

POSCO

Corporate Citizenship

Report 2018

 With POSCO

BUSINESS With POSCO



SOCIETY With POSCO



PEOPLE With POSCO



posco

POSCO's Dream for the Future – We will go together

From world's top premium products & differentiated solutions to GIGA STEEL, electric steel plates, eco-friendly cars made lighter and safer through the application of anode and cathode materials, a mega-city with even taller yet safer structures, and unlimited clean energy, POSCO is with you anywhere you go in your daily life. POSCO delivers greater value with society through its technology and quality toward a new future and a better world.

Business With POSCO

We will create value together with
our business partners

Society With POSCO



We will create value society
together with you

People
With POSCO

We will create a culture of trust and
creativity together with you



About This Report

POSCO Corporate Citizenship Report

The POSCO Corporate Citizenship Report (hereafter the "Report") is an integrated report which contains POSCO's economic, social, and environmental performance in 2018. The Report describes how sustainability contributes to the long-term success of POSCO and how POSCO creates value for its customers, employees, shareholders, suppliers, and society as a whole.

Scope and Reporting Standards of the Report

This Report contains POSCO's major financial and non-financial data. The topics were selected through the materiality test conducted in accordance with the principles of materiality, sustainability context, completeness, balance and stakeholder inclusiveness.

The Report follows the Global Reporting Initiative (GRI) standards. As POSCO is a member of the UN Global Compact (UNGC), the Report also includes a portion of the UN Global Compact Progress Report on POSCO's progress and achievement made in endorsing the ten UNGC principles. Information on the GRI Index and the UNGC can be found in the Appendix of this Report. Data relating to International Organization for Standardization (ISO)'s guidance on social responsibility (ISO 26000) also appears in the Appendix.

Reporting Data

This Report describes POSCO's performance for the year 2018. Some of the data spans the period ending by the end of March 2019, the deadline for completing this Report. The POSCO Corporate Citizenship Report is published every year in Korean and English.

The scope of the Report includes economic, environmental and social performance of Pohang Works, Gwangyang Works, the Pohang Head Office, and the Seoul Office. Business performance data includes POSCO's consolidated financial data. POSCO Group ESG (Environmental, Social and Governance) performance indicators cover the performance of POSCO and its seven major subsidiaries. Information on fair trade, quality management, safety, and health refers to POSCO, its domestic and overseas subsidiaries, and suppliers.

External Assurance

This report is assured by a third party. The 2019 Report was assured by Samil PwC, an independent external assurance provider, in accordance with ISAE3000, AA1000AS Type II.

Feedback

This report can be accessed and downloaded online at POSCO's website. We welcome any feedback from stakeholders via the internet, email or phone.



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Message from the CEO



As a corporate citizen, we will take a step closer to our wide-ranging stakeholders across different nations and communities in accordance with our philosophy of empathy, care and co-prosperity.

Dear Stakeholders,

Last July, we announced our new management philosophy of 'Corporate Citizenship: Building a Better Future Together' with an aim to evolve into a centennial company genuinely trusted by all stakeholders, such as employees, business partners, customers local communities and shareholders. Corporate citizens refer to businesses who fulfill their role and responsibility for co-existence and co-prosperity just as modern citizens would do for their society.

As a corporate citizen, we at POSCO promise that we will take a step closer to our wide-ranging stakeholders across different nations and communities in accordance with our philosophy of empathy, care and co-prosperity. Corporate citizenship embodies our commitment to creating value with business partners (Business With POSCO), making our society a better place (Society With POSCO), and building a culture of trust and creativity (People With POSCO).

To this end, we launched the Love Letter initiative last July to gather feedback from varying stakeholders to identify their expectations on POSCO. Such feedback was integrated in defining our 100 reform tasks that were announced internally and externally last November as a way to move POSCO forwards for the next 50 years. These 100 reform tasks consist of 60 in the Business area, 20 in the Society area and 20 in the People area, and will be completed within this year.

Starting with Business with POSCO, we practice the value of corporate citizenship by promoting fairness, transparency and ethics in doing business with all our business partners. We adopted the 100% competitive procurement policy and the 'fair trade bidding system' for our suppliers while significantly improving fairness in doing business with our customers through our company-wide CRM (Customer Relationship Management) system and 'customer promise management system'.

Our quality, technology, production and other functional organizations are closely aligned to collaborate with one another to deliver the right product to the right customer at their intended time-point and to respond to customer complaints in real time. These endeavors enabled us to post KRW 3.8 trillion in operating profit and 12.4% in operating margin last year, continuing with double digit growth in operating margin for three consecutive years.

We take the initiative in creating a robust industrial ecosystem by advancing eco-friendly management, developing new growth engines, and establishing an industry-academia-research institute cooperation model. We developed atmospheric pollutant and CO₂ emissions reduction technology, established the 'Particulate Matter Research Center' to help reduce PM levels, and will invest more than KRW 1 trillion by 2021 in a bid to create eco-friendly steelworks. Furthermore, we established new business divisions to complement our business portfolio that is heavily focused on steelmaking, and plan to double our efforts to identify new revenue streams for our future growth. We also take a long-term approach in developing a new growth ecosystem through the creation of industry-academia-research institute venture valleys in Pohang and Gwangyang and the operation of venture funds.

As for Society with POSCO, we do not merely make donations or implement philanthropic programs but strive to play a leading role in recognizing and solving pressing social issues. To make substantial contributions to specifically addressing the issues of youth unemployment and low birth rates, we will translate our diverse ideas into actionable initiatives, ranging from the operation of youth employment and startup courses as well as the 'Idea Market Place' as a venture support program to the creation of POSCO's distinctive cooperation model to pursue win-win partnership between large companies and their SME suppliers, and the establishment of childcare centers for business partner employees as well as for POSCO employees.

While our POSCO 1% Foundation has been operated mainly by the company, this will change to enable donors to take the initiative in order to encourage our employees to lay the basis to undertake self-initiated social contribution programs.

Regarding to People with POSCO, we are innovating our talent recruitment and development system to ensure that our employees have a strong sense of vocation and a caring mind as a member of the corporate citizen in addition to job expertise. We will be committed to promoting the fairness and transparency of our HR system, adopting smart work practices that allow the millennials to fully unleash their creativity, offering top-notch welfare and benefits that our employees can take pride in, and creating a safe and healthy workplace. In so doing, we will build a corporate culture that stimulates creativity and trust and attracts young, devoted and talented individuals who will lead us to a brighter future.

Dear Valued Stakeholders,

Our intense endeavors to fulfill corporate citizenship have been widely recognized: we were honored at the Global Metal Awards 2018 hosted by S&P Global Platts, and became the first steelmaker in the world to be listed on the Dow Jones Sustainability Index (DJSI) in the Asia Pacific region for 10 consecutive years as a proud member of the UN Global Compact.

As we continue our journey to realize our management philosophy of corporate citizenship, we look forward to your sincere interest and support so that we win the heart of stakeholders and pursue sustainable growth as a responsible member of our society.

Thank you.

Jeong-Woo Choi

CEO, POSCO

June 2019



About POSCO

POSCO was established as a fully integrated steel maker of hot rolled, cold rolled and stainless steel on April 1, 1968. We were listed on the Korea Exchange on June 10, 1988. As of 2019, POSCO's operations include two steelworks in Pohang and Gwangyang, the Seoul Office, and six overseas offices.

Company name	POSCO
Head office	(Goedong-dong) 6261, Donghaean-ro, Nam-gu, Pohang-si, Gyeongsangbuk-do, Korea
Steelworks and offices	Pohang Works: (Dongchon-dong) 6262, Donghaean-ro, Nam-gu, Pohang-si, Gyeongsangbuk-do, Korea Gwangyang Works: (Geumho-dong) 20-26, Pokposarang-gil, Gwangyang-si, Jeollanam-do, Republic of Korea Seoul Office: 440, Teheran-ro, Gangnam-gu, Seoul, Republic of Korea Overseas offices: six offices to support global operations (Dubai, Iran, Europe, Rio de Janeiro, Western Australia, Argentina)
Business areas	Iron making, steel making, and production & sale of rolled steel products
Major products	Hot rolled steel, cold rolled steel, stainless steel, etc.
CEO	Jeong-woo Choi
Date of establishment	April 1, 1968
Number of Employees	17,150
Credit rating	Domestic : AA+ (Positive) Overseas : S&P: BBB+ (Positive), Moody's: Baa1 (Stable)
Crude steel production	POSCO Group: 42,867 thousand tons / POSCO: 37,735 thousand tons
Website	www.posco.com

Revenue

Consolidated :
64,978 billion KRW
Non-consolidated :
30,659 billion KRW

Operating Profit

Consolidated :
5,543 billion KRW
Non-consolidated :
3,809 billion KRW

Net Income

Consolidated :
1,892 billion KRW
Non-consolidated :
1,073 billion KRW

*As of 2018



Vision and Strategy

Performance Highlights in 2018

In 2018, the global economy showed positive growth during the first half year, but trade tensions between the United States and China, and the rise of U.S. federal interest rate led to a conservative monetary policy of the advanced economies, which resulted in a growth rate in the mid-3% range by the year end. As for the domestic economy, exports were boosted by the growing global economy. But by the second half year the growth rate slowed to below 3%, which was lower than the previous year. This is a result of the trade tension between the G2 countries and the concerns on worsening financial crises in the emerging economies which led to a lower consumer confidence and less facilities investments. Externally, the Chinese steel industry's restructuring and American trade restrictions pushed up steel prices, while protectionism spread widely across the globe, heightening competition and resulting in a prolonged state of fluctuating raw material and fuel prices. Domestically, the sluggish construction market, decrease in automobile production and U.S. trade regulations contributed to prolonging an unstable market condition. However, there have been positive factors as well, such as the decrease in low-price Chinese imported materials and the recovery of the shipbuilding industry. Amidst such external conditions, POSCO focused on enhancing our competitive edge in the steel business, restructuring the organization toward high-profit core businesses, and building the basis for growth in the energy storage material business. As a result, we recorded KRW 3.8 trillion in operating profit, and operating margin of 12.4%, achieving two-digit operating margin for three consecutive years on a non-consolidated basis. On the consolidated basis, we recorded KRW 5.5 trillion in operating profit, the greatest since 2010. Major business activities that were undertaken by POSCO in the year 2018 are as follows.

First, we enhanced our competitiveness both domestically and abroad by increasing high-quality products and enhancing our market leadership, building a high-efficiency production system, and taking more active measures against global protectionism.

We actively responded to customers on global-level projects and provided them with solutions. This led to an increase in sales of high value-added products. The ratio of "World Premium Plus" products which are highly competitive in technological prowess, marketability and profitability increased by 4%p at 29.7%. Also we have strengthened our response to import goods centered on large buyers of hot rolled steel, and took preemptive measures to the rising demand from domestic shipbuilding companies. This increased the sales ratio by 3.5%p at 57.5%, building a strong sales foundation.

Meanwhile, we improved our production competitiveness through preemptive improvement of facilities failure and strengthening

of our facilities. We built a high-efficiency production process by advancing our facilities based on the "Smart Factory" system. We developed technologies to decrease air pollutants and CO₂ to implement eco-friendly steelworks, and focused on developing products and technologies that respond to the megatrend such as eco-friendly electric vehicle materials and light-weight automobile body technologies. We managed exit strategies of businesses with uncertain profitability and strengthened our competitiveness. Most of our overseas steelmaking subsidiaries recorded net profits. In particular, our Indonesian subsidiary PT. KRAKATAU POSCO turned profitable for the first time by expanding the sales of high-profit products. Meanwhile, having our overseas subsidiaries cooperate and communicate with the local steelmakers and communities enabled us to preemptively respond to global protectionism and thus prevent the risk of trade friction.

Second, we enhanced the competitiveness of the major domestic subsidiaries' core businesses, and continued our reorganization and business restructuring.

POSCO International embarked on the stage 2 development of the gas field in Myanmar, cultivated new demand for products and increased supply of raw materials to POSCO Group's overseas subsidiaries, thereby strengthening their basis for steel sales. POSCO International recorded the highest operating profit through food trading that improved their profitability. POSCO International also cut down on low-profit businesses, such as selling of the Canadian tight oil gas play and the thick plate processing center in UAE. POSCO E&C brought the Songdo City project back on track, merged three O&M subsidiaries into one, and integrated the plant business division, which strengthened the competitiveness of POSCO E&C's core businesses. In the infrastructure business, POSCO E&C awarded landmark-grade projects, including the Sinansan Line (double rail line), and Saemangeum cable-stayed bridge. POSCO E&C also strengthened its profit-centered management by streamlining low-profit businesses such as solar power construction projects. POSCO Energy, despite unfavorable external conditions such as rising LNG prices, signed the direct import contract of low-price LNG for Incheon No.3 LNG power plant and implemented the smart facility system, which improved the competitiveness of the power generation business. POSCO Energy also had begun construction of Samcheok Coal-fired Thermal Power Plant in earnest and had established an LNG mid-stream expansion strategy utilizing its group assets such as LNG terminals.

Third, in order to ensure a long-term growth of the energy storage materials business, we expanded the basis for domestic production of the cathode and anode materials used in secondary batteries, and built a stable supply system for lithium, the core material in the battery business.

Utilizing its secondary battery materials technology competitiveness, POSCO CHEMICAL launched a joint corporation in China that produces precursors and cathode materials. POSCO CHEMICAL, Korea's only producer of anode materials had built a production system with an annual capacity of 24,000 tons intended for global demand. POSCO CHEMICAL is currently constructing the second anode material plant in response to growing demand. This facility will increase the annual capacity to 74,000 tons by 2022. To this end, POSCO CHEMICAL is forming strategic partnerships with major secondary battery companies to expand sales of anode materials for electrical vehicles. The promotion of group-level consolidated secondary battery materials marketing achieved sales of KRW 200 billion in 2018. In order to establish a stable supply basis of lithium, POSCO signed a long-term purchase agreement of Pilgangoora lithium concentrate with Australian Pilbara Minerals and also signed an acquisition agreement of the development right to northern Hombre Muerto salt water lake with Argentine Galaxy. Through these effort, POSCO has secured the commercialization base for its lithium extraction technology (PosLX).

Fourth, POSCO established the new vision “With POSCO”, and built the system for spreading its three key components of its code of conduct, which are Substance (shiljil), Execution (shilhaeng), and Practicality (shilli), and the culture of corporate citizenship.

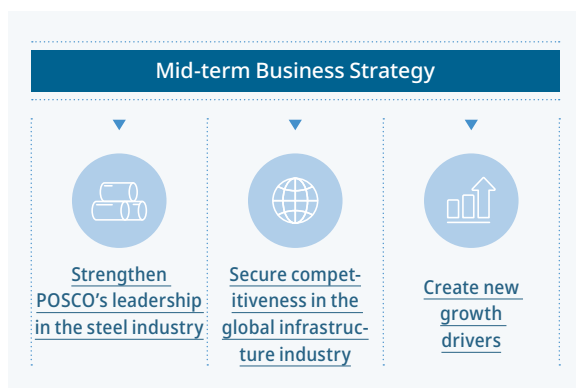
We declared “With POSCO” to be the new vision to guide us toward 100 years of sustainable growth and also stated “Corporate Citizenship: Building a Better Future Together” as our management philosophy. To fulfill our role as a corporate citizen, we established 'Corporate Citizenship Department' and drew up the 100 tasks for POSCO's reform through 'Corporate Citizenship Lover Letter', executive's suggestion and etc. We also enhanced shareholder-friendly management activities through IR activity by outside directors and etc. Internally, we strengthened the responsible management system by restructuring steel, global infrastructure and new growth business divisions. We recruited outside experts for the break down of pure blood custom, and we also promoted human resources innovation. Also, we improved the way we do business based on the three code of conduct principles (Substance, Execution and Practical), and strengthened field-centric management. In recognition of these efforts two positive events took place. Moody's raised our credit rating from Baa2 to Baa1, and secondly S&P also raised our rating to Positive. We won the Global Metals Awards from the S&P Global Platts and also being the first steelmaker in the world who listed as outstanding company in the Asia Pacific region for ten consecutive years at the 2018 DJSI (Dow Jones Sustainability Indices) assessment. Not only that, POSCO was named the World's Most Competitive Steelmaker by WSD (World Steel Dynamics) for nine consecutive years, strengthened its position as a global leading steelmaker

Vision and Core Values



POSCO's Strategic Direction for 2019

The global economy is projected to grow at 3.0%, showing a slight decrease compared to 2018 due to slowing of both advanced and emerging economies. In particular, the trade tension between the U.S. and China, slower growth rate of the Chinese economy and growing debt of emerging economies is expected to fuel the uncertainty of the global financial market. The growth rate forecast for Korea is 2.6%. This is due to decreasing investments and decrease in exports caused by unfavorable external conditions. As the automobile and construction market continues its sluggish pace, steel prices have turned to a downtrend since the end of 2018. POSCO Group's subsidiaries are expected to experience difficulties in the trading, construction and energy market. Despite these challenges ahead, we will undertake the following management activities in the three fields of Business, Society and People with a view to achieving the management goal of 2019 we have set for ourselves and the growth foundation for the medium and long-term future.



In the steel business, we will expand sales of WTP(World Top Premium Product), and improve profitability through tangible cost savings.

Focusing on marketing Division, we will collaborate with related organizations such as quality, technology and production to supply right products to customers at right time, and respond to customer requests in Real Time. In addition, we will concentrate our efforts on developing new products capable of leading the future market by converting the steel R & D system to open and market-oriented. In order to maintain our advantage in price competitiveness we will pursue cost cutting activities through the "CI (Cost Innovation) 2020" project throughout all divisions. We plan to also build an environment- friendly and highly efficient production system by applying smart, environment-friendly technologies in our steelmaking process. At the production site, we will keep in mind that safety is the best value the company pursues and all employees and management will strengthen safety activities. The over-

seas steel business, which is vulnerable to changes in the international financial market and trading environment, will seek out new growth opportunities by seeking preemptive countermeasures such as local trade cooperation, reducing working capital, and minimizing foreign exchange risk.

Steel



Increase sales of premium products and strengthen our response mechanism against protectionism

[Higher quality products] Focus on sales of WTP and expand manufacturing capacity of high-end materials

[Low cost] Develop technologies to secure cost competitiveness

[Response to market] Prepare to respond effectively to trade issues and enhance the competitiveness of overseas steel subsidiaries

We will realign our global infrastructure business to improve our business model by group affiliate, and focus on cultivating specialty business so that they will contribute to POSCO Group's profitability.

The trading business will strengthen the development of new steel markets, securing the LNG trading capacity, promote the food business, and enhance the role of developer in the group infrastructure business. The E&C business will utilize Smart Construction to raise cost competitiveness and concentrate its capabilities to make the O&M business a new revenue source. The energy business will improve the profitability of the power generation business by upgrading the purchasing strategy such as direct import of LNG.

Global Infrastructure



Strengthen business competitiveness through business model and revenue model reform

[Trading] Improve the business method, and strengthen competence in project development

[E&C] Internalize "Smart Construction" and improve cost competitiveness

[Energy] Enhance the profitability of power generation through LNG direct import

In order to develop new business more actively, we will establish new business promotion system and accelerate the growth of secondary battery materials business.

