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Industrial Plants

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SMART PLAYER **in Steel Construction & Concession**

2016 – 2017 SUSTAINABILITY REPORT

GUIDE TO USING REPORT



**VIEW SUSTAINABILITY
REPORT (PDF)**



**VIEW POSCO E&C
PR FILM**



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SMART PLAYER in Steel Construction & Concession

Based on the differentiated nature of our competencies, POSCO E&C is growing into a leading global construction company.

Global Business

39 Entry Into Countries



14 Overseas Subsidiaries

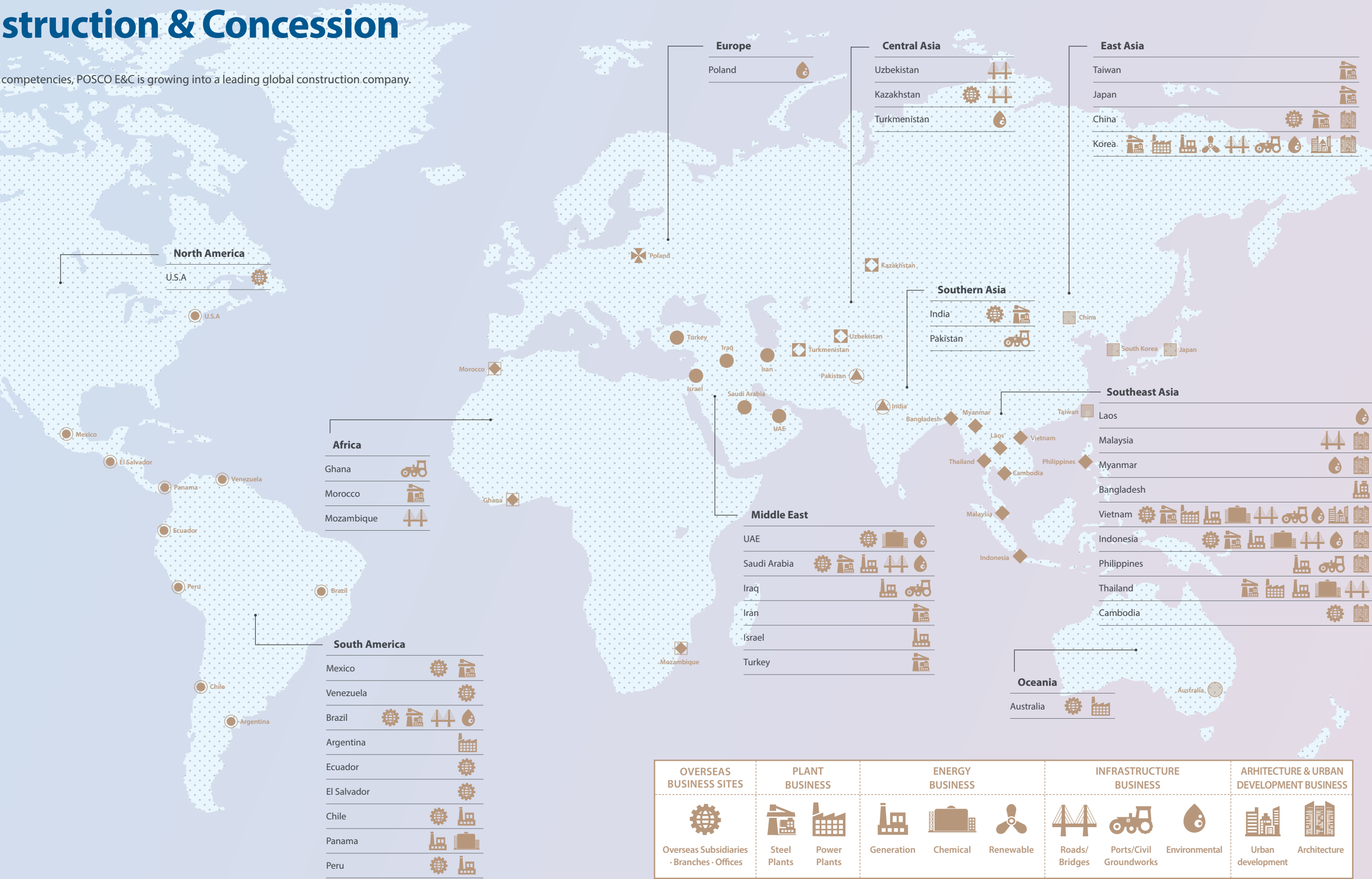
- Mexico: Tamaulipas
- Ecuador: Quito
- Venezuela: Caracas
- Brazil: Ceara
- U.S.A.: Hawaii
- India: Gurgaon
- Indonesia: Jakarta
- Cambodia: Phnom Penh
- Vietnam: Hanoi, Ho Chi Minh
- Australia: Perth
- China: Beijing, Hunchun, Dalian

07 Branches

- Chile: Santiago
- El Salvador: San Salvador
- Peru: Lima
- UAE: Abu Dhabi
- Saudi Arabia: Riyadh
- Kazakhstan: Almaty
- Cambodia: Phnom Penh

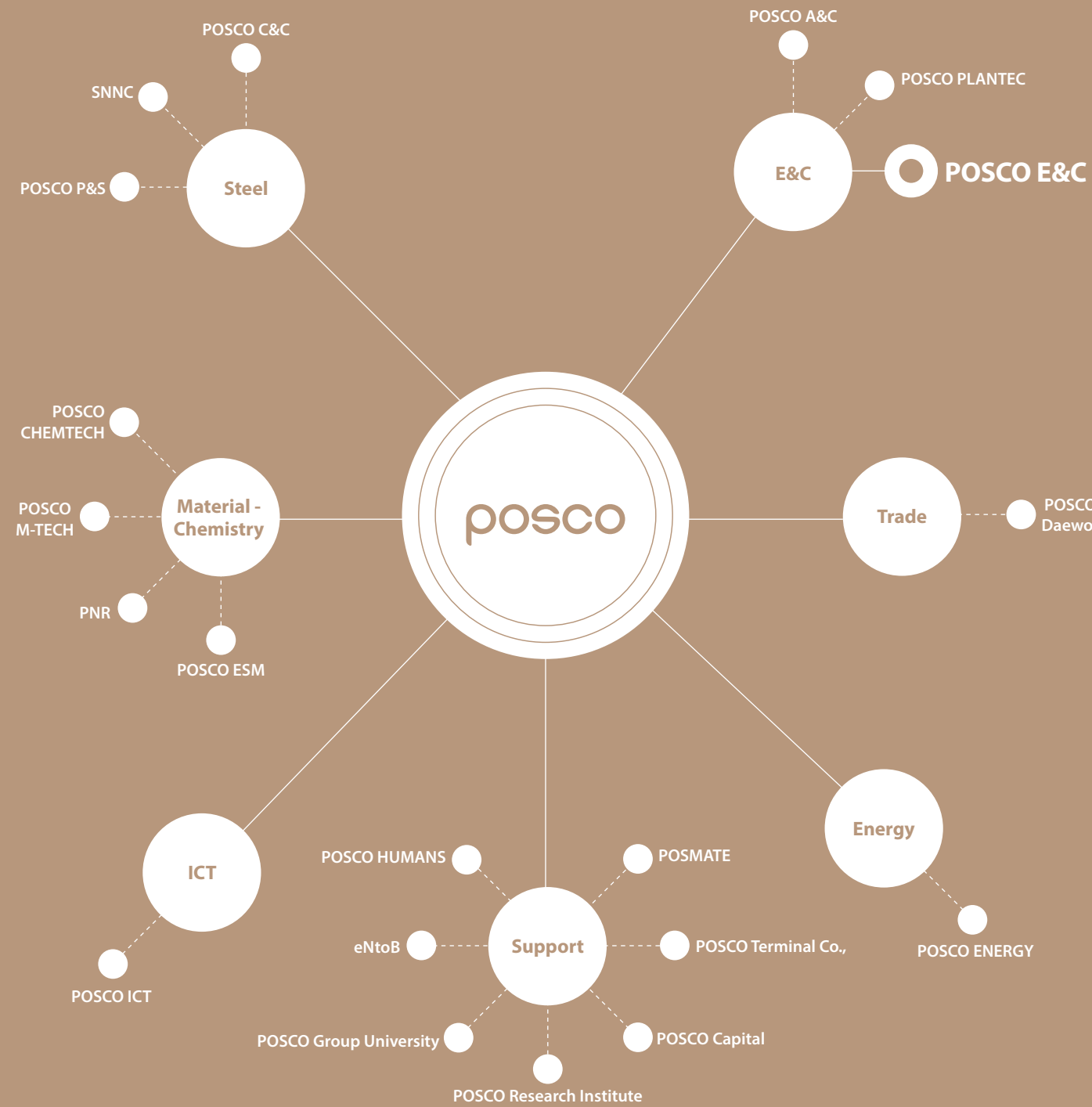
02 Offices

- U.S.A.: Houston
- Vietnam: Hanoi



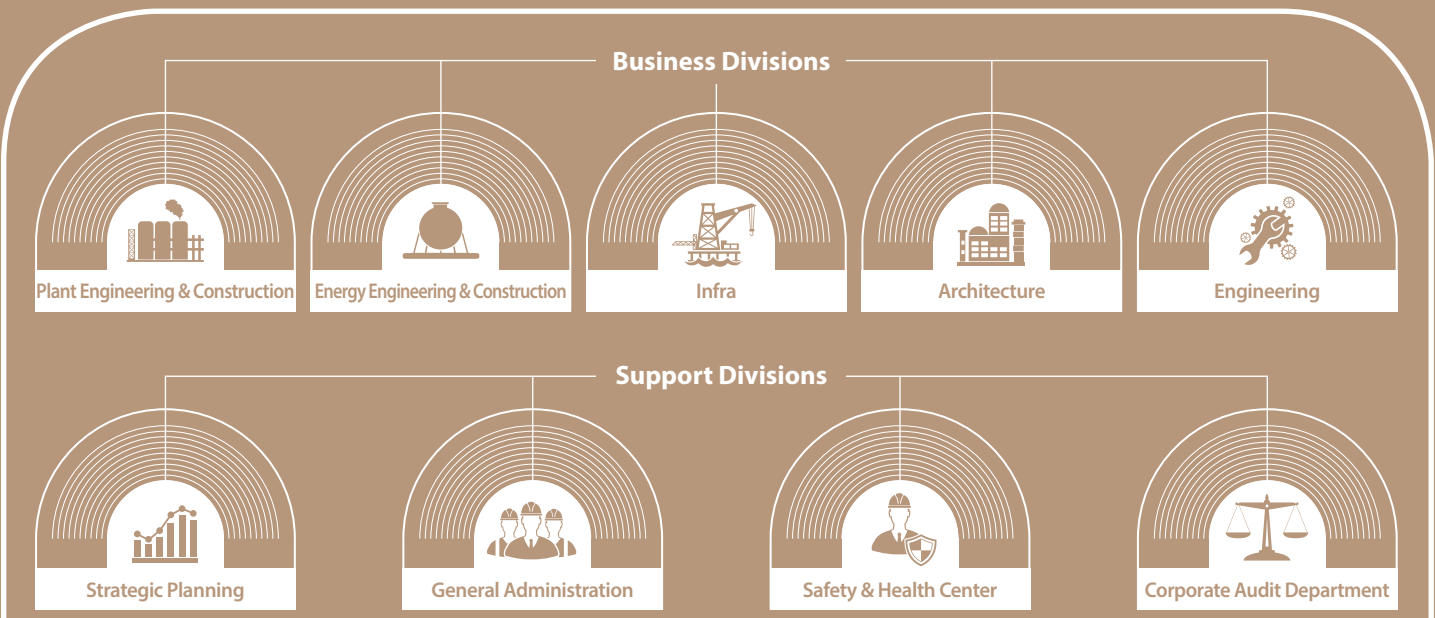
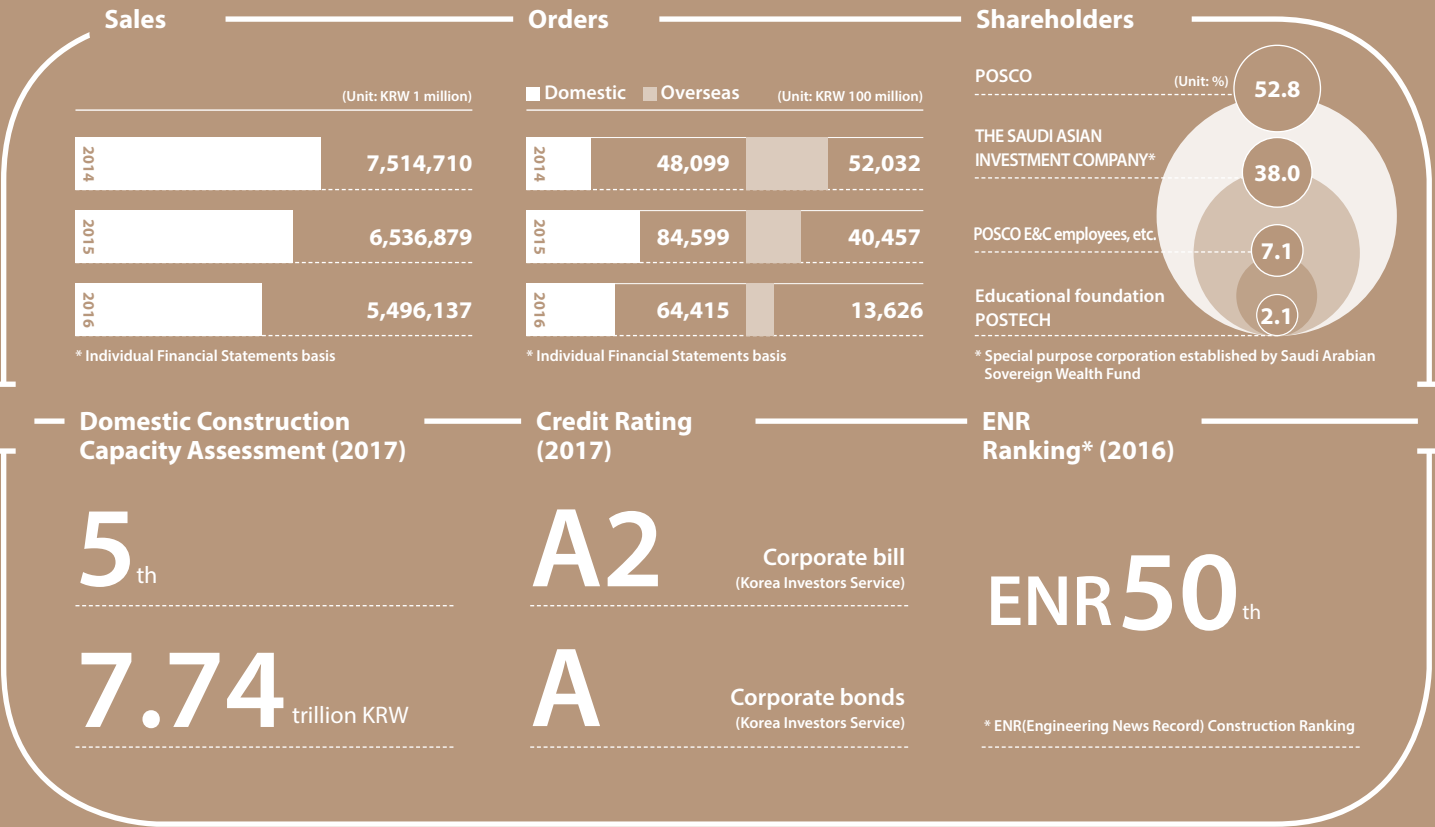
POSCO GROUP

During the past half century, POSCO has been the leader of the Korean steel industry, having created something out of nothing through the power of actions and spirit of challenge to go beyond limits. Based on differentiated global competitiveness and synergy between a range of fields—including not only steel, but also new materials, E&C, energy, ICT, and trade—the POSCO Group is strengthening its capabilities. Grounded in a forward-looking business structure that harmoniously balances steel & non-steel, manufacturing & services, tradition & the future, POSCO, along with its affiliates, is growing into a well-loved global business group.



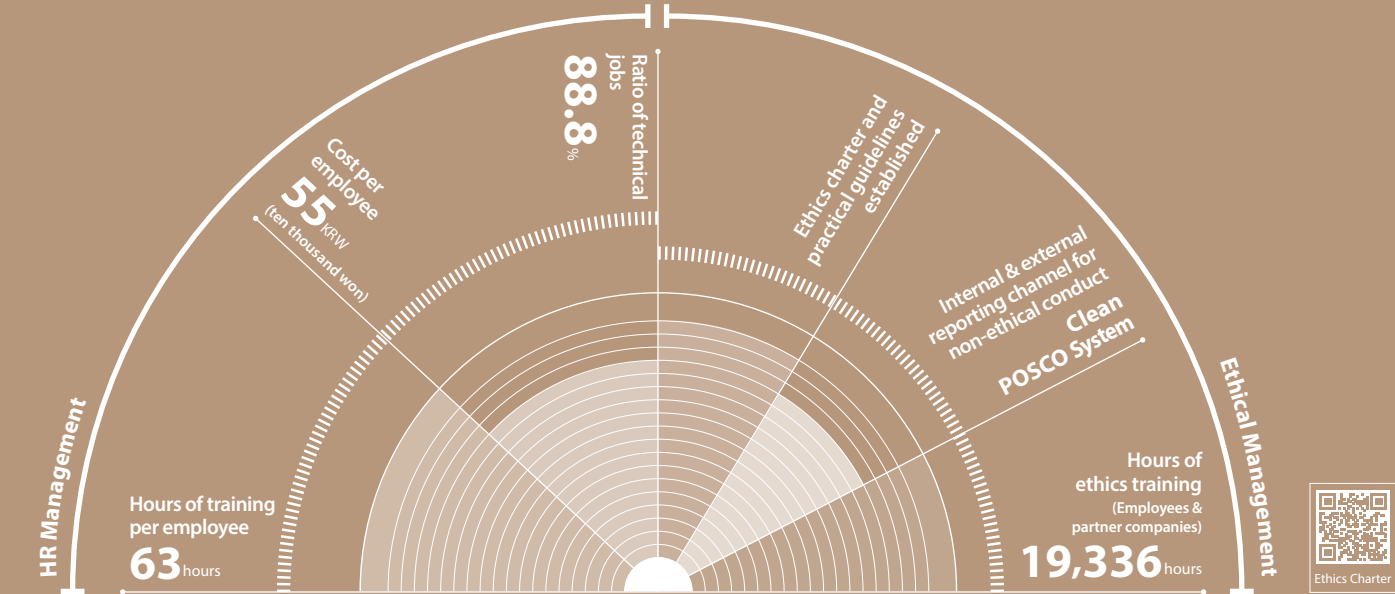
POSCO E&C

Established in 1994 and bolstered by POSCO's 50-year history of global competitiveness, POSCO E&C is a comprehensive construction company that possesses world-class steel plant technologies and know-how, such as FINEX. Through the comprehensive implementation of a series of projects—ranging from project planning, design, construction, test runs, and operations—covering all areas of construction, from the plant sector (steel, environmental, energy) to new urban development, social overhead capital (SOC) projects, and high-rise buildings, POSCO E&C is undergoing global expansion.



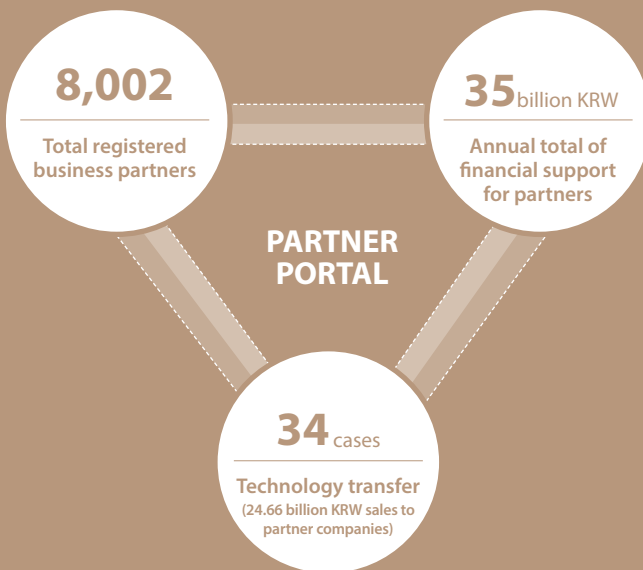
Human Resource Management

• Securing and cultivating talented global human resources to drive change through a advanced thinking, technology and passion will be better



Win-win Growth

• Securing excellent business partners by building an integrated management system for global suppliers and promoting win-win programs for shared growth



Ethical Management

• Establishing a fair and ethical corporate culture to realize a 'Clean POSCO E&C'

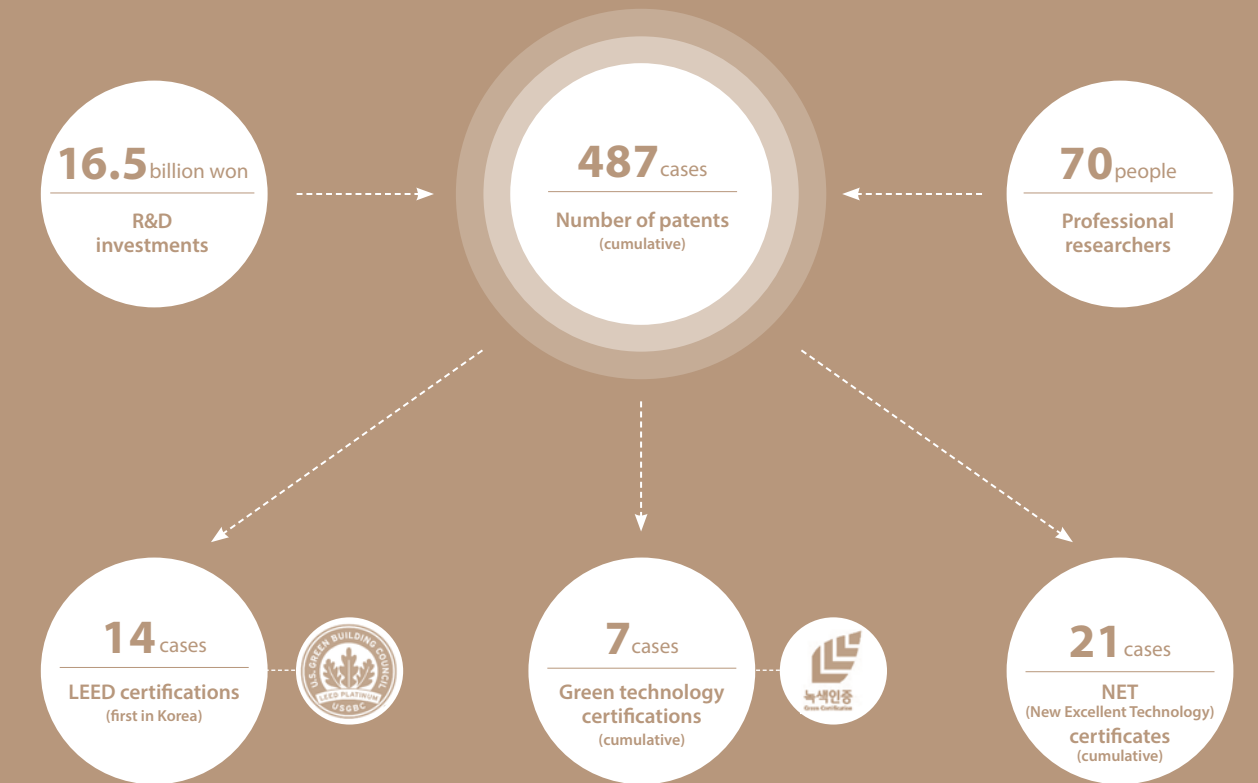
Social Contribution

• Contributing to cooperation with and development of regional strongholds in Korea, and expanding social contributions with an emphasis on overseas countries

