on LRQA's approach, except for the effect of the matter described in the following qualification, we believe that the GHG data presented in the Report are materially correct:

- Some offices which POSCO E&C rented were omitted from organizational boundary. And some subcontractors which are working in construction sites of POSCO E&Cs was contained within organizational boundary.
- GHG emissions by mobile combustion in all construction sites were included in GHG emissions by stationary combustion, which should be separated from each other.
  However, they are estimated below the materiality level.

Table1. GHG emissions reported in the Report

Scope (as defined within GHG Target Management Scheme in Korea)	Year 2015
Direct GHG Emissions	5,638.510
Energy Indirect GHG Emissions	25,975.944
Total GHG Emissions	31 ,614
Data is presented in tonnes of CO2 equivalent.	

Dated: 20 June 2016

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#### Sang-Keun Yoo

On behalf of Lloyd 's Register Quality Assurance Ltd.

17th Floor, Singsong Building, 67 Yeouinaru-ro, Yeongdeungpo-gu, Seoul, 07327, Korea LRQA Reference: SEA 6037695

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# **UN Global Compact**

POSCO E&C has announced in 2012 its resolution to comply with ten major principles for social responsibilities including human rights, labor, environment, and anti-corruption by joining the UN Global Compact. POSCO E&C aims to sincerely fulfill its corporate social responsibility by reflecting international standards on sustainable management and by conducting various activities related to such standards.

Classification	Reporting Principle	POSCO E&C's major activities	Page	GRI G4
	01. We support and respect internationally declared human rights	Observance of 10 principles of UN Global Compact     Observance of ILO rules	85	HR1~6, HR10
Human Rights	02. We do not engage in any infringement of human rights.	<ul> <li>Implementation of education on the prevention of sexual harassment</li> <li>Inclusion of provision on human rights protection in contract</li> <li>Monitoring on the respect for human rights</li> </ul>	64, 79	HR3, HR7
	03. We acknowledge the rights to freedom of association and collective bargaining.	Observance of Labor Standard Act     Operation of labor union and labor-management council	64	G4-11, LA4, HR4
Labor	04. We abolish all kinds of forced labor 05. We effectively abolish children's labor.	<ul> <li>Observance of laws regarding prohibition of child labor and forced labor</li> </ul>	64, 79	HR5~6
	06. We abolish discrimination in both the employment process and actual work.	<ul> <li>Operation of fair recruitment process</li> <li>Improvement of assessment system for executives and employees</li> </ul>	63, 78-79	LA1, LA9, LA12, LA13, HR3
Environment	07. We support a preventive approach to environmental issues	<ul> <li>Operate environment-friendly Management System</li> <li>Performance of environmental management for overseas projects</li> <li>Comply with environmental laws and regulations</li> <li>Support for grievances on the environment</li> </ul>	51, 54, 78	G4-14
	08. We take the lead in taking bigger environmental responsibilities.	<ul> <li>Management of Air Pollution and Pollutants</li> <li>Implementation of activities for preserving the ecosystem</li> <li>Reuse and recycling of waste</li> <li>Examination of reliability of greenhouse gas data</li> <li>Development of technology in response to climate change</li> </ul>	51-55, 77-78	EN12, EN13, EN19, EN22, EN23, EN27, EN31
	09. We support environmentally friendly technology development and its distribution.	<ul> <li>Development of eco-friendly construction methods and technology</li> <li>Eco-friendly engineering</li> <li>Support business to expand environmental management into business partners</li> </ul>	52-53	EN6, EN7, EN10, EN19, EN27
Anti-corruption	10. We strive to eradicate all kinds of corruption including unjust enrichment and bribery.	<ul> <li>Operation of the Program for Ethical Practice</li> <li>Ethics management education</li> <li>Reinforcement of Overseas Anti-corruption Activities</li> </ul>	20-21	SO3~5

## **UN SDGs**

POSCO E&C supports the Sustainable Development Goals (SDGs) announced by the UN, and is carrying out activities for the sustainable management of POSCO E&C in relation with 17 major SDGs in order to fulfill its social responsibilities as a global corporate citizen. POSCO E&C plans to prioritize and execute 17 major SDGs that are related to the businesses of POSCO, and to allow for transparent communication on the results of the activities.

No.	SDGs Goal	Relevant activities	Page
04	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Development of executives and employees, support for local disadvantaged classes, social contribution activities in foreign countries	63, 67-69
05	Achieve gender equality and empower all women and girls	Operation of family-friendly programs, education on preventing sexual harassment	79
07	Ensure access to affordable, reliable, sustainable, and modern energy for all	Response to climate change	55, 77-78
08	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Acquisition of financial soundness, employment of talented human resources	36-37, 63
10	Reduce inequality within and among countries	Social contribution activities in foreign countries	26-31, 67-69
11	Create comprehensive, safe, resilient, and sustainable cities and habitats for people.	Development of eco-friendly methods and technologies, application of eco-friendly designs, response to climate change	52-53, 55
12	Ensure sustainable consumption and production patterns	Purchase through green partnerships, construction for reducing environmental impact	52-53
13	Take urgent action to combat climate change and its impacts	Response to climate change, support on environmental management for business partners	55, 77-78
15	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Preservation of biodiversity	78
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Governance, ethics management, human resource management	12, 20-21, 63-65