This year, we will select new business domains that will make POSCO as a centennial company. After that, we will operate various business development channels and collaborate with industry-academia-research to develop new business in the selected domains. The secondary battery materials business, which is being developed as a core business for the new growth of POSCO group, will concentrate on facility investment, R & D, product development, and diversification of customers so that we can quickly become a global top player in the near future.

In the Society sector, we will reorganize our existing social contribution activities centered on the newly launched Corporate Citizenship Committee and Corporate Citizenship Office, and will lead the social contribution activities in specialized fields to make POSCO's unique brand.

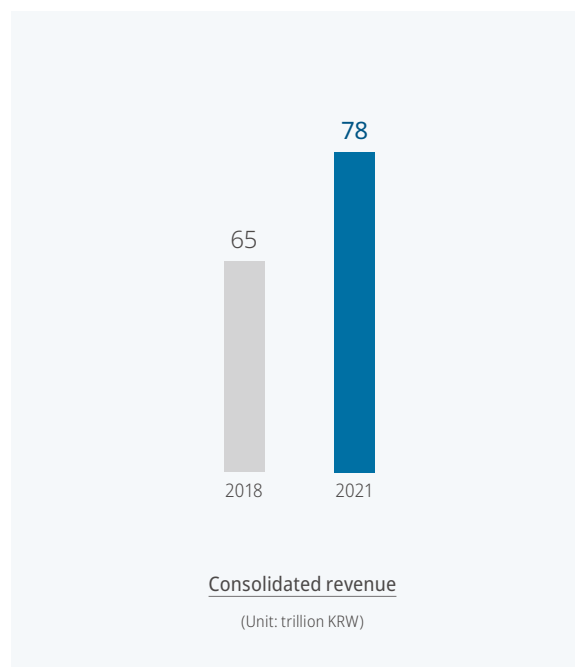
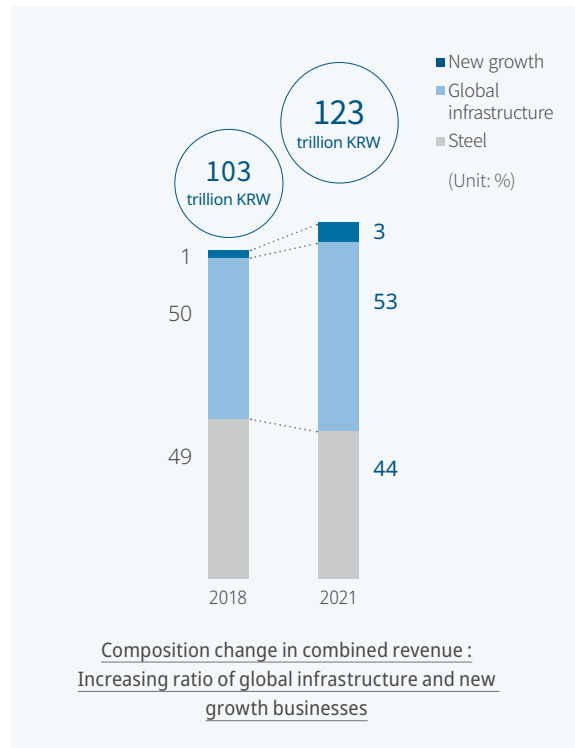
To solve national difficulties like youth unemployment and low birth rate issue, POSCO will proactively present a role model that can be implemented as a company, and will lowering the transaction barriers between large and SMEs for mutual growth. We will also take a leading role in spreading the mutual growth culture. Through our new contribution activities, we will build a social contribution system in which economic value and social value are circulate virtuously.

In the People sector, POSCO will improve working conditions so that employees can focus on their core businesses, and will continuously innovate HR, organization and culture to build trustworthy and creative workplace.

We will improve our system so that all employees will have ownership, practice consideration and respect, and grow as creative human talents. We will keep in mind that our competitiveness is in the the field, and will innovate our way of working in accordance with the three keywords in the code of conduct – Substance, Execution, and Practical.

The 2019 is the first year of beginning POSCO's next 50 Years who pursues 100 years business. We will actively seek out and fulfill our role as a corporate citizenship that build a better future together, and will aim for a higher dream and a greater goal.

POSCO has been striving to become the world's best steel company for the past half-century. Starting this year, we will do our best to grow mutually with customers, suppliers, partners and local communities as a corporate citizen that build a better future together. Everyone here at POSCO will put their best effort in realizing the new vision "With POSCO" in order to show appreciation of the unwavering support and interest from the stakeholders.



Board of Directors

BOD Composition

POSCO's board of directors (BOD) is comprised of five inside directors and seven outside directors.

At the 51st general shareholders' meeting held on March 15, 2019, Prof. Heui Jae Pakh of Seoul National University was newly appointed as an outside director, and the former Vice Chairman of SK Group Shin-bae Kim, and Prof. Moon-ki Chung of Sungkyunkwan University were reappointed. As for inside directors, Senior Executive Vice President Tak Jeong and Senior Executive Vice President Hag-dong Kim were newly appointed, and President In-hwa Chang and Senior Executive Vice President Jung-son Chon were reappointed. At the subsequent BOD meeting, Mr. Shin-bae Kim was elected as the Chairman of BOD.

Number of inside directors	5
Number of outside directors	7
Total number of directors	12

Independence of the BOD,

Election process of outside directors, number of outside directors, separation of the chairman and the CEO

POSCO appoints its outside directors in an independent and transparent manner. The Outside Director Candidate Recommendation Advisory Group comprised of five experts from various fields recommends candidates three times the number of outside directors to be appointed. The Director Candidate Recommendation and Management Committee evaluates candidates' qualifications, and recommends final candidate to general shareholder's meeting upon which the final decision is made.

POSCO structures the company's governance in accordance to the "Corporate Governance Charter" that stipulates the vision and principles of POSCO's corporate governance, which are the independence of the board of directors and the protection of shareholders' rights. In order to ensure the Board's independence, a maximum of eight outside directors and five inside directors can be appointed. In addition, POSCO established an outside director-oriented operation structure by appointing an outside director as the chairman of the board of directors as well as the heads of the special committees operating under the board of directors. Regular outside director meetings are held for by the BOD charter so that outside directors are guaranteed to have opportunities to share their independent opinions.

*In 2006, POSCO took the initiative as a leading company to separate the chairman of the BOD and the CEO to enhance the independence of the board of directors.

BOD Diversity and Expertise

POSCO's board of directors is comprised of experts from various backgrounds such as industry, finance, academia, law, accounting and public sector. This is to ensure management's reasonable and unbiased decision-making. To promote the diversity of our BOD

composition, outside director appointments are made in consideration of their gender, race, ethnicity, birthplace, nationality, age, academic background, and expertise, and this principle is widely announced through our Corporate Citizenship Reports and other in-house regulations.

In addition, regular two-day Strategy Sessions are held twice a year to establish and review medium-to-long-term management plans. Outside directors visit our various business sites in relation to steel making and new business to improve their knowledge and expertise.

Activities Undertaken to Improve the Expertise of Outside Directors

- Visits paid to major business sites and business briefings offered to help outside directors understand the status of business: Aug. & Nov. 2018, Jan. 2019
- Outside director meeting held to discuss any agenda relevant to management and operation of BOD
- Strategy Session held to discuss POSCO Group's strategic directions and business plans: Nov. 2018 (two-day session)

BOD Activities

In 2018, the BOD meetings were held twelve times. The attendance of inside directors was 98% and outside directors 100%, reaching 99% in overall. Major decisions made at the 2018 BOD meetings include the appointment of the CEO, quarterly dividend payment, the installation of a new coal storage facility in Pohang, approval of merger plan between POSCO Chemical Co., Ltd. and POSCO ESM Co., Ltd. medium-term management strategies and 2019 management plans.

Evaluation and Compensation of the BOD

POSCO's board of directors has been operating the board of directors' evaluation system since 2010 in order to improve the efficiency of the BOD and to ensure the external credibility of POSCO's corporate governance.

BOD performs self-assessments every February, and its outcomes are reported at the BOD meeting in May. All the board members are surveyed regarding the board of directors and the special committee they belong to (both qualitative and quantitative). Survey questions cover the overall operating system and level of the board of directors, such as the role of the board, its structure and operations. This evaluation is a tool used for improving the board's operation after reporting and discussion at the board meeting. Outside directors' compensation is set by taking into account their work load, other companies of similar size, and social perceptions. The details of outside director compensation are disclosed in the Annual Report.

Structure of the Board of Directors

Classification	Name	Tenure	Work Experience	Main Role
Outside Directors	Shin-Bae Kim	Mar. 2019~Mar. 2022 First appointment: Mar. 2017	· Vice Chairman of SK Group · CEO of SK Telecom · Chairman of Korea IoT Association – Seoul National University (Industrial Engineering), University of Pennsylvania (MBA)	· Chairman of BOD · Member of the Evaluation and Compensation Committee
	Byong-Won Bahk	Mar. 2018~Mar. 2021 First appointment: Mar. 2015	· Chairman of the Korea Employers Federation · Chairman of Woori Financial Group · Vice-minister of Ministry of Economy and Finance – Seoul National University (LL.B/LL.M), University of Washington (Seattle) Economics	· Chairman of the Director Candidate Recommendation and Management Committee · Member of the Audit Committee
	Joo-Hyun Kim	Mar. 2018~Mar. 2021 First appointment: Mar. 2015	· Currently CEO of Financial News · President of Hyundai Research Institute · President of future Korea institute, Kookmin University – Sogang University (English Literature and Language) – Arizona State University (Ph.D. in Business Administration)	· Chairman of the Finance and Related Party Transactions Committee · Member of the Director Candidate Recommendation and Management Committee
	Moon-Ki Chung	Mar. 2019~Mar. 2022 First appointment: Mar. 2017	· Currently Associate Professor in accounting, Sungkyunkwan University · Member of the Accounting Review Committee, Financial Supervisory Service · Partner and Chief Quality Officer, Samil PwC – Sungkyunkwan University (International Trade) – Sungkyunkwan University (Ph.D. in Business Administration)	· Chairman of the Audit Committee · Member of the Evaluation and Compensation Committee
	Seung-Wha Chang	Mar. 2017~Mar. 2020 First appointment: Mar. 2017	· Currently Dean, Dept. of Law, Seoul National University · WTO Appellate Body judge · ICC (Int'l Court of Arbitration) arbitrator – Seoul National University (Law) – Harvard University (LL.M/S.J.D.)	· Chairman of the Evaluation and Compensation Committee · Member of the Audit Committee
	Sung-Jin Kim	Mar. 2018~Mar. 2021 First appointment: Mar. 2018	· President of Hankyong National University · Minister of Ministry of Oceans and Fisheries · Commissioner of Small and Medium Business Administration – Seoul National University (Economics) – University of Kansas (M.S./Ph.D. in Economics)	· Member of the Finance and Related Party Transactions Committee · Member of the Evaluation and Compensation Committee
	Heui-Jae Pahk	Mar. 2019~Mar. 2022 First appointment: Mar. 2019	· Currently Professor, Dept. of Mechanical and Aerospace Engineering, Seoul National University · Head of strategic R&D planning office in the Ministry of Trade, Industry and Energy · CEO of SNU Precision – Seoul National University (B.A. and M.A. in Machinery Design) – University of Manchester (Ph.D. in Mechanical Engineering)	· Member of the Director Candidate Recommendation and Management Committee · Member of the Finance and Related Party Transactions Committee
Inside Directors	Jeong-Woo Choi	Jul. 2018~Mar. 2021 First appointment: Jul. 2018	· Currently CEO of POSCO · CEO of POSCO Chemtech Co., Ltd. · President & CFO, Head of Corporate Strategy & Finance Center, POSCO · Senior Executive Vice President, Head of Financial Planning Division, POSCO Daewoo Corporation · Senior Vice President, Head of Corporate Audit, POSCO – Busan National University (B.A. in Economics)	· Chairman of the Executive Management Committee
	In-Hwa Chang	Mar. 2019~Mar. 2020 First appointment: Mar. 2017	· Currently President, Head of Steel Business Unit · Head of Steel Production Division · Head of Technical Investment Division · Head of Steel Solutions Marketing · Management Director of RIST – Seoul National University (B.A. in Shipbuilding and Marine Engineering) – MIT (Ph.D. in Marine Engineering)	· Member of the Finance and Related Party Transactions Committee · Member of the Executive Management Committee
	Jung-Son Chon	Mar. 2019~Mar. 2020 First appointment: Mar. 2018	· Currently Senior Executive Vice President, Head of Corporate Strategy & Planning Division · Senior Executive Vice President, Head of Corporate Strategy & Finance Center · President and CEO of POSCO C&C · Executive Vice President, Head of Management Strategy Office – Korea University (Law)	· Member of the Director Candidate Recommendation and Management Committee · Member of the Executive Management Committee
	Hag-Dong Kim	Mar. 2019~Mar. 2020 First appointment: Mar. 2019	· Currently Senior Executive Vice President, Head of Production Division · Senior Executive Vice President, Gwangyang Works · Senior Executive Vice President, Pohang Works · CEO and Senior Executive Vice President, SNNC – Seoul National University (Metallurgy Engineering) – Carnegie Mellon (Ph.D. Materials Science and Engineering)	· Member of the Executive Management Committee
	Tak Jeong	Mar. 2019~Mar. 2020 First appointment: Mar. 2019	· Currently Senior Executive Vice President, Head of Marketing Division · Senior Executive Vice President, Head of Steel Business Division · Executive Vice President, Head of Steel Business Strategy Office · Managing Director, Head of Hot Rolled Steel Division at POSCO Daewoo Corporation – Hankuk University of Foreign Studies (Arabic)	· Member of the Executive Management Committee

Special Committees

POSCO operates five special committees: the Director Candidate Recommendation and Management Committee, the Evaluation and Compensation Committee, the Finance and Related Party Transactions Committee, the Audit Committee, and the Executive Management Committee. Four special committees are chaired by outside directors. The exception is the Executive Management Committee that is responsible for performing reviews and deliberations on in steel business investment. The Audit Committee and Compensation and Evaluation Committee are composed solely of outside directors to ensure the independent decision-making of the board.

Composition and Major Roles of Special Committees

Director Candidate Recommendation and Management Committee

(Three outside directors and one inside director)

Major deliberations & decisions in 2018	<ul style="list-style-type: none"> Qualification assessment and recommendation of outside director candidates Qualification assessment of inside director candidates Review of appointment of committee members Operation of the Outside Director Candidate Recommendation Advisory Group, etc.
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Evaluation and Compensation Committee

(Four outside directors)

Major deliberations & decisions in 2018	<ul style="list-style-type: none"> Evaluation of companywide management performance in 2017 Plans for evaluating the companywide management performance in 2018
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Finance and Related Party Transactions Committee

(Three outside directors and one inside director)

Major deliberations & decisions in 2018	<ul style="list-style-type: none"> Capital increase of POSCO ESM Co., Ltd. Plan for POSCO P&S merger Financing plans for 2018, etc.
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Audit Committee

(Three outside directors)

Major deliberations & decisions in 2018	<ul style="list-style-type: none"> Internal audit results of 2017 and plans for 2018 Evaluation of implementation of IACS system Audit result of the 50th internal and external auditing of financial statement Revision of the Audit Committee Operation Regulations
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Executive Management Committee

(Five inside directors)

Major deliberations & decisions in 2018	<ul style="list-style-type: none"> Disposal of treasury shares for employee rewards Expanding the application of the coke oven compound combustion technology Construction of a new power generation facility using by-product gas
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Agendas Submitted to the BOD in 2018

Meeting	Date	Agenda
First	Jan. 24	① Approval of the 50th business report and financial statements and convening of the general shareholders' meeting ② Amendment to the Articles of Association ③ SILO lease contract with Posco Terminal
Second	Feb. 13	① Agendas to be submitted to the 50th general shareholders' meeting ② Recommendation of inside director candidates
Third	Mar. 9	① Appointment of chairman of the board of directors ② Appointment of special committee members ③ Appointment of representative directors and position assignment to inside directors ④ Preliminary plan for POSCO's 50th anniversary project
Fourth	Apr. 18	① Set-up and operation plan of the CEO Succession Council
Fifth	May 11	① Payment of 2018 1Q dividends ② Financing plan for 2018 ③ Set-up of cut-off date for the voting right at the special shareholders' meeting ④ Plans for related party transactions in 2018 ⑤ Capital increase of POSCO ESM Co., Ltd.
Sixth	Jun. 22	① Selection of the CEO candidates to undergo qualification review and the operation plan of the CEO Candidate Recommendation Committee
Seventh	Jun. 23	① Recommendation of inside directors (candidates for CEO) ② Convocation of the special shareholders' meeting and agendas to be submitted to the meeting
Eighth	Jul. 27	① Appointment of CEO ② Payment of 2018 2Q dividends
Ninth	Aug. 22	① Capital increase related to Project PUMA ② Capital increase of POSCO-China to acquire equities in the Beijing POSCO Center ③ POSCO coal storage facility construction project ④ Plan for POSCO P&S merger ⑤ Filing administrative litigation regarding tax investigation in 2013 ⑥ Filing a lawsuit against former large shareholders of Steel Flower for the financial proceeds from stock trade
Tenth	Nov. 3	① Payment of 2018 3Q dividend ② Lime Calcination Plant lease contract ③ Approval of merger with POSCO P&S ④ Donation for win-win partnership ⑤ Making donations for Indonesia's recovery from the earthquake
Eleventh	Dec. 7	① Medium-term management strategies and 2019 management plans ② Plan to merge POSCO Chemtech Co., Ltd. and POSCO ESM Co., Ltd. ③ Provisional payment according to the lawsuit for redemption of Suncheon Eco Trans borrowings ④ Suspension of the Synthetic Natural Gas (SNG) Project ⑤ Revision of the Audit Committee operation regulations ⑥ Yearend donation for community chest ⑦ POSCO 1% Foundation paying the matching grant fund
Twelfth	Dec. 19	① Suspension of the Synthetic Natural Gas (SNG) Project

Director's remuneration limit

Criteria	Previous Term	Current Term
Number of directors (number of outside directors)	12 (7)	12 (7)
Limit of total remuneration	10 billion KRW	10 billion KRW

Corporate Citizenship Committee

In March 2019, POSCO launched the Corporate Citizenship Committee, with an aim to become a corporate citizen respected and beloved by the general public and to pursue shared growth with society. The Corporate Citizenship Committee is the executive strategic advisory group comprised of POSCO's inside and outside directors and external experts. The committee is charged with discussing the management philosophy of corporate citizenship and the direction of the activities to be pursued.

The external experts relay various voices from stakeholders and the public, and are responsible for translating those voices into policy suggestions and to promote company's activities as a corporate citizen. The inside and outside directors are responsible for strengthening execution momentum within the company so that its policies are incorporated into corporate citizenship activities and are implemented in a coherent and unified manner.

The Corporate Citizenship Committee convenes each quarter to give advice regarding corporate citizenship strategy, changes in ESG (Environment, Social, Governance) trends, the evaluation of the value created through corporate citizenship activities, and the review of the POSCO Corporate Citizenship Report.