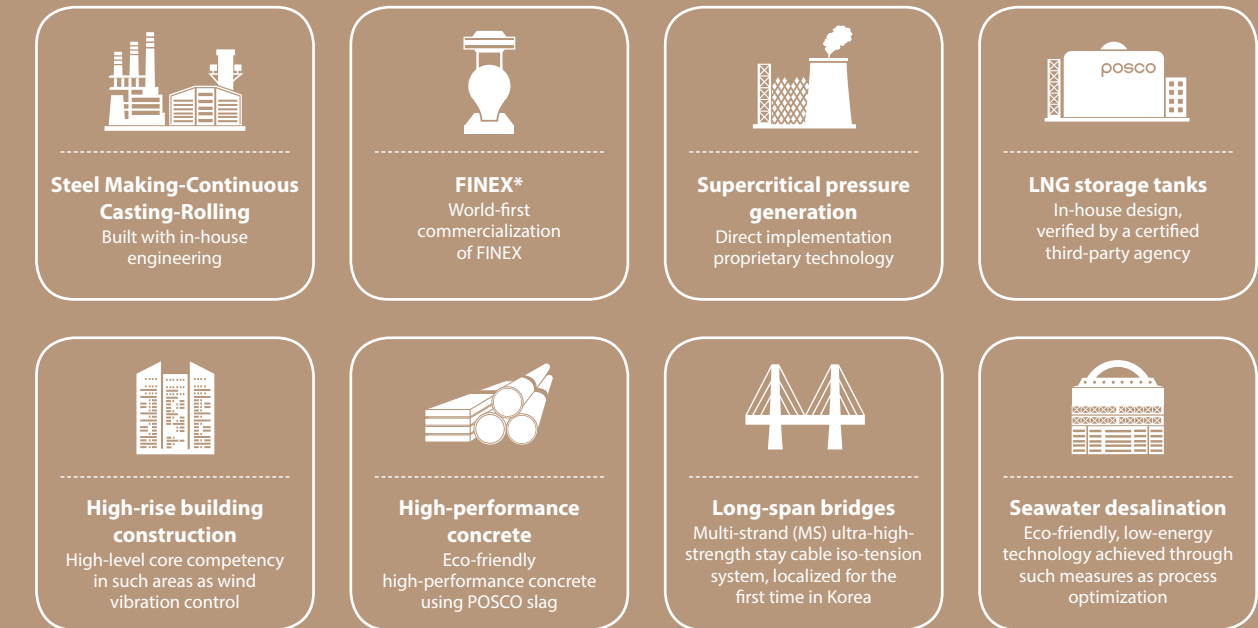


Technology Competitiveness

• R&D to secure differentiated competitiveness in the sectors of smart construction and steel structures



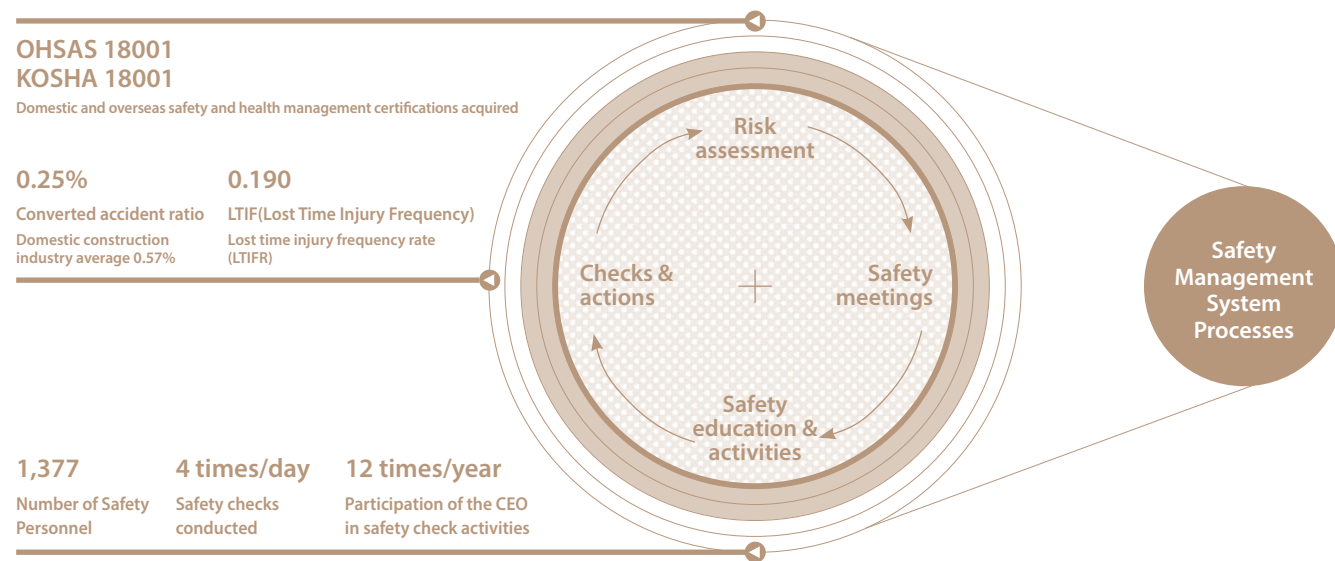
Key Technologies



* The FINEX system is a facility to produce iron ore by directly inputting low cost iron ore and coal without processing.

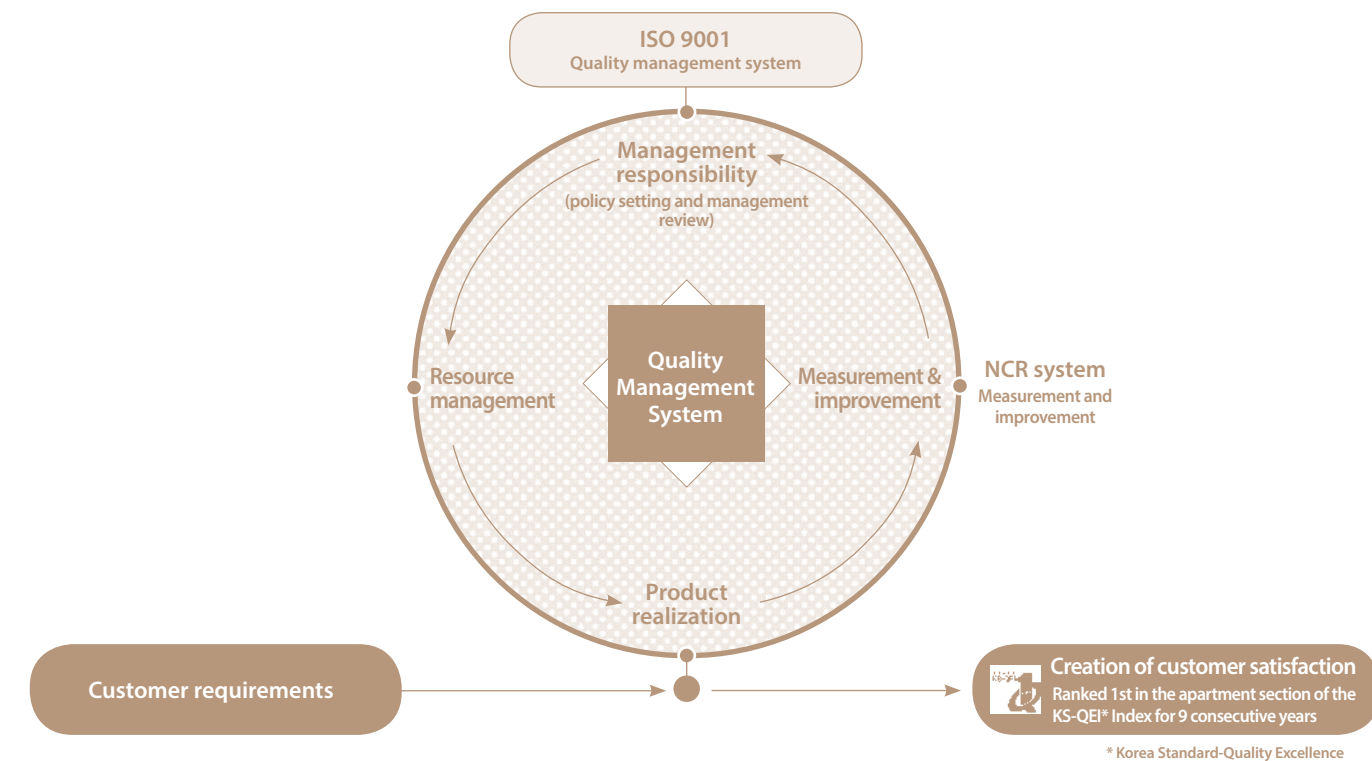
On-site safety management

- Running cycle of self-directed standard safety activities
- Modifying the command structure, for instance by establishing a safety & health center directly under the CEO along with safety technology sections within each business division
- Implementing Smart Safety Processes through the on-site use of IT devices such as beacons, drones, and remote monitoring



Quality Management

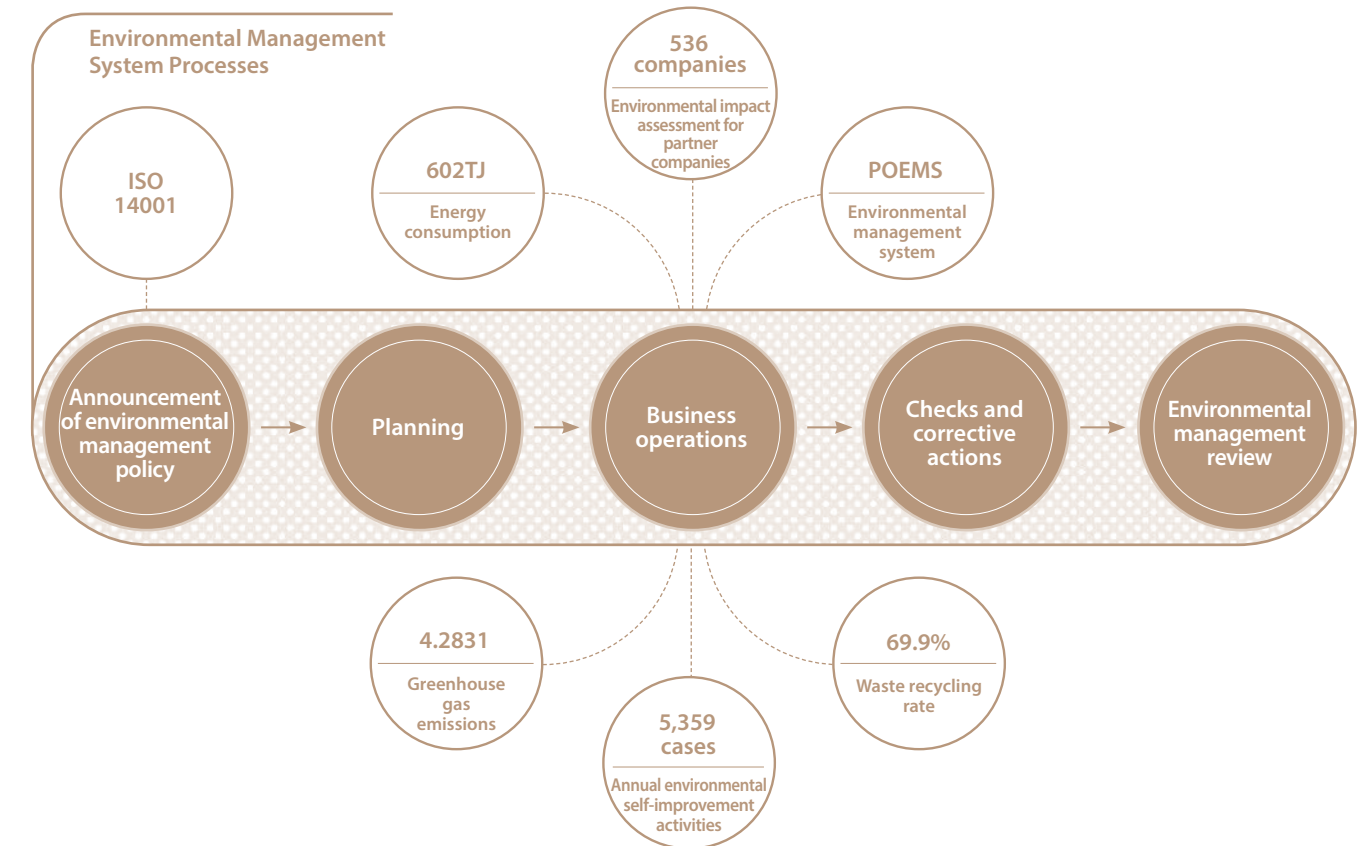
- Eliminating wasteful factors and improving quality of work processes based on a quality management system (ISO 9001)
- Operating an NCR (non-conformance report) system managing a shared database containing a causal analysis of occurrence of non-conformance and the outcomes of response measures
- Operating regular on-site quality diagnosis systems and conducting voluntary quality improvement activities



Environmentally-friendly Construction

- Eco-friendly construction site management through ISO 14001 certification and an environmental management system (POEMS*) optimized for the construction industry
- Eco-Save campaign to promote a culture of environmental management
- Control of construction site noise, vibrations, and fugitive dust through environmental management-related self-improvement activities

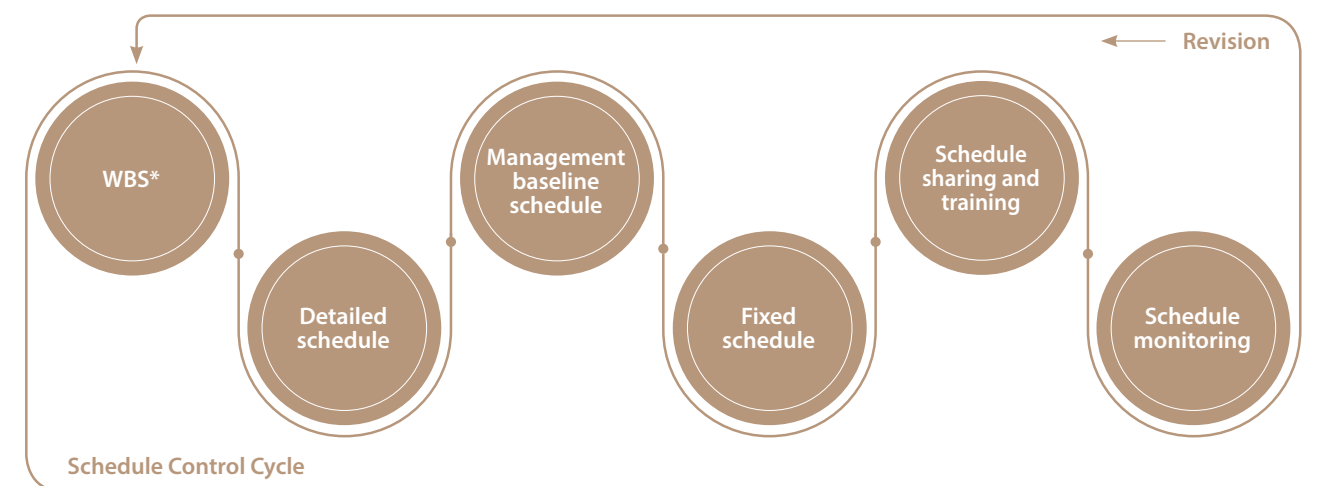
* POSCO E&C Environmental Management System



Process Management

- Construction process management using CPM tools such as Primavera and MS Project
- Identifying and responding to schedule risks through process management by business area

* WBS : Work Breakdown Structure



BUSINESS

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STEEL & INDUSTRIAL PLANTS

BUSINESS

POSCO E&C



POSCO E&C, the world's only construction company capable of performing mass-scale engineering, procurement, and construction (EPC) of steel plants, is recognized for its competence through overseas mega projects that include the CSP integrated steel plant in Brazil and the Krakatau steel plant in Indonesia. Expanding its business areas to encompass resource development and the industrial plant sector, POSCO E&C is rising in the world.

Krakatau Steelworks (Indonesia)
Project period: 2011. 07 ~ 2013. 12
Production capacity: 3 million tons/year



Project Details



01	03
	04
02	05
	06

- 01 - **CSP Steelworks (Brazil)**
Project period: 2012. 01 ~ 2016. 02
Production capacity: 3 million tons/year
- 02 - **Formosa Steelworks (Vietnam)**
Project period: 2013. 08 ~ 2015. 11
Production capacity: 510,000 Tons/year
Coke oven gas (COG): 150,000NM³/h
Raw materials: 7 million tons/year
- 03 - **No.3 FINEX, Pohang Steelworks (Korea)**
Project period: 2011. 06 ~ 2013. 11
Production capacity: 2 million tons/year
- 04 - **Asia Special Steel Co. steel works (Japan)**
Project period: 2007. 12 ~ 2009. 05
Production capacity: 2 million tons/year
- 05 - **No.4 Hot rolling mill, Gwangyang Steelworks (Korea)**
Project period: 2010. 12 ~ 2014. 08
Production capacity: 3.5 million tons/year
- 06 - **IISCO blast furnace (India)**
Project period: 2007. 01 ~ 2010. 12
Production capacity: 1.4 million tons/year



| Resource Development Plants |



01
02
03

01 - Moolarben soft coal plant (Australia)

Project period: 2016. 02 ~ 2017. 08
 Production capacity: 12 million tons/year

02 - New POSCO FINEX raw material handling plant (Korea)

Project period: 2011. 10 ~ 2013. 09
 Capacity: 60,000 tons, 3 units

03 - Gwangyang raw materials plantons/yearard, with capacity-enhancing silos (Korea)

Project period: 2009. 12 ~ 2012. 09
 Capacity: 50,000 tons, 15 units



| Industrial Plants |

01
02
03
04

01 - STATS ChipPAC Korea new plant (Korea)

Project period: 2015. 11 ~ 2016. 11
 Total floor area: 147,783m²

02 - KyungDong Navien new plant with adjunct facilities (Korea)

Project period: 2012. 04 ~ 2014. 03
 Total floor area: 94,857m²

03 - Il-yang Pharmaceutical vaccine plant (Korea)

Project period: 2012. 06 ~ 2013. 03
 Total floor area: 14,026m²

04 - IASS Holdings cold & frozen logistics center (Korea)

Project period: 2013. 12 ~ 2016. 02
 Total floor area: 24,379m²



Engineering technical competencies, to correspond global standard

The strong engineering technical competencies of POSCO E&C have earned it wide recognition for its engineering, procurement, and construction (EPC) capabilities. POSCO E&C exhibits a wealth of experience in implementation that complies with industry-specific global standards, including sectors like semiconductors & electronics, pharmaceutical/bio/food, logistics centers, and general manufacturing plants.

ENERGY PLANTS

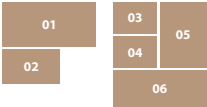
As the first Korean construction company to build energy plants in Central and South America, including Chile, Peru, and Panama, POSCO E&C has demonstrated its technological competitiveness in the energy sector. POSCO E&C is also expanding its business areas by pioneering diverse energy fields—future renewable energy such as wind and solar power and refuse-derived fuel (RDF), as well as refining and petrochemicals.

BUSINESS

POSCO E&C



Ventanas coal-fired power plant (Chile)
Project period: 2016. 12 ~ 2010. 09
Generation capacity: 242MW



- 01 - Ansan Combined Cycle Plant (Korea)
Project period: 2012. 10 ~ 2014. 10
Generation capacity: 834MW
- 02 - Kallpa Combined Cycle Plant (Peru)
Project period: 2009. 11 ~ 2012. 07
Generation capacity: 831MW
- 03 - Incheon POSCO Energy Combined Cycle Plant: Units 7-8-9 (Korea)
Project period: 2012. 10 ~ 2015. 12
Generation capacity: 400MW X 3
- 04 - Angamos coal-fired power plant (Chile)
Project period: 2008. 03 ~ 2011. 10
Generation capacity: 518MW
- 05 - Gwangyang Off-gas Combined Cycle Plant (Korea)
Project period: 2009. 02 ~ 2011. 12
Generation capacity: 284MW
- 06 - R Combined Cycle Plant (Israel)
Project period: 2010. 09 ~ 2013. 07
Generation capacity: 400MW



Performance-based Planning for Power Plant EPC (Engineering, Procurement, Construction)

In 2007, POSCO E&C received initial certification from the American Society of Mechanical Engineers (ASME) for design and construction in the field of thermal power generation and subsequently received ASME repair/replacement certification in 2016, creating a bridgehead for expansion into overseas markets. In 2017, POSCO E&C also achieved Korea Electric Power Industry Code (KEPIC) certification, a national certification in the field of the structural design of nuclear power plants.



- 01

02

03
- 01 - Seokmun Energy Plant (Korea)

Project period: 2015. 01 ~ 20 17. 07

Capacity: 38.9MW
- 02 - Busan RDF (refuse-derived fuel) Power Plant (Korea)

Project period: 2010. 10 ~ 2013. 10

Capacity: 25MW
- 03 - Jinyang/Hyunjin Solar Power Plants (Korea)

Project period: 2015. 10 ~ 2017. 04

Details: 17 solar power plants in 14 cities nationwide



SDG Target 7. Ensure access to affordable, reliable, sustainable, and modern energy for all

A smooth and seamless energy supply is the basis for stable social growth. Worldwide, the transition to sustainable energy is accelerating through the development of clean energy technologies and infrastructure. POSCO E&C has been expanding its efforts in the renewable energy business, having built power generation plants that use solar, wind, tidal, and RDF energy. This foray into renewable energy started with the 2007 construction of a 3MW photovoltaic power generation facility in Yeongam (South Jeolla-do), at which point in time it possessed the world's largest power generation capacity for a single plant.



- 01

02

03
- 01 - Gwangyang SNG Plant (synthetic natural gas) (Korea)

Project period: 2009. 10 ~ 2014. 06

Capacity: 500,000 t/d
- 02 - Pohang No.16 Oxygen Plant (Korea)

Project period: 2011. 12 ~ 2013. 12

Capacity: oxygen 100,000Nm³/h
- 03 - Gwangyang LNG Storage Tank 3 (Korea)

Project period: 2012. 12 ~ 2014. 09

Capacity: vaporization delivery facilities: 200 t/h

INFRASTRUCTURE

BUSINESS

POSCO E&C



POSCO E&C is contributing to global regional development through top-tier technologies and capabilities in a range of large-scale infrastructure projects, including roads, railways, ports, and environmental facilities. We are leading change towards a better world through the construction of environmental facilities equipped to handle sewage/wastewater, seawater desalination, waste-to-energy, and air cleaning processes, and are actively providing environmental solutions in the area of O&M (operations & maintenance). Moreover, our business areas are expanding to embrace environmentally-friendly renewable energy, such as hydroelectric power generation.