# **Awards & Association Membership**

#### Awards in 2015

Date		Award Title/Description	Awarded by
		Silver Award on Water Resource Special Award from Korea Water Resources Association	Korea Water Resources Association
2015	January	Special Award from Korean Society of Coastal and Ocean Engineers	Korean Society of Coastal and Ocean Engineers
	February	Award from Vietnamese Minister of Transportation (Site of Dau Giay, Ho Chi Minh)	Vietnamese Minister of Transportation
	March	Silver Award on This Year's Civil Engineering Structure for the 18th Day of Civil Engineering (Daegu Metro Vehicle Depot)	Korean Society of Civil Engineers
	April	Award for excellent construction site in 2015 from Korea Land & Housing Corporation (Housing site construction in Samsong, Goyang)	Korea Land & Housing Corporation
		Grand Prize for Super Quality in the first half of 2015 from Yeongnam Headquarters of Korea Rail Network Authority	Yeongnam Headquarters of Korea Rail Network Authority
	July	Grand Prize for presentation contest on excellent cases of non-disaster campaign and compliance with safety rules in 2015 business sites (Development of Berjaya Jeju Resort)	Ministry of Employment and Labor, Korea Occupational Safety and Health Agency
		Grand Prize on green energy for 2015 Representative Apartments in Korea Award (Guri The Sharp Greenfore)	WOW Korea Economy TV
		Grand Prize on 2015 Eco-friendly Construction Industry Award	Minister of Land, Infrastructure and Transport
	August	Grand Prize in 2015 Korea Luxury Housing (Songdo The Sharp Masterview)	Money Today
		Power Plant Asian Awards 2015, Global Award for Gas Power Project of the Year (Ansan Combined Cycle Power Plant)	Power Engineering International Magazine
		Power Plant Asian Awards 2015, Gold Award for Fast-Track Power Plant of the Year (POSCO Combined Cycle Power Plant units 7,8,9)	Power Engineering International Magazine
S	eptember	No. 1 in KS-QEI for 7 consecutive years (Apartment sector)	Korean Standards Association
		2015 Social Contribution Award by Korea Chamber of Commerce and Industry · Forbes (Global Social Contribution sector)	Korea Chamber of Commerce and Industry • Forbes
		Selected as 2015 exemplary environmental business site (Civil engineering construction for Seoul complex units 1,2)	Governor of Mapo-gu
	October _	Grand Prize for Super Quality in quality improvement activities from Korea Rail Network Authority (Railway construction in Donghae Line Pohang - Samcheok Section 3)	Yeongnam Headquarters of Korea Rail Network Authority
		Award from head of Cheonan Branch, Minister of Employment and Labor (Cheonan Baekseok The Sharp Apartments)	Daejeon Regional Ministry of Employment and Labor
		Award of Contribution in Commemoration of 70th Anniversary of Architectural Institute of Korea	Architectural Institute of Korea
1	November	Award Certificate from Mayor of Incheon	Mayor of Incheon
[	December	Selected as The Salvation Army BEST DONOR CLUB	Commander of The Salvation Army Korea

#### **Association Membership**

Classification	Name of association and organization	
Customers	Korea Housing Association, Korea Management Association, Korea Atomic Industrial Forum, Korean Standards Association, Korea Federation of Construction Contractors, Korea Project Management Association, Korea Construction Defect Management Association, International Contractors Association of Korea, Korea International Trade Association	
Labor Relations	Korean Professional Engineer Association (HR), Korea Construction Engineers Association	
Safety and health	Korean Association of Occupational Health Nurses, Korea Fire Facility Association	
Ethics Management	nt The Institute of Internal Auditors, BEST Forum (Business Ethics and Sustainability management for Top performance)	
Local Communities	Pohang steel industrial complex, Gwangyang Police Administration Advancement Committee, Pohang Local Development Council, South Pohang Police Administration Advancement Committee, North Pohang Police Security Coordination Council	
Business partners	Construction Outsourcing Association	
Environment	Korea Environment Construction Association, Maekyung SEL Club, Korea Carbon Capture and Storage Association, Korea Desalination Plant Association, Korean Society of Civil Engineers, Korean Society on Water Environment, Korea Society of Waste Management, Korean Society of Environmental Engineers, Korean Society of Coastal and Ocean Engineers, Korea Water Resources Association	

#### Contributors to the Report

Gi-Hwan Kim, Dae-Ho Kim, Eun-Kyung Kim, Byeong-Gyu Park, Sang-Kyu Park, Yeong-Geun Park, Jae-Ho Park, Hyun-A Park, Hyung-Seok Park, Hye-Soo Seo, Ji-Won Shin, Hyun-Jin Yang, Byeong-Woo, Lee, Hui-Soo Lee, Yun-Ji Jeon, Hye-Jin Jeong, Gyeong-Seok Choi, Jung-Hwa Choi, Hae-Min Heo

# We sincerely appreciate all the people who helped to publish the sustainability report.

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For more detailed information on our sustainability report, please visit our website, where you can download a PDF version.

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#### www.poscoenc.com

 Headquarters
 180, Daesong-ro, Nam-gu, Pohang, Gyeongsangbuk-do, Korea

 Tel
 +82. 54. 223. 6114

 Songdo Office
 POSCO E&C Tower 1, 241 Incheon Tower-daero, Yeonsu-gu, Incheon, Korea

 POSCO E&C Tower 1
 Tel +82. 32. 748. 2114