POSCO set in motion a consultative body to make sure Corporate Citizenship Committee's advice and suggestions are put into practice. The Corporate Citizenship Committee, which is the highest advisory group, announces discussion conclusions and suggestions. To follow up on this, the Corporate Citizenship Strategic Meeting chaired by the CEO and attended by respective affiliate presidents decides whether and how those suggestions will be implemented at POSCO subsidiaries. The Corporate Citizenship Council, composed of affiliate executives in charge of corporate

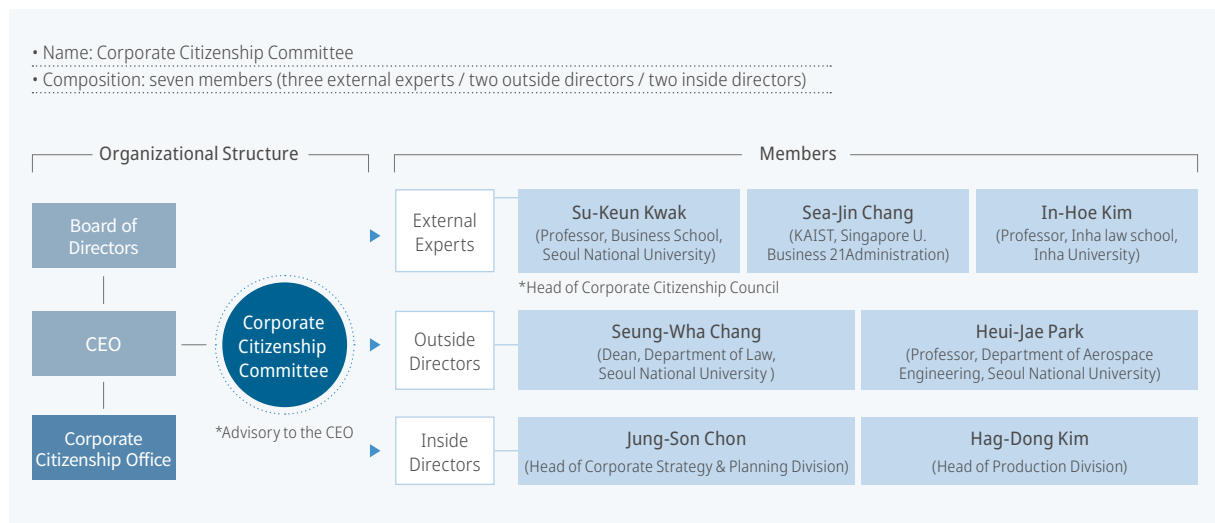
citizenship operations establishes implementation plans for relevant departments, and shares the results and improvements to be made with the rest of the POSCO Group.

POSCO's Corporate Citizenship Committee and the Council is a compass that brings us to a virtuous circle between business activities and social value creation, so that POSCO can become a great workplace beloved by its local communities.

Corporate Citizenship Committee's Major Activities



Structure of the Corporate Citizenship Committee



Investor Relations

Credit Rating

International credit rating agencies upgraded the credit ratings of POSCO in view of the improvement of its operating performance and financial soundness. In June 2018, S&P upgraded our credit ratings from BBB+(Stable) to BBB+(Positive), and Moody's also upgraded our credit ratings from Baa2(Positive) to Baa1(Stable).

Dividends

POSCO is maintaining long-term stable cash dividends in order to improve its shareholder value. We introduced the quarterly dividend payout system in the second quarter of 2016 which strengthened our shareholder return policy. In 2018, POSCO paid an annual dividend of KRW 10,000 per share, which is the sum of the KRW 1,500 for the first and second quarters, KRW 2,000 for the third quarter, and KRW 5,000 at the year's end. As a result, we recorded a dividend payout ratio of 47.3% and a dividend yield of 4.1%.

Ownership and Voting Rights

As of the end of December 2018, the National Pension Service is POSCO's largest shareholder, owning 10.72%, and institutions and private investors hold 81.04%. The remaining 8.24% is owned by POSCO.

The total number of shares issued by POSCO is 87,186,835 shares. This number is comprised of ordinary shares only without any preferred shares. Each share has the voting right of 1, and there are no differential voting rights that give multiple votes to a certain stock. However, the 7,185,703 shares owned by POSCO have no voting rights according to the commercial law, making the total number of shares with voting rights 80,001,132 shares, or 91.76% of the total number of issued shares.

POSCO protects shareholders in exercising their rights as well as their legitimate voting rights, assures equal treatment of private and foreign investors, and respects shareholders' rights according to the law and articles of association. POSCO employs the focused written voting system. According to a board resolution, an electronic voting system was put in place in February 2019 to protect shareholder rights and promote their participation.

Credit Rating History

Agency	2016	2017	2018
S&P	BBB+ (Negative)	BBB+ (Stable)	BBB+ (Positive)
Moody's	Baa2 (Stable)	Baa2 (Positive)	Baa1 (Stable)

Dividends

Category	2016	2017	2018
Per share			
Cash dividend ¹⁾ (KRW)	8,000	8,000	10,000
Interim dividend (KRW)	2,250	4,500	5,000
Total dividend (billion KRW)	640	640	800
Consolidated payout ratio ²⁾ (%)	46.9%	22.9%	47.3%
Dividend yield ³⁾ (%)	3.1%	2.4%	4.1%

1) Quarterly dividend payment started in 2016. KRW 1,500 and KRW 750 per share were paid in 2Q and 3Q, respectively.

2) The consolidated dividend payout ratio was based on the net profit of controlling interests

3) Dividend yield was calculated by dividing cash dividends per share by the average closing share price for a week before the date of dividend payout.

Shareholders

Name / classification	Number of shares owned	Ratio
National Pension Service	9,342,192	10.72%
Institutional and private investors	70,658,940	81.04%
Treasury stock	7,185,703	8.24%
Total	87,186,835	100.0%

* No family-owned stocks

Type of shares and voting right

Type	No. of issued shares	Ratio	Note
Preferred shares	-		No voting right
Ordinary shares with voting right	80,001,132	91.76%	With voting right
Ordinary shares without voting right	7,185,703	8.24%	No voting right
Total	87,186,835	100.0%	

Major Business Outcomes and Plans

"WITH POSCO, CORPORATE CITIZENSHIP: BUILDING A BETTER FUTURE TOGETHER" IS OUR NEW VISION THAT WILL DRIVE OUR EVOLUTION INTO A CENTENNIAL COMPANY.

WITH THE MISSION OF CONTRIBUTING TO THE DEVELOPMENT OF THE KOREAN ECONOMY, WE EMERGED AS A GLOBAL STEELMAKER, AND ARE NOW DETERMINED TO DELIVER THE NEW VALUE OF OUR TIME THROUGH "CORPORATE CITIZENSHIP: BUILDING A BETTER FUTURE TOGETHER" SO AS TO PURSUE THE VALUES OF CARE, COEXISTENCE AND COPROSPERITY AND STAND STRONG FOR A HUNDRED YEARS.

WE TAKE A MULTI-FACETED APPROACH FOR OUR FUTURE GROWTH BY REALIGNING FLAGSHIP BUSINESS OPERATIONS AMONG POSCO GROUP AFFILIATES WITH AN AIM TO REINFORCE OUR COMPETITIVENESS IN THE GLOBAL INFRASTRUCTURE INDUSTRY AND TO FULLY BOOST OUR NEW GROWTH ENGINES IN ADDITION TO OUR CONVENTIONAL MAIN BUSINESS OF STEELMAKING.

TO THIS END, WE ARE BUILDING AN INTEGRATED OPERATIONAL SYSTEM FOR OUR SECONDARY BATTERY MATERIALS BUSINESS WHICH IS EXPECTED TO SERVE AS A KEY GROWTH DRIVER FOR POSCO GROUP. IN SO DOING, WE WILL SURELY STRENGTHEN OUR NEW GROWTH BUSINESS AND DO OUR UTMOST IN IMPROVING ITS OPERATIONAL EFFICIENCY AND RESPONDING TO ITS CUSTOMERS.

BUSINESS WITH POSCO

MARKETING STRATEGY 019	CIRCULAR ECONOMY AND THE FUTURE OF STEEL 040
TECHNOLOGY DEVELOPMENT 022	RESPONDING TO CLIMATE CHANGE 042
QUALITY MANAGEMENT 024	NEW GROWTH BUSINESS 055
ENVIRONMENTAL MANAGEMENT 026	SECONDARY BATTERY MATERIAL 056
ENVIRONMENTAL INVESTMENT 036	INDUSTRY- ACADEMIA-RESEARCH COOPERATION 057
ECO-FRIENDLY PRODUCT 038	



SOCIETY WITH POSCO

SOCIAL CONTRIBUTION 059
SHARED GROWTH 066
ADDRESSING THE ISSUE OF LOW BIRTH RATE IN SOCIETY 073
IDEA MARKET PLACE 074
YOUTH EMPLOYMENT AND START-UP SUPPORT 075



PEOPLE WITH POSCO

SAFETY AND HEALTH 077
RECRUITMENT 082
HUMAN RESOURCES CULTIVATION 084
WORK AND LIFE BALANCE 088





01

BUSINESS WITH POSCO

We will create value together with our business partners

We will strengthen domestic steel industry's competitiveness by building a safer and more economic steelmaking system, and developing world's top-class smart technologies.

We will innovate our R&D centered around cost saving technologies, and develop differentiated solutions that will enhance the competitiveness of the steel industry to further bolster our position as the world's premium steelmaker.

We will build a new business portfolio for future growth to serve as an unwavering anchor for POSCO Group's business, and put our utmost effort in creating new value and contributing to society's development.

MARKETING STRATEGY

BUSINESS ▼

WTP (World Top Premium) Product

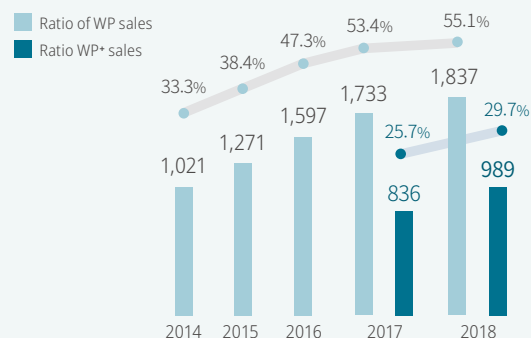
POSCO introduced the concept of WP (World Premium) products in 2014 that are made of materials competitive in both technology and profitability, and has since pursued a marketing strategy centering on high value-added products. Our World Premium encompasses WF (World First), the products that POSCO is developing or has developed for the first time in the world, WB (World Best) that is recognized as one of the world's top 3 in the aspects of technological advancement and economic viability, and WM (World Most) that refers to products that are not in either WF or WB group but are highly sought after by our customers and thus are competitive in the market. In 2019, POSCO introduced another new concept of WTP (World Top Premium) that includes WF and WB only, without WM, with a stronger focus on technology and growth potential to further expand the sales of differentiated top-quality steel products.

Integrated Growth Centering on WTP, realizing the vision “Business with POSCO”

During the past five years, POSCO has been pursuing “Business with POSCO” to deliver WP products that meet customer needs based on our unique technological prowess. The ratio of WP product sales in 2014 when it was first introduced was 30%. After a steady increase, it reached over 50% in 2017. In 2019, we will take it to the next level, expanding WTP oriented sales and developing new products to establish our presence in the high-end steel product market.

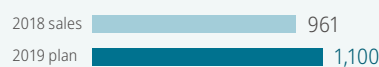
Sales and ratio of WP/WP+ products

(Unit: 10,000 tons)



WTP Sales

(Unit: 10,000 tons)



CRM System to Meet Customer Needs

POSCO's CRM (Customer Relationship Management) system was introduced in 2003 and currently manages information from over 20 thousand customers worldwide. Information is updated automatically - transaction results of each customer are updated through the ERP system, and financial/general information is updated in alignment with credit rating agencies. All customer-contacting departments update customer needs, responses, and critical issues to the CRM system in real time. Customer information in the system is shared with more than 50 business sites at home and abroad to improve customer satisfaction and enhance solution marketing activities. POSCO also ensures the swift handling of identified customer needs by linking the CRM system to the “Customer Promise Management System,” a company-wide collaboration tool, and the “Mobile CRM System” app used on tablet PCs and smartphones enables our field staff to better respond to customer requirements.

Customer Satisfaction Survey

Every year, POSCO conducts a customer satisfaction survey to identify customer needs and opinions and to enhance customer value. In 2018, the survey was conducted by KMAC (Korea Management Association Consulting), an external professional management consulting service. Its respondents included POSCO's 294 major customer companies (70 more from the previous year) operating in POSCO's seven strategic business sectors. It turned out that POSCO received 89 points at home and 76 points abroad and 82 points overall, which was up by one point compared to the previous year. In particular, the level of satisfaction of domestic customers increased by four points over the previous year as a result of expanding domestic sales and making improvements in the areas that received lower points in the 2017 survey. This enabled us to maintain an important advantage over our competitors. POSCO will define new tasks for the 405 customer needs identified in 2017 and undertake extensive improvement measures within 2019. For the VOCs that require improvement over the longer term, relevant departments will organize a TF to tackle them within this year.

Customer Satisfaction Survey Results

(points out of 100)

Classification	2016	2017	2018
Domestic	85	85	89
Overseas	74	78	76
Overall	80	81	82

Flagship WTP Products

GIGA STEEL

The advanced-high-strength steel that is lighter yet stronger

In the “smart” age of electric vehicles and autonomous cars, POSCO developed GIGA STEEL, the next-generation automotive steel sheet that can significantly reduce the weight of automobiles.

GIGA STEEL is a state-of-the-art material, and each square millimeter can withstand over 100kgs, which means GIGA STEEL the size of a coin will support the weight of over 10 tons. It is stronger and lighter than comparable materials such as aluminum and CFRP (Carbon Fiber Reinforced Plastic). Compared to aluminum, it is 3.5 times more affordable and processing cost is 2.1 times lower, and thus can bring down production costs. GIGA STEEL is also eco-friendly, as it helps automobile decrease their accumulated CO₂ emission by 10%. Currently GIGA STEEL offerings produced by POSCO include XF steel, TWIP steel, DP steel, CP steel, and HPF steel.

High Manganese Steel

The new cryogenic material of our dreams that can withstand temperatures as low as -196°C

POSCO's innovative High Manganese Steel is a mixture of iron and high levels of Manganese.

The high Mn steel produced by POSCO includes Pos_XD and PosM_AR. The high Mn steel for slurry pipes (Pos_XD) has twice the abrasion resistance compared to existing steel pipes, and was made possible by developing advanced welding technology. Another high abrasion-resistant product is PosM-AR that allows a longer lifespan based on its enhanced wear-resistance. This is ideal for heavy equipment such as excavator buckets, bulldozer blades, coal transportation equipment and mining equipment as well as for military applications such as bulletproof gear.

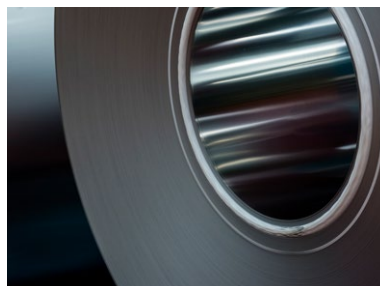
POSCO was the first to succeed in applying HMS to LNG-fueled vessel fuel tanks. As global regulations on sulfuric acids, nitrogen oxides and carbon dioxide are becoming more stringent, we expect to see an increased construction of LNG-fueled vessels and a subsequent rise in the demand for HMS for LNG tanks.

PosMAC

Highly corrosion-resistant ‘iron that does not rust’

PosMAC has made a breakthrough in corrosion resistance

PosMAC is a highly corrosion-resistant alloy coated steel with a coating layer composed of zinc, magnesium and aluminum. Compared to normal zinc coated steel, it is five to ten times more resistant against corrosion and is called “iron that doesn't rust.” Photovoltaic (PV) energy structures are exposed to the outdoor environment for an extended period of time once they are installed, and thus require materials that can withstand corrosive environments. PosMAC is gaining wide popularity in the PV energy market thanks to its excellent corrosion resistance. Besides PV energy structures, PosMAC can be applied in agricultural and livestock settings such as greenhouses and animal barns, as well as for the interior and exterior finishing of high-end buildings. The possibilities for its application in various industrial sectors are very promising.



01
GIGA STEEL is the next-generation automotive steel sheet developed by POSCO



02
PosMAC is a highly corrosion-resistant alloy coated steel developed with POSCO's own technology



03
This LNG-fueled ship used POSCO's High Manganese Steel that can withstand temperatures as low as -196°C

The Evolution and Advancement of Solution Marketing

POSCO's solution marketing that started in 2014 has evolved in three different directions: a "technical solution" that provides customers with technical support in using steel products, a "commercial solution" that helps customers create commercial value, and a "human solution" that wins the heart of our customers based on trust.

We use testing equipment that replicates customer's operating conditions to develop steel application technologies such as forming, welding, painting, and performance evaluation. We use the cooperative network of POSCO's research facilities in Pohang, Gwangyang and Incheon; the Group subsidiaries' research facilities in Sejong, Gumi, Cheonan and Pangyo; RIST, the specialized research institute of POSCO Group; and POSTECH, a world-renowned research university specialized in science and technology, in order to develop sophisticated solutions.

Solution Marketing with the Customer – Next 50 Years With POSCO

The biennial "POSCO Global EVI Forum" that POSCO has been organizing since 2010 is a marketing festival tailor-made for our customer. Its goal is to strengthen business partnership with customers and meet and cooperate with prospect customers.

The 2018 EVI Forum celebrating POSCO's 50th anniversary saw the biggest attendance since its conception, where 1,400 guests from around the world came together to congratulate POSCO's anniversary and bless the "Next 50 years with POSCO".

WTP Products by Industry and Model Cases of Solution Marketing

Construction



TMC thick plates applied to bridge towers (Çanakkale 1915 Bridge, Turkey).

- TMC thick plates will be applied to the towers of the Çanakkale 1915 Bridge, the longest suspension bridge in the world.
- Solution providing activities in alternative tenders and structural performance verification (NL steel 2.5m~3m width → TMC steel, 4m).
- Secured competitiveness by providing thick wall welding solutions and ensuring transportation quality.

Energy & Shipbuilding



TMCP steel applied to storage tanks.

- Applied the TMCP steel (ASTM A841) to pressurized tanks for the first time.
- Has better weldability compared to existing heat-treated steel → shortened construction period improves economic viability.
- Has higher productivity compared to existing heat-treated steel → improves our response to customer needs.

Electric & Electronic



Used as replacement for air-conditioner condensing unit (aluminum coat-ed alloy → PosMAC).

- Applied high corrosion-resistant alloy coated steel (PosMAC) to air-conditioners sold to warm and humid regions such as Southeast Asia to reinforce the corrosion resistance of condensing units
- Replaced existing Galvalume with PosMAC → even with less coating, corrosion-resistance is twice as high, enhancing the value of the product.
- Developed new household applications for PosMAC, creating new demand for WTP.

Stainless



Applied STS329LD to the lining of the sedimentation tank at a water purification plant.

- The STS329LD was used as lining in the Gyeong-san City Waterworks sedimentation tank (area of 2,587m²).
- Saved construction cost by 10% compared to epoxy coating, construction period was shortened by 60%, and maintenance reduced by 95% (in view of 20 years of repair and reinforcement).
- Developed anchoring that connects concrete and STS panels, and vibration-reducing brackets → earthquake resistance (improved by 2.2 times).