Nohwa-Gudo bridge (Korea)
Project period: 2011. 11 ~ 2017. 06
Scale: 1.62km (two-lane extradosed sea bridge - 780m, access road - 840m)



- 01
- 02
- 03

- 01 - Capital Region 2nd Ring Expressway (Incheon–Gimpo expressway) (Korea)
Project period: 2012. 03 ~ 2017. 03
Scale: section 2 - 3.6km; 1 underwater tunnel; section 3-1, 3.7km; 1 junction
- 02 - A380 highway (Uzbekistan)
Project period: 2014. 05 ~ 2016. 12
Scale: extended by 85km
- 03 - Noi Bai - Lao Cai Expressway (Vietnam)
Project period: 2009. 07 ~ 2015. 11
Scale: extended by 80km



- | |
|----|
| 01 |
| 02 |
| 03 |
- 01 - Phase 2 breakwater in Ulleung Sadonghang Port (Korea)
Project period: 2014. 02 ~ 2017. 12
Scale: 640m; 3 seawater circulation facilities; incidental work (1 L/S)
 - 02 - Breakwater at Saemangeum New Port (Zone 2) (Korea)
Project period: 2011. 12 ~ 2016. 10
Scale: 1.9km
 - 03 - Civil groundwork for Chungju Enterprise City (Korea)
Project period: 2008. 06 ~ 2012. 08
Scale: 7,012,760m²



SDG Target 9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
Universally accessible infrastructure—roads, ports, railways and the like—stimulate economic development in local communities and allow enterprise an opportunity to create new markets. Through its domestic infrastructure projects, POSCO E&C has contributed to balanced regional development in Korea. In the global setting, our infrastructure projects all over the world, including Vietnam, Kazakhstan and Uzbekistan, have boosted local communities and aided social progress.



- 01
- 02
- 03

- 01 - **Busan–Gimhae Light Rail Transit (Korea)**
Project period: 2006. 04 ~ 2011. 04
Scale: extended by 23.2km
- 02 - **Seongnam–Yeoju double-track railway depot (Korea)**
Project period: 2012.12 ~ 2017.03
Scale: maintenance facility for 20 trainsets; storage facility for 14 trainsets
- 03 - **Lampung Hydroelectric Power Plant (Indonesia)**
Project period: 2015. 02 ~ 2017. 09
Capacity: 55.4MW



- 01
- 02
- 03

- 01 - **Krakow Waste-to-Energy Plant (Poland)**
Project period: 2012. 10 ~ 2016. 06
Production capacity: 10.7 MWh/y
Processing capacity: 220,000 tons/year
- 02 - **Underground Desalinated Water Storage Facility (Abudhabi)**
Project period: 2010. 08 ~ 2013. 02
Storage capacity: 30,000 t/d
- 03 - **Gwangyang East Revetment Desalination Water Supply Project (Korea)**
Project period: 2013. 01 ~ 2014. 07
Production capacity: 30,000 t/d



SDG Target 6. Ensure availability and sustainable management of water and sanitation for all
Water and sanitation facilities are the source of life and are a basic human right. But shortages of fresh water, resulting from climate change, and degraded water quality from pollution have increasingly given rise to water-related risks in nations and regions. POSCO E&C has acquired technology to not only construct seawater desalination facilities, but also reduce the associated O&M costs. In Abu Dhabi, this technology has been applied in a desalinated water storage project that helps address the region's water scarcity problems.

URBAN DEVELOPMENT & ARCHITECTURE

In projects like the Songdo International Business District, POSCO E&C is engaged in construction for large-scale urban development that combines the technology and know-how of the entire construction industry.

In constructing high-rise smart buildings such as Haeundae LCT The Sharp, we are also building local landmarks.

Songdo International Business District (Korea)


Project period: 2003 ~ 2020
Production capacity: 5,720,000m²

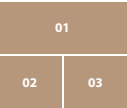




- 01 - Splendora (Vietnam)
Project period: 2010. 03 ~ 2013. 08
Scale: Total construction area: 120,000m²
Apartments: 248 (B1/16F~22F)
Villas: 136
Terrace houses: 117
- 02 - Haeundae LCT The Sharp (Korea)
Project period: 2015. 09 ~ 2019. 11
Scale: 5 underground floors, 101 above-ground floors



“The Sharp” Brand 
The Sharp is a brand that truly enriches the lives of our customers through painstaking devotion and attention to detail, while focusing on the essence. POSCO E&C is striving to do our utmost to help our customers residing in The Sharp to enjoy a life of greater affluence, sophistication, and contentment.



- 01 - Songdo The Sharp Central Park I, Songdo The Sharp Central Park II (Korea)
Project period: 2007. 06 ~ 2010. 11, 2007. 12 ~ 2011. 09
Scale: 2 underground floors, 47 above-ground floors; 2 underground floors, 47 and 49 above-ground floors
- 02 - Dongtan Metapolis (Korea)
Project period: 2006. 10 ~ 2010. 09
Scale: 5 underground floors, 55-66 above-ground floors
- 03 - Songdo The Sharp First World (Korea)
Project period: 2005. 05 ~ 2009. 01
Scale: 2 underground floors, 64 above-ground floors





01 - Yeouido Parc 1(Korea)

Project period: 2016. 11 ~ 2020. 02
Scale: 7 underground floors,
69 above-ground floors

02 - Northeast Asia Trade Tower (Korea)

Project period: 2012. 12 ~ 2015. 05
Scale: 3 underground floors,
68 above-ground floors

03 - Hana Bank Headquarters (Korea)

Project period: 2014. 08 ~ 2017. 06
Scale: 6 underground floors,
26 above-ground floors

04 - POSCO E&C Songdo Headquarters (Korea)

Project period: 2007. 01 ~ 2010. 05
Scale: 5 underground floors,
39 above-ground floors

05 - Sejong City Government Office (Korea)

Project period: 2010. 10 ~ 2012. 12
Scale: 1 underground floor,
7 above-ground floors

06 - Canal Walk (Korea)

Project period: 2008. 01 ~ 2009. 10
Scale: 1-2 underground floors,
5 above-ground floors,
4 buildings

01	02	05
03	04	06



Acquisition of LEED certification for green buildings

Since becoming the first Korean company to receive LEED (Leadership in Energy and Environmental Design) certification from the U.S. Green Building Council, a body that certifies green buildings and architecture, POSCO E&C has had 14 of its buildings LEED-certified, as of the first half of 2017. In addition, through the incorporation of eco-friendly technologies such as the adoption of building commissioning, minimization of energy waste and operational problems, enhancement of air-tightness, use of eco-friendly adhesives and carpeting, and prevention of the summer heat island phenomenon by way of rooftop landscaping, POSCO E&C is leading the construction of eco-friendly cities.



01	
02	03

- 01 - **Tri-Bowl (Korea)**
Project period: 2008. 10 ~ 2010. 02
Scale: 1 underground floor,
3 above-ground floors
- 02 - **Art Center Incheon (Korea)**
Project period: 2009. 05 ~ 2016. 08
Scale: 2 underground floors,
7 above-ground floors
- 03 - **Convensia (Korea)**
Project period: 2005. 03 ~ 2008. 06
Scale: 1 underground floor,
4 above-ground floors




- 01 - **Lotte Hotel & Resort Yangon (Myanmar)**
Project period: 2014. 02 ~ 2017. 05
Scale: Two-building complex (658 rooms)
2 underground floors, 29 above-ground floors
- 02 - **Songdo International School (Korea)**
Project period: 2006. 05 ~ 2009. 06
Scale: 1 underground floor, 5 above-ground floors
- 03 - **Seoul Metropolitan Children's Hospital (Korea)**
Project period: 2005. 11 ~ 2008. 01
Scale: 1 underground floor, 6 above-ground floors (300 beds)
- 04 - **Heavy Ion Accelerator Complex (RAON) (Korea)**
Project period: 2017. 02 ~ 2020. 08
Scale: 2 underground floors, 4 above-ground floors;
14 experimental labs/facilities & accelerators

01	
02	
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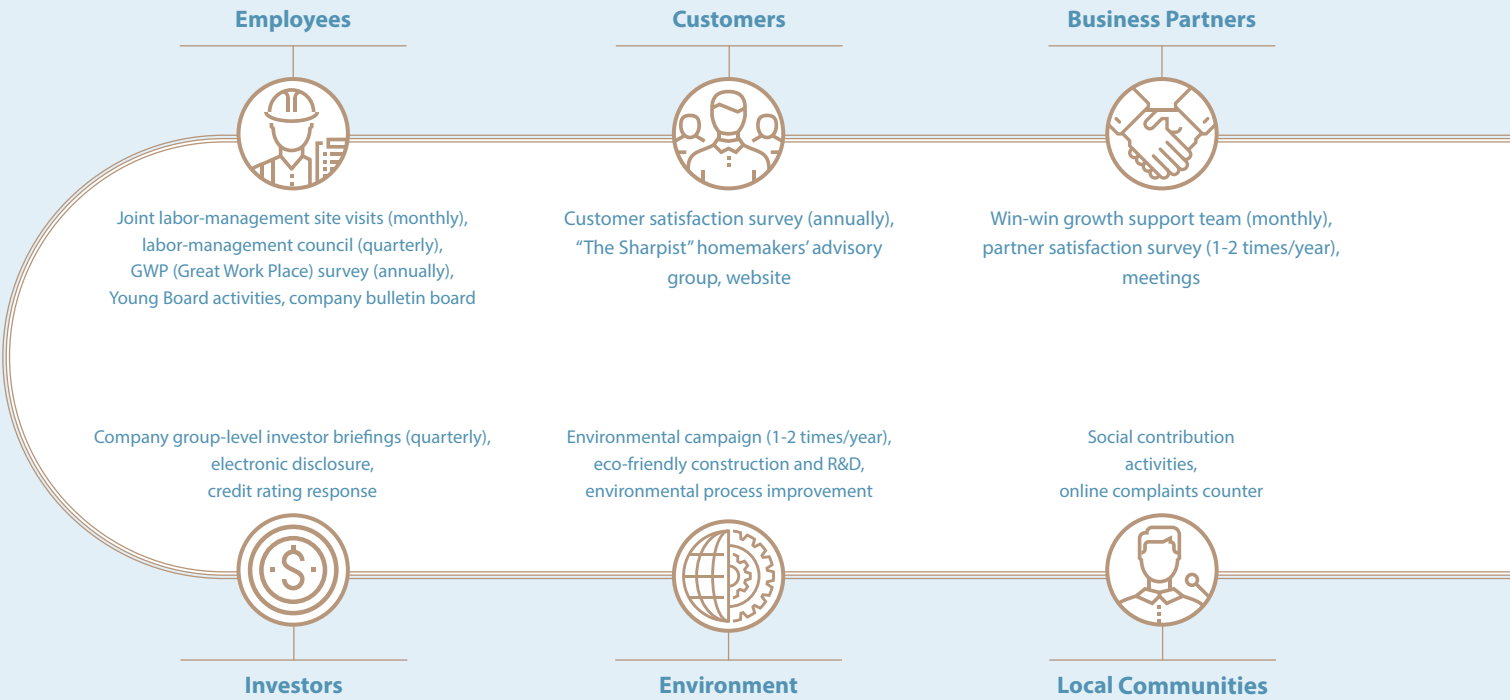
MATERIALITY ISSUES

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Stakeholder Engagement and Materiality Assessment

To obtain a diverse range of opinions from the six categories of stakeholders—all of which directly and indirectly influence business management—POSCO E&C maintains communication channels that vary according to their separate characteristics. In order to identify and manage issues affecting POSCO E&C's sustainability every year, we analyze sustainability management issues and identify those to be prioritized as material issues. We then establish response strategies for the identified issues, and share the subsequent activities and results with each stakeholder in a transparent manner.



STEP 1. Deriving a pool of sustainability management issues

In order to identify a pool of issues facing POSCO E&C, we analyzed international standards, media reports, benchmarking, and internal management conditions.

- International standard analysis: ISO 26000, DJSI, SASB, etc.
- Media analysis: 4,588 major news media items (Jan.-Dec. 2016)
- Benchmarking analysis: 12 domestic & overseas construction companies
- Analysis of internal management conditions: Internal data such as business performance & action plans

STEP 2. Prioritizing issues

A materiality assessment was conducted, following the report content principles of the GRI (Global Reporting Initiative) Guidelines. The materiality assessment, conducted from May-June 2017, derived 12 reporting issues and identified six material issues, sustainable general issues.

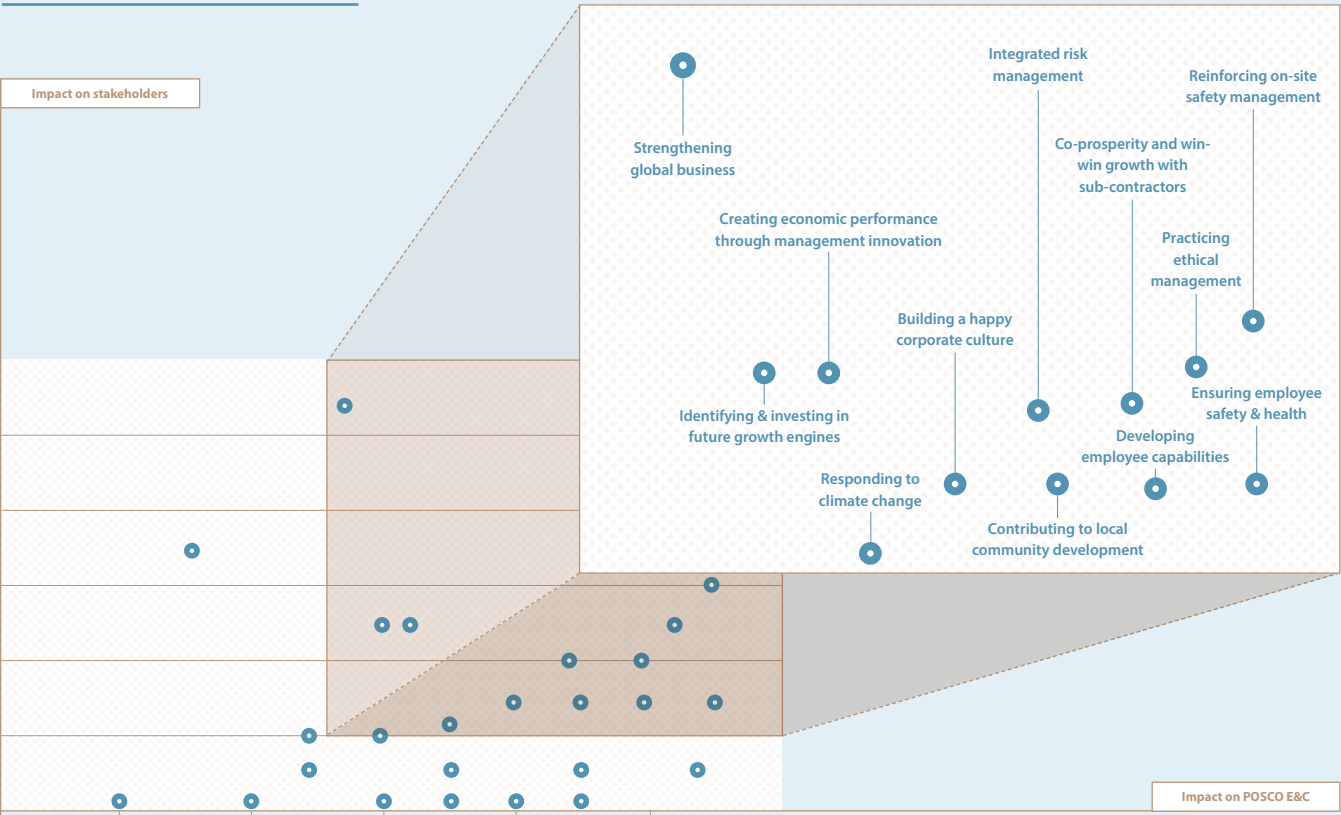
STEP 3. Managing material issues

For these six material issues, we identified risks and opportunities, and developed countermeasures accordingly. The associated activities and results are managed by the corresponding divisions, and improvements are carried out on a continuous basis.

STEP 4. Monitoring and follow-up reporting

The year's performance outcomes are compiled in a sustainability report. The report is submitted to the board of directors and a feedback process takes place. The report is also shared with all stakeholders in online and offline forms.

MATERIALITY ASSESSMENT



MATERIAL ISSUES	RELEVANT STAKEHOLDERS	GRI ASPECT	PAGE REFERENCES
Integrated risk management	Employees, Investors, Sub-contractors	Economic performance, Industrial safety & health, Emissions	73
Creating economic performance through management innovation	Employees, Investors	Economic performance	5~6, 13~40
Strengthening global business	Employees, Investors	Economic performance	5~6, 13~40
Identifying & investing in future growth engines	Employees, Investors, Sub-contractors	Economic performance	5~6, 13~40
Responding to climate change	Environment, Local Communities	Energy, Compliance	49~52
Practicing ethical management	Sub-contractors	Anti-corruption	71~72
Ensuring employee safety & health	Employees	Industrial safety & health	45~48
Reinforcing on-site safety management	Employees, Customer, Sub-contractors	Industrial safety & health	45~48
Developing employee capabilities	Employees, Customer, Investors	Employment, Training and education	53~56
Building a happy corporate culture	Employees	Employment	53~56
Co-prosperity and win-win growth with sub-contractors	Sub-contractors	Indirect economic impacts	61~64
Contributing to local community development	Local Communities	Local community, Indirect economic impacts	65~68



ON-SITE SAFETY MANAGEMENT

OUR APPROACH

As the issue of safety & health becomes an ever-growing social concern in Korea, the government is strengthening public policies and regulations for industrial safety & health. In particular, in Korea, rapid construction is done on a tight schedule for the lowest price, leading to working conditions in which laborers and heavy equipment for performing various works are placed together pell-mell in a limited amount of space, along with temporary structures. As such, the construction industry is rife with unfeasible construction practices that neglect proper measures for safety. Meanwhile, despite expanding our safety & health system every year and initiating a range of safety improvement activities, POSCO E&C faced the worst safety & health management crisis since our founding when an explosion occurred at the construction site of the Namyangju double-track railway in 2016. Accordingly, corporate management places the highest value on safety & health, and is mobilizing every capability to improve the safety management system with a mid- to long-term view.

Direction of safety & health initiatives

POSCO E&C considers safety & health as the company's highest value. To achieve a Top Safety & Health Culture, all employees, including the CEO, have been involved in 'SSS' Formerly called "Self-directed Safety Spread" activities to create a pleasant and safe working environment.

Safety & health organization

To enable immediate implementation of the CEO's safety & health management policy throughout all sites, POSCO E&C maintains a safety & health organization. For quick decision-making on safety & health issues, we have established a Safety and Health Center under the direct control of the CEO, as well as safety technology sections within the four major business divisions to supplement technical safety.

Continuous development of our safety & health management system

To ensure a safe working environment throughout the entirety of every project, the safety & health work processes established and implemented by POSCO E&C go beyond legislative and regulatory requirements. In addition, having acquired domestic and overseas certificates (KOSHA18001 and OHSAS18001) for our safety & health management system, our work and business sites are in line with global safety and health standards. To ensure optimal operation of the company's safety & health management system, POSCO E&C is constantly monitoring and improving all safety & health standards and processes. We conduct regular internal audit to check safety & health management system during both construction and operation phases.



EXECUTIVE'S VOICE



"Based on an advanced safety & health management system and infrastructure, we are strengthening our power of execution."

POSCO E&C's safety & health management system and infrastructure are at the highest level in the industry. On this basis, we are striving to further the practice of a safety & health culture, all the way from the CEO to every member in the field. We are continuously strengthening the company's safety & health power of execution through self-directed safety & health inspections and a range of activities.

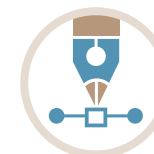
Jong-gu Kim,
director of the Safety and Health Center



Converted accident rate

Domestic construction industry average 0.57%

0.25
(Unit : %)



On-site safety inspections & training with CEO

12



Assessment of industrial accident prevention activities

80
(Unit : points)

Creating safety & health culture practices

The company's top management initiates regular on-site safety & health inspections and training, and encourages members at every level to participate in safety & health activities. Through Safety Talks, the CEO receives reports from site managers about on-site safety & health conditions, and conveys requests and directives involving safety & health issues. Another representative example of initiatives by top management is Safety Contact, a platform used to share safety & health information before every meeting. In addition, customized safety & health training programs are offered at every level. We conduct safety leadership training for site project managers, safety practices training for construction managers, and multi-lingual video tutorials for foreign workers.

Safety & health rallies and strategy meetings

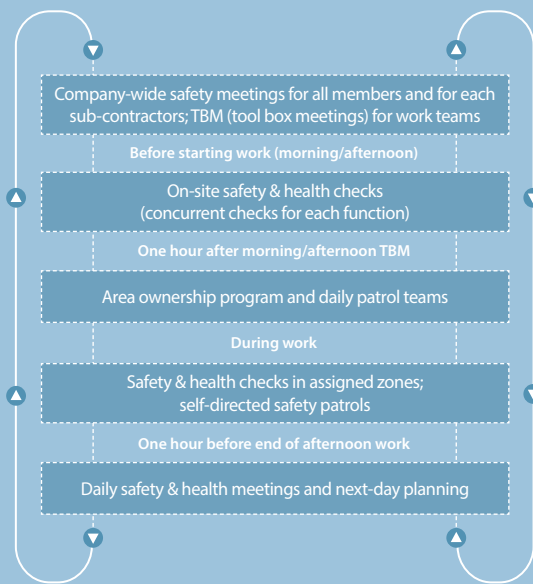
At the beginning of each new year, all employees and sub-contractors attend safety & health campaigns, where everyone pledges to the lack of management industrial accidents resulting from the lack of management in the coming year. In addition, all executives and the CEO attend quarterly strategic safety & health meetings to develop detailed strategies and action plans.

Safety & health best practice competitions

To enhance the company's safety competitiveness, all employees may take part in safety & health (best practice) competitions, including the CEO. Bestpractices presented in the competition are applied in the field, helping to create an environment that aims to achieve ZERO fatality.

FOCUSED CASE · Daily standard safety activity cycle based on safety SSS activities

To identify on-site hazards and make immediate improvements, POSCO E&C has adopted a standard safety activity cycle at all sites, based on 'SSS' formerly called "Self-directed Safety Spread" activities. In this action program, managers of POSCO E&C and its sub-contractors participate in self-directed safety duties at certain times during the work day, enabling the systematic implementation of daily safety & health activities.