TECHNOLOGY DEVELOPMENT

BUSINESS ▼

In 2018, POSCO concentrated on developing high value-added World Top Premium products through World First, World Best new technologies based on customers' needs. POSCO maintained market dominance with products such as GIGA STEEL for automobiles, High Manganese Steel for energy, earthquake resistant high-strength steel, high-end non-oriented electrical steel for electric vehicles, and API steel built to withstand extremely low temperatures. Adding to them are the development of cost-reducing and eco-friendly processing technologies that enabled POSCO to keep its world's top-notch competitive edge. In 2019, to stay abreast of the age of the Fourth Industrial Revolution, we will focus our attention to achieving state-of-the art Smart Factory. We will do this by leveraging our business expertise acquired through our long history and know-how with the current digital technology such as Internet of Things, Artificial Intelligence and Big Data. We continue to apply smart solutions to our core steelmaking processes, extending the application of our exceptional smart technology to other plants. We will also continue our efforts in developing eco-friendly technologies tailored to the steelmaking industry. To this end, we aim to minimize our process load and impact on local communities to help reduce GHG emissions and particulate matter (PM) levels that have recently become a nation-wide concern.

SMART FACTORY



POSCO is mobilizing its capacity to maintain the world's top competitiveness in cost and quality by building a cutting-edge Smart Factory to optimize and improve the efficiency of its production process. In 2018, a total of 40 "Smart" projects were completed including the converter off-gas control model and work automation, and developed the Smart safety helmet and distributed 50 units of the wired version and 100 units of the wireless version in the field. Integrating artificial intelligence with the ironmaking process that was started in 2016 has advanced both production and quality, making actual difference. Some of the main examples include controlling the coating amount in the coating process, automatic operation of the ZRM rolling process, and iron temperature forecasting in the blast furnace.

Automatic coating amount control based on artificial intelligence

We developed an AI-based precision control technology of the CGL (Continuous Galvanizing Line), which is the core process in the production of automotive steel sheets, and reduced the work load and improved quality deviations that may occur between different workers. This technology that was applied in the CGL at Gwangyang Works combines the AI-based coating amount prediction model and the optimization method-based control model, providing real-time coating amount prediction and adjusting the precise target coating amount. The automatic coating amount controlling solution, after verification, will be expanded from the CGL to other processes, leading the technological advancement in the automotive steel sheet market.

IRON MAKING

**Reducing cost by discovering low-cost raw materials and developing utilization technology**

Traditionally, small blast furnaces lacked price competitiveness compared to large blast furnaces due to the economy of scale. However, we discovered new low-priced raw materials suitable for small furnaces, developed mixing techniques to increase their efficiency, and strengthened the refractory spray inside the blast furnace to improve its utilization. This raised the price competitiveness of small blast furnaces to the level of larger furnaces.

Highly efficient eco-friendly sintering off-gas circulation technology

In order to reduce CO₂ emissions and other air pollutants, we developed technology that circulates the off-gas at the sintering process to build POSCO's unique high-efficiency, low-calorie sintering process. This has helped us reduce fuel costs as well as fugitive dust.

STEEL MAKING

**Developed Cr, V control improvement technology for the better usage of Roy Hill ore**

POSCO owns 12.5% stake of the Roy Hill Mine in Australia. One issue is the ores produced there have high content of chromium (Cr) and vanadium (V), which means that only 31% of the offtake (1.5 Mtpa) is usable. POSCO played a leading role in developing "Charged V, Cr neutralization and automatic refining technology" and "Scrap classification by residue components and automatic use technology," enabling us to fully use the Roy Hill ores produced. This, in return, has saved us more than KRW 50 billion in annual materials cost.

Extremely thick steel plate caster PosMC (POSCO Mega Caster) developed exclusively by POSCO, is capable of producing the thickest slabs in the world

Thick steel products, as usually their application conditions are severe, need to be thickened further to improve their performance. While POSCO produced high-end thick steel plates using the 400mmt slab caster with reduction rate (slab thickness/steel plate thickness) of 3:1 at a maximum thickness of 133mm, we are now capable of producing 233mmt plates with the development of PosMC 700mmt slab production technology. This allowed us to complete the full line-up of thick steel plates and their sales order is expected to rise in the upcoming years.

REFRACTORY



Refractory technology that prevents the blockage of the casting submerged nozzle to increase clean steel production

The casting submerged nozzle is a refractory that transfers clean refined steel steadily to the mold. In the past, the alumina inclusion formed during casting would pile up inside the submerged nozzle causing irregular movement of molten steel and lower productivity. POSCO developed a new refractory material and structure to succeed in improving the uniform movement of molten steel and its productivity.

ROLLING



Developed cryogenic toughness thick API steel and 4-high skin pass technology for high-tensile hot strips

API is used for the mining and transportation of oil and is also used under severe conditions such as deep sea and extreme cold. These extreme conditions resulted in market demands for thicker API. Thus, we completed developing API-X70 23.8t and API-X80 21.6t, our extremely thick high-strength steel plates, and built a portfolio that will enable us to immediately meet requirements for large projects. In addition, in order to enhance the wave quality of AHSS (Advanced High-Strength Steel), we applied the technology at the 4-high skin pass mill that prevents local thermal expansion in the work roll using the heat pipe, and improved the temper rolling quality of high-tensile strength steel through hot strip skin passing.

Developed technology for hard spot guarantee for thick API sour steel service

In response to energy companies' request for hard spot guarantee for API sour service steel, we developed technology to predict hard spots and offer assurance against such flaws. Hard spots refer to high-hardness regions that are locally created on the product surface: when high pressure is imposed, this could cause the steel pipe to crack. POSCO developed technology to predict and prevent hard spots through API material and accelerated cooling control. Moving forward, we will develop an inspection device, obtain relevant certifications, and complete guarantee against hard spots.

Eco-friendly graphite free-machining steel wire rod

In response to the increasingly stringent environmental regulations, we developed graphite free-machining steel that will replace lead-based free-machining steel. Unlike the existing free-machining steel that uses low melting-point elements - lead (Pb), bismuth (Bi) - and MnS, the new product developed by POSCO uses carbon (C), silicon

(Si) and manganese (Mn) that induce nodule formation and improve machinability. This graphite-based free-machining steel has the same machinability with the lead-based steel. They can be applied in various ways, and soon we will be developing new WTP (World Top Premium) products using this material.

Eco-friendly highly corrosion-resistant (PosMAC®1.5) Cr (III) coating technology

We needed to develop an eco-friendly after treatment solution to substitute Chromium (VI), as it is subject to the RoHS (Restriction of Hazardous Substances) regulations. As construction materials need sufficient corrosion-resistance properties, it was difficult to make them chromium free or treat them with ordinary Cr (III). To solve this issue, we developed the first-ever inorganic-organic hybrid Cr (III) after treatment solution that has equal corrosion resistance to Cr (VI), while achieving fineness and uniformity for high-gloss and in-process blackening-resistance. We plan to tap into new markets through active marketing, mainly in the developed countries where demand for eco-friendly products is high.

High-quality PO surface steel to meet global automakers' demand

Recently, global automobile manufacturers are demanding PO (Pickling & Oiling) products with surface quality as high as those for the car exterior. POSCO developed high-quality PO surface steel production technology, which has been recognized for its quality by customers.

High heat-resistant insulation coating for non-oriented electrical steel

We developed a high heat-resistant insulation coating product for non-oriented electrical steel that maintains machinability characteristics (punching, fastening, welding) required by customers while significantly improving the deterioration characteristic of the coated layer by controlling the polymer structure. This has improved the rust formation after SRA (Stress Relief Annealing) by 90%. We expect this product will pioneer the premium motor market. We will explore new markets by establishing new production standards and global quality certifications in the high heat-resistant insulation coating product category.

Stainless steel production technology for bipolar separators used in hydrogen fuel cell electric vehicles

We developed a stainless steel product for bipolar separators that has high conductivity without the need for surface coating, based on high corrosion-resistant stainless steel. Conventionally, carbon coated titanium or gold coated STS 316 were used to achieve the required conductivity, which led to high production costs. POSCO succeeded in lowering production costs by achieving the required conductivity without coating in the high corrosion-resistant 400 series stainless steel. Taking a leading role in the development of core material for hydrogen fuel cell electric vehicles, we will surely dominate the eco-friendly automobile market.

QUALITY MANAGEMENT

BUSINESS ▾

CEO's Philosophy on Quality Management

"Let us build POSCO into a centennial company and a proud corporate citizen by providing the best quality products and services to grow together with customers, innovate and enhance competitiveness together with partner companies based on equal partnership to build a sturdier industrial ecosystem."

POSCO Quality Charter

POSCO established the "POSCO Quality Charter" that embodies our CEO's management philosophy and quality principle. The Quality Charter aims for the world's top quality that will deliver truly impressive customer experience. To achieve this goal, we will ensure consistent and unrivaled product quality, and secure high-quality raw materials by cooperating with suppliers and partner companies.



POSCO's Quality Management System

The company introduced the ISO quality management system in 1993 to ensure that our products meet customers' demand and legal requirements. In 2003, we acquired the ISO/TS 16949 certification, the quality management system for the automotive industry, and in 2017, we acquired the IATF 16949 certification to continue with our efforts to improve the quality management system.

Domestic and International Product Standard and Quality Certifications

With the recent rise of protectionism worldwide, demand for regional quality certifications is growing. In 2017, we developed a global standard certification management system and expanded its application throughout the company in order to preemptively obtain and systematically manage certificates. In 2018, we acquired two international certificates including ISO 9001 for quality management, 134 national standards, and 98 collective standard certificates. Meanwhile, for those customer companies who are unfamiliar with overseas certifications, we held informational presentations to brief them on certifications in Southeast Asia, including relevant procedures and their acquisition methods as part of our corporate citizenship activities.

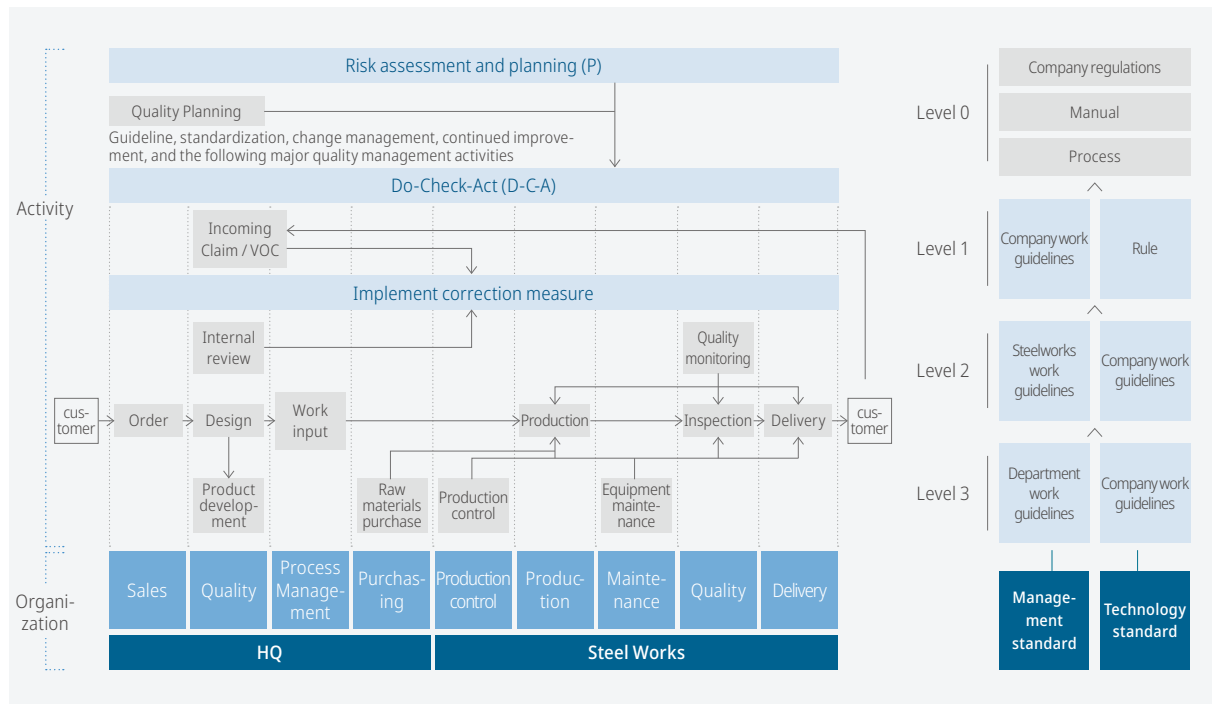
Quality Management in POSCO and Overseas Manufacturing Subsidiaries

In 2015, POSCO changed its internal audit system to include quantitative assessments on the production departments at Pohang Works and Gwangyang Works. We also selected 17 quality management items that are used to evaluate production departments. As a result of the quality management assessment conducted on all production departments in 2018, the average score turned out to be 882 points out of 1,000, which is an improvement from 862 points in 2017. The assessment was performed on 12 overseas subsidiaries as well, starting with P-Vietnam in 2014. Quality management assessments and subsequent improvement activities have elevated the level of quality management system at the overseas subsidiaries on par with the mother company. In 2018, reassessment was conducted on P-VST (Vietnam), P-Malaysia and P-Maharashtra (India) to ensure whether the improved quality management system was being implemented appropriately, and the new manufacturing subsidiary P-TCS (Thailand) underwent its first quality management assessment.

Quality Certification Obtained in 2018

Classification	Certification
International (2 standards)	ISO 9001, IATF 16949
National standards in 7 countries (134 standards)	KS (Korea), JIS (Japan), MS (Malaysia), SNI (Indonesia), BIS (India), TISI (Thailand), TCVN (Vietnam)
Collective standards in 8 organizations (98 standards)	ACRS (Australian Certification Authority for Reinforcing Steel), AD 2000 (Pressure Vessel Directive and Standard, Germany), API (American Petroleum Institute), BC1 (Building and Construction Authority, Singapore) CIDB (Malaysian authority in construction and development), CPR (Construction material standard, Europe), KEPIC (Korea Electric Power Industry Code), PED (Pressure Equipment Directive, Europe)

System Diagram for Quality Management and Standards



POSCO Supplier Quality Certification

POSCO has been operating the PosQC (POSCO Supplier Quality Certification) system since 2012 in order to achieve the vision “With POSCO.” The purpose of this system is to enhance the level of quality management of partner companies and raw material suppliers to secure quality raw materials and achieve the world’s highest level of quality competitiveness. According to evaluation results, partner companies and raw materials suppliers are rated on a scale of Q1 to Q5. Those who get good ratings of Q3 or higher are awarded separate certificate recognition. In 2018, the number of companies subject to evaluation rose to 99, and 91 of them received certificates for Q3 or higher ratings.

POSCO Supplier Quality Certification Evaluation Result

Classification	2014	2015	2016	2017	2018
Evaluated companies	58	66	62	77	99
Companies that rated Q3 or higher	31	56	56	67	91

POSCO Quality Awards

Since 2011, our CEO has been hosting the annual “POSCO Quality Awards” to recognize the organizations that effectively operated their quality management system and achieved excellent performance in quality innovation. The award categories are: POSCO Family, POSCO, Overseas Subsidiary, and Partner/Supplier Company. They are evaluated in accordance with fair criteria such as quality management assessment, quality KPI evaluation, and PosQC. In 2018, the rewards were further segmented and the prize money was increased to promote benefits for awardees. The award-winner in the partner company category was Manseo, and Chosun Refractories was honored in the supplier category.

2018 Quality Award Winners

Category	Winner
POSCO	Pohang Cold Rolling Dept. Coating Plant, Gwang-yang Hot Rolling Dept. Hot Rolling Plant No.1
POSCO Group	POSCO M-TECH Office of Material Business
Overseas Subsidiary	POSCO China Guangdong Steel
Materials Supplier	Chosun Refractories
Partner Company	Manseo

ENVIRONMENTAL MANAGEMENT

BUSINESS ✓

POSCO Group's Environmental Management

POSCO officially declared the CEO's environmental policy in 1995 and published the first environmental report in Korea. We also established an environmental management system and have since conducted environmental management and improvement activities in a systematic manner. Based on these activities, on the first year that ISO14001 - the international standard for environmental management - was created in 1996, we acquired the ISO14001 certification and have maintained it ever since. In 2017, we have transferred to the ISO14001: 2015 certification. In particular, in accordance with the new CEO's management policy, POSCO aims to grow as a "Corporate Citizen" that pursues not only economic profits, but also the value of coexistence and mutual benefits. With this view, we announced 100 reform projects at the "With POSCO Management Reform Rally" on the 100th day of the CEO's appointment. Among the 100 reform projects, we set "eco-friendly, high-efficiency smart production system" as our reform strategy, and "minimizing risk at a time of stringent environmental regulations" as our implementation project, and we are currently proceeding with the detailed action plans that we established. We are implementing the vision, strategy and implementation plans to build an environmental management system together with companies we invested in including overseas subsidiaries, suppliers and partner companies. We take environmental and ethical aspects into account throughout our business conduct, rang-

ing from manufacturing to any and all business activities, and has earned us positive recognition, such as making it to the RobecoSAM's Dow Jones Sustainability Index for 10 consecutive years.

Environmental Goals and KPI

In consideration of the CEO's commitment to environmental management and internal/external circumstances, we set environmental goals that are categorized by POSCO-Operation Sites-Departments-Plants. These goals are linked to our environmental guidelines and objectives, and their implementation plans are managed by designating detailed timetables and responsible staff. In addition, we set KPIs in connection with these goals so that they can be measured and controlled, and compared with our past performance. At the company and business sites, in view of the rising concern over PM, we set the environmental goal of reducing air pollutants, as well as its KPI as "atmospheric emission intensity" of Dust, Sulfuric oxide and Nitrogen oxide emitted for every ton of steel produced. This KPI is reported at the quarterly meeting chaired by the CEO, along with performance and detailed action plans. To minimize the amount of waste generated including unused materials processed through landfilling, we also track down on 'By-product recycling rates' as another KPI.

POSCO Group's environmental management policy

POSCO Group shall recognize the environment as a key element of the business strategies, and follow these policies as a corporate citizen that strives to grow together with the stakeholders.

- We secure global leadership by establishing a group environmental management system based on ISO14001.
- We comply with environmental laws and constantly improve the environment considering all processes.
- We minimize pollutants by implementing a eco-friendly manufacturing process and applying optimum prevention technology.
- We contribute to build circular economy and protecting the environment and ecosystem by efficiently using natural resources and by-products.
- Use low-carbon fuel and clean energy, enhance energy efficiency and develop innovative technologies to reduce greenhouse gas emissions.
- We open the performance of environmental management to the public, and lead the company to the sustainable growth.

KPI

Classification	2017 Performance	2018 Performance	2024 Target	Formula
Atmospheric emission intensity(kg/T-S)	1.73	1.78	1.24	Emission intensity: $\Sigma(\text{Dust} + \text{SOx} + \text{NOx total emission volume}) / \text{steel production volume}$
By-product recycling rate(%)	98.4	98.3	98.8	Amount of By-product recycled / amount of By-product generated X 100

*Coverage: All of domestic operation sites

POSCO ISO 14001 Certification
(Nov. 1 of 2017~Oct. 31 of 2020)

Environmental Organization

POSCO operates the Energy & Environment Planning Group at the head office and the Environment & By-Product Group at the steelworks, following the new CEO's emphasis on Substance, Execution and Practicality. The Environment & By-Product Group at the two steelworks is responsible for minimizing pollutants in the production process and increasing the reuse of by-products. This organization has separate operating the sections of atmosphere preservation, water preservation and resources recycling. In particular, the Environmental Center that is under its leadership performs real-time pollutants monitoring and operates an automatic alarm system to take prompt actions when pollutants generated beyond the in-house limit. The Environment & By-Product Group is also strengthening the authorization and inspection of pollutant emission/prevention facilities. Fugitive dust, odors and noise reducing technologies are applied to the field to substantially improve the surrounding environment. The waste water generated within the processing line is inspected to enhance our water treatment efficiency and minimize wastewater discharge, preventing chemical accidents in so doing. Work is underway to minimize any waste of valuable resources by identifying new demand for slug to improve the profitability of such byproducts and creating high added-value out of these byproducts. The Environment & By-Product Group strives to minimize environmental risks, maximize the reuse of byproducts and build the world's top-level eco-friendly steel works. In addition to these efforts, POSCO is collaborating with POSRI (POSCO Research Institute), RIST (Research Institute of Industrial Science & Technology) and other domestic and foreign research institutes to analyze environment policies and management trends, as well as developing relevant technologies.

Environmental Education and Competence Building

POSCO operates capacity-building and mandatory education courses on environmental management for field staff, internal auditors and personnel in charge, and provides differentiated training tailored to fit each job description. Personnel in charge of environmental management at the company and at each operation site are required to complete the ISO 14001 lead auditor training. Field staff must take the "Field Staff Training Course" and internal auditors must take the

"Internal Auditors Course" at least twice a year with the help of outside instructors. In 2018, personnel in charge of environmental management obtained the ISO 14001 lead auditor certification of the IRCA after completing the program and undergoing both external and internal evaluation, and they conducted training for 195 field staff in 26 departments. In addition, 35 employees from Pohang Works and 51 from Gwangyang Works completed the internal auditor training and served as internal auditors at the field and at the departments. We also provide optimized education for each job level. Manager positions responsible for field management share recent environmental issues and trends as well as information on the operation of environmental equipment (once a month) to enhance their understanding of environmental management. For engineers who are directly responsible for making improvements at the field, we provide education on the general topic of environmental management and the basics of environmental theories (five times a year) so that they understand the importance of environmental management and the direction to be taken in their improvement work. The personnel in charge of environment are gathered once a month to disseminate the goals and regulations related to the environment in order to bring real improvement at the work sites. Since 2018, we have published "Environmental Knowledge All POSCO People Should Know About," which is uploaded on the in-house notice board to help employees improve their environment-related work. We utilize the Environmental Council jointly operated between the two steelworks and partner companies to discuss major environmental issues and the optimization method of environmental equipment (three times a year). From 2019 onwards, POSCO will further systemize environmental training to provide standardized educational materials for employees at each job level and establish training cycles to upgrade environmental management competency in the field. In particular, POSCO has included five courses on the environment including water treatment in the Job Capability Certification program designed to train professionals at the enterprise level. The completion/certification results are reflected in promotion evaluation so as to strengthen the relevance of environmental education.

Environmental Organizations' Activities

Classification	1Q(3.E)	2Q(6.E)	3Q(9.E)	4Q(11.E)
Common session	Performance check for each sector, sharing and discussion of issues, establishing new tasks, discovering new ideas			
Main issue	Detailed implementation plan for each kick-off sector	Performance and major issues report for the main policy trend of each sector		Summation of the annual performance, and implementation plan for the following year
Supervisor	Executive in charge	CEO	Executive in charge	CEO

Environmental Education Performance of 2018

Education Course	Targets	Performance
ISO14001 Internal Auditor Training Program	Internal Auditors	86 (twice a year)
ISO 14001 Training Program	Field Staff	195 employees completed the program
Environmental Management Training	Manager position in charge at the field	Once a month (12 times total)
Environmental law regulations and trends	Personnel in charge of environment	Once a month (12 times total)
"Environmental Knowledge All POSCO People Should Know About" posted on the notice board	Regular employees	Once a month
Partner Companies Environmental Education	Partner companies	Three times a year

Environmental Information Exchange

POSCO holds regular internal meetings between the head office, Pohang Works and Gwangyang Works to exchange the latest trends in environmental technology and to introduce the optimal management system for each business site, as well as continuing technology exchange with overseas steelmakers. We also participate in various events such as policy briefing by the Ministry of Environment, environment-related seminars, and International Exhibition on Environment Technology & Green Energy (ENVEX), to learn about environmental regulation trends and reflect them to our steel plant environmental management system, and collect environment technology information to apply such information in improving the environment.

Environment Awards

Since 1997, we have been granting the CEO Environment Award to departments with outstanding performance in order to facilitate environmental management and improvement activities. While the awards were given to organizations within POSCO, POSCO Group affiliates and partner companies, the scope was expanded to include overseas subsidiaries and outside organizations in 2018 by reflecting the CEO's management philosophy in order to realize our corporate citizenship management principle. The number and value of rewards were increased as well. Award candidates are selected based on self-applications and recommendations based on major environment-related activities, and after the first screening of achievements and disqualification factors, a second evaluation by the Environmental Evaluation Expert Committee composed of manager-level judges is performed, and the final winners are selected based on evaluation result.

Response to Environmental Risks

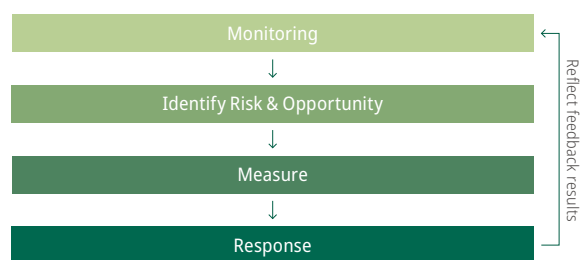
POSCO systematically analyzes and manages risk elements to minimize environmental impacts as well as management risks caused by environmental factors. Taking rapidly changing market conditions and tightening global environmental regulations as an opportunity, POSCO is proactively reflecting these changes to its medium to long-term business strategy and investment decisions. Departments responsible for environment and investment cooperate closely in identifying, evaluating, and diagnosing environmental risks in each stage of the investment review, design, construction, and operation process. Accordingly, verification procedures by the department responsible for environment in the stages of planning, investment, and construction have been made compulsory since 2014 in order to minimize environmental risks from new projects. To efficiently respond to tightening environmental regulations from around the world, we continuously monitor the trends of related regulations and government policies to verify potential business risks and proactively participate in public discussions to develop reasonable policies.

Inspection of Environmental Risk

In order to prevent environmental risks such as environmental accidents and regulatory violations, the POSCO head office conducts diagnoses of environmental risks at POSCO, its overseas subsidiaries and POSCO Group affiliates, and diagnosis and improvement results are reported to the CEO. At the steel works, daily environmental patrols for the atmosphere, water and waste are conducted to minimize the impact on the environment. The Environment Control Team is operated throughout the year to address environmental risks at the steel works.

In addition, special inspections are also performed on key management areas in consideration of seasonal factors, and during high-risk times such as weekends, holidays and nighttime. Since October 2015, the Clean SYS staff have performed on-site patrols during the nighttime and monitored environmental data to check for any cases of inappropriate facility operation. Since June 2017, separate patrol teams have been conducting environmental inspections during weekends and holidays. Such weekend and holiday patrols were previously operated only when required due to seasonal factors - checking water drainage during the rainy season or controlling fugitive dust during harsh winds in winter. As they proved to have outstanding environmental improvement benefits, however, they have been conducted throughout the year since 2018.

Environmental Risk Management Process



Environmental Performance

At POSCO, we promote the effective operation of our environmental management system to minimize the impact our business might have on the environment, and we review the effect of our environmental improvement and management activities through the monitoring and analysis of our environmental performance.

Environmental Management System

Since we first acquired the ISO 14001 certification (international standards for environmental management) in 1996, we have received annual follow-up management and recertification examinations conducted by outside expert institutions. Every year, company-wide internal reviews are performed on our environmental management system under the supervision of the environmental department while compliance assessments are made on governmental regulations as well as in-house regulations and internal standards. Individual departments also conduct their own internal evaluations and compliance assessments at least once a year. The results of these evaluations are reported to the CEO, and are used to revise our environmental strategies and goals to further enhance the efficiency of the system. During internal evaluation and compliance assessment a checklist of the environmental management system and compliance items was used to ensure objectivity and consistency. Meanwhile, specific issues were selected as the theme of the year, (such as chemical substance control; emergency response plans and drill results; and air pollutant reduction) and intensive inspections in collaboration with outside certification institutions were conducted to pinpoint and improve on areas that required greater attention. Since 2015, we have been taking the ERP-based POEMS (POSCO Environment Management System) one step further. We are building the “New POEMS”, which is a web and mobile-based integrated environmental performance management system. The New POEMS consists of eight processes - environmental monitoring, air quality control, water quality control, byproduct control, soil and underground water control, chemicals control, general management information, and environmental cost – to ensure the systematic management of the company's environmental data. Air and water pollutant data from our two steelworks are transmitted to the government in real time through the TMS (Tele Monitoring System). Other major environmental data are disclosed transparently to employees and local residents through electric display boards. In particular, the mobile environment monitoring system is applied in performing on-site patrols for effective site environment control.

POSCO conducts online environmental impact assessments so that the personnel in charge can identify elements that affect the environment and perform impact assessments to establish

mitigation plans. Reflecting the opinion of senior management and employees, multiple systems, that were operated in silo to deal with quality, safety and environment in order to analyze the impact in advance and establish response measures, were integrated into a single system in 2018. This system integration helped resolve the issues caused by omission or redundancy in addressing modifications.

Water Management

Recognizing water shortage as a critical global issue, POSCO strives to increase water recycling and develop alternative water sources with the goal of reducing water consumption and increasing co-prosperity with local communities. Considering that steel production uses a large amount of water, POSCO has invested considerable efforts into the reuse of water consumed in the process of steelmaking. In particular, we procure a portion of our water intake from reclaimed water by reusing urban sewage water and desalinating seawater, thus contributing to conserving water resources on a national level.

Pohang Works promotes the improvement of water management systems and processes, with an aim to facilitate water reuse and optimize water management. First, collected water is treated by water purification facilities before being supplied separately to each factory as fresh water and purified water. Wastewater, gray water and cooling water from each factory is separated and collected through independent drainage facilities. Wastewater is treated through primary and secondary processes at each factory and then brought to the final wastewater treatment facilities before being discharged. Wastewater containing low concentration of chlorine ions (Cl-) generated from rolling factories is transferred to water purification facilities through separate pipelines for treatment and reuse. Gray water is collected into gray water treatment facilities for biological treatment before being used as cleaning water. Cooling water, sprinkling water, and rainwater is treated at rainwater processing facilities for reuse as industrial water and sprinkling water for yards and roads. Meanwhile, POSCO signed an MOU with Pohang City in 2008 to reuse the water treated by local sewage treatment facilities as a solution to water shortages in local communities. Since 2015, POSCO has used 80,000 tons of treated water a day for industrial use. Moreover, we take 20,000 tons of underground water a day instead of dam water, contributing to solving water shortages in local communities.

Gwangyang Works uses 210,000 tons of water daily through the nearby Seomjin River water dam. However, the drought that lasted for the past few years and multiple upriver dam constructions have caused decreases in waterflow in the downstream region. Thus, local communities including the Yeongsan River Environment Agency have been strongly demanding POSCO to reduce industrial water usage in order to help them mitigate the risk of water shortages.

In response to such demand, Gwangyang Works built a seawater treatment facility (30,000 tons/day) in 2014 in spite of its higher costs compared to the use of dam water, and is now using 20,000 tons of treated seawater a day. Gwangyang Works is also increasing its reuse of wastewater in order to further reduce water consumption. In 2018, Gwangyang Works improved on the corrosiveness of wastewater by using low-chlorine water treatment chemicals, and increased the number of locations capable of using recycled water. Wastewater purification using membrane technology is also under development. In addition, wastewater generated at our factories undergoes preliminary treatment at each factory before being sent to the final wastewater treatment facility for the secondary treatment in order to minimize the discharge of water pollutants. These second and third treatments ensure safe treatment and the discharge of major pollutants such as COD and T-N at the final drainage outlet. POSCO has participated in the Water Management Project (2007 -2011) hosted by the World Steel Association and continually improved its water management program by utilizing the "WBCSD Water Tool", a supply chain water management guideline recommended by the WBCSD (World Business Council for Sustainable Development). In 2016, we joined the CDP Water Disclosure to disclose information on our water management.

Air Quality Management

POSCO implements various activities to improve air quality at our steelworks and in the surrounding region. We adopt stricter air quality criteria than those required by environmental laws and operate mobile monitoring systems for site patrol to identify and promptly improve environmental risk points, contributing to maintaining clean air around worksites. Particularly, we have installed additional air quality measuring stations and dust analyzers at the site boundaries and in the vicinity of our factories to continuously improve air quality. We operate the Environment Center to monitor the air quality of Pohang Works and surrounding areas. Major emission facilities within Pohang Works are equipped with 24-hour automatic measurement systems, and if the set internal limit (80% of the legal limit) is reached, the automatic alarm enables us to quickly remedy the situation to prevent pollution. PM and noise measurement devices have been added at the site

boundaries, replacing old PM and odor measurement devices to systematically monitor the emission of air pollutants. Pohang Works operates a linear storage yard (95,000-ton capacity) for supplementary materials as well as coal storage silos (540,000 tons) to reduce fugitive dust at the source, and water sprays, covering cloths and surface hardeners are used as well. Other activities include creating green plots and spraying water on the roads near the steel mills. Recently, we installed a dry fog system for pilot testing, which sprays fine water particles between 50~150 μ m, to evaluate the efficacy of the device. We expect that this new system will overcome the limitations of the current water spray system, which can't be used during winter and results in production quality degradation, and be much more effective in reducing dust particles as the surface area is 1,000 times larger than conventional water droplets.

Gwangyang Works signed the 1st and 2nd voluntary environmental agreements of the Gwangyang Bay area (1st: 2006~2010, 2nd: 2012~2016) and has implemented measures to reduce the emission of nitrogen oxides, sulfuric oxides, dust and VOCs (volatile organic compounds). The emission of air pollutants declined by 24.7% (from 2003) and 32% (from 2008) under the 1st and 2nd agreements respectively. Although the voluntary agreement period has ended in 2017, Gwangyang Works continues to abide by the total air emission limit defined according to the environmental impact assessment agreement. Emission density targets are set for each factory, and their emission is monitored in real-time, while the sintering off-gas cleaning facility steadily controls the air quality.

We are also putting much effort in addressing the PM issue that is becoming a major concern of the country. In 2017, we established a comprehensive PM reduction measure and investment road map. In 2018, we replaced old spray pipes, enclosed transferring facilities, conducted a pilot project of enclosing the yard, and installed more dust collectors, and we are continuing with this line of investments. In order to reduce fugitive dust at the yard as much as possible, we continue to cover all the piles that can be covered, and for those that cannot be covered, we spray water and surface hardeners. In addition, we continue with greening the steel mill area. We planted 688 trees (6 species) in 2018 and the green area has expanded by 3,600m². The green area in Gwangyang Works has reached 22.2% of the total site area, maintaining a high level of green land.

By-product Management

All collateral materials produced during ironmaking are called byproducts collectively. We are implementing a variety of activities to make valuable use of the byproducts produced at steel works and minimize waste discharge.

Slag takes the largest portion of the by-products produced during the iron smelting process at the steel works. Most metal elements exist as oxides in ore form in the natural state, and iron ore also exists as various oxides. Ironmaking is a process of separating the iron from the raw ore, and the silicon, aluminum and calcium remain in the molten state above the molten iron, which is called slag. Approximately 500 kg of slag are generated per ton of iron produced, and slag is low in harmful heavy metal content, making it a viable eco-friendly construction aggregate. When blast furnace slag in smelted state is cooled down rapidly by spraying pressurized water, it turns into granulated slag and is used as cement material. Compared to limestone, granulated blast furnace slag does not emit greenhouse gases during production, making it an eco-friendly material. Steel works is equipped with granulated slag production facilities at all of its nine blast furnaces. In 2018, 91% of the smelted slag, which amounts to 10.99 million tons, was made into granulated slag and recycled in an eco-friendly method. Steel works recognizes these byproducts as resources, and continues its endeavors to discover their new applications that will reduce the use of raw materials and the generation of waste, in order to become a resource-recycling steel works. As a result of such efforts, Steel Works reused 98.3% of the 24.23 million tons of by-products in 2018.

By-product recycling

(Unit: 1,000 ton)

Category	2015	2016	2017	2018
By-products Generated	23,960	23,370	23,760	24,227
Recycling/Sale	23,560	22,990	23,370	23,813
Disposal	400	380	390	413

Chemical Substance Management

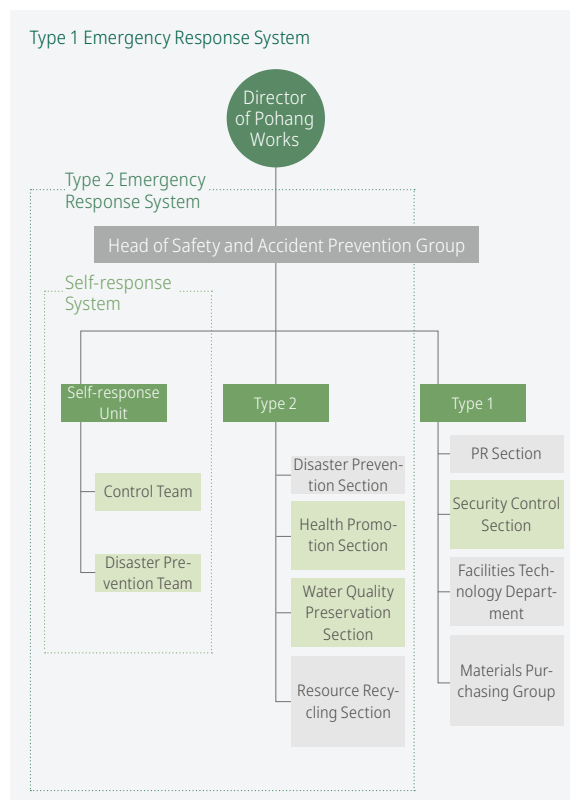
Strengthening chemical substance management

Recognizing the grave impact chemical substances have on the environment, safety, and local communities, POSCO focuses on preventing accidents involving chemical substances that are handled at our steelworks. First, hazardous chemical substances that are supplied to steelworks are continually monitored by a company-wide chemical substance distribution management system for the amount of usage, storage, and data on the facility that uses them. Furthermore, to fundamentally reduce risks, we are devel-

oping technologies to replace hazardous chemicals with low hazard substances, or to reduce the use of those chemicals. In 2017, we established a real-time leakage detection system in order to monitor the chemicals leaked from all chemical substance handling facilities. To prevent and respond to chemical accidents occurring in the Pohang Industrial Complex area, we are cooperating with the Daegu Regional Environmental Office as the lead company of the Chemical Safety Management Community. At the same time, we are committed to protecting our steelworks from harmful chemical substances by offering systematic safety training and accident prevention training.