Safety meetings for all members company-wide and for each sub-contractors; TBMs (tool box meetings) for work teams

To ensure that risk factors for each work day are diagnosed in advance, full-participation safety meetings for all members and partners are conducted by daily safety check leaders. Subsequently, at the actual work site, MOS (Moment of Safety) TBM are conducted by work team leaders.

On-site safety & health checks

To ensure on-site safety & health, all supervisors go to workplaces and conduct safety & health checks, including verifying that safety facilities are in operation. These are performed in conjunction with their own regular duties, such as checking construction quality and progress.

Responsibility areas system and daily inspection teams

We have put in place a system of assigned responsibility areas. All supervisors are assigned to perform safety & health management tasks in specific zones at specific times. In addition, daily safety & health patrol teams—pairs of workers whose primary duties are construction work—are organized to carry out safety & health tasks exclusively on a given day.

Safety & health checks in assigned zones; self-directed safety patrols

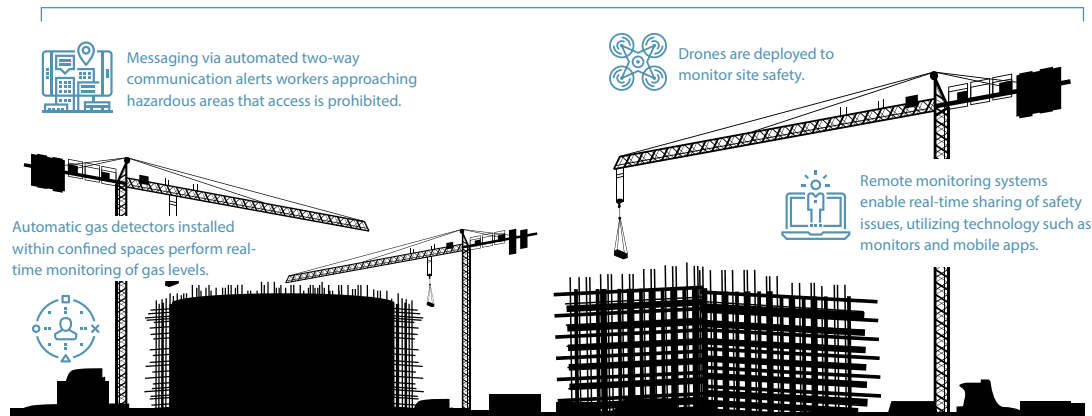
All supervisors go to their assigned zones and focus on any residual risk factors in the workplace (fire, explosion, falls, etc.). The heads of sub-contractors take part in self-directed safety & health patrol teams, performing comprehensive checks on the safety & health, quality, and environmental management in the workplace.

Daily safety & health meetings and next-day planning

After each group discusses countermeasures for safety & health issues such as process interference, safety & health performance for the day is shared at daily safety meetings led by project managers, and safety & health plans for the following day are established. To ensure continuous improvement, the meeting outcomes are shared with the entire workforce at the next day's TBM.

Smart Safety Process

Utilizing IT (information technology) equipment such as beacons, drones, and CCTV monitoring, major on-site hazards are recognized in advance, enabling prevention and preparation for potential emergency situations.



Safety & health management for business partners

The competitiveness of our business partners' safety & health is considered tantamount to that of POSCO E&C itself. In a program to improve affiliates' safety & health management capabilities, we select business partners with proven capabilities. We support the betterment of safety and health standards by means of continuous feedback and improvement.

Program to enhance business partners' safety & health management capabilities

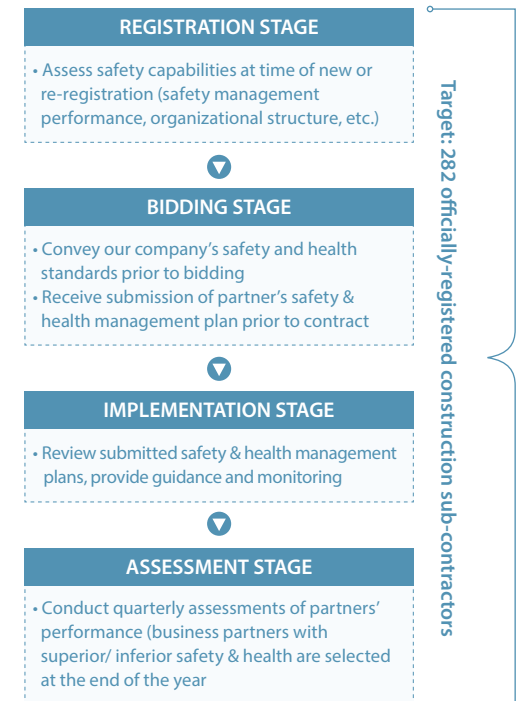
To ensure that every business partner participating in construction is equipped with adequate safety & health management capabilities, we perform rigorous verification and provide support at every stage of partner registration, assessment, and feedback. At the 'registration stage,' we examine the prospective partner's basic safety & health management capabilities, such as the CEO's stance on safety & health, organizational structure, and company accident record. At the 'bidding stage,' we relay our company's safety and health standards in detail. Companies which have won bids are supported in establishing safety & health management plans. At the 'implementation stage,' we monitor the implementation of safety & health management plans and exchange feedback. Lastly, in the 'assessment stage,' we perform quarterly assessments of sub-contractors' safety & health management implementation. Sub-contractors in the top 5% receive incentives equivalent to those given to outstanding partners identified in the comprehensive performance assessment. Meanwhile, sub-contractors in the bottom 5% are penalized according to stage. Through such measures and activities, we are encouraging the development of voluntary, self-directed safety & health management capabilities.

Future directions

Making 2017 the first year in the establishment of a new safety & health culture, our aim is to elevate "safety & health implementation capabilities, awareness, and infrastructure" to higher levels.

Towards this end, we plan to strengthen self-initiated safety & health implementation capabilities (for example, establishing standard safety activity cycles), improve safety & health awareness and capacity at all staffing levels, and establish advanced/accident prevention systems.

Safety & health capability assessment of sub-contractors, by stage



Focus orientation



02 ENVIRONMENTALLY-FRIENDLY CONSTRUCTION

OUR APPROACH

The nature of the construction industry is such that many resources are simultaneously poured into a construction project, leading to a significant amount of waste and scrap material, along with numerous environmental problems. Meanwhile, environmental issues at project sites, such as noise and dust, may give rise to civil complaints in local communities, possibly having direct impacts on projects such as construction delays. In an effort to address this, POSCO E&C developments on-site environmental management systems to be reduced pollution and waste of resources through eco-friendly design and construction. In addition, POSCO headquarters performs monthly reviews of the environmental management situation at each site, and provides support to improve sub-par factors.



EXECUTIVE'S VOICE



"We are reinforcing proactive, anticipative support for field-driven environmental management."

POSCO E&C supports the prioritization of the environment, safety, and quality in every aspect of the work we do, and has established a field-driven environmental system. In addition, to ensure that all employees are empowered to implement environmental protection on the job, we are endeavoring to increase environmental awareness through the 'Eco-Save' campaign.

*Kyu-won Kyung,
director of PJT Innovation Division*

Environmental management promotion system

With an environmental vision grounded in the POSCO Group Environmental Management Policy, POSCO E&C is pursuing deep implantation of a Green Culture, establishment of Green Processes, and activation of Green Business. In June 2016, POSCO E&C acquired the latest ISO 14001:2015 certification. We have also implemented the POSCO E&C Environmental Management System (POEMS), a system for managing environmental plans, data, regulations, etc., optimized for the construction industry.

Sustainable growth based on eco-friendly construction

CREATING A GREEN CULTURE	<ul style="list-style-type: none"> 'Eco-Save' environmental campaign Voluntary environment management of construction sites Support for Green partnership of partner company
ESTABLISHING GREEN PROCESSES	<ul style="list-style-type: none"> Establishment of international environmental management (ISO 14001) Operation of computerized environmental management Development of environmental construction system
ACTIVATING GREEN BUSINESS	<ul style="list-style-type: none"> Strengthened on green building and the renewable Energy Eco-friendly design and technology development Retention of green certifications and R&D capacity-building

* POSCO E&C Environmental Management System

Eco-Save: Creation of an environmental management culture

In 2017, POSCO E&C launched an environmental protection and waste reduction initiative under the slogan 'Eco-Save.' Associated activities include environmental campaigns, modularization of best 'green' practices, and reinforced environmental risk management.

Eco
Environmental practices in daily life
<ul style="list-style-type: none"> Climbing stairs Commuting by bicycle Using fewer single-use disposable goods Reducing food waste
Green practices on the construction site
<ul style="list-style-type: none"> Reducing noise and dust Implanting voluntary environmental improvements Holding monthly 'environmental days'
Save
Reducing office waste
<ul style="list-style-type: none"> Conserving copier paper Conserving energy Conserving water Using conference rooms efficiently
Reducing construction site waste
<ul style="list-style-type: none"> Conserving resources and energy Minimizing materials wastage Recycling waste



Voluntary improvement activities

Each site has taken ownership of voluntary environmental management improvement activities, and each strives to attain 'ZERO environmental accidents.' Employees themselves directly identify issues on the site, and implement solutions tailored to the situation. In this way, priority cases requiring improvement can be managed intensively. At the same time, all employees are encouraged to achieve self-directed change.

Carbon management support for business partners, towards realizing a low carbon society

Since 2015, POSCO E&C has been participating in the Ministry of Trade, Industry & Energy's Green Partnership Project, conducting continuous coaching projects for business partners in areas such as building carbon management systems. POSCO E&C supported carbon management programs for 10 partner companies in 2015 and 14 in 2016, enabling our sub-contractors to expand their carbon management and greenhouse gas (GHG) reduction activities.

Major support programs

Strategy and training	Support for carbon reduction activities
<ul style="list-style-type: none"> Supply chain carbon management support agreements and support plans Carbon management diagnosis of each sub-contractor to support strategies and roadmaps for achieving low carbon Training & education on climate change, environmental regulations, and industrial safety 	<ul style="list-style-type: none"> Energy diagnosis and facilities improvement by construction materials producers Improvement of construction methods and equipment by construction contracting companies Acquisition of low-carbon product certification for construction products
Establishment of carbon management systems	Expansion and development of carbon management
<ul style="list-style-type: none"> GHG inventories of each sub-contractor Expert inspection each sub-contractor's GHG emissions Development of tools and manuals for calculating the GHG emissions of each sub-contractor 	<ul style="list-style-type: none"> Conferences with the CEO, presentations sharing carbon management performance & practices Carbon management campaigns, media reports, video production, etc. Improving the low-carbon construction procurement & purchasing system, expanding government support, and more

FOCUS CASE · Delivered presentation at the Asia-Europe Environment Forum on best practices in the construction industry



As an exemplar of best practices for transforming industry through sustainable development, POSCO E&C was invited to the annual meeting of the 2017 Asia-Europe Environment Forum, held under the theme of "Sustainable Development Goals and Financing: No Longer Business as Usual". The presentation by POSCO E&C was well received as it described efforts to create a low-carbon society through green partnership projects in the construction industry, as well as the associated greenhouse gas reductions and economic effects of such projects. The Asia-Europe Environment Forum (ENVforum) is a gathering of officials, professionals and experts from such fields as politics, finance, environment and civil society. As a platform for knowledge exchange, it seeks institutions and cases in sustainable development. It is a joint endeavor of entities including the Asia-Europe Meeting (ASEM), Institute for Global Environmental Strategies (IGES), the Asia-Europe Foundation (ASEF), and Germany's Hanns Seidel Foundation (HSF).

ENVIRONMENTAL IMPACTS BY PROJECT PROCESS

**Design stage**Eco-friendly construction methods & technologies

To reduce energy use and greenhouse gas emissions, we are working on developing and adopting methods and facilities appropriate for the construction industry. In 2016, we worked with LED product manufacturers to develop tunnel construction lighting, and piloted the results in the Dogyeo Tunnel project. And for the first time in KOREA, we applied inverter panel boards to pile drivers to cut down on the overconsumption of oil.

Green certifications

In a quest to create more comfortable and pleasant interior & exterior environments and to increase building values, POSCO E&C is pursuing green certifications both domestic and abroad. Through practices like energy and resource conservation, use of materials with a low carbon footprint and reduced harmful substances, water conservation technologies such as water-saving fixtures, and eco-friendly construction and management, most of our projects in Korea have received Green Building certification. POSCO E&C has the nation's highest number of LEED (Leadership in Energy and Environmental Design) certifications from the U.S. Green Building Council. Fourteen of our individual buildings have been certified, as well as our Songdo complex, which received LEED ND (Neighborhood Development) certification. Notably, the Songdo Art Center was certified LEED Silver level through features such as abundant green and open spaces, water conservation facilities, eco-friendly interior finishing materials, and indoor air quality management.

Eco-friendly green designs

POSCO E&C provides eco-friendly residential housing with high energy efficiency by applying green architectural design. To respond to government policy in advance, we have devised strategies for reducing energy consumption by 60 percent, researching optimal design methods to comply with public notices on construction standards for energy-saving green houses. In addition, POSCO E&C has established standards on airtight performance management to realize energy savings in apartment buildings, as well as minimize air leakage, air infiltration, and other problems caused by the stack effect. POSCO E&C applies eco-friendly materials for healthy and comfortable indoor

environments. The interior finishing materials and adhesives are green building materials with low VOCs (volatile organic compounds) and low formaldehyde emissions. We also apply rigid polyurethane foam (KS 1 kinds 3ho) insulation known as PIR in residential buildings which not only counteracts the spread of fire, but also reduces environmental pollutants through low ODP(Ozone Depletion Potential) index.

Environmental management systems for improved environmental efficiency

In response to growing consumer concern with heating & cooling costs in residential environments, POSCO E&C has developed and applied a building environment performance and energy analysis system based on an integrated information management technology known as Building Information Modeling (BIM). BIM is used to convert 2D data into 3D designs, to maintain databases of building data, and to optimize factors like sunlight, view, and cooling & heating. In 2016, this system was applied to 11 project sites, including POSCO The Sharp Apartments in Myeongji-dong, Busan and Yeouido Parc 1 in Seoul. We plan to apply it to all construction sites afterwards.

Purchasing & procurement stageProcurement of low-carbon products

To promote the use of low-carbon products and technologies, POSCO E&C holds briefings for prospective sub-contractors, the POSCO E&C R&D, and purchasing contracts Division. The briefings seek to share awareness of low-carbon products, as well as discuss topics like performance improvement measures for partners' low-carbon products and technology and purchasing promotion plans. Based on these activities, we plan to expand procurement of low-carbon products in the future.

Support for sub-contractors' development of eco-friendly products

POSCO E&C contributes to sub-contractors' expansion of eco-friendly green product development and the opening up of new sales channels by supporting low-carbon product certification and carbon footprint calculation of their products. The associated achievements in 2016 included three cases of low-carbon product certification and four cases of carbon footprint assessment and

verification for sub-contractors' products. By purchasing these products, POSCO E&C successfully expanded its procurement of green products.

Discovering new enterprises through Green Partnerships

Through the Green Partnership initiative, Shin-gwang Pump Co., a supplier of industrial pumps, received support from POSCO E&C in their work on standardizing remanufactured pumps and related business. Their standardized remanufactured high-capacity industrial centrifugal pump volute, used to intake water from rivers, dams, etc., demonstrates the same quality as a brand-new product, enabling annual cost reductions of KRW 3.1 billion* for pump replacement and operations.

Construction stageModularization of best environmental management practices

POSCO E&C has modularized some of our case-by-case responses to on-site environmental management, and apply them from the early stages of a project. By analyzing cases linked to environmental factors such as dust, waste, noise, and vibration, according to the type of construction (e.g., apartments, buildings, roads), we achieve not only rigorous environmental management of worksites, but also cost reductions. For example, when razing urban high-rises, we apply environmentally-friendly methods to prevent environmental impacts from noise, dust, and demolition waste. And when performing civil works, we rig the earthwork vehicles and other machinery with eco-friendly equipment to minimize air and road pollution. These measures have helped to minimize environmental impacts such as GHG emissions, reduce environmental complaints, and shorten construction periods, leading to lower costs.

Intensive environmental risk management

Recent years have brought an increase in demolition work, an area that involves significant accident risks. POSCO E&C has been striving to prevent accidents through environmental risk management, for instance by devising measures at the beginning of the year for managing demolition work, e-mailing standards and matters for inspection to the upcoming demolition sites prior to beginning work, and checking sites following demolition.

Reinforcement of on-site waste management

Waste management is becoming a bigger and bigger issue due to the shortage of landfills and an increase in dismantling work, which accounts for 12 to 25 percent of all waste. In response, POSCO E&C has devised ways to reinforce on-site waste management. We are reinforcing field guidance in visits to sites where large amounts of waste are generated, addressing the sorting and recycling of each type of waste. In addition, we investigate exemplary processing companies every quarter and share that information at demolition sites or sites in the early stages of construction. We also provide 'conscientious waste pouches' to laborers working in apartment buildings for collecting daily personal trash.

Management of dust dispersion

Fine dust and particulate matter have recently become a major social issue in Korea, making it all the more important to reduce the dispersion of fugitive dust, one of the primary causes of fine dust. In response, nine large domestic construction companies, including POSCO E&C, have signed voluntary agreements to establish and implement dust management plans to reduce dust dispersion around construction sites. Equipment to control dust generation and dispersion in each emissions-causing process has been installed, and other proactive voluntary efforts include cleaning roads near construction sites and using spraying equipment for dust suppression.

Communication stageOpen competitions for exemplary cases and ideas for eco-friendly green construction

An open competition was held by POSCO E&C seeking exemplary cases and ideas for eco-friendly construction practices. Targeting field and office staff, partner companies, and residents of The Sharp apartments, the competition raised environmental awareness and helped to minimize environmental impact. Judged according to the criteria of environmental improvement, utility, and economic efficiency, six cases were awarded prizes. Among the prize-winners were a business model for the standardization of remanufactured pumps, a low-carbon precast slab produced with recycled slag, and a waste recycling eco-station on apartment complex premises.

03

IMPROVING THE ORGANIZATIONAL CULTURE

OUR APPROACH

A company's major competitive power starts with talents. In particular, the construction industry requires a high level of technical expertise in order to create a safe urban infrastructure. Thus, building up a basis for the individual capacity of employees, and for the continuous improvement of that capacity, is paramount. POSCO E&C aims to have global talents and business-minded talents to achieve becoming a 'Smart Player in Steel Construction & Concession.' Through preemptive support and management, POSCO E&C is committed to fostering professionals capable of being global market leaders.

EXECUTIVE'S VOICE



"We are cultivating entrepreneurial professionals capable of bringing a strong sense of responsibility to their work."

At POSCO E&C, human resources are considered the most important factor in the company's competitiveness. By identifying the needs of employees in advance, we are able to proactively provide support. 'The Plus' campaign is one way of enhancing awareness and improving the organizational culture. At the same time, we are continuously securing core competencies to stay at the forefront of an industrial environment that is transforming into Industry 4.0.

Kim Hee-dae,
managing director of HR Support Division



Core job training
completed
909
(Unit: persons)



Rate of parental leave
utilization
100
(Unit: percent)



Overseas workers
481
(Unit: persons)



Human resources management system

POSCO E&C is securing and fostering global talent that will lead change with their advanced thinking, advanced technology, and advanced passion. POSCO E&C aims to have talented human resources possessing global competence, a spirit of challenge, creativity, and a strong work ethic. That is the definition of the Right People—global players, creators, and implementers.



Global players

Creators refer to talented human resources possessing global competence, with open minds and respect for diversity, equipped to play role on the global stage.



Creators

Global players refer to talented human resources possessing unwavering commitment and a passion to achieve the highest goal, capable of readily rising to challenges and taking a unique perspective and approach to creating new value.



Implementers

Implementers refer to talented human resources knowledgeable in their fields, possessing high-caliber professional skills, a sound work ethic, and the capacity to fulfill their assigned roles.

CREATING ANOTHER SUCCESS STORY

Strengthening Organizational Culture • Benefits

Standardized group-wide ranking system and professional training system

Since 2015, we have adopted a position or 'P-ranking' system, uniformly applied throughout the POSCO Group, to standardize job ranks, positions, and duties, creating a culture of unity and cooperation within the organization. In the future, we will select outstanding human resources among local employees recruited overseas and assign them the same P-rankings used by employees at headquarters, thus actively fostering them at the same uniform levels. We have also adopted the PCP (POSCO Certified Professional) system to select qualified employees in specific fields and encourage their careers on a professional growth track, empowering them create high performance results.

Extension of the retirement age

To ensure that company employees can maintain their quality of life following retirement, POSCO E&C has implemented a retirement extension system that extends the retirement age to 60. Together with this, a wage peak system is being applied starting at age 56. Further, an interim payment system is also being implemented to prevent decreases in the value of pension benefits.

Balance between work and family

We are working to improve work-life balance by modifying the work schedule system towards reduced working hours, for instance through flexible work schemes and a partial day leave system. A newly-established system of leave for fertility treatments is being offered to married employees. In addition, we have adjusted maternity subsidies, offering congratulatory gifts of money to new biological or adoptive parents.

Talent Acquisition

POSCO E&C has set up a fair and impartial hiring process to recruit both new and experienced personnel with global competence and expertise. During the hiring process, an objective and consistent system is applied to assess all applicants, without discriminating on the basis of factors like nationality, gender, or religion.

Organizational restructuring

In 2016, POSCO E&C merged with POSCO Engineering and the engineering headquarters were newly reorganized. POSCO Engineering specialized in the design of infrastructure zones, such as plants, railways, and ports, with a focus on overseas projects. By consolidating, POSCO E&C looks forward to strengthened design capabilities and a synergistic effect in overseas project awards. In addition, POSCO E&C intends to enhance management efficiency, including management processes and personnel structure. Meanwhile, in preparation for the Industry 4.0 paradigm, POSCO E&C has established a smart automation group to support R&D on future IT technology.

Global talent development

Leadership training

We provide leadership training to cultivate the staff competencies required for the roles of each position. To equip staff in advance with the necessary skills for their job titles, we provide support through e-learning, leadership certification exams, and strategic task performance.



EMPLOYEE TRAINING

General PM (Project Manager) Training Course

This training course aims to prepare PMs to carry out every phase of a project, from planning awards to executing EPC. The training contents mainly address improving the essential competencies of General PMs, such as project management and management leadership. The six-month course covers theoretical learning, task performance, and on-the-job training, in

that order. Notably, towards enhancing the execution capabilities of overseas project and generating future competitiveness, special courses for executives and training courses on decision-making situations were added in 2017. Since 2003, a total of 362 general PMs have been fostered.

Construction & Management Academy

We operate a construction management academy that offers a total of 78 courses, subdivided by business division and the associated positions and duties. In this way, we foster professionals based in various job areas, such as sales, E&C technology, PM themes, and management.

Training core job specialists

To activate overseas awards and reinforce project implementation capabilities, we are cultivating specialists in selected core areas such as overseas sales contract management and risk management. Outstanding talents from each business division are selected to receive training tailored to their job duties. In 2016, a total of 152 job specialists were produced.