Pohang Works has 10 special emergency rescue vehicles to respond to chemical spills, and a team of 43 experts is on call, operating the Accident Prevention Center. Not only is Pohang Works equipped with the highest-level unmanned articulating water tower fire engine that can spray water up to 105 meters high and with hazmat apparatus and ambulance, but all operating rooms and handling facilities have impermeable hazmat suits and safety gear nearby (120 total) under systematic management.

Pohang Works Chemical Accident Response System



Gwangyang Works handles a total of nine types of hazardous chemicals (sulfuric acid, hydrogen chloride, sodium hydroxide, etc.) for the purpose of coating, water treatment facility pH control, off-gas purification and others, and one type of hazardous chemical substance is generated in the iron and steel making process (carbon monoxide in the byproduct gas of BFG/LDG). Thus, we are paying our utmost attention to preventing chemical spills through the tight control of hazardous substances. In 2018, we conducted two special inspections over the whole 270 facilities that handle hazardous chemical substances, and those facilities that do not meet the Chemicals Control Act standards will make necessary improvements by the end of 2019. In addition, we are undertaking a three-phased investment project to build a chemical spill detection system, and 160 locations in phase 1 (until 2016), and 240 locations in phase 2 (until 2018) have been set up with the detection system. The last and third phase involves 900 locations that will be fitted with the detection system by the end of 2019.

We also conduct vigorous training for employees who handle hazardous substances, and 1,257 employees completed the training program in 2017, and 549 in 2018. Other POSCO employees and partner company employees who do not directly handle such chemicals also receiving training (including online training).

We report and disclose the usage of hazardous chemicals and the discharge of chemicals to the government each year. We build a model that calculates the scope of effects in case of a spill, and this information is disclosed as well. Restrictions on chemical substances contained in products are increasingly tightening

across the world. In response, POSCO discloses test certificates on MSDS²⁾, REACH³⁾, and RoHS⁴⁾ by each chemical substance in accordance with EU's Restriction of the Use of Certain Hazardous Substances and the latest SVHC¹⁾ candidate list through its e-commerce system(www.steel-n.com), which is open to the public. We are also preparing information disclosure on imported and produced chemical substances in response to the REACH and Act on Registration, Evaluation, etc. of Chemicals.

1) SVHC (Substances of Very High Concern): If a product is manufactured or imported by more than 1 ton and it contains over 0.1% SVHS compared with total weight, the manufacturer or importer must report the content to ECHA (European Chemicals Agency).

2) MSDS (Material Safety Data Sheets): A program to manage material safety and health

3) REACH (Registration, Evaluation and Authorization and Restriction of Chemicals): The EU's new chemicals management system

4) RoHS (Restriction of Hazardous Substances): Guidelines to restrict the use of certain hazardous substances initiated by the EU.

Chemical Substance Discharge

(Unit: ton)

Classification	2015	2016	2017	2018
Pohang Works	39	44	42	47
Gwangyang Works	39	38	39	46

Chemical Accident Prevention Training through Private-Public Cooperation



Photovoltaic Power Generation Project Using Idle Land

Pohang Works signed an MOU with POSCO ICT to undertake a photovoltaic (PV) power generation project by using idle sites in the complex, and its construction is now completed. In November 2018, we installed a rooftop PV energy system in the parking lot of the Hyupdong Sports Facilities with a capacity of 22,900V, 466.2kW, which can power 150 households annually. This will also serve to provide shades for customers using the parking lot during the summer. We installed a test PV panel system and a small turbine generator on the rooftop of the Electrical Steel Plate Sub-Center No.3, to review the efficacy of installing PV and wind power generators in the rolling factory area at Pohang Works. We will review their efficiency during test operations to decide whether we will expand the project within the complex.



Hyupdong Sports Facility and rooftop of the Electrical Steel Plate Sub-Center No.3

Communication with Stakeholders

Having joined the Pohang Eco-Friendly Corporation Promotion Council launched in 2003, Pohang Works performs voluntary activities to reduce contaminants and to improve the environment around the industrial complex. Especially in 2016, the company joined an industry-academic-public-private council in Pohang, under the Eco-Friendly Corporation Promotion Council, working to improve the air quality in the industrial complex and strengthen environment improvement activities for local communities. We also signed a sisterhood relationship agreement with local communities to share ideas on environmental issues and to continue communication with them.

Numerous partner companies are situated within the Gwangyang and Pohang Works complexes to support our production. When partner companies perform environmental management activities individually, this could make it difficult to pinpoint where the responsibility lies when an issue occurs or results in inefficient and overlapping investments. As such, we established a separate Environmental Council for Pohang and Gwangyang Works respectively to assist partner companies in preventing environmental risks and generating synergistic effects in environmental management. The Councils hold quarterly meetings to discuss major domestic environmental trends and issues, discover best practices of work site improvement, and benchmarking peers in other similar industries. We will continue the regular convening of the Environmental Council to enhance our response competence against tightening regulations and react preemptively to environmental issues.

At the Gwangyang Works, 17 partner companies participated in the Gwangyang Environmental Council, and in 2018, they identified 217 environmental improvement projects and completed 113 of those projects. In addition, the Environmental Council Meeting was held to share best practices and host lectures joined by competent authorities such as the Jeollanamdo Province and Gwangyang City, to learn about the direction of the government's environmental policy and discuss activities to be taken in response.

The Environmental Council will continue to serve as the control tower for the integrated management of our environmental diagnoses and improvement activities at the two Steel Works. Gwangyang Works has been a member of the "Gwangyang City Sustainable Environmental Council," an industry-academic-public-private council created in 2012 to share ideas on the future-oriented aspects of local environmental issues. The Gwangyang City Sustainable Environmental Council hosted the Korea Society of Waste Management Symposium at Gwangyang Works and contributed to promoting resource recycling in the Gwangyang region. In addition, Gwangyang Works participated in the environmental impact assessment performed for several large-scale projects in the region such as the Yeosu Integrated Energy Project, Gwangyang Bioenergy Project, and Private Park within Gaya Mt. Public Park Project. During the assessment process, Gwangyang Works actively presented opinions and ideas to preserve the environment, and we helped set in motion the Insun ENT landfill project that had remained stagnant for years. Other activities include the substitute designation of a wildlife preservation area in Gwangyang City, and a toilet refurbishment project for vulnerable groups.

Biodiversity Preservation Activities

POSCO continuously monitors the pollution status of the sea and sediments adjacent to the steelworks as well as changes in the number of marine organisms. In particular, we carry out cleaning campaigns to protect marine ecosystems affected by industrial activities, through the Clean Ocean Volunteer Group organized in 2009. In addition to weekly underwater cleaning volunteer work in Yeongil Bay, we also cooperated with external institutions such as the government and water rescue volunteer groups to improve the environment of our local community. The total number of volunteer activities executed as of 2018 exceeds 500.

POSCO continues its efforts in restoring marine ecosystems by using steel slag to build marine forests. "Triton," used for restoring coastal areas affected by rising seawater temperatures, is effective in restoring marine organisms in the ecosystem within a short period.

Steel slag is a byproduct generated during ironmaking, and is the main material for Triton. Its mineral content, particularly calcium and iron, is higher than that of general aggregates, and thus is effective in promoting the growth and photosynthesis of seaweeds, and in purifying polluted sediments and water. Marine forests made with Triton are also able to fixate CO₂ through the carbonization of slag and the photosynthesis of seaweed. In particular, three types of Triton artificial reefs (Type A, Type T, and combined steel type) were approved by the Ministry of Oceans and Fisheries as a general reef, and were used in marine forest and marine farm building projects conducted by the central and municipal governments. By 2018, a total of 1,418 Triton reefs and 12,200 small boulders were applied in undertaking marine resources restoration projects, and the restoration area was expanded. Triton marine forests contribute to restoring ecosystems through the diversification of species living in them, are developed through the use of low carbon materials, and are capable of fixing 10-20 tons of CO₂ per year per hectare with the help of the photosynthesis of seaweeds. Triton marine forest technology utilizes the byproduct generated during ironmaking process and contributes to environment conservation as well as marine ecosystem restoration and carbon dioxide emissions reduction. As such, it was introduced at the WCC (World Conservation Congress) and WBCSD (World Business Council for Sustainable Development) as a best practice. Meanwhile, slag is also used as rock wool material and contributes to energy conservation in buildings for its high insulation properties. For its potential to replace the natural aggregates used for road construction, slag contributes to curbing the exploitation of natural sand and rock mountains, and to conserving natural resources as a low-carbon eco-friendly material.



Clean Ocean Volunteer Group



Triton Marine Forest

Environmental Performance Data

Index Name		Unit	2015	2016	2017	2018
Air pollutant emission	Sulfuric oxide	thousand tons/year	26.9	25.8	25.0	24.2
	Nitrogen oxide	thousand tons/year	40.2	39.1	36.1	39.2
	Dust	thousand tons/year	3.4	3.5	3.3	3.2
Water intake	Water usage	million m ³ /year	155.1	154.5	160.8	160.3
	Urban water	million m ³ /year	34.9	34.4	37.2	35.8
	Surface water	million m ³ /year	113.6	111.9	116.9	117.9
	Groundwater	million m ³ /year	6.5	8.3	6.6	6.6
	Wastewater discharge	million m ³ /year	57.2	56.2	57.8	60.6
Waste discharge	Generated waste	ten thousand tons/year	1172	1,110	1,059	1,130
	Recycled waste	ten thousand tons/year	1144	1,051	1,020	1,089
	Treated waste	ten thousand tons/year	27	59	39	40
	Landfill (self/outourced)	ten thousand tons/year	24	52	32	34
	Incineration (self/outourced)	ten thousand tons/year	3	7	7	6
Chemical substance discharge		tons/year	78	82	81	93
Environmental facilities investment	Air	billion KRW	92	70.9	100.9	102.9
	Water	billion KRW	34	26.8	50.7	18.9
	Recycling and others	billion KRW	43	52.1	44.9	29.4
Environmental costs	Environmental facilities/recycling	billion KRW	778	804	801	780
	Depreciation	billion KRW	174	174	189	203
	General maintenance cost	billion KRW	51	52	51	72
	Environment-related R&D	billion KRW	10	14	13	13
	Energy recovery	billion KRW	47	56	51	51

*The numbers above are the sum of Pohang and Gwangyang Works, and as Gwangyang Works has acquired the wastewater treatment license, the recycled wastewater and rainwater of Pohang and Gwangyang Works were added.

*Coverage: All of POSCO's domestic operating sites

Green Purchasing

Classification		2016		2017		2018	
		No. of Products	Amount (million KRW)	No. of Products	Amount (million KRW)	No. of Products	Amount (million KRW)
Government-certified green products	Environmental certification mark products	181	2,424	194	2,793	174	2,165
	Recycling certification products (GR certification)	9	18	11	33	15	44
	Energy conservation certification product (e mark)	737	6,851	1,213	10,239	1,160	9,773
	Hazardous substance reduction certification product (RoHS)	3,791	96,274	5,038	130,802	5,103	144,459
Total		4,718	105,567	6,456	143,867	6,452	156,441

*Coverage: All of POSCO's domestic operating sites

ENVIRONMENTAL INVESTMENT

BUSINESS ▾

POSCO's Goal is to Reduce Air Pollutant Emissions by 35% by 2022**Investment of KRW 1.07 trillion in Environmental Management by 2021**

POSCO plans to invest KRW 1.07 trillion by 2021 to reduce PM (particulate matter) emissions. First of all, we will build an SCR (Selective Catalytic Reduction) system that can drastically reduce nitrogen oxide emissions. An SCR system converts nitrogen oxides (NOx) into harmless N₂ and O₂ before they are released into the atmosphere. Using this system is known to reduce NOx emissions by 65%~85%.

POSCO will invest KRW 200 billion in three sintering furnaces by 2020, and KRW 130 billion in 15 by-product gas power plants to install more SCR systems, thereby removing NOx more efficiently.

Six old by-product gas power plants will be shut down by 2021 and KRW 350 billion will be put into replacing them with new power plants in order to minimize the emission of air pollutants. We are currently conducting environmental impact assessments, and plan to begin construction in 2019.



1 — We operate the TMS (Tele Monitoring System) at the Atmospheric Environment Center



At the same time, investments will be made to reduce the fugitive dust produced during the steelmaking process. Currently, we are operating silos that are closed structures that prevent dust from scattering, and 33 indoor storage facilities with a 1.79-million-ton storage capacity. We will invest KRW 300 billion by 2020 to newly construct ten indoor storage facilities including eight more silos that will add 400,000 tons of storage. We will also spend KRW 90 billion to build a new slag cooling yard and install more dust collectors.

We are also actively developing new technologies by improving the filter structure of dust collectors and incorporating "smart" technology to increase the efficiency of our environmental management facilities. With such efforts, we expect to reduce our air pollutant emissions by 35% by 2022.

**PM in Pohang and Gwangyang Found
to be Below National Average
The Effect of Real-Time Air Quality Control**

POSCO has been allocating 10% of its facility investment budget to improving the environment. As a result, PM density in the vicinity of the steel works has steadily decreased and is now lower than the national average. Taking into account the fact that our steel production has increased from 33.7 million tons in 2010 to 37.21 million tons in 2017, it is indeed a significant achievement.

The Ministry of Environment's survey shows that the annual average PM levels in 2017 in Pohang and Gwangyang were $39\mu\text{g}/\text{m}^3$ and $37\mu\text{g}/\text{m}^3$ respectively, which are lower than the average of the 96 cities and counties ($45\mu\text{g}/\text{m}^3$) in Korea. The atmosphere monitoring system installed at the edge of the steelwork grounds and nearby areas enables the real-time monitoring of air quality, and we strive to minimize our atmospheric environment impact depending on weather conditions. In particular, the "Mobile Environment Monitoring System" allows us to monitor PM density in real-time, and take immediate action when abnormal signals are captured.



Prior to the implementation of the Special Act on Particulate Matter Reduction and Management, we signed "the Voluntary PM Reduction Agreement" with the Ministry of Environment on January 25, 2019, and the Joint Response Agreement on PM Reduction with Gyeongsangbuk-do Province and Daegu City. When an emergency PM reduction measure is issued, POSCO uses hard coal with low nitrogen content in its sintering furnaces to reduce the emission of nitrogen oxides, spray more water in the roads and yards, and execute vehicle restriction measures. We will also improve the environmental facilities' performance and develop process innovation technologies, taking the lead in reducing PM emissions.

2 — Picture of the Pohang Works Environment Center



ECO-FRIENDLY PRODUCT

BUSINESS ▾

Type of Eco-Friendly Technologies Applied in Product Development

Reduction of harmful elements 13 type



- Does not contain environmentally harmful substances, reduces electromagnetic waves, noise and vibration
- Does not use fossil fuels

Energy conservation 72 type



- Lightweight vehicles, removal of process and/or heat treatment
- Increases energy efficiency, improves processability

Life cycle extension 27 type

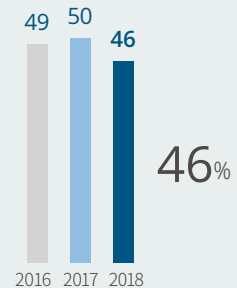


- Increases the product life span through corrosion resistance, fatigue resistance and improved durability.

* Cumulative number of steel types between 2014 and 2018



Eco-Friendly Product Development Status



Ratio of eco-friendly products that were developed (%)



Number of eco-friendly steel product types

Major Eco-Friendly Products

Hot Rolled

CT110 for Coiled Tubing

With recent oil price fluctuations, studies are being conducted widely to increase the yield and efficiency of oil well operations. One possible option is to remove foreign substances from old oil wells to improve their functionality, and the main steel product used in this process is coiled tubing. Coiled tubing is inlaid with special materials within the steel tubing, and is used with high-pressure gas or water to clean the oil well and be rolled back out of the well pipe. They are made in units for easy transportation, and can be used multiple times anywhere between two to sixty times according to the condition of the oil well, and is one of the representative eco-friendly products. The newest API-CT110 has the highest strength in the hot rolled product group. After pipe making Yield Strength was obtained 110 ksi (758 MPa) at the steel pipe, and improved fatigue resistance by 35% in high pressure environments compared to existing product. Various chemical elements were added to improve its strength and corrosion resistance features.

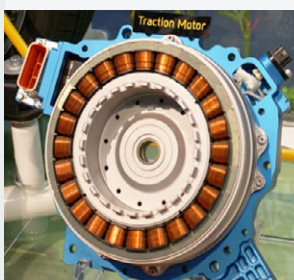
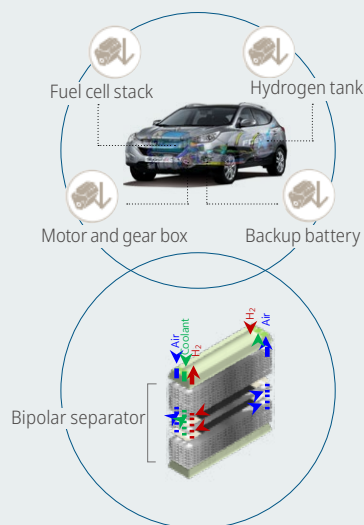


① — Coiled Tubing

STS**470FC for PEMFC (Polymer Electrolyte Membrane Fuel Cell)**

The bipolar separator, which is a core component of the hydrogen fuel cell, connects electricity created at each cell, distributes reactive gases and provides mechanical support. The separator that works under high acidity conditions requires high corrosion resistance, low surface contact resistance (high conductivity), and exceptional formability in its thin plate state. POS470FC meets all these requirements with its high corrosion resistance, low surface contact resistance and easy formability.

Existing materials used for bipolar separators to increase conductivity were either gold (Au) on STS, or carbon (C) on titanium. However, POS470FC is highly economic because it maintains conductivity without any coating. POS470FC was used in manufacturing Hyundai Motor's hydrogen-powered electric vehicle Nexa that was launched in 2018, and we expect its demand to surge in the upcoming years.



2 — Traction motor for HEV

3 — Traction motor for EV

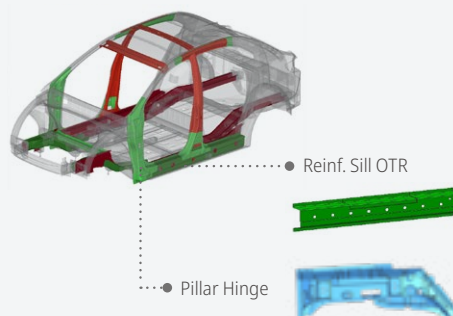
**Electrical Steel****25PNX1250F**

Due to tightening regulations on automobile fuel efficiency and carbon emission trading, interest is rising in eco-friendly vehicles such as EV (Electric Vehicle) and HEV (Hybrid Electric Vehicle). 25NPX1250F has low core loss (high efficiency) and high magnetic flux density (high torque) properties. When applied to eco-friendly automobile engines, it can increase their efficiency by approximately 2% and help reduce their carbon dioxide emissions.