Training experts in AI (artificial intelligence)

To respond to Industry 4.0, we are cultivating experts in artificial intelligence (AI). We aim to prepare high-level specialized personnel in a training course with four phases, ranging from a beginner-level course that focuses on recognizing the necessity of artificial intelligence and understanding the basic concepts to joint research projects with outside experts. Through this initiative, we intend to leverage technologies such as IoT and Big Data to achieve business optimization and create future value.

Course category	Training specifics
Foundational course	Understanding basic concepts of artificial intelligence
Basic course	Nurturing entry-level professionals through acquiring basic knowledge and solving short-term tasks
Intensive course	Learning/practicing techniques for AI algorithm design and applications
Master training	Joint research projects linked with outside professional organizations

Performance-based evaluation and compensation system

We are operating an evaluation and compensation system centered on individual capabilities and performance. In particular, the Matrix Assessment System targets organizations that rely on strong working relationships with other departments. As the results are reflected in performance evaluations, the system serves to encourage interdepartmental cooperation and coordination. In 2017, we have made improvements to the compensation systems for managerial and office positions as well as staff working in the field, thereby reinforcing the business and field-based compensation systems.

Respect for human rights and sound labor-management relations

In order to establish an organizational culture of respect for human rights, we conduct human rights monitoring in each half of the year. In addition, through regular meetings with labor-management councils and labor union, we strive to establish sound relations between labor and management based on mutual respect and understanding. Activating channels of communication between employees enables personnel to discuss key management-related issues and matters such as the labor conditions. The diverse opinions and views of company staff are gathered and reflected in management activities.

· FOCUSED CASE · Building a strong, vibrant organizational culture: The Plus campaign



POSCO E&C the Plus!

A robust organizational culture that overcomes crises through leadership initiatives and the voluntary participation of employees!

To build a strong, vibrant organizational culture, we are carrying out 'the Plus' campaign. We identify and implement "execution-oriented" tasks aimed at achieving management goals through enhanced competitiveness, by transforming mindsets of all staff, and combining collective competences.

Organization=
Performance+

Leader=
Initiative+

Employees=
Royalties+

Customer=
Happiness+

- 100-DAY TURN-AROUND initiative
- Enhanced consensus on the vision and management strategy
- HR system improvements based on performance & role
- Expanded communication channels
- Expanded sharing of experience & knowledge
- Improved work methods
- Activating idea proposals and applications
- Making dignified speech and behavior a habit
- Enhancing work engagement
- Strengthened partnerships
- Support for sub-contractors' adoption of safety & health management systems

Sharing the corporate vision and facilitating cooperation:
PERFORMANCE PLUS FOR ORGANIZATION

Respecting and empowering employees:
INITIATIVE PLUS FOR LEADERS

Practicing field-driven management and inspiring pride:
LOYALTY PLUS FOR EMPLOYEES

Emphasizing trust and promoting win-win growth:
HAPPINESS PLUS FOR CUSTOMERS

Organization=Performance+

We improved profit margins and minimized operating costs through the 100-DAY TURN-AROUND campaign. Online notices and workshops in each departmental organization were deployed to increase organizational consensus on the vision and management strategy and to strengthen organizational synergy. In addition, by establishing compensation and evaluation based on performance & role, we aim to implant a merit-based system and improve the organizational business capabilities.

Employees=Royalties+

To facilitate ideas for work improvement and provide employee motivation through awards and recognition, we organize competitions and group-centered idea theme rooms. When ideas are adopted—for instance, in areas like cost savings and reduced wastefulness—we link the ideas with projects to support their implementation. Meanwhile, we are also striving to create a work atmosphere of mutual respect through communication training and campaigns encouraging expressions of appreciation & praise. We are also seeking to enhance employee work engagement by providing more workplace conveniences and improved welfare.

Leader=Initiative+

All staff and executives, including the CEO, take part in programs and events such as the company-wide "Han-maum" (One Mind) Festival and a marathon competition. We work to enable internal communication channels as constructive discussion forums for the company's advancement. Efforts like these create an atmosphere of open communication among employees. In addition, through activities like executives giving talks and directors sharing their work experience, we are spreading the success stories of leaders and preventing repeats of failures. Meanwhile, we also seek to improve working methods, performing activities such as providing feedback on individual work habits, and seek to improve the culture of directive reporting meetings to improve work efficiency and awareness of directors.

Customer=Happiness+

Towards enhancing business performance and promoting win-win growth, we are reinforcing relationships with sub-contractors through regular biannual events for intercommunication and a newly established incentive program. We are also encouraging sub-contractors to improve their safety management capabilities by supporting excellent business partners in acquiring KOSHA 18001 certification and receiving diagnoses and consulting on their safety management & operations.

CUSTOMER-CENTERED MANAGEMENT

OUR APPROACH

To achieve a competitive edge in the increasingly fierce global market, the key word is CUSTOMER VALUE CREATION. As such, many companies make customer satisfaction the top priority in every process, from product development to after-sales service. POSCO E&C is creating innovative customer value by proactively identifying the needs of residents and ordering enterprises of 'The Sharp' apartments. Working to prevent minor defects in the apartments and to expand a range of landscaping and community facilities in the complex, we strive to enhance the affective quality of the resident experience. Maintaining construction quality based on superior technology, while also contributing to cost savings by shortening the construction period, we raise the credibility of the owner/client.

Design for customer satisfaction: 'The Sharp' apartments

Creating cultural spaces

To elevate resident satisfaction, we have created a variety of community spaces, such as the Kids' Pool for water play and Moms' Café for getting together with neighbors. Besides these features, we maximize customer satisfaction through spaces like Farm Gardens for growing and harvesting your own produce, exotic wooded refuges called Camping Gardens, and Healing Parks featuring grassy lawns, fields, and man-made waterfalls.

Developing IoT device-linked applications

We are the first Korean construction company to build a wireless network environment inside apartments using ZigBee*, and have also developed five different "The Sharp IoT products" linked to it. Residents can use a mobile app exclusive to The Sharp to collectively adjust switches for lighting, heating, and standby power cut-off. We also plan to develop a smart phone service to inform residents of current conditions inside their apartment. Meanwhile, it was quite an achievement when, among the five IoT products, we received awards for the integrated wall pad, integrated switches, and door lock at the 2017 K-Design Awards, one of Asia's three major design awards.

* ZigBee protocol: Low-power, short-range wireless networking technology able to stably communicate small amounts of data

** The Sharp' brand won first place in the apartment category in the 2017 customer brand loyalty survey conducted jointly by the Korean Customers' Forum and Brand Keys, one of the top ten brand consulting firms in the U.S. The survey targeting consumers evaluates their brand trust, brand attachment, repurchase intention, referral intention, and switching intention.



EXECUTIVE'S VOICE



"The customer has the answers."

POSCO E&C seeks to enhance its competitiveness by making customers the highest priority and reflecting their views throughout management. In particular, we are striving to strengthen our customer services to receive overwhelming support far above our competitors. Starting with our special "Onmaum" [whole-hearted dedication] services for customers in 2012, such efforts show why, in 2017, we achieved the feat of being No. 1 in the KS-QEI for the ninth year in a row.

Kyo-hoon Kim,
director, Construction Support Division 2

Preventive pre-move-in inspection

We preemptively manage customer complaints throughout every phase, from ordering to maintenance. We prevent hype advertising to provide accurate information to customers. During the construction stage, we refer to previous defects and complaints in the construction technology guidelines to prevent repeat problems. In particular, we take preemptive steps such as reinforcing finishing work and cleaning, enhancing the affective quality. At the same time, we reduce the rate of repeat defects by putting experts in place to handle any defects, thus ensuring a high-quality residential environment.

Pre-move-in inspection process

D - 60 Overall inspection	Overall inspection of households personally conducted by homeowner-managers, to prevent defects
D - 35 Pre-completion Quality Fair	Overall quality review with personnel from construction and related departments, who reflect the feedback received
D - 30 New home visiting event	Pre-completion visit from future residents, an opportunity for requests concerning areas for improvement
D - 30 Final check	A final check of defects identified during earlier inspections
D - DAY	MOVE-IN



Korean Standard-Quality Excellence IndexApartment sector

KS-QEI - 9 consecutive years

1st



After-sales service customer satisfaction

89.2

(Unit: points)



Quality management maturity

2016 Management assessment on POSCO Family Companies

1st

(Achieved 906 points)



Brand customer loyalty

Apartment sector, 2017

1st

Post-move-in inspection
Enhancing resident satisfaction

During customers’ first three months of residence, POSCO E&C conducts a range of activities to enhance resident satisfaction. The ‘resident pre-inspection appointment system’ allows customers to make appointments to inspect their new homes accompanied by a manager-in-charge to provide any necessary explanations.In addition, a ‘mobile inspection system’ expedites handling of any defects identified in the initial period after move-in. Our customer-oriented post-management activities and A/S-related services for the first year after move-in are facilitated by an integrated defect diagnosis system, through which critical defects are diagnosed and corrected within 24 hours through coordination with the appropriate divisions.

‘Onmaum’ services
Our “Onmaum” [whole-hearted dedication] services provide differentiated customer value and raise customer satisfaction. In addition to an array of services—cleaning services such as sterilizing mattresses and cleaning kitchen stove hoods; services for daily life such as bicycle repair and knife-sharpening; and sharing services, including providing carts in underground parking garages—we launched the “Onmaum Clean-Out Service” in 2016. Targeting complexes occupied for at least 4–5 years, this service involves cleaning out pipes in the kitchen, bathroom, and laundry room to remove accumulated household waste and promote smooth drainage.

Improving clients’ satisfaction
To improve the satisfaction of project owners/clients, POSCO E&C is carrying out various satisfaction enhancement activities such as quality improvement and construction period reduction. We are also creating additional business opportunities through established partnerships based on trust.

Entry into the resource development business in the Australian market
POSCO E&C made its first foray into the resource development business in the Australian market with the successful completion of the Moolaben mining project. With optimized purchasing agreements with companies in Australia, POSCO E&C could supply facilities and equipment would meet the quality standards required by Australian law, not only did we minimize quality risk, but we also shortened the construction period by two and a half months. This increased profit margins and built trust with the client, thus helping to lay the groundwork for additional orders in future resource development projects in Australia.

Ongoing business propulsion through strategic partnerships with clients
POSCO E&C became the first Korean construction company to enter the Latin American energy plant market in 2006, when we won the contract for the Ventanas coal-fired power plant in Chile, a project ordered by the American company, AES Corporation. Our advanced construction technology and process management helped build trust with AES and won us four projects in Chile alone. Through the reinforced strategic partnership with AES, we continue to create business opportunities, including winning a contract in 2016 for the Masinloc coal-fired power plant in the Philippines.

· FOCUSED CASE · Establishment of the AS materials management system campaign

By building a mobile logistics management system and logistical warehouses in region-specific hubs, we are seeking to systematically manage AS materials and materials for post-occupancy management. This system enables real-time investigation of the whole AS materials inventory. Expected effects include the ability to collect immediate customer feedback, reduce redundancy costs, and cut costs through integrated ordering when materials run low.

Improving quality management maturity
In recognition of the fact that quality is at the root of customer satisfaction, POSCO conducts quality management assessment targeting all POSCO family companies. The assessment consists of three areas: customer satisfaction, internal competence, and win-win cooperation. On top of proactive quality innovation measures, like supporting the establishment of an autonomous quality management system and obtaining quality management certifications, POSCO E&C demonstrated steady quality innovation activities compared to the previous year, and was able to achieve the highest score among the family of companies.

Area	Key improvements
Customer satisfaction	Reinforced preventive activities against customer complaints at every stage
Internal competence	Integrated management system for quality-testing tools
Win-win cooperation	Enhanced effectiveness of win-win cooperation with sub-contractors

Preemptive quality risk response system
We are preemptively responding to quality risks, and supporting on-site autonomous quality control systems to prevent serious defects. At construction sites, we conduct training visits and quality audits. In the case of sites where quality management is subpar, we focus on providing customized support and publish quality management manuals and guides, seeking to ensure consistent levels of quality and to improve the work capabilities of quality managers.

Acquisition of quality management certification
We have obtained KEPIC (Korea Electric Power Industry Code) certification in the field of nuclear power plant structural design. As a national standard of the electric power industry, KEPIC provides detailed specifications on methods and procedures for the design, manufacture, construction, and operation of nuclear power plants to ensure their safety. To obtain KEPIC certification, having an organization specialized in nuclear design and securing the associated competencies are part of the prerequisites. With this certification, POSCO E&C has created the foundation for nuclear power plant EPC (engineering,

procurement, construction) turnkey projects, from design to construction. Meanwhile, our ASME S-stamp certification for the design, manufacture and installation of thermal power generation was renewed, and we became the first in the Korean construction industry to acquire the ISO9001:2015 conversion certification, the international standard for quality management systems.

Strengthening our global quality capabilities
To reflect the standardized quality requirements of POSCO E&C at both domestic and overseas sites, we support the quality control efforts of overseas subsidiaries and projects. Professional quality managers are placed at overseas sites to implement quality management. Towards improving the business competence of managers, we also support partners in acquiring international quality qualifications. In establishing special quality agreements with overseas project construction partners in 2017, we clearly indicate quality standards by attaching the quality requirements to agreements at the time of contract. We also select outstanding human resources in the field of project management and foster them through training to become experts in overseas on-site quality management. We are strengthening our global quality management capabilities through various training courses, such as the practical field application of quality management systems, intensive training on overseas quality control, and training courses for internationally registered certified auditors.

POSTIM* Activation Campaign
We are activating POSTIM (POSCO Total Innovation Methodology), a POSCO Group-wide innovation system. Other innovation activities are underway in the areas of project-based work methods, cost reductions and risk improvement, and smart work environments. We are committed to improving quality competitiveness by creating a company-wide culture of innovation.

* POSTIM (POSCO Total Innovation Methodology): Integrated innovation methodology of POSCO Group companies

WIN-WIN GROWTH

MATERIALITY ISSUES

OUR APPROACH

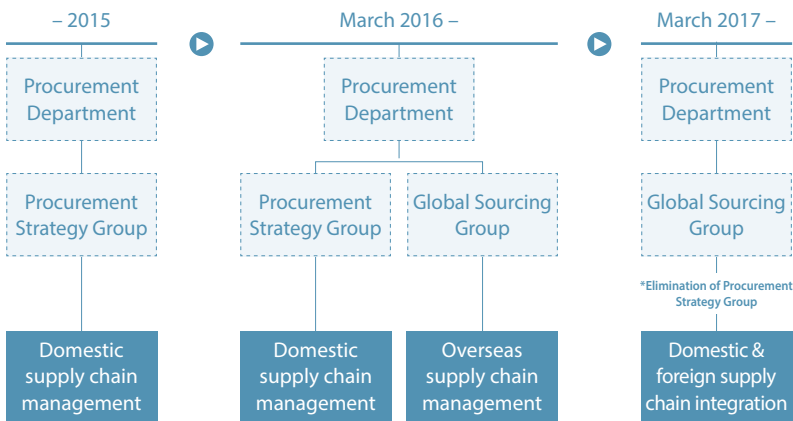
As the scope of our corporate business expands to the global market, the company's network widens and win-win cooperation throughout the entire supply chain is emerging. In particular, due to nature of the construction business, which relies on frequent dealings with sub-contractors, a top priority in building competitiveness across the entire enterprise in the development of enterprise projects is strategic and advanced partnerships. In its relationships with sub-contractors, POSCO E&C considers the establishment of advanced partnerships to be the key element for win-win growth. By actively introducing win-win growth support programs, we are making every effort to strengthen our partners' own inherent competitiveness.

POSCO E&C

Promoting win-win growth with sub-contractors

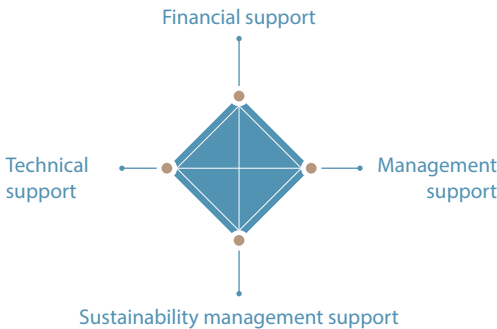
POSCO E&C initiatives include various support systems for co-prosperity with sub-contractors based on four major directions, including financial, technical, management, and sustainability support, along with two-way communication. In addition, we have reorganized a dedicated organization to expand the scope of win-win growth with sub-contractors to overseas markets, and are strengthening communication with local overseas sub-contractors, as well.

Dedicated organization for supply chain management



We are operating an improved dedicated organization to facilitate the overseas expansion of our partners' supply chain management.

Major partner support programs for win-win growth



Financial support

We have financial support programs to help our sub-contractors to concentrate on their business operations without worrying about funding required for production and operations. We directly established a low-interest loan fund to provide support for loans to sub-contractors. We also help sub-contractors with weak credit to secure capital liquidity, enabling them to receive loans through e-commerce guarantees from credit rating agencies on the basis of transaction records and contracts.

Technical support

POSCO E&C's competitiveness is directly linked to the quality and technology of its partners. So, we provide funding support for joint R&D on new technologies and collaborate with partners through joint patent applications and registration. We also have a Benefit sharing program to share jointly-created achievements

with sub-contractors. In addition, POSCO E&C provides unstinting support to reinforce technological competitiveness with sub-contractors, including the transfer of patented technology.

Management support

In order to support stable operations in sub-contractors' business, we provide customized support, including technical consulting, in such areas as IT, office systems, process innovation, business ethics, and safety management training. Through SME vocational training programs, we help improve sub-contractors' technical competitiveness by supporting customized educational design for areas such as technology, IT, and office management. In addition, POSCO E&C provides annual investment funds through its Industry Innovation campaign to support sub-contractors' QSS (Quick Six Sigma) innovations.

Sustainability management support

POSCO E&C provides sub-contractors with ethics education and safety training in order to spread a culture of sustainable management and improve their competencies. To encourage sub-contractors to establish self-contained safety management systems, we carry out inspections and consulting on safety management activities, targeting partners wishing to obtain KOSHA 18001 certification. In the first half of 2017, one sub-contractors acquired the certification through this program. Even after certification, we plan to continue to provide customized support for post-auditing follow-up and renewal reviews.

EXECUTIVE'S VOICE

"In the construction industry, added value is created through collaboration with partner companies."

As part of our efforts to support partner companies, POSCO E&C is proactive in setting up a range of programs for win-win growth. In the future, to contribute to increased sales and profitability for our partner companies, we intend to actively promote joint overseas expansion. In addition, to strengthen our network with overseas partner companies, we plan to hold more purchasing roadshows and expand channels of communication through the Global Partner portal.

Kim Tae-guk,
director, Outsourcing purchasing office



Financial support

Low-interest loan fund

269

(Unit: KRW billion)



Joint application/
registration of patents

17

Applications

05

Registrations

(Unit: cases)



Sustainability
management education
for partner companies

Corporate ethics and safety
management education

6,118

Including duplicates
(Unit: persons)



Transfer of patented
technologies

34

(Unit: cases)

246.6

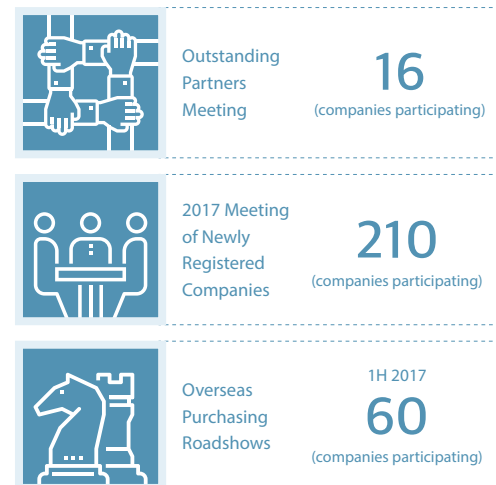
Revenue generated (Unit: KRW billion)

Strengthening partnerships with business partners

In order to maintain continuous business relationships with outstanding sub-contractors, which form the basis of our corporate competitiveness, we employ a variety of communications channels, including meetings with excellent companies and roadshows with overseas companies.

At an Outstanding Partners Meeting in 2016, awards were presented to sound business partners, and their grievances and difficulties were aired. In 2017, we reinforced incentives, such as rewards for outstanding employees at sub-contractors, and promoted a roadshow in Thailand for communication with overseas business partners. We will continue to strengthen our partnerships.

Strengthening Business Partnerships



* Philippines Roadshow and Indonesia Roadshow scheduled for 2H 2017



Outstanding Partners Meeting



Thailand Purchasing Roadshow

Transparent dealings with sub-contractors

Total Cost of Ownership (TCO) purchasing

TCO consists of the purchase price of a purchased product or service plus costs incurred during and after delivery to the customer. POSCO E&C applies TCO purchasing for major transactions over a certain amount. We diagnose factors like the quality management capabilities and construction capacity of prospective business partners in advance, and make sure that the final bidders are exemplary companies. This helps to ensure construction quality and prevent additional costs being incurred after contract, arising from production delays, design changes, and delays in the construction schedule.

Open sourcing system

We have adopted an open sourcing system to alleviate barriers to the entry of new suppliers. This serves to reinforce competitiveness by securing a larger pool of excellent suppliers. At the same time, to mitigate the risks of an open sourcing system, we have made the basic registration eligibility and verification process more stringent.

In order to manage CSR (corporate social responsibility) risk with regard to suppliers, contracts since 2014 have included provisions related to a code of ethics that reflects human rights and labor provisions set forth by global initiatives such as the Universal Declaration of Human Rights, the United Nation Guiding Principles on Business and Human Rights (UNGPs), the International Labor Organization (ILO), and the ISO 26000 social responsibility guidance standard. Among our domestic contracts, 98 percent adhere to the pertinent ethical provisions.

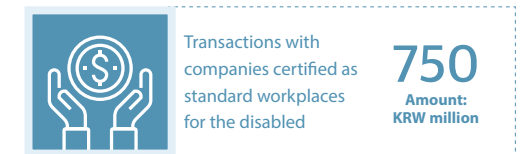
Registration Process for Business Partners



Realizing social value through business transactions

To contribute to addressing social problems, POSCO E&C strives to secure diversity in its supply chain through our supplier transactions. Since 2014, we have entered into a strategic alliance agreement with companies that are certified as standard workplaces for the disabled, and we are steadily expanding purchases of goods handled by such companies. In this way, we are contributing to the promotion of disabled employment and ultimately giving people with disabilities the opportunity to grow through their roles as members of society.

By actively seeking out companies that hire the disabled as well as partners committed to addressing social problems, we plan to continue to expand the scope of targets for our business transactions and purchasing.



· FOCUSED CASE · Establishing a PARTNER PORTAL

To enable overseas suppliers to register their businesses online, POSCO E&C has established a global supplier portal, a convenient means of sharing POSCO E&C's vision, managing registration, handling estimates (bidding), and sharing information. We plan to deploy the portal to establish transparent and reliable trading relationships with global partners and leverage it as a platform to communicate with overseas partners over the long term. In addition, through this portal, once-scattered information about global sub-contractors can be easily shared among project divisions. Being integrated with the company's main procurement system, it also enhances management efficiency.