Automobile**PAT980T**

Steel normally becomes less formable when its strength is enhanced, but POSCO GIGA STEEL has succeeded in overcoming this problem. GIGA STEEL shows higher strength in the same thickness as other steel sheet products, which allows for making thinner parts, and thus lighter automobiles that can decrease CO₂ emissions during their total life cycle starting from material production and use to recycling after disposal. In particular, 980TRIP can post an elongation rate of more than 21% at tensile strength of over 980MPa leveraging TRIP (Transformation Induced Plasticity) effect from the residual austenite. Auto parts with complicated shapes can be easily formed without heating, and this represents a breakthrough ultra-high-strength product that will replace the hot press forming of auto parts.

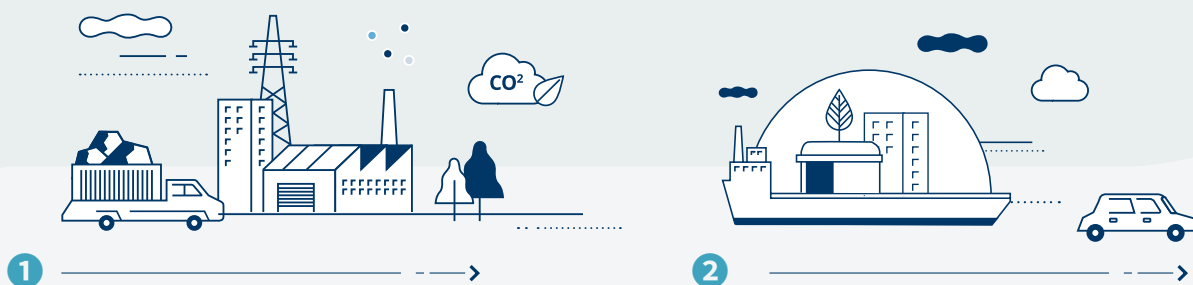
4 — Automotive parts applying the 980TRIP



CIRCULAR ECONOMY AND THE FUTURE OF STEEL

BUSINESS ▾

The steel industry has a large volume of production due to the demand of shipbuilding, automobile and other downstream industries. Therefore, it is common to perceive that the steel industry consumes a huge amount of energy and thus puts burden on the environment. There are various advantages to be found, however, from the LCA (Life Cycle Assessment) perspective that takes into account the whole life cycle of each steel product from raw material mining to production, usage, disposal and finally recycling



1 PRODUCTION

Major by-products generated in the steelmaking process are slag and by-product gas. These can be put to use both inside and outside of the steel works, contributing to the conservation of the environment as resources.

PosMent PosMent is a slag cement that is made by adding approximately 30~60% of granulated slag powder to ordinary cement. This can be used as a substitute for clinker, which is the interim material for cement, thus contributing to saving energy consumption and reducing CO₂ emission.

Calcium silicate fertilizer This is the granulated form of slag. The silicic acid within slag prevents the oxidation of soil, increasing rice harvest and enhancing their quality.

Triton (reef) Triton is made from slag aggregate and slag cement. Its high mineral content promotes the growth of seaweeds that absorb CO₂ and thereby has the effect of fixing carbon in the sea.

* Triton was presented as a best practice at the WCC and WBCSD

Slag aggregate When replacing natural aggregates used in concrete and road construction with slag aggregates, it deters the exploitation of natural sand and stone mines, as well as saving energy that is required in the mining and processing of aggregates.

By-product gas All the by-product gases generated within the steel-making process are recovered and re-used as energy source within the process and for power generation.

Coal tar Artificial graphite made from coal tar, a by-product from the coke production process, is used as EV battery material.

2 USE

Lightweight automobile Increases fuel efficiency and reduces greenhouse gas emissions.

* When the weight of a car is reduced by 10%, its fuel efficiency is increased by 5~8% *(Vehicle Technologies Office, The U.S. Department of Energy). CO₂ emission can be reduced by as much.

Longer product life of steel products Using highly corrosion resistant steel in corrosive environments such as the sea or water (i.e. marine structures and wind turbines) ensures longer usage, helping to minimize the use of resources and pollution when the time comes to rebuild such structures.

High-rise buildings If conventional construction steel is replaced by advanced high strength steel, it is possible to use 50% less steel in building skyscrapers compared to 50 years ago. (source: Steel FACTS from the World Steel Association)

3 END-OF-LIFE TREATMENT & RECYCLING

When the life of a product ends, many materials that went into that product are buried or incinerated due to difficulty in recovery, but steel is easy to pick out and recover and be used repeatedly.

Magnetic separation As steel sticks to magnets, even when it is mixed with other wastes, they can be easily identified and separated.



Social GHG emissions
reduction in 2018

14,628 kt-co₂*

*The contribution to the reduction of GHG emissions that are not directly generated during production but indirectly during the use of the product (the indirect contribution of "high strength steel sheets for automobiles, low core loss electrical steel sheet, and granulated blast furnace slag").

Quality maintenance As steel has a few impurities and can be easily removed, its original quality is maintained after recycling.

According to latest data from the World Steel Association, it was announced that 630 million tons of steel scrap were recycled annually, and the CO₂ emissions reduced as a result amounted to 950 million tons. Korean steelmakers including POSCO are actively using steel scraps.

Scrap recycling rate Construction 85%, automobiles 90%, machine 90%, house appliances 50% (Source: Steel FACTS from the World Steel Association)

4 REUSE

Buildings that use steel materials are not only durable and stable, but can also be reused in an environmentally-friendly manner. Relocatable modular construction involves the on-site assembly of structures that were manufactured at the factory. Relocatable units can be moved and reused at other locations.

The Media Residence hotel that accommodated reporters during the PyeongChang 2018 Winter Olympics was built using POSCO A&C's relocatable modular construction method. The Media Residence is now used as a resort for POSCO Group Family companies after the Winter Games.

Transparency through LCA-based EPD certification

The importance of environmental and sustainable management is ever growing globally. As customer companies and stakeholders are becoming increasingly interested in product life cycle assessments (LCA)¹⁾ include raw material usage and greenhouse gas emissions, environmental impact assessments and environmental certifications become more relevant as well. The EPD (Environmental Product Declaration) certification is a quantitative

presentation of a product's environmental impact throughout its life cycle from raw material extraction to production, transportation & distribution, use and finally disposal. LCAs are conducted according to the ISO 14040/44 guidelines, and they produce reliable results as they are assured by a third party according to the ISO 14025 standards.

Thirty-two steel products acquired EPD²⁾ certification

In cooperation with a specialized institution, POSCO became the first Korean steel maker to build an LCI (Life Cycle Inventory) data base³⁾ of its steel products based on the LCA methodology. Currently, 32 products in five product groups—Giga Steel(980DP)⁴⁾, thick plate, wire rod, HGI, steel for construction, etc.— were certified in accordance with seven environmental indices, which are: carbon footprint, abiotic depletion potential, ozone depletion potential, acidification potential, eutrophication potential, photochemical ozone creation potential, and water footprint.

1) LCA (Life Cycle Assessment): An objective environmental impact assessment technique to analyze the potential environmental impacts of raw materials and energy used as well as pollutants discharged in the entire process of human economic activities, production and service, from the collection and production of raw materials, to product manufacturing, transport, use, and disposal. The environmental load is analyzed and quantified to be used in establishing mitigation methods.

2) EPD (Environmental Product Declaration): An environmental load index for the life cycle of a product calculated by applying LCA techniques to disclose quantified environmental impact information on resource consumption, global warming, impact of ozone depletion, acidification, eutrophication, and photochemical oxide generation through third-party verifications.

3) LCI DB (Life Cycle Inventory Data Base): A database quantifying input and output - the amount of resources and energy invested into the production system as well as the amount of environmental load generated over the entire life cycle of a product, from the collection of raw materials necessary in production, to processing, transport, use, disposal of the materials.

4) Giga Steel: An ultra-high-strength steel sheet for automobiles with a tensile strength of 980 MPa(1 GPa) or higher, that safely protects the chassis of an automobile and lowers automobile fuel consumption through chassis weight reduction.

Responding to Climate Change

BUSINESS ✓

Carbon Management

Carbon Management Risk and Opportunity Management Perspective & Approach

Climate change is a mega trend that is shifting the paradigm of each sector of society. A majority of global companies proactively respond to this issue and strive to secure a competitive advantage. With the understanding that climate change is a critical risk factor, POSCO acknowledges that it is a strategic opportunity to enhance corporate competitiveness.

Management System & Process

POSCO operates an internal system to identify, analyze, and control risks and opportunities regarding climate change. Risk and opportunity factors are systematically analyzed in multiple aspects according to our risk management system, and the results are reflected in our medium to long-term strategies. In addition, our investment management rules specify that a decision on whether to invest in a project with potential environmental risk factors such as GHG emissions should be made after discussions with relevant departments, and reviewing prospect investments, their carbon costs should follow domestic market prices. The results of such climate change response activities are reported to

the Strategy Council once a year, and the company-wide CO₂ and energy indices are shared through the Management Meeting. The Low-Carbon Technology Council chaired by the head of the Steel Production Sector manages our CO₂ emission intensity target and encourages the development of greenhouse gas emissions mitigation technologies. Data on POSCO's efforts in carbon-related risk and opportunity management is verified by a third party, and is disclosed in detail through this Report and Form 20-F.

Major Risk Factors Related to Climate Change

Risk factors related to climate change and carbon management are classified into three categories: physical factors caused by climate change, policy factors associated with carbon regulations, and other factors such as corporate reputation.

Unforeseen weather phenomena such as heavy rainfall, heat wave, cold wave, and earthquake are frequently causing massive damage all around the world. POSCO has also experienced not only direct damage to its facilities but also negative impacts on its overall business operations such as difficulties in securing raw materials, electricity, and industrial water, and increases in logistics costs.

Carbon Risk & Opportunity Management Process

Identifying risk and opportunity factors	Determining Risk Factors	<ul style="list-style-type: none"> Physical and regulatory risk factors Risk level and financial impact assessment
	Discovering opportunity factors	<ul style="list-style-type: none"> Carbon market and new green business opportunities Outlook on trends and strengthening of risk control
Establishing carbon management system	<ul style="list-style-type: none"> POSCO Carbon Management System established (2006) GHG inventory and third-party verification Integrated carbon & energy management system (2013) Carbon accounting and carbon emission verification system operated (2015) 	
Implementing climate change mitigation activities	<ul style="list-style-type: none"> Linkage with enterprise-wide risk management Deliberation of climate change risks when making investment decisions Reflection of GHG reduction technology in medium to long-term technology strategies 	
Inspecting climate change response activities	<ul style="list-style-type: none"> Regular monitoring of GHG reduction activities Check activities responding to climate change regulations and policies Examination of environmental risks of the invested businesses 	
Reporting to management	<ul style="list-style-type: none"> Report to the Strategy Council (annually) Report to the Enterprise-wide Management Meeting on CO₂ and Energy Indices (whenever necessary) 	

Carbon Management Risk & Opportunity Factors

Risk Factors	
Damages to equipment and facilities, difficulties in securing raw materials and water, increased logistics costs caused by weather anomalies such as heavy snowfall, heavy rainfall or drought	S
Increased carbon costs with the implementation of the domestic Emissions Trading System, and consequential decrease in price competitiveness	S
Weakening of the competitiveness of carbon-intensive businesses due to tightened carbon regulations under the Paris Agreement, and heightened regulatory barriers in overseas countries	S B P
Requirements on social responsibility for large GHG emitting companies	S
Opportunity Factors	
Increasing demand for high energy-efficiency steel products triggered by the Paris Agreement, and development of new markets such as green buildings and slag marine forests	S B
Participation in new businesses such as renewable energy, energy storage, and carbon market	B
Enhancement of corporate competitiveness through the development of innovative low-carbon technologies	S
Improvement of stakeholder awareness through external evaluation and transparent information disclosure	L P
S Green Steel B Green Business P Green Partnership L Green Life	

To preemptively respond to climate change risks, the Natural Disaster Emergency Response Team of the two steelworks conduct regular monitoring and closely cooperate with government and relevant organizations. Furthermore, we have established and continue to upgrade the companywide risk management process and system by developing disaster management manuals and guidelines for a more systematic response to risks.

The enforcement of the Emissions Trading System and a new climate regime is a crucial policy risk to corporate competitiveness. In July 2018, the government revised the “National Roadmap for Greenhouse Gas Reductions by 2030” to integrate fine dust reduction and energy transformation policies, and based on this roadmap, the government finalized its carbon emission allowance allocation plan for the second period (2018~2020). At the COP 24 held in December 2018, a vast majority of the agendas were agreed to be included in the rulebook that will come into effect in 2021, except the mechanisms on carbon market (article 6).

POSCO identifies potential business risks through the monitoring of relevant policies and actively participates in discussions aimed at building rational policies. Also, policy risks arising from the global expansion of POSCO and its subsidiaries are actively reviewed.

Meanwhile, demand for carbon-intensive companies to further fulfill their social responsibility, such as disclosure of information, has been increasing and any inadequate response may undermine their corporate reputation. Hence, POSCO receives external assessments regarding climate change, performed by the CDP and the DJSI, and discloses related information through the Corporate Citizenship Report.

Major Opportunities Related to Climate Change

New business opportunities can be discovered as well, through the increasing energy consumption caused by changing natural environment and weather anomalies such as heat waves and cold waves. POSCO has initiated a marine forest restoration project by developing ‘Triton’, a product made from steel slag, to restore coastal areas experiencing chlorosis in marine plants. We also plan to use the POSCO Green Building that applies over 100 types of eco-friendly technologies as an energy-saving building model and to spread this technology.

Meanwhile, our low-carbon technologies and efforts for reducing social GHG emissions create opportunities for new business models. Our high-strength steel sheet that helps reduce vehicle weight and improve fuel efficiency, and blast furnace slag that replaces cement, have already become new sources of income. As our unique eco-friendly technology, the FINEX method and environmental management activities, receive a great deal of attention

from global steelmakers, we expect to witness growing demand for our environmental and energy-saving technologies.

In line with the domestic policies to improve energy efficiency and expand new and renewable energy, we will also actively pursue Smart Factory¹⁾ demonstration, Smart Grid²⁾ and photovoltaic energy projects.

1) Smart Factory: A system that collects all important on-site data by using the Internet of Things, conducts a predictive analysis of the collected big data, and optimizes and controls all processes through in the automated method using AI technologies.

2) Smart Grid: A next-generation intelligent power grid that optimizes energy efficiency through the real-time exchange of information between energy suppliers and consumers.

Climate Change Response System

Our sustainability management system helps with swift decision-making on climate change under the corporate governance of shareholders, the Board of Directors and the CEO. The decision-making body deliberates on the company-wide vision and agenda and presents specific goals and directions based on the opinions of responsible staff and the issues discussed by relevant committees. Our goal is to implement systematic sustainability management.

The Energy and Environment Planning Group of the Technological Strategy Office under the Head of Steel Business Division is responsible for establishing management strategy related to the environment and energy, building a companywide system for responding to climate change and carbon & energy management, and developing strategies to efficiently use resources and byproducts to create profits. The Group also takes the initiative in establishing a global environmental management system for the operation of overseas steelworks and responding to regulatory policies and rising energy prices.

At Pohang Works and Gwangyang Works, the Energy Department and the Environment & Byproduct Group are responsible for CO₂ emissions reduction, energy efficiency improvement, and environmental and resource recycling. They cooperate closely with the Energy and Environment Planning Group to enforce environmental management and carbon & energy management systems at the steelworks.

In 2011, POSCO integrated the Environment and Energy Committee and the Green Growth Committee into one, and now operates the POSCO Family Environmental Management Committee. In 2019, it will be changed into the Low-Carbon Environment-Friendly Council chaired by the head of the Steel Business Division.

Climate Change Response Strategy

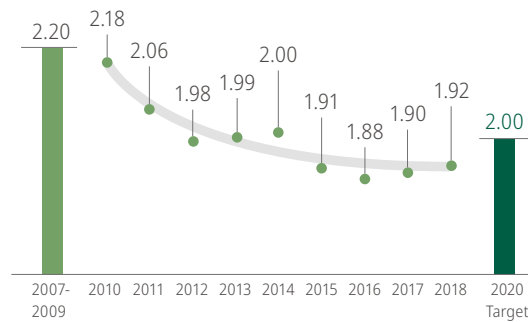
In response to climate change, POSCO Group companies are focused on the four implementation areas of Green Steel, Green Business, Green Life and Green Partnership. The foundation for Green Steel is reinforced by the development of high energy-efficiency steel, CO₂ emissions reduction process, and other low-carbon innovative technologies as well as energy efficiency improvement and the Smart Factory project. Fostering Green Business also contributes to creating tangible performance in new growth engine businesses by not only promoting renewable energy such as photovoltaic power and smart-grid but also developing lithium extraction technology. Moreover, employees of POSCO and its subsidiaries participate in Green Life activities designed to improve the living conditions of households with limited access to energy. We also cooperate with domestic and overseas carbon policies and strengthen activities to contribute to building a low-carbon society in order to secure leadership in climate change mitigation and to forge Green Partnership.

POSCO's Voluntary Greenhouse Gas Emissions Reduction Target by 2020

POSCO announced its GHG Emissions Reduction Target to be achieved by 2020 at the 7th Green Growth Committee meeting chaired by the President of Korea in February 2010. In this regard, we intend to reduce CO₂ emissions per ton of steel at our steel-works to 2.00 t-CO₂/t-S by 2020, a 9% decrease from the average level between 2007 and 2009 (2.20 t-CO₂/t-S). We will also establish our 2030 reduction target to meet the "2030 National Greenhouse Gas Mitigation Roadmap" that was revised in July 2018.

POSCO's CO₂ Emission Intensity Target and Outcomes

(Unit: t-CO₂/t-S)

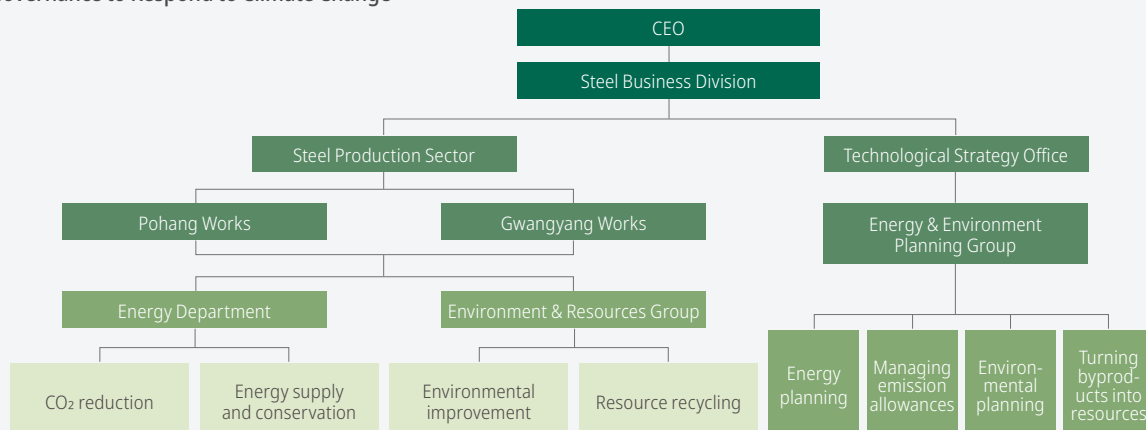


* In response to the enforcement of the Emissions Trading System, the amount of emissions was calculated in accordance with the "Administrative Guideline for the Greenhouse Gas Target Management System" announced by the government in March 2011.