OUR APPROACH

The development of local communities has a direct positive impact on enterprise, and leads to a virtuous cycle through a company's potential growth. As such, global corporations are sustaining social contribution activities based on mid-to-long-term strategies, in order to contribute to sustainable social development. POSCO E&C focuses on social contribution activities centering on domestic and overseas strongholds, with a focus on sharing-centered activities with children and youth, our future generations. Maintaining a long-term perspective, we are committed to creating positive change in local communities as we continue our genuine social contribution activities.

Direction of social contribution initiatives

POSCO E&C is committed to contributing to the spread of a sharing culture among employees and to addressing community problems through genuine social contribution activities.



Hours of volunteer activity per employee

29

(Unit: hours)



Funds raised through the 1% Sharing Campaign

Employee contributions + Matching grants

1.14

(Unit: KRW billion)



Talent donation volunteer activities

172

(Unit: instances)

EXECUTIVE'S VOICE



"Through the practice of sharing, we will create a compassionate tomorrow for Korea."

The social contributions of POSCO E&C can be embodied by the keyword 'future.' We aim to bring happiness to all stakeholders in order to create a warm and compassionate tomorrow for Korea. In particular, following the theme of nurturing future talent, we plan to continue to foster talented human resources in Korea and to provide a range of support programs for children and youth in developing countries.

Jae-Youl Lee,
director of the corporate relations department



Infrastructure of a sharing culture

POSCO E&C upper management shows initiative in social contribution activities, inspiring all members to relate to the importance of a sharing culture. In addition, by leveraging elements of our social contribution infrastructure—for instance, the 1% Sharing Campaign, public-private partnerships, and employee volunteer groups—we are seeking ways to contribute to local community development.

POSCO 1% Sharing Campaign

Our company actively participates in the POSCO Group 1% Sharing Campaign. In 2016, with an employee participation rate of 81.5 percent generating contributions of KRW 570 million, plus matching funds from the company, POSCO E&C donated a total of KRW 1.14 billion to the POSCO 1% Sharing Foundation. We regularly share information on fundraising and details on activities in the company through the company's internal 1% Sharing Letter.

Talent donation volunteer groups

Employees of POSCO E&C are sharing their talents with local communities. As of 2017, 11 groups are donating their talents. Besides construction training and improvement of residential environments, activities which take advantage of skills intrinsic to the construction business, the different groups' varied activities also include photography, choral singing, and mentoring.

College student volunteers 'Happy Builders'

Every year, POSCO E&C selects participants for a college student volunteer group called "Happy Builder." By providing college students with an opportunity to utilize their talents and experience diverse global cultures, we help to foster warm-hearted and talented individuals possessing fire and passion. The 50 students selected in 2016 took part in a variety of domestic and overseas social contribution programs conducted by POSCO E&C, performing an average of 117.4 hours of sharing activities per person.

Public-private cooperation partnership

In cooperation with government agencies and embassies in various countries, we are carrying out social contribution activities both at home in Korea and abroad. In 2016, we performed activities in a variety of public-private partnerships, including the Korea Foundation (a public diplomacy organization under the Ministry of Foreign Affairs); the Korea Foundation for International Culture Exchange (under the Ministry of Culture, Sports and Tourism); the Central Fire Service (Ministry of Public Safety and Security); and Inha University Hospital. These active and ongoing social contribution activities supported not only cultural education for youth, educational equipment, and cultural exchange festivals, but also medical aid for residents near our overseas project sites.

Contributing to cooperation and development in regional strongholds in Korea

Fire prevention and residential environment improvement

In cooperation with local fire departments in the vicinity of POSCO E&C construction sites, we carry out renovations for the residentially disadvantaged whose homes are vulnerable to the risk of fire. We help make residential environments safer and more comfortable through activities like replacing old wiring and other fire inspection activities, helping to buy fire prevention safety items, and subsidizing home fire insurance. In 2016, our renovation activities included providing flame-retardant window and wall treatments in 10 social welfare facilities across the country. We also provided disadvantaged households in each region with basic fire protection equipment, such as smoke alarms and fire extinguishers.

Supporting the disadvantaged in regions

Employees at major project sites—including in Incheon, Pohang, Gwangyang, and Busan—regularly conduct seasonal social contribution activities for the region’s less advantaged residents.

Activities	Details
Sharing rice cake soup with the elderly for the Lunar New Year	• Serving rice cake soup, presenting gift packages
Delivering gifts to marginalized households during Family Month	• Presenting gifts for local children's welfare centers • Making carnations, writing letters to the elderly, handing out packages of daily necessities
Sharing chicken soup on Boknal during the summer	• Serving samgyetang (Korean chicken soup) • Providing the “Onmaum” [wholehearted] knife-sharpening service • Presenting gift packages
Sharing kindness for the Chuseok holiday	• Giving scholarships • Presenting packages of daily necessities
Sharing cold weather kits with marginalized groups for wintertime	• Giving out cold weather kits, including tents, hats, gloves, underclothing

• FOCUSED CASE • Future talent nurturing

Support for local children's centers

One of POSCO E&C’s leading social contribution activities is supporting community centers for children. For the eighth year, we helped support the hopes and dreams of children from low-income households in Incheon. One-on-one twinning relationships have been formed between 37 of our divisions and 37 children's centers in Incheon. Once a month, our company's members support children's recreational activities, academic tutoring, and cultural experiences, as well as providing assistance in such forms as wallpapering and facility maintenance.

Construction Education Academy for the free semester initiative

POSCO E&C launched the ‘Construction Education Academy,’ a course of study aimed at 1,039 students from 29 middle schools who are taking advantage of the recently-introduced free semester initiative. The academy grew from an MOU with Incheon Metropolitan City and the city's Office of Education. Personnel from POSCO E&C, along with college student volunteers, serve as mentors and helpers, providing basic knowledge about the construction industry, as well as field experience. In this way, local youths are able to cultivate construction-related knowledge.

Children's Choral Competition

POSCO E&C created the only children's choir competition in Incheon. The 2017 Incheon Children's Choral Competition, in its second year, provides children in the region with an opportunity to demonstrate their musical talent, as well as supporting the qualitative growth of children's song culture.

Dream Tree Scholarships

POSCO E&C awards ‘Dream Tree [Ggum-namu] Scholarships’ to students unable to continue their studies due to economic difficulties. The scholarship fund is created through such activities as a ‘piggy-bank of love campaign’ as well as outside lecture fees earned by company members. We plan to continue supporting all young people committed to studying, enabling them to keep their dreams and hopes alive as they concentrate on their academic work.

Expansion of Overseas Social Contribution Activities



Philippines

- ‘Global Bridge’ cultural exchange (2016)



Myanmar

- Support for marginalized groups (2016)
- Oriental medicine medical aid (2017)
- Golden Wave Festival cultural exchange (2017)



Poland

- Global Harmony cultural exchange (2016)
- Multimedia equipment donation ceremony (2016)



Vietnam

- Medical aid activities (2016)

Cultural exchange and education

We are working to spread the culture of the Korean Wave (Hallyu) to other parts of the world by developing public-private cooperation projects with the Korea Foundation for International Culture Exchange. As part of this effort, we support cultural content, such as Korean movies screenings and samulnori percussion performances, as well as cultural exchange festivals featuring K-POP performances. We are also actively promoting Korean culture and tradition to local areas through education. Cultural exchange activities took place in Masinloc (the Philippines) and Krakow (Poland) in 2016, and in Yangon (Myanmar) in 2017.

Bilateral cultural exchange festivals were held, largely through the efforts of Happy Builders and young local volunteers. Social contribution activities included Korean cultural education, such as NANTA rhythmic performing arts and taekwondo martial arts, and donations of educational equipment.

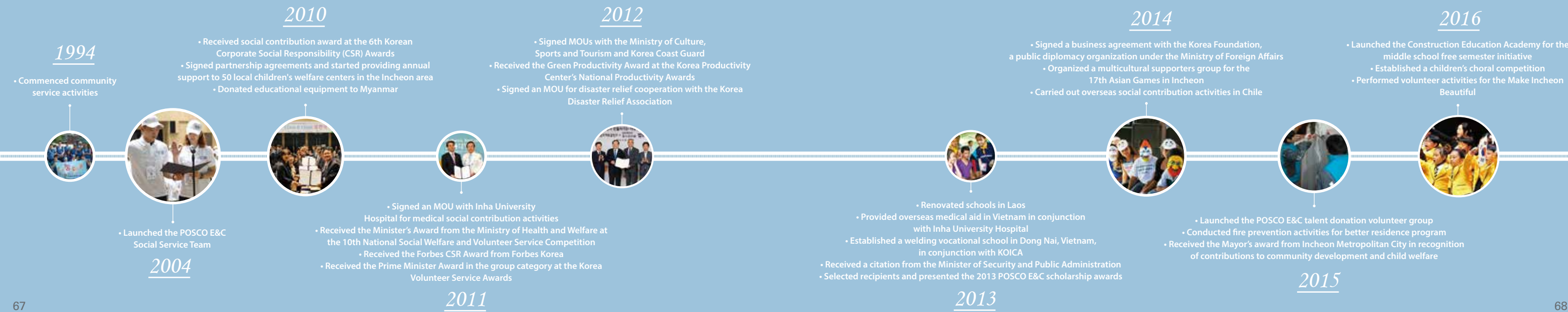
Medical Support with Western & Oriental Medicine

In connection with Inha University Hospital, we provide free medical care and health screenings to residents in areas where medical infrastructure is lacking, including Myanmar and Vietnam, among others. In 2016, we helped local residents in the vicinity of the Da Nang-Quang Ngai Highway in Vietnam to receive medical care (family medicine, rehabilitation medicine, dentistry, pediatrics, and surgery), as well as pharmaceuticals. Some 1,300 local residents benefited. In 2017, a volunteer group of Oriental medicine practitioners delivered care at a national traditional medicine hospital in Yangon, Myanmar. About 2,300 local residents received traditional Korean medicine treatments such as acupuncture, moxibustion, and herbal medicine granules. Healthcare professionals from both countries also benefited from exchange and cooperation at an academic seminar.

Material support for the disadvantaged

We provide supplies to disadvantaged and disaster-stricken people. In addition to offering essential supplies, such as daily necessities and emergency relief kits, we also provide additional social infrastructure support, such as demonstrations of rainwater facilities. We also help raise the quality of education by donating multimedia centers for students and educational equipment.

A History of Our Sharing Culture



SUSTAINABILITY MANAGEMENT

If you click on a page number, you can jump to that page.

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Compliance	71
Risk Management	73

CORPORATE GOVERNANCE

Board composition

The Board of Directors at POSCO E&C is composed of six members, including three internal executive directors and three external non-executive directors. Two of the non-executive directors are appointed by the Public Investment Fund (PIF), a sovereign wealth fund of Saudi Arabia, contributing to the increased transparency and independence of the Board’s decision-making process.

Role and operation of the Board of Directors

The Board of Directors deliberates and makes resolutions on major managerial issues, statutory requirements, and other essential matters that directly or indirectly affect the business objectives stated in the Articles of Incorporation.

In 2016, 13 board meetings were held, at which the Board approved amendments to the board's operating regulations and the merger with POSCO Engineering. In particular, in October 2016, the Board resolved to revise its regulations to enable it to focus on strategic decision-making. Accordingly, measures such as higher criteria for submitting agenda items and abridged regulations for regular Board meetings are in place to increase operational efficiency. Potential risk from these changes is being mitigated through the project council and Management Sessions.

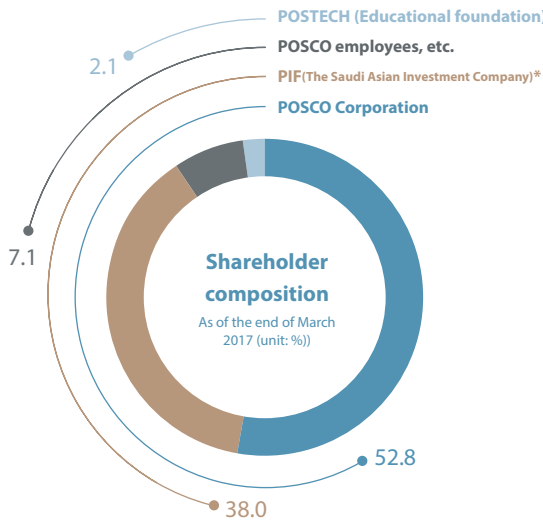
Management Sessions are held periodically, at least once a year, in which participating executives and directors discuss various issues not addressed at Board meetings. Three meetings took place in 2016, held in Dubai, Songdo, and Saudi Arabia. At a 2017 meeting held in Songdo, key management issues and current business status were shared, and attendees discussed mid-to-long-term strategy and the human resources system.

Audit system

Through a resolution of the General Meeting of Shareholders, one auditor is appointed to perform accounting and business auditing. Internal devices are in place to facilitate access to the management information required for auditing, ensuring independent authority. A Corporate Audit Department exists as a separate entity in an auxiliary capacity to conduct internal auditing.

Shareholder composition

With the shareholding participation of the Saudi Asian Investment Company of the Public Investment Fund (PIF), shares of POSCO E&C are held by POSCO (52.8%), PIF (38.0%), Pohang University of Science and Technology (POSTECH) (2.1%), and employees & minority shareholders (7.1%).



*The Saudi Asian Investment Company is a special purpose corporation (SPC) established by the Public Investment Fund (PIF), a sovereign wealth fund of Saudi Arabia.

(As of the end of May 2017)

Category	Name	Career highlights
Executive directors	Chan-Kun Han	Current CEO of POSCO E&C, former VP of POSCO Daewoo
	Woo-Kyu Lee	Current VP of POSCO E&C, former Senior Managing Director of POSCO
	Yong-Il Lee	Current Senior Managing Director of POSCO E&C, former Director of POSCO E&C
Non-executive directors	In-Hwa Chang	Current VP of POSCO
	Mohammad A.Abunayyan	Current President of ACWA POWER
	Ahmed A.Al-Subaey	Current VP of Aramco

COMPLIANCE

Ethical Business Management System

Based on our vision of 'Clean POSCO E&C,' we are strengthening our ethical management and fair trade promotion capabilities. By establishing a culture of compliance in which we conform to basics and principles in all our work, we intend to spread the value of integrity and fairness throughout the entire company, and the trust that goes along with them. In particular, since 2016, we have upgraded our business operating system through the integrated management of strategies, programs, and training on ethical management and fair trade.

Strategic goals Propulsion direction

Minimizing ethical risk under FCPA*	<ul style="list-style-type: none"> Enhancing monitoring to prevent unethical conduct Increasing synergy through participatory education Continuously strengthening the compliance program to mitigate anti-bribery and corruption risk
Minimizing risk of legal violations by subcontractors	<ul style="list-style-type: none"> Regularly checking legal compliance Strengthening preventive activities for subcontracting disputes with sub-contractors

* Foreign Corrupt Practices Act (FCPA)

Amendment of the Code of Conduct

In 2003, POSCO E&C enacted its Code of Conduct. In 2017, the Ethics Charter and Practical Guidelines were amended to concretize the Improper Solicitation and Graft Act and the four major forms of ethical misconduct. Following an earlier 2015 revision which had clarified guidelines on ethical misconduct, this latest revision was implemented as a timely proactive response to changes in laws and regulations related to ethics management, and to promote employees' understanding.

Details on revisions to the Code of Conduct

2003	<ul style="list-style-type: none"> Enactment of the Code of Conduct
2015	<ul style="list-style-type: none"> Addition of the Ethics Charter Presentation of specific criteria (amounts of money and other valuables, entertainment, etc.)
2016~2017	<ul style="list-style-type: none"> Revision of standards in accordance with the Improper Solicitation and Graft Act Clear statement on the four major forms of ethical misconduct

• Ethics Charter_ http://www.poscoenc.com/service/ethics_standard2.asp

• Practical Guidelines_ http://www.poscoenc.com/service/ethics_standard3.asp

Managing ethical and anti-corruption risk

Activation of the Clean POSCO System

We run something called the Clean POSCO System, which requires all recommendations and solicitations to be reported in order to block excessive requests concerning any sort of contract, preferential treatment in personnel matters, or special accommodations outside of accepted practice. All employees are required to register the incident on POSCO's Clean System if they receive recommendations/solicitations from stakeholders. When POSCO employees register such an incident, they are granted merit recognition in the ethical and fair trade implementation program, leading to the promotion of employee awareness and overall activation of the program. Details of requests can be registered online or via a mobile app for ethical management.

Reference to the ethics counseling line on employees' business cards

tarting in August 2015, we have listed the contact information for the ethics counseling line at the bottom of company business cards. In January 2016, we added a statement on privacy protection. Through this, we are expressing our commitment to ethical practices and promoting ethics counseling to stakeholders.

posco
E&C

- Mobile: 010-6437-7250 (Korea)
- E-mail : go20598@poscoenc.com
- Ethics counseling
T. 032-748-7652
W. <http://ethics.poscoenc.com>
- POSCO E&C strictly adheres to the laws and regulations concerning the protection of personal information.

Reinforced monitoring with external stakeholders

Before the Lunar New Year and Chuseok holidays, we send out letters about the "ethical holiday culture" to the CEOs and construction managers of sub-contractors, signed by standing auditor. After these traditional holidays, we survey sub-contractors' construction managers to gauge the ethical standards of our own employees. In addition, following semiannual ethical training for sub-contractors' construction managers, we conduct fair trade surveys to measure our company's fair trade compliance.



Staff ethics training given by standing auditor

Reinforced training on ethics and fair trade

We provide compliance training to all employees, according to division and job function. In addition to offline training about ethics, fair trade, and auditing cases, we also provide training using a quiz-style SNS platform to improve our employees' understanding. Notably, the Corporate Audit Department conducted a training for all employees in response the Improper Solicitation and Graft Act, which went into effect in September 2016, to prevent any violations of the law. In addition, we increased the professionalism of ethics training for sub-contractors by having it delivered by visiting trainers from our Corporate Audit Department, rather than under the supervision of our construction managers.

Reinforced prevention of overseas anti-bribery and corruption risk

On our Ethics Management web page, we provide guidelines for compliance with anti-corruption law translated into Vietnamese, Chinese, and Portuguese. In addition, we identify any potential risk in overseas service contracts and agent contracts in excess of KRW one billion. In cases of high-risk services, the Ethics Committee holds deliberations before proceeding with the contract. Since 2016, we have conducted bimonthly anti-corruption risk monitoring, selecting compliance leaders in corporations and construction sites in countries low on the Corruption Perceptions Index (CPI).

Minimizing risk of legal violations by subcontractors

Advancement of fair trade practices

In response to the fortified regulations and penalties of the Fair Trade Commission, we are constantly monitoring legal compliance, and urge immediate and voluntary correction of any violations. We have four fair trade guidelines and utilize standard subcontracting contracts, and also employ an electronic contract system to manage the entire purchasing process with fairness and transparency. At the same time, key issues related to fair trade are shared frequently with all employees through pop-up windows and reports posted on the employee intranet portal.

Strengthened prevention of subcontracting disputes

As part of our efforts to establish an ethical and fair trading system, we have Start-up Councils (made up of standing auditors and construction managers from POSCO E&C together with representatives and construction managers of sub-contractors) at newly-launched construction sites to form joint agreements on ethical management practices and fair trade compliance. At eight construction sites, we operate subcontracting 'Clean-Up' sites, providing case-based education and consulting on regulations related to subcontracting disputes. Through this, we are propagating relevant training throughout the field.



Joint pledge ceremony, pledging to comply with ethical practice and fair trade

Strengthened monitoring of external stakeholders

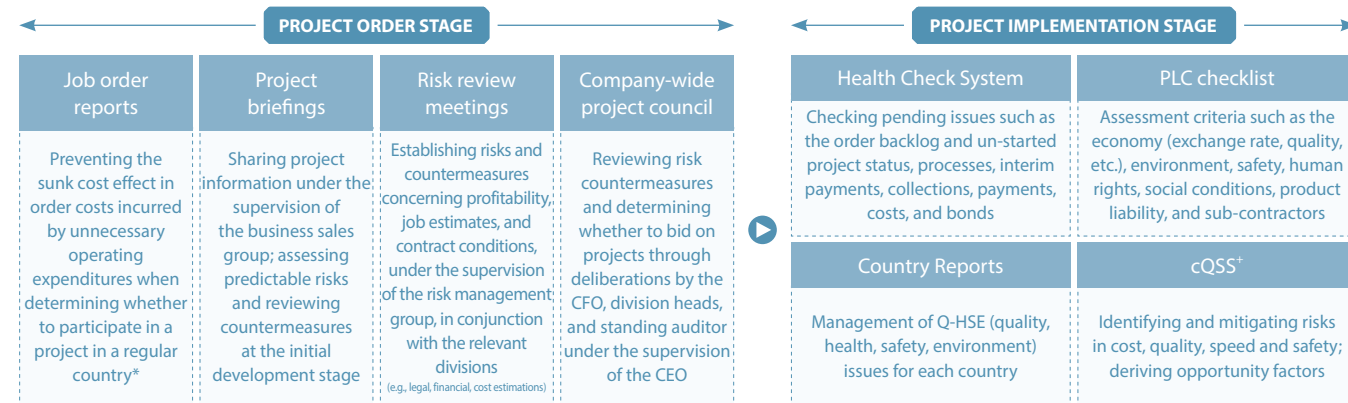
For advance detection and prevention of possible subcontracting disputes, we perform monthly monitoring to predict potential disputes at construction sites.

RISK MANAGEMENT

Integrated Risk Management

POSCO E&C analyzes various risk factors that may arise at every stage from project orders to project implementation, and compiles the particulars of actual risk into a database for systematic management. We divide risk management into two stages: the initial development stage of project orders and project implementation. At each stage, we manage financial and non-financial risk factors in a cohesive manner. In particular, in 2016 and 2017, we focused on strengthening our risk management system to improve our operating margin.

Integrated Risk Management Process



* Regular countries: Countries not considered 'strategic countries' or 'countries of interest' according to POSCO E&C's screening and concentration criteria

Risk management at the initial order stage

In the initial order stage, besides holding project briefings, risk review meetings, and deliberations by the project council before an order takes place, the final decision-making on bidding goes forward through an assessment of project (PJT) soundness and a profit margin management guideline tool which quantifies country, client, commodities, job estimates, project conditions, etc. In particular, we reinforce the risk assessment of high-risk projects by setting limits on the submission of agenda items for project deliberations, including target profit margins, compliance risk in countries with corruption, first-entry countries and new-process projects. In addition, for enhanced risk verification expertise, specialists from other areas such as finance, taxation, legal affairs, and cost estimating also participate in the risk assessment.

Key risk management improvements in the initial order stage in 2016 & 2017

Limits to agenda items in project deliberations	Shortfalls in the target profit margin, compliance risk, degradation of project soundness, first-entry countries & new-process projects, etc.
Profit management guidelines	Project bidding applying the minimum operating margins on commodities whose profit margins have decreased between the time of the initial order and the time of completion, initial goods, and goods of first-entry countries
Job estimate review meetings	Preventing faulty estimates on overseas projects by checking the adequacy of quote conditions and processes, such as design, construction period, implementation conditions, and outsourcing estimates

Risk management at the project implementation stage

Our Health Check System ensures the financial soundness of projects. At every stage of the project, upper management and construction managers are provided with key financial information based on Big Data. Alerts are sent when financial risk criteria have been exceeded, ensuring a timely response. In addition, by using cQSS+, a Quick Six Sigma system applied to construction sites, we identify risk and opportunity factors for cost, quality, speed, and safety, the key elements of construction management.

Global CSR Risk Management

In order to increase the efficiency of risk management in overseas projects, we apply the PLC (Project Life Cycle) checklist to share CSR (corporate social responsibility) risk factors requiring common management at overseas construction sites, such as the environment, safety, process, and quality. Through Country Reports, we also apply the areas of Q-HSE (Quality, Health, Safety, Environment) to systematically manage issues related to national laws and regulations, local labor conditions, etc., on a country-by-country basis. In addition, database content is created based on various risk factors that occur at particular construction site units, so as to check situation-specific risks early in the project. These efforts are improving the company's risk management maturity.

APPENDIX

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FINANCIAL INFORMATION

Consolidated Statement of Financial Position

35th Fiscal Year, as of December 31, 2016
34th Fiscal Year, as of December 31, 2015
33th Fiscal Year, as of December 31, 2014

POSCO E&C and its subsidiaries		(Unit: KRW)	
Item	End of 35th Fiscal Year	End of 34th Fiscal Year	End of 33th Fiscal Year
Assets			
I . Current assets	5,651,493,299,076	5,973,501,500,227	5,829,020,082,106
Cash and cash equivalents	696,046,280,620	1,411,552,573,868	370,766,199,255
Account receivable	1,544,038,275,644	1,773,134,693,119	2,067,723,471,591
Other financial assets	863,993,743,926	625,346,471,594	531,935,460,000
Unclaimed construction	824,107,510,205	954,093,831,301	1,180,734,916,886
Inventories	954,863,796,874	744,402,047,174	1,070,019,039,431
Current income tax assets	11,483,644,840	18,232,107,250	22,420,872,525
Other current assets	456,960,046,967	446,739,775,921	585,420,122,418
Assets held for sale	300,000,000,000	-	-
II . Non-current assets	2,172,020,808,391	2,270,567,394,662	2,537,244,632,908
Investments in associates	189,286,978,067	224,567,094,198	112,651,783,891
Non-current account receivables	2,610,290,589	52,824,598,380	6,633,520,813
Other non-current financial assets	378,189,293,065	404,070,401,857	557,126,006,444
Tangible assets	229,069,199,264	250,309,863,778	196,550,542,427
Investments in real estate	483,754,207,354	481,587,935,419	787,721,293,971
Intangible assets	324,322,291,843	427,484,108,133	473,918,546,327
Deferred income tax assets	520,786,529,628	385,179,863,179	361,159,954,466
Other non-current assets	44,002,018,581	44,543,529,718	41,482,984,569
Total assets	7,823,514,107,467	8,244,068,894,889	8,366,264,715,014
Liabilities			
I . Current liabilities	4,686,844,793,834	3,993,520,035,720	4,059,558,170,297
Account payables	1,043,135,659,421	1,223,478,650,962	1,072,218,046,110
Borrowings	1,458,803,057,844	600,005,692,173	595,769,132,046
Other financial liabilities	546,637,343,975	645,958,053,930	763,452,596,469
Prepaid construction property	1,088,000,688,617	711,459,222,945	898,885,985,466
Current income tax liabilities	-	40,820,673,256	14,322,641,744
Provisions	17,493,274,171	10,177,174,594	9,965,069,522
Other current liabilities	532,774,769,806	761,620,567,860	704,944,698,940
II . Non-current liabilities	555,684,331,889	911,386,910,931	1,320,802,991,667
Non-current account payables	44,344,564,320	10,948,383,388	88,469,261,204
Non-current borrowings	283,034,122,576	695,596,207,502	907,095,440,245
Other non-current financial liabilities	29,665,601,112	12,610,249,859	43,976,587,597
Net defined benefit liabilities	47,624,983,771	72,930,608,987	65,392,712,603
Provisions	120,115,306,805	102,684,973,717	93,046,351,017
Deferred income tax liabilities	26,839,229,966	13,181,966,274	14,326,636,807
Other non-current liabilities	4,060,523,339	3,434,521,204	108,496,002,194
Total liabilities	5,242,529,125,723	4,904,906,946,651	5,380,361,161,964
Capital			
I . Equity attributable to the owner of the parent Issued capital	2,557,548,219,172	3,299,267,213,538	2,948,386,191,999
Issued capital	209,033,470,000	209,033,470,000	183,615,000,000
Capital surplus	1,119,293,169,512	1,121,177,275,047	749,388,414,043
Reserves	(75,946,273,908)	(14,634,822,846)	(46,224,243,306)
Retained earnings	1,305,167,853,568	1,983,691,291,337	2,061,607,021,262
II . Non-current interests	23,436,762,572	39,894,734,700	37,517,361,051
Total equity	2,580,984,981,744	3,339,161,948,238	2,985,903,553,050
Total capital and liabilities	7,823,514,107,467	8,244,068,894,889	8,366,264,715,014

Consolidated Statements of Comprehensive Income

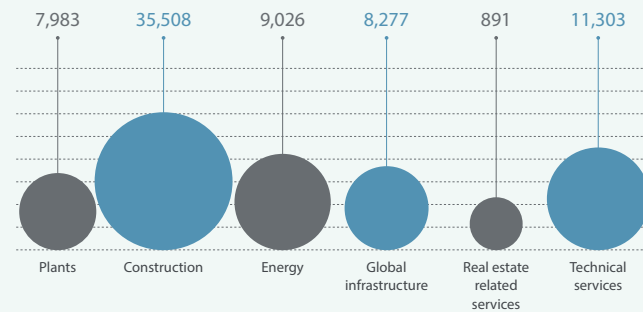
35th Fiscal Year, From January 1, 2016 to December 31, 2016
34th Fiscal Year, From January 1, 2015 to December 31, 2015
33th Fiscal Year, From January 1, 2014 to December 31, 2014

POSCO E&C and its subsidiaries		(Unit: KRW)	
Item	End of 35th Fiscal Year	End of 34th Fiscal Year	End of 33th Fiscal Year
I . Sales	7,128,081,643,087	8,871,420,646,853	9,580,583,545,954
II . Cost of sales	(7,133,160,604,460)	(8,346,425,961,841)	(8,853,762,616,913)
III. Gross profit (loss)	(5,078,961,373)	524,994,685,012	726,820,929,041
IV. Selling and administrative expenses	(503,938,035,915)	(386,089,341,252)	(403,827,231,663)
Administrative expenses	(448,466,319,716)	(342,008,037,338)	(347,290,156,050)
Selling and logistics expenses	(55,471,716,199)	(44,081,303,914)	(56,537,075,613)
V . Operating profits (loss)	(509,016,997,288)	138,905,343,760	322,993,697,378
VI. Gain (loss) on investments in associates (net)	(36,666,635,048)	(22,774,441,158)	(8,471,404,052)
VII. Financial income (loss, net)	(35,374,760,306)	(138,935,024,250)	(115,080,962,118)
Financial income	223,708,280,772	158,835,128,956	177,414,173,924
Financial cost	(259,083,041,078)	(297,770,153,206)	(292,495,136,042)
VIII. Other non-operating income (loss, net)	(196,897,158,432)	(19,269,704,523)	(145,984,584,841)
Other non-operating income	38,022,083,079	95,180,979,827	41,473,644,847
Other non-operating costs	(234,919,241,511)	(114,450,684,350)	(187,458,229,688)
IX. Profit for the period from continuing operations before deducting corporate tax (loss)	(777,955,551,074)	(42,073,826,171)	53,456,746,367
X. Corporate tax for continuing operations (cost)	99,728,397,045	(40,441,216,815)	(44,040,418,764)
XI. Net profit for continuing operations (loss)	(678,227,154,029)	(82,515,042,986)	9,416,327,603
XII. Net profit for interrupted operations	-	-	63,341,600,450
XIII. Net income(loss)	(678,227,154,029)	(82,515,042,986)	72,757,928,053
XIV. Other comprehensive income and loss (net)	(46,710,686,430)	32,084,774,928	11,951,094,885
1. Items that will not be reclassified to profit or loss	15,317,808,163	(24,757,223)	190,425,530
Actuarial gains and losses on post defined benefit pension plans	15,317,808,163	(24,757,223)	190,425,530
2. Items that will be reclassified to profit or loss	(62,028,494,593)	32,109,532,151	11,760,669,355
Net gain and loss on available-for-sale financial investments	1,495,515,226	1,324,262,118	2,011,086,629
Net income reclassification adjustment	(6,001,605,481)	-	4,199,295,148
Equity adjustments in equity method	(1,187,001,627)	80,157,447	1,019,595,272
Exchange differences on translation of foreign operations	(56,335,402,711)	30,705,112,586	4,530,692,306
XV. Total comprehensive income for the year (loss)	(724,937,840,459)	(50,430,268,058)	84,709,022,938
Net income (loss) attributable to:	(678,227,154,029)	(82,515,042,986)	72,757,928,053
The owner of the parent	(662,418,779,950)	(74,225,814,987)	78,619,786,148
Net profit of continuing operations (loss)	(662,418,779,950)	(74,225,814,987)	18,566,103,213
Net profit of interrupted operations	-	-	60,053,682,935
Non-controlling interests	(15,808,374,079)	(8,289,227,999)	(5,861,858,095)
Net losses of continuing operations	(15,808,374,079)	(8,289,227,999)	(9,149,775,610)
Net profit of interrupted operations	-	-	3,287,917,515
Total comprehensive income (loss) attributable to:	(724,937,840,459)	(50,430,268,058)	84,709,022,938
The owner of the parent	(708,479,868,331)	(42,461,709,634)	88,667,608,281
Non-controlling interests	(16,457,972,128)	(7,968,558,424)	(3,958,585,343)
Earnings per share of the owner of the parent			
Basic and diluted earnings per share (loss)	(15,845)	(1,962)	2,141
Operating profits of continuing operations for basic and diluted earnings per share (loss)	(15,845)	(1,962)	506
Operating profits of interrupted operations for basic and diluted earnings per share	-	-	1,635

PERFORMANCE DATA

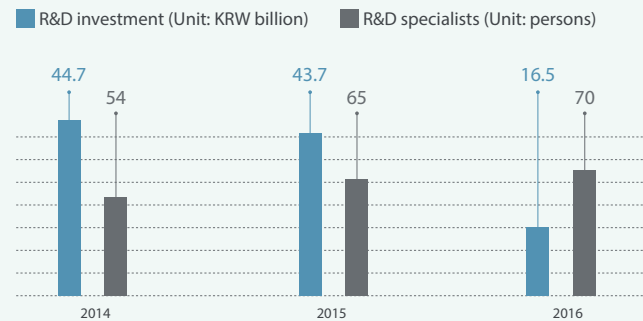
Economy

Sales by business category



R&D investment

The R&D organizations under POSCO E&C's R&D Center include groups for Technology Strategy, Construction Solution Research, Plant Research, Infrastructure Research, Building Research, and Steel ENG Research.



Category	2014	2015	2016
National new technology certification	7	2	3
Green technology certification	3	1	-
New patents registered	64	42	45
Cumulative patent registrations	374	416	487

Retirement pension system

Data	Unit	2014	2015	2016
Operating fund	KRW billion	130.1	156.0	161.8
Defined contribution (DC) participants	Persons	0	0	37
Defined benefit (DB) participants		5,508	5,518	4,850

Environment

Raw materials

Due to the nature of the business, the efficient management and use of raw materials is one of the key factors in generating profitability. POSCO E&C has secured various domestic and overseas procurement channels to procure reasonable and stable raw materials.

Amount of non-recycled raw materials used

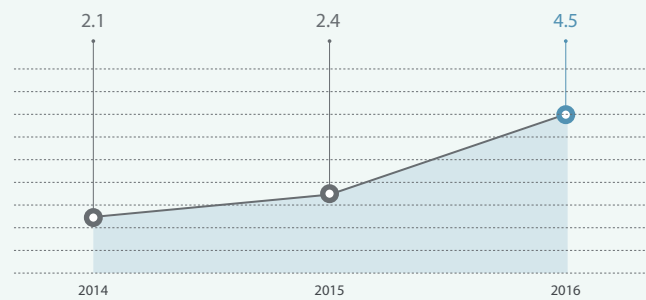
Category	Unit	2014	2015	2016
Rebar		186	275	259
Cement	1,000 tons	113	133	197
Ascon		167	234	235
Ready-mixed		2,115	2,463	2,994
Sand	1,000 m ³	158	97	74
Gravel		110	80	8,379

Water resources

1. Water usage

Category	2014	2015	2016
Waterworks	560,409	655,010	694,841
Underground water	227,876	275,742	85,082
Recycled water	17,136	23,359	36,584
Total	807,421	954,111	816,507

2. Recycled water utilization rate (Unit: %)



Energy and greenhouse gases

All employees at the office and construction site are working to save energy and reduce greenhouse gas (GHG) emissions. From managing construction equipment energy and using LED lighting, to using stairs instead of elevators, we actively practice energy conservation.

1. GHG emissions and intensity

Category	Unit	2014	2015	2016
GHG emissions		30,318	31,614	30,530
Scope1		4,205	5,639	4,676
Pohang headquarters, Songdo office, etc.		1,489	1,139	1,060
Domestic construction sites	tCO ₂ e	2,716	4,500	3,616
Scope2		26,113	25,975	25,854
Pohang headquarters, Songdo office, etc.		6,516	5,988	5,930
Domestic construction sites		19,597	19,987	19,924
Emissions per unit		4.0345	4.8363	4.2831
Scope1	tCO ₂ e / KRW billions	0.5596	0.8626	0.6560
Scope2		3.4749	3.9736	3.6271
Other GHG emissions				
Scope3	tCO ₂ e	57,522	63,365	53,931

* Emissions per unit = Emission volume / revenue

* GHG intensity Songdo office = 2.44tCO₂e/m³

2. Energy usage by business site

Category	2016
Pohang headquarters, Songdo office, etc.	143.86
- Fuel	18.07
- Electricity	114.00
- Steam	11.79
Domestic construction sites	458.27
- Fuel	52.65
- Electricity	405.61

Energy intensity of Songdo Headquarters: 0.05TJ/m³

Effluents and waste

Wastewater and other wastes generated at construction sites are handled through lawful means. Real-time management of wastes from all domestic sites in Korea follows the Ministry of Environment's 'Allbaro' comprehensive waste management system.

1. Wastewater discharge

Category	2014	2015	2016
Wastewater generation	198,256	201,833	130,521

2. Waste generation

Category	Unit	2014	2015	2016
Waste generation (by treatment method)		418,076	589,149	451,102
- Recycled	tons	318,178	447,624	315,227
- Incinerated		29,969	8,116	15,120
- Landfilled		69,929	133,409	120,755
Waste recycling rate	%	76.1	76.0	69.9
Waste generation (by type)		418,076	589,149	451,102
- Designated	tons	110	20	7
- Onsite		12,556	8,676	11,399
- Construction		405,410	580,453	439,696
Waste treatment costs	KRW millions	14,221	11,596	9,978

Biodiversity conservation

POSCO E&C is engaged in ecosystem conservation activities to protect plant and animal life in accordance with environmental impact assessments. On construction sites in Korea, our ecosystem protection activities have worked to save habitats of wild animals, birds, and plants including the otter, pied oystercatcher, and maehwa-mareum, a rare aquatic plant. To minimize the impact on local ecosystems in overseas construction sites, wildlife that we find is transferred to safety.

Environmental standards and regulations

We have incurred no fines for violations of environmental law for three years. However, in 2016, nine non-monetary sanctions were imposed, for which we took remedial actions.

Category	2014	2015	2016
Non-monetary sanctions	10	7	9

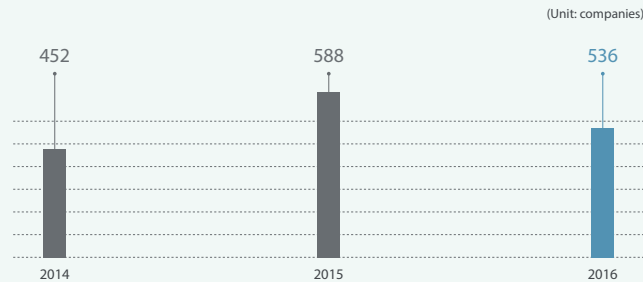
On-site self-directed environmental management activities

We support on-site self-driven environment management at construction sites. In 2016, a total of 5,359 self-driven environment management and improvement activities were conducted.

Environmental management of sub-contractors

POSCO E&C conducts environmental impact assessments targeting sub-contractors. In 2016, a total of 536 environmental impact assessments were conducted. Among these, negative environmental impacts were identified in 126. After we requested amelioration and consulting by the sub-contractors, corrective actions were taken.

1. Sub-contractors undergoing environmental impact assessment



2. Identified cases of negative environmental impacts

(Unit: cases)

Category	2014	2015	2016
Sub-contractors with identified negative environmental impacts	49	233	126
Sub-contractors undertaking improvements and consulting on negative environmental impacts	49	23	126

Customers

Customer Satisfaction

To maximize customer value, we implement a variety of customer satisfaction activities targeting pertinent divisions, as well as targeting personnel at sub-contractors. Thanks to these efforts, we have achieved the top ranking in the apartment quality category of the Korea Quality Satisfaction Index and 91.8 points in resident satisfaction.

Customer personal information protection

To protect the personal information of our customers, including apartment residents, we have established a strict personal information protection system. We passed ISO 27001 certification, the international standard for information security, as well as post-review. We comply with the Act on Promotion of Information and Communications Network Utilization and Information Protection and the Personal Information Protection Act. We regularly conduct security drills, such as hacking simulations, on websites connected with POSCO E&C.

Employees

Employee Facts

(Unit: persons)

Category	2014	2015	2016
Total Employees	4,133	3,921	3,364
Employees	4,074	3,878	3,330
By employment type			
Total	4,074	3,878	3,330
Regular workers	3,602	3,456	3,020
Irregular workers	472	422	310
Gender			
Male	3,848	3,655	3,173
Regular workers	3,390	3,246	2,875
Irregular workers	458	409	298
Female	226	223	157
Regular workers	212	210	145
Irregular workers	14	13	12
By age			
Total	4,074	3,878	3,330
Under age 30	503	184	92
Age 30–50	3,073	3,115	2,751
Age 51 and above	498	579	487
Executives	59	43	34

New hires and retirement

In order to guarantee the livelihoods of retired employees, we offer defined contribution along with defined benefit retirement plans.

Category	Unit	2014	2015	2016
New hires		66	80	35
- Male	persons	62	78	33
- Female		4	2	2
- New employment rate	%	1.6	2.1	1.1
Retirees		69	96	428
- Male	persons	63	94	358
- Female		6	2	70
- Retirement rate	%	1.7	2.5	12.9

Periodic performance evaluation ratio

(Unit: %)

Category	2014	2015	2016
Percentage by gender			
Male	95.9	96.7	97.7
Female	92.9	91.6	92.4
Percentage by employment			
Regular workers	98.6	99.5	99.5
Irregular workers	73.9	73.1	77.2

Benefits

1. Benefits system

Category	
Benefits system	<ul style="list-style-type: none"> • Support for children's school expenses • Benefits card support • Stable livelihood & housing loans • Maternity subsidy support • Congratulatory & condolatory money; funeral supplies • Support for leave due to work-related and non-work-related injury or disease • Support for indemnity health insurance • Gift support for Family Month
Work system	<ul style="list-style-type: none"> • Flexible work schemes • Partial day leave system • Smart Work support • Family care leave system • Reduced work hours during early parenting period • Fertility treatment leave
Other support	<ul style="list-style-type: none"> • Health screenings • Recreational & fitness facilities • Lodging/taxi fare for night shift workers • Daycare centers • Small weddings support • Social contribution activities • Travel for family visits • Infirmary, nursing area

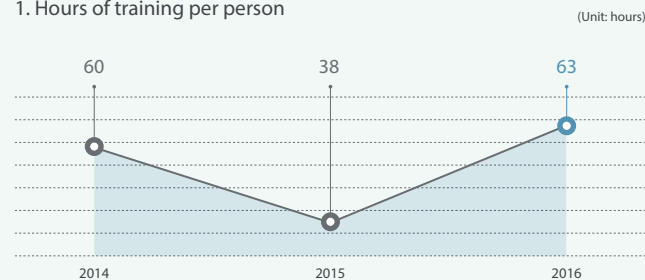
2. Post-parental leave return-to-work and tenure

(Unit: persons)

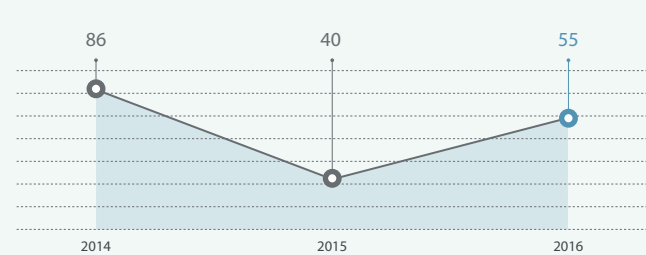
Category	2014	2015	2016
Employees eligible for parental leave	12	20	12
Employees utilizing parental leave	12	19	12
Employees staying at least 1 year following parental leave	9	17	11

Talent development

1. Hours of training per person



2. Training expenditures per person



Workers covered by collective agreements

We are building advanced labor-management relations based on smooth communication and mutual understanding between labor and management. In the event of any significant management changes, the information is shared with our employees immediately.

Category	Unit	2014	2015	2016
Number of employees eligible for union membership	persons	1,101	1,100	1,075
Total number of union members		2	2	2
Ratio under collective agreement*	%	100	100	100

* Collective agreement applies to union members

Handling employee grievances

We operate the cyber Sinmungo whistle-blower system, enabling internal and external stakeholders to report grievances related to the company and its employees, including irregularities, corruption, and poor construction, as well as violations related to fair trade. Complainants' anonymity is completely protected. We also provide anonymous bulletin boards to gather employees' grievances or complaints, along with suggestions, queries, and ideas for improvement.

Category	2014	2015	2016
Number of employee complaints received	247	198	180
- Cyber Sinmungo (internal staff)	2	3	2
- Moa-gwangjang (Moa Square) internal bulletin board	245	195	178
Avg. days to respond	1.9	1.9	1.1

Sexual harassment prevention

To prevent sexual harassment, we strictly adhere to ethical guidelines to be observed by all employees. When a sexual harassment incident occurs, the perpetrator is referred to the personnel committee and is penalized through discipline, dismissal, or suspension. The victim's identity is fully protected. Over the past three years, the number of sexual harassment cases resulting in disciplinary action included 1 in 2014, 1 in 2015, and 1 in 2016.

Sexual harassment prevention training

Category	Unit	2014	2015	2016
Hours of training	time	9,914	9,250	7,947
Participation rate	%	132.5	137.0	147.7

* Including separate workers on construction sites

Ethics/Fair trade education*

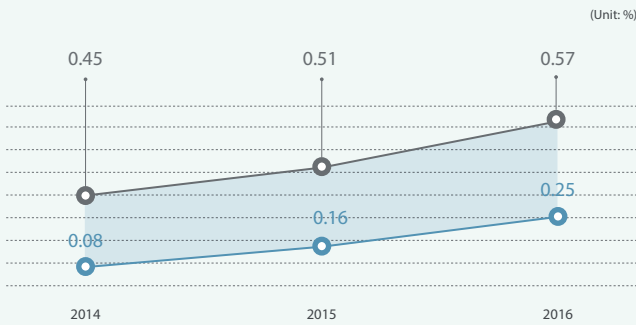
Category			2014	2015	2016
Ethics/Fair trade education	Executives	Trainees	17,308	8,586	17,829
		Hours of training	20,517	8,629	17,829
Ethics education	Sub-contractors	Trainees	1,108	1,056	1,507
		Hours of training	1,108	1,056	1,507

* Including online/offline training

Health and safety

Accident rate

● POSCO E&C ● Average converted accident rate (1,000 construction companies)



Win-win Growth

Agreements and contracts considering human rights

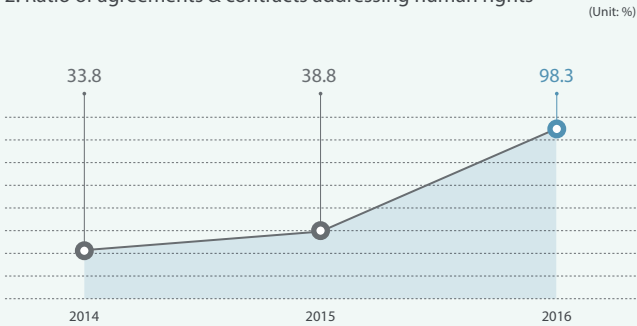
When entering purchase agreements with sub-contractors, the contracts are written in consideration of human rights issues reflected in international standards such as the Universal Declaration of Human Rights and the United Nation Guiding Principles on Business and Human Rights (UNGPs). In particular, through internal process improvement undertaken in 2014, our domestic projects are implementing special contract terms for ethical practice, while contracts for our overseas projects address matters pertaining to ethics and compliance with the Foreign Corrupt Practices Act (FCPA).

1. Major contracts

(Unit: cases)

Category	2014	2015	2016
Major contracts	3,241	2,685	2,985
Contracts considering human rights	1,096	1,041	2,935

2. Ratio of agreements & contracts addressing human rights



Local Community

Employee volunteer service

(Unit: hours)

Category	2014	2015	2016
Volunteer service hours per person	29	32.1	29
Total volunteer service hours	118,759	126,791	119,245

Social contribution investments

(Unit: KRW billion)

Category	2014	2015	2016
Employee donations for 1% Sharing	0.54	0.64	0.57
Total contributions from 1% Sharing activities	1.08	1.28	1.14

GLOBAL INITIATIVES

UN GLOBAL COMPACT

In 2012, POSCO E&C joined the UN Global Compact and expressed our commitment to compliance with the Ten Principles in the four fields of human rights, labor, environment, and anti-corruption. We are committed to fulfilling our corporate social responsibility by reflecting international standards for sustainable management and by carrying out a variety of related activities.

Classification	Principle	Notable actions by POSCO E&C	Page	GRI G4
Human rights	01. Businesses should support and respect the protection of internationally proclaimed human rights; and	•Observance of the Ten Principles of the UN Global Compact •Observance of International Labor Organization (ILO) regulations	56	HR1~6, HR10
	02. make sure that they are not complicit in human rights abuses.	•Sexual harassment prevention education •Contractual provisions for human rights protections •Monitoring of respect for human rights	80~81	HR3, HR7
Labor	03. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	•Compliance with the Labor Standards Act •Labor unions and labor-management councils	54, 56, 80	G4-11, LA4, HR4
	04. the elimination of all forms of forced and compulsory labour; 05. the effective abolition of child labour; and	•Compliance with laws prohibiting child labor and forced labor	54, 56	HR5~6
	06. the elimination of discrimination in respect of employment and occupation.	•Fair and impartial hiring process •Improved employee assessment systems	79	LA1, LA9, LA12, LA13, HR3
Environment	07. Businesses should support a precautionary approach to environmental challenges;	•Eco-friendly environmental management systems •Environmental management in overseas projects •Compliance with environmental laws and regulations •Support with civil environmental complaints	49~52, 78	G4-14
	08. undertake initiatives to promote greater environmental responsibility; and	•Control of pollution and pollutants •Ecosystem conservation activities •Waste reuse and recycling •GHG data assurance check •Technical developments for climate change response	49~52, 77~79	EN12, EN13, EN19, EN22, EN23, EN27, EN31
	09. encourage the development and diffusion of environmentally friendly technologies.	•Development of green construction methods and technologies •Eco-friendly design •Diffusion of environmental management capabilities to sub-contractors	51~52	EN6, EN7, EN10, EN19, EN27
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery.	•Programs on ethical practices •Diffusion of ethical management education •Strengthened anti-corruption activities overseas	71~72	SO3~5

AWARDS & ASSOCIATION MEMBERSHIPS

Major Awards	January	POSCO Family POSCO Quality Awards (highest award in the category of family companies)	POSCO Corporation
	March	KSCE Best Civil Engineering award (construction sector)	Korean Society of Civil Engineers
	June	Livable Apartment Award (Excellence Award, Busan The Sharp City Avenue)	Maeil Business Newspaper
	June	Exemplary Taxpayer Award in 2015 (Hanoi office)	Hanoi Central Tax Office, General Department of Taxation
	September	Presentation competition, ROK-US Construction Technology Seminar (Excellence Award) Korean Standard-Quality Excellence Index (KS-QEI), ranked No. 1 for 8 consecutive years (apartment category) Selected as an exemplary environmental construction site in 2016 (construction sites for Seoul Thermal Power Plant Nos. 1 and 2)	Minister of National Defense Korea Standards Association District head of Mapo-gu
	October	Construction Grand Prize, Aju Business Daily (Social contribution category)	Aju Business Daily
	December	2016 CSR Excellence Award, jointly organized by Ministry of Trade, Industry and Energy (Korea) and the Myanmar Ministry of Strategy and Finance Citation (for contributions to refuse-derived fuel project) Excellence Award for Construction Win-win Growth competition (Gumi Hi-tech Valley, Phase 1)	Ministry of Trade, Industry and Energy (Korea) - Myanmar Ministry of Strategy and Finance Mayor of Gwangju Metropolitan City Korea Water Resources Corporation
Major Associations	Customers	Korea Housing Association, Korea Management Association, Korea Atomic Industrial Forum, Korea Standards Association, Korea Federation of Construction Contractors, 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	
	Health and Safety	Korean Association of Occupational Health Nurses, Korea Fire Facility Association	
	Ethics Management	Institute of Internal Auditors	
	Local Community	Pohang Steel Industrial Complex Management Corporation, Gwangyang Police Administration Advancement Committee, Pohang Local Development Council, Pohang Nambu (Southern Pohang) Police Administration Advancement Committee	
	Environment	Korea Environment Construction Association, Maekyung S.E.L Club (Safety Environment Leaders 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	

GRI INDEX

GENERAL STANDARD DISCLOSURE (58)

Classification	G4	Indicators	Page
Strategy and Analysis	G4-1	Statement from the most senior decision-maker	3~4
	G4-2	Provides a description of Key impacts, risks, and opportunities	3~4, 73
Organizational Profile	G4-3	Report the name of the organization	3
	G4-4	The primary brands, products, and services	13~40
	G4-5	The location of the organization's headquarters	5~6
	G4-6	The number of countries where the organizaion 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	5~6
	G4-7	The nature of ownership and legal form	70
	G4-8	The markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)	5~6
	G4-9	Scale of the organization	75~76
	G4-10	Total workforce	79
	G4-11	The percentage of total employees covered by collective bargaining agreements	80
	G4-12	The organization's supply chain	61~64
	G4-13	Any significant changes during the reporting period regarding the organization's size, sutructure, ownerhship, or its supply chain	88
	G4-14	Whether and how the precautionary approach or principle is addressed by the organization	73
	G4-15	List Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	82
	G4-16	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization	82
Identified Material Aspects And Boundaries	G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents	88
	G4-18	The porcess for defining the report content and the Aspect Boundaries	43~44
	G4-19	List all the material Aspects identified in the process for defining report content	43~44
	G4-20	For each material Aspect, report Aspect Boundary within the organization	43~44
	G4-21	For each material Aspect, report the Aspect Boundary outside the organization	43~44
	G4-22	The effect of any restatements of information provided in previous reports, and the reasons for such restatements	88
	G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries	88
Stakeholder Engagement	G4-24	List of stakeholder groups engaged by the organization	43~44
	G4-25	Basis for identification and selection of stakeholders with whom to engage	43~44
	G4-26	Organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group	43~44
	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	43~44
Report Profile	G4-28	Reporting period such as fiscal or calendar year) for information provided	88
	G4-29	Date of most recent previous report (if any)	88
	G4-30	Reporting cycle such as annual, biannual)	88
	G4-31	Provide the contact point for questions regarding the report or its contents	88
	G4-32	Report the 'in accordance' option the organization has chosen	88
	G4-33	Report the organization's policy and current practice with regard to seeking external assurance for the report	88
Governance	G4-34	Report the governance structure of the organization, including committees of the highest governance body	70
Ethics and Integrity	G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	71~72

SPECIFIC STANDARD DISCLOSURE - ECONOMIC (9)

Classification	G4	Indicators	Page
Economic Performance	DMA		13~40
	EC1	Direct econmic value generated and distributed	75~76
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	51~52
Indirect Economic Impacts	DMA		65
	EC7	Development and impact of infrastructure investments and services supported	65~68
	EC8	Significant indirect economic impacts, including the extent of impacts	65~68
Materials	EN1	Materials used by weight or volume	77

Classification	G4	Indicators	Page
Energy	DMA		49
	EN3	Energy consumption within the organization	78
	EN4	Energy consumption outside of the organization	78
	EN5	Energy intensity	78
	EN6	Reduction of energy consumption	49~52, 78
	EN7	Reductions in energy requirements of products and services	49~52
	CRE1	Intensity of building energy	78
Water	EN8	Total water withdrawal by source	77
	EN9	Water sources significantly affected by withdrawal of water	77
	EN10	Percentage and total volume of water recycled and reused	77
Boidiversity	EN12	Description of significant impacts of activities, products, and services on Biodiversity	78
	EN13	Habitats protected or restored	78
Emissions	EN15	Direct greenhouse gas(GHG) emissions (Scope 1)	78
	EN16	Energy indirect greenhouse gas(GHG) emissions (Scope 2)	78
	EN18	Greenhouse gas (GHG) emissions intensit	78
	EN19	Reduction of greenhouse gas(GHG) emissions	49~52
	CRE3	Building greenhouse gas emission intensity	78
	EN23	Total weight of waste by type and disposal method	78
Products and Services	EN27	Extent of impact mitication of environmental impacts of products and services	49~52
Compliance	DMA		49
	EN29	Monetary value of significatn fines and total number of non-monetary sanctions for non-compliance with environmental laws and regluations	78
Supplier Environmental Assessment	EN32	Percentage of new suppliers that were screened using enviromental criteria	79
	EN33	Significant actual and potential engative environmental impacts in the supply chain and actions taken	79
Employment	DMA		53
	LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region	79
	LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	80
	LA3	Return to work and retention rates after parental leave, by gender	80
Occupational Health and Safety	DMA		45
	LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	81
	CRE6	Ratio of business sites operating global safety health system	45~48, 81
	LA7	Workers with high incidence or high risk of diseases related to their occupation	47~48
Training and Education	DMA		53
	LA9	Average hours of training per year per employee, by gender, and by employee category	80
	LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	55~56
	LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	56, 80
Diversity and Equal Opportunity	LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	79
Supplier Assessment for Labor Practices	LA14	Percentage of new suppliers that were screened using labor practice criteria	81
	LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	81
Supplier Human Rights Assessment	HR10	Percentage of new suppliers that were screened using human rights criteria	81
Local Communities	DMA		65
	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	65~68
	CRE7	Number of cases for voluntary or non-voluntary immigrants	N/A
Anti-corruption	DMA		71~72
	SO4	Communication and training on anti-corruption policies and procedures	81
Customer Health and Safety	PR1	Percentage of significant products and services categories for which health and safety impacts are assessed for improvement	57~60
	PR5	Results of surveys measuring customer satisfaction	58
Marketing Communications	CRE8	Certification regarding sustainable management	10, 38, 51
Customer Privacy	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	79

THIRD-PARTY ASSURANCE STATEMENT

Introduction

POSCO ENGINEERING & CONSTRUCTION CO., LTD. (“POSCO E&C”) commissioned DNV GL Business Assurance Korea, Ltd. (“DNV GL”), part of DNV GL Group, to undertake independent assurance of POSCO E&C Sustainability 2016-2017 Report (the “Report”). The directors of POSCO E&C have sole responsibility for the preparation of the Report. The responsibility of DNV GL in performing the assurance work is to the management of POSCO E&C in accordance with the terms of reference. DNV GL’s assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith.

Scope of assurance

The scope of assurance includes a review of sustainability activities and performance data over the reporting period from 1st January to 31st December 2016. This also includes:

- Evaluation of the principles for defining the sustainability report content in the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 4.0.
- Evaluation of the process for determining material aspects for reporting and the management approach to material issues and the process for generating, gathering and managing the quantitative and qualitative data in the Report.

Basis of our opinion

We’ve performed our work using DNV GL’s assurance methodology VeriSustain^{TM1}, which is based on our professional experience, international assurance best practice including International Standard on Assurance Engagements 3000 (ISAE 3000). We applied the limited level of assurance. The audit was carried out from August till September 2017. The site visits were made to POSCO E&C’s headquarters and construction project site in Songdo. We undertook the following activities as part of the assurance process:

- challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls.
- interviewed representatives from the various departments.
- conducted document reviews, data sampling and interrogation of supporting databases and associated reporting systems as they relate to selected content and performance data.
- reviewed the materiality assessment report.
- Visit to construction project site in Songdo to interview the leaders of safety & health team.

1. The VeriSustain protocol is available upon request at DNV GL Website (www.dnvgl.com)

Limitations

The engagement excludes the sustainability management, performance and reporting practices of POSCO E&C’ subsidiaries, associated companies, suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this Assurance Engagement. Economic performance based on the financial data is cross-checked with internal documents, the audited consolidated financial statements and the announcement disclosed at the website of Korea Financial Supervisory Service (http://dart.fss.or.kr) as well as POSCO E&C’s website (www.poscoenc.com). These documents, financial statements and the announcements are not included in this Assurance Engagement. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. The baseline data for Environmental and Social performance are not verified, while the aggregated data at the corporate level are used for the verification. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

Conclusion

On the basis of the work undertaken, nothing comes to our attention to suggest that the Report does not properly address the adherence to the Principles for defining report content in GRI G4. In addition, nothing comes to our attention to believe that the Report does not meet the GRI G4 and Construction and Real Estate Sector Disclosure in accordance – ‘Core’ option of reporting. Further opinions with regards to the adherence to the Principles are made below;

Stakeholder Inclusiveness

POSCO E&C has identified internal and external stakeholder groups such as Employees, Customers, Suppliers, Investors, Environment, Local communities. POSCO E&C engages with the stakeholders at the company and business unit levels through various channels. The examples of approaches to engage with selected stakeholders and relevant organizations are described in the Report.

Sustainability Context

POSCO E&C presents stakeholders the sustainability performances through their business model. POSCO E&C addresses how material issues grouped into material issues are managed and what was achieved in 2016, which would help the stakeholder understand the management approaches toward the material aspects. In the future, POSCO E&C could develop and manage the goal and long-term strategies with management performances.

Materiality

POSCO E&C has conducted the materiality assessment to prepare the Report. Internal and external stakeholder survey to rate the material issues. 15 material issues are prioritized accordingly and reported under 6 topics in the report. POSCO E&C takes into account the consistent way of selecting material issues so that the decision made by the management and daily operation are fully aligned with strategic sustainability management. Especially, the dedicated safety and health team is formed to enhance the safety and health management and the CEO often visits the project site to encourage project team. The audit team has reviewed the materiality assessment process and confirms relevant material issues prioritized from the process are addressed in the Report.

Completeness

The Report has covered sustainability performances of POSCO E&C and management approach to material issues for the reporting period. The reporting boundary includes the operations over which POSCO E&C implements management control in 2016 however the quantified performance data for the environmental aspects are collected from the projects and main building properties only in Korea. POSCO E&C should consider expanding reporting boundary so that the material environmental and social performance data generated from international projects should be reported.

Accuracy and Reliability

We found a limited number of non-material errors and these were corrected prior to inclusion in the Report. The data presented in the report were gathered from the teams responsible for data control in POSCO E&C. The verification team interviewed the person-in-charge, reviewed the process of gathering and processing data and information, and the supporting documents and records. The depth of data verification is limited to the aggregated data. Based on sampling verification and other reported information and available evidence, nothing comes to our attention that would cause us to believe that the data and information presented in the Report have any intentional error or material misstatement.

Competence and Independence

DNV GL Business Assurance is part of DNV GL Group and a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. Our environmental and social assurance specialists are present in over 100 countries. The assurance work was performed by independent team which meets DNV GL’s competence requirements. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. The audit team has complied with DNV GL Code of Ethics during the assurance engagement.

September 2017
Seoul, Korea

In Kyoon Ahn
Country Representative
DNV GL Business Assurance Korea, Ltd.



STATEMENT OF ASSURANCE REPORT ON GHG EMISSIONS

Terms of Engagement

This Assurance Statement has been prepared at the request of POSCO E&C Co., Ltd.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 2016 (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 [major plant facilities] and reviewed processes to control the data and records regarding GHG emissions and energy usage
- Interviewed the relevant persons responsible for managing and maintaining raw and consolidated data on GHG emissions
- Verified the historical data and information back to source for the calendar year 2016.

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 qualifications, 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. Also, the electricity usage of some contractors located in construction site offices should be excluded from the organization boundary, but were not.

- 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, the impact of this was estimated below the materiality level.

GHG emissions of POSCO E&C reported in the Report	Scope (as defined in the GHG Target Management Scheme in Korea)	2016
	Direct GHG emissions	4,675.55
	Energy indirect GHG emissions	25,854.01
	Total GHG emissions	30,529.78
	Data is presented in tonnes of CO2 equivalent.	

June 19, 2017

Sang-Keun Yoo



Assurance Report _The Report has been prepared in accordance with GHG Target Management Scheme for quantification and reporting of GHG emissions in Korea.
Third Party Liability _ LRQA.. Lloyd's Register Group Limited, its affiliates and subsidiaries, including Lloyd's Register Quality Assurance Limited (LRQA), and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

ABOUT THIS REPORT

2016-2017 report is the sixth 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 2016-2017 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, 2016. Information which may have significant influence on stakeholders, such as governance structure, includes activities up to August 2017. 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.

CONTRIBUTORS TO THE REPORT

Kyung-Hun Kang, Sung-Hu Ko, Eun-Kyung Kim, Jae-Sin Kin, Jong-Woo Kim, Hwa-Ran Kin, Sang-Kyu Park, Young-Keun Park, Hyung-Seok Park, Sang-Yong Song, Ho Shin, Hyun-Sung Yang, Hyung-No Lee, Hyun-Ji Lim, Sung-Kun Jung, Hye-Jin Chung, Kyoung-Seok Choi, Hae-Min Huh

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

POSCO E&C SUSTAINABILITY REPORT 2016-2017

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

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HISTORY OF INNOVATION

1994 -

1994. 12.	Founded POSCO Engineering & Construction Co., Ltd. (POSEC)
1995. 08.	Developed MIDAS-BDS (Building Design System) program for structural analysis & design
1995. 09.	Won contract for ARCO special steel plant in Egypt (annual production 1.4 million tons)
1995. 10.	Started construction of Diamond Plaza in Ho Chi Minh City, Vietnam
1996. 04.	Started construction of POS Plaza in Shanghai, China
1996. 07.	Won contract for KOBRASCO plant in Brazil
1996. 10.	Acquired ISO 9001 certification
1997. 01.	Won contract for Posven HBI (hot-briquetted iron) plant project in Venezuela
1999. 12.	Won contract for Tavazon blast furnace in Iran (first overseas blast furnace project by a Korean construction company)
2000. 04.	Obtained ISO 14001 certification

2001 -

2001. 12.	Received order for stainless steel expansion project at Zhangjiagang Port in China
2002. 02.	Changed company name to POSCO E&C
2002. 03.	Announced the # (The Sharp) apartment brand
2003. 06.	Obtained OHSAS 18001 certification
2003. 10.	Held launch ceremony for Songdo International City
2005. 03.	Won contract for Hadeed CCL (color-coating line) in Saudi Arabia
2005. 06.	Started construction of '909 Kapiolani' condos in Hawaii
2006. 08.	Developed Splendor, first self-contained city in Vietnam
2006. 09.	Won contract for Ventanas coal-fired power plant in Chile (first Korean construction company to advance into Central/South America)
2007. 09.	Won contract for IISCO blast furnace in India (India's largest single plant)
2007. 12.	Won contract for new project of Asia Special Steel Co. in Japan
2008. 04.	Took over Daewoo Engineering
2009. 03.	Won contract for Noi Bai-Lao Cai A1 section highway in Vietnam
2009. 09.	Received order for Kallpa Combined Cycle Plant in Peru (first Korean construction company to enter Peru market)
2010. 03.	Won contract for high-rise financial complex in Cambodia (Vattanac Capital Tower)
2010. 05.	Won contract for highway construction in Uzbekistan
2010. 05.	Completed Songdo office and moved in
2010. 09.	Won contract for desalinated water storage and recovery facility in Abu Dhabi
2010. 10.	Started construction of Krakatau Steel integrated steelworks in Indonesia

2011 -

2011. 12.	Won contract for CSP integrated steelworks in Brazil, worth US \$4.43bn (largest order won by a Korean construction company for an overseas steelmaking plant)
2012. 02.	Ranked 1st in winning contracts in the domestic construction industry (KRW 14.4 trillion in 2011)
2012. 11.	Won contract for Krakow Waste-to-Energy Plant in Poland
2013. 04.	Received order for Nam Lik 1 Hydroelectric Power Plant in Laos
2015. 04.	Won contract for 101-story Haeundae LCT The Sharp
2015. 06.	Saudi PIF acquired 38% stake in POSCO E&C
2016. 02.	Won contract for Colon Combined Cycle Power Plant and LNG facility in Panama
2016. 07.	Rose to 3rd place in construction capability assessment
2016. 08.	Won contract for construction of Heavy Ion Accelerator Complex (KRW 291.9 billion)
2016. 11.	Won contract for Yeouido Parc 1 development project (KRW 1.12 trillion)
2017. 02.	Merged with POSCO Engineering



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