- Scope: Pohang Works and Gwangyang Works
- GHGs: CO₂, CH₄, N₂O, HFCS, PFCS, SF₆
- Direct emissions (Scope 1): Direct CO₂ emissions from steel production, gaseous fuel combustion, mobile combustion, and waste incineration
- Indirect emissions (Scope 2): Indirect CO₂ emissions from the use of purchased electric power

* The figures disclosed in this Report are from Pohang Works and Gwangyang Works only and may not exactly correspond to those in the statement submitted to the government which includes all business sites including Pohang Works and Gwangyang Works.

Governance to Respond to Climate Change



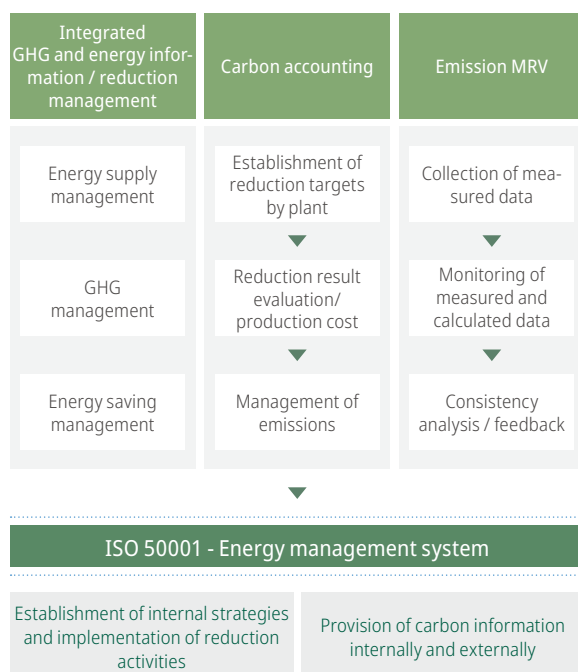
Implementation of the GHG Emissions Trading System

The Act on the Allocation and Trading of Greenhouse Gas Emission Permits was enacted in January 2015, signaling the commencement of the emissions trading system¹⁾. In August 2018, POSCO fulfilled its obligation under the system by submitting its allowances for the 1st phase period (2015-2017). In October 2018, we were allocated with new emission allowances for the 2nd phase period (2018-2020).

We revised our GHG management system which had been in operation since 2006, to improve its operation. The Carbon Accounting System was established to support the demand forecast of emission allowances and reflect the cost incurred in manufacturing (due to shortage of allowances) as a result of the emission trading. We also established the Emission Verification System to manage the monitoring, reporting and verification (MRV) of emissions, in order to revamp our emission control procedures with improved transparency and reliability. Additionally, we revised our internal guidelines and reinforced the company-wide monitoring of GHG emissions. As a result of our concerted reduction efforts, we managed our GHG emissions to remain below the allocated emission allowances for the 1st phase period (2015-2017).

1) A company with annual emissions of 125,000 tons across the company, or 25,000 tons at a single business site is covered by this emissions trading program. As of 2016, a total of 560 companies were subject to the program.

POSCO Carbon Management Mechanism



Carbon Performance

GHG Emissions from Production Processes

Carbon dioxide constitutes the majority of GHG emissions generated from POSCO Pohang Works and Gwangyang Works. In 2018, our GHG emission volume amounted to 72.49 million tons, while CO₂ emissions per ton of crude steel produced was 1.92 t-CO₂/t-S. Through our ongoing energy saving efforts, POSCO's CO₂ emissions intensity continuously remains below our voluntary reduction target of 2.00 t-CO₂/t-S.

CO₂ Emissions Intensity

(Unit: t-CO₂/t-S)

Category	2016	2017	2018
Direct emissions (scope 1)	1.78	1.82	1.85
Indirect emissions (scope 2)	0.10	0.08	0.07
Total emissions intensity	1.88	1.90	1.92

*The figures only cover Pohang Works and Gwangyang Works, thus may not coincide exactly with those in the statement (involving all sites operated by POSCO) submitted to the government.

Generation and Purchase of Renewable Energy

In 2018, POSCO sold 4,482 MWh of electricity generated by using the photovoltaic roof panels installed on its steel plants, and small hydropower produced by using raw water from Sueo Dam in Gwangyang. We also generated and consumed 33 MWh of electricity generated through the BIPV (Building Integrated Photovoltaic) system of the Smart Data Center, built in July 2018 inside Pohang Works. Meanwhile, renewable energy constitutes 4.2%¹⁾ of the total energy purchased by POSCO in 2018, which amounts to 282 GWh. In line with the global shift to renewable energy and growing demand for its use, the South Korean government is reviewing policy reforms to allow companies to purchase renewables through varied routes.

1) The rate of renewable energy over electricity sold by Korea Power Exchange.

The amount of renewable energy generated and purchased

(Unit: MWh)

Category	2016	2017	2018
Renewable energy generated	4,889	4,954	4,515
Renewable energy purchased ¹⁾	281,187	267,974	281,723

1) Total amount of electricity purchased x rate of renewable energy over sold by Korea Power Exchange.

GHG Emissions Reduction via use of POSCO Product

In 2018, we achieved 6.24 million tons of CO₂ emissions reduction by delivering high energy-efficiency steel products, such as high-strength steel sheets for automobiles, and low core loss electrical steel which increases the energy efficiency of motors and transformers. Blast furnace slag, one of the byproducts from steelmaking, also contributed to reducing 8.39 million tons of CO₂ emissions as it substituted the use of cement in 2018.

Social GHG Emissions Reduction Effect

(Unit: kt-CO₂)

Category	2016	2017	2018
High-strength steel sheet for automobiles ¹⁾	3,405	3,608	3,651
Low core loss electrical steel sheet ²⁾	2,271	2,528	2,585
Granulated blast furnace slag ³⁾	7,834	8,596	8,392
Total	13,510	14,732	14,628

1) Ultra high-strength steel sheet refers to HSS (High-strength Steel) and AHSS (Advanced High-strength Steel) with tensile strength of at least 340 MPa. Reduction of weight by applying this steel to a 2,000cc passenger vehicle is substituted for CO₂ emissions reduction volume. CO₂ emissions reduction effect per ton of high-strength steel: 0.81t-CO₂/year (weight reduction (fuel saving: 86L/year, unit) X number of vehicles produced per ton of high-strength steel (4.4 units) X CO₂ emission coefficient in road transportation (0.0693 kg CO₂/MJ, based on IPCC Guideline, gasoline vehicles) X caloric value (31.0 MJ/L, Energy Act's Enforcement Regulation) ÷ 1,000).

2) Low core loss electrical steel refers to grain-oriented electrical steel with core loss of less than 0.98 W/kg, as well as non-oriented electrical steel with core loss of less than 4.7 W/kg. Improvement of energy efficiency by applying this steel to motors and transformers is substituted for the CO₂ emissions reduction volume.

3) CO₂ reduction volume is calculated by applying the theoretical ratio to convert the main ingredient of cement clinker (calcium oxide) to CO₂, which estimates a reduction of 0.785 t-CO₂/t-clinker when replacing each ton of cement with blast furnace slag.

Other CO₂ Emissions

GHG is also emitted from a variety of channels including the transportation of raw materials, employee commuting, business trips, and others. The emissions data for 2018 are as follows:

Other CO₂ Emissions¹⁾ (Scope 3)

(Unit: kt-CO₂)

Category	2016	2017	2018
Transportation of raw materials ²⁾	959	978	986
Employee commuting ³⁾	7	7	7
Employee business travel ³⁾	1	1	1
Purchased products and services ⁴⁾	2,970	2,638	2,997
Upstream leased assets ⁵⁾	2,111	2,081	2,180
Investments ⁶⁾	13,105	12,339	12,733

1) Calculated on the basis of the WBCSD/WRI Greenhouse Gas Protocol.

2) Total weight of purchased raw materials amounted to 93.91 million tons (coal, iron ore, and limestone took up the majority)

3) Based on 13,348 employees working at Pohang Works and Gwangyang Works corresponding to Scopes 1&2, as of the end of 2018.

4) Calculated GHG emissions focusing on major raw materials suppliers out of purchased goods and services.

5) Calculated GHG emissions from the limestone calcination plant which was leased to POSCO Chemtech.

6) Calculated Scope 1&2 emissions from investee companies subject to the GHG Emissions Trading System in consideration of POSCO's equity ownership.

Investments in GHG Reduction Facilities and R&D

A total of KRW 120.5 billion was invested in energy recovery facilities and process improvements for energy conservation in 2018. Some of the investment highlights include improving the power generation efficiency of Gwangyang LNG Power Plant, and installing inverters on the electric dust collector of Pohang FINEX plant. In 2018, we also invested KRW 98 billion in R&D projects focusing on GHG emissions reduction, which involved recovering sensible heat generated from production processes and capturing CO₂ from by-product gas, as well as other related items.

Energy Consumption

Category		Unit	2016	2017	2018
Amount of energy consumption ¹⁾	By-product gas	TJ	288,040	286,461	295,216
	LNG	TJ	40,576	42,842	41,384
	Diesel, Gasoline, Vehicle-LPG	TJ	173	186	181
	Electricity ²⁾	TJ	26,860	22,825	21,633
	Total	TJ	355,649	352,313	358,415
GHG emissions	SCOPE1(direct emission)	thousand ton CO ₂ e	66,888	67,743	69,687
	SCOPE2(indirect emission)	thousand ton CO ₂ e	3,479	2,956	2,802
	SCOPE1+SCOPE2	thousand ton CO ₂ e	70,367	70,700	72,489
GHG emissions per ton of crude steel production	SCOPE1(direct emission)	t-CO ₂ /t-S	1.78	1.82	1.85
	SCOPE2(indirect emission)	t-CO ₂ /t-S	0.09	0.08	0.07
	SCOPE1+SCOPE2	t-CO ₂ /t-S	1.88	1.90	1.92

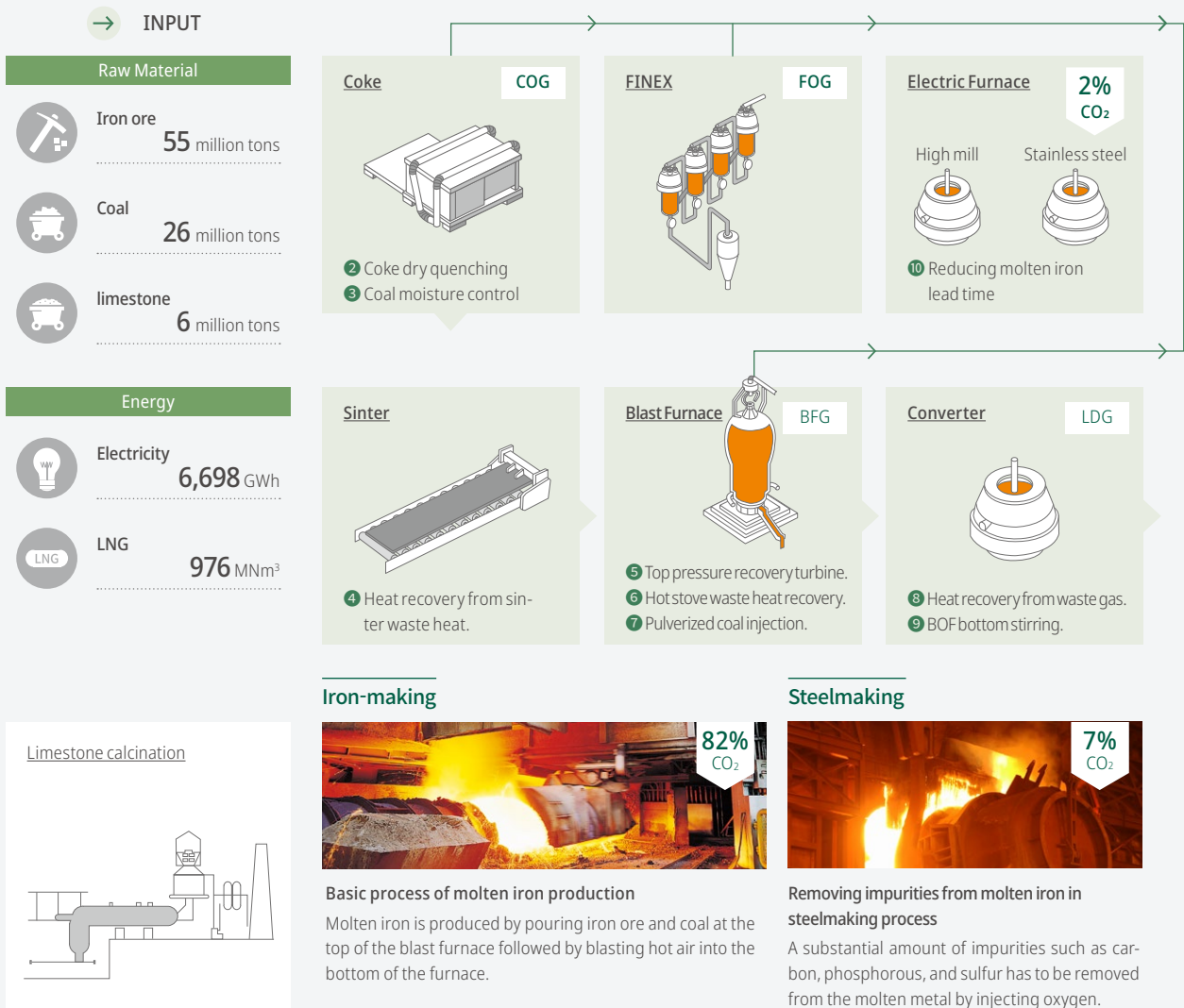
1) Total Amount of energy consumption of 2017 has been corrected

2) Based on the figures on the statement submitted to the government. Electricity consumption was totaled up by converting into 3.6 TJ/GWh on the recommendation of the CDP.

* The figures cover the Pohang Works and Gwangyang Works

POSCO Carbon Flow

The GHG emissions generated in our steelworks are mostly comprised of CO₂ from the coal entering blast furnaces directly and indirectly. CO₂ emissions mainly occur during the iron-making process which involves oxidation reduction reactions. POSCO calculates not only CO₂ emitted from the production process at Pohang Works and Gwangyang Works, but also indirect emissions of CO₂ along the value chain, including raw materials transportation, commuting and business travel of executives and employees, and upstream leased assets.



Application of Available Technologies for CO₂ Emissions Reduction

Technology description	Energy recovery				
	Electricity	Steam	Hot water	other	
① Capturing, purifying, and reusing the by-product gas generated from the blast furnace, FINEX, coke oven, and converter.				●	Scope 1 Direct emissions from incineration and production processes.
② Recovering sensible heat by exchanging heat between red hot coke and cooling gas.	●	●			
③ Improving coke strength and blast furnace efficiency by controlling the moisture of coal which is inserted into the coke oven.				●	
④ Recovering sensible heat from the cooling process of sintered ore.		●	●		Scope 2 Indirect emissions from electricity and steam generation.
⑤ Generating power through the blast furnace by-product gas pressure.	●				
⑥ Recovering sensible heat from the exhausted gas of the hot blast stove.				●	
⑦ Directly injecting coal instead of coke into the blast furnace.				●	Scope 3 Indirect emissions from the value chain.
⑧ Recovering sensible heat included in the gas emitted from processes.		●			
⑨ Improving energy efficiency by injecting argon gas into the bottom of the converter.				●	
⑩ Minimizing energy loss through reduced transportation time between steel tapping and back end processes.				●	
⑪ Saving energy through the direct insertion of hot slabs.				●	
⑫ Recovering sensible heat included in the gas emitted from the heating furnace.		●	●		
⑬ Saving energy for heating during the pickling process through low-temperature operation.				●	

OUTPUT →

Recovery and utilization of by-product gas

50 %

By-product gas reused for steelmaking process.

① Recovery of by-product gas.

36 %

Power generated through by-product gas (1,396 MW).

14 %

By-product gas sold.

Product

Production of crude steel

38 million tons

CO₂ emissions

Emissions from production (Scope 1, Scope 2)

72 million t-CO₂

Other emissions (Scope 3 including raw material transportation)

19 million t-CO₂

Social CO₂ reduction

Ultrahigh-strength steel sheet for automobiles

Weight reduction and improvement of fuel efficiency

3.7 million t-CO₂

Low core loss electrical steel

Efficiency improvement of motors and transformers

2.6 million t-CO₂

Blast furnace and FINEX slag

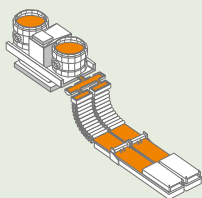
Substitute material for cement

8.4 million t-CO₂

Supply of recovered steam
District heating and related businesses

0.1 million t-CO₂

Continuous caster



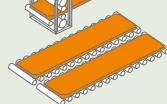
Casting



Solidifying molten metal

Intermediate materials such as slabs, blooms, and billets are produced by pouring molten iron without impurities into the caster.

Hot rolling mill



⑧ Heat recovery from waste gas.
⑪ Hot charge rolling.
⑫ Heat recovery from reheating furnace.

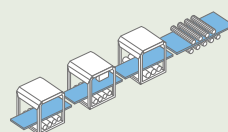
Hot rolling



Producing steel sheets and rolled plates

Slabs, blooms, and billets are flattened and lengthened through hot, or cold rolling processes to produce steel sheets and rolled plates.

Cold rolling mill



⑬ Low-temperature pickling.

Cold rolling

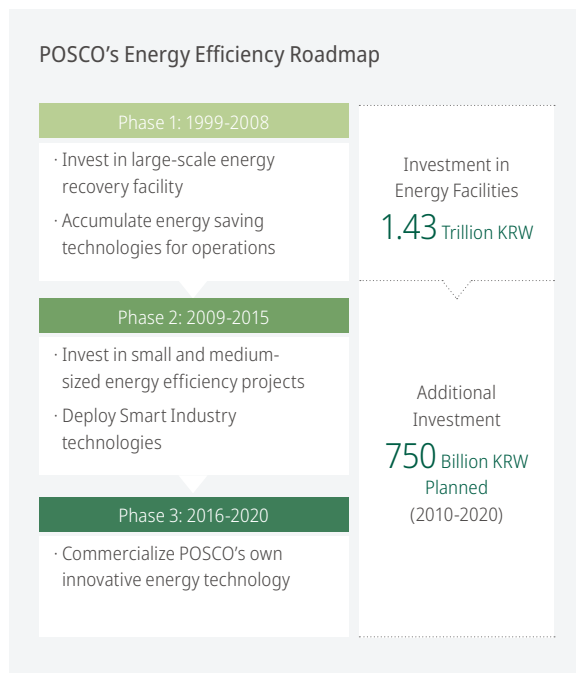


Climate Change Response

Increasing Energy Efficiency: Roadmap and Performance

POSCO established an action plan to raise energy efficiency and is preemptively investing to save energy. During Phase 1 (1999-2008), investment in POSCO's large-scale energy recovery facility was completed. In Phase 2 (2009-2015), small and medium-sized energy efficiency projects were carried out as POSCO pushed forward to adopt convergence technologies.

In Phase 3 (2016-2020), POSCO plans to improve the management of the existing large-scale heat recovery facility, invest in the improvement of off-gas supply infrastructure for power generation, and undertake a generator performance recovery projects with an aim to increase the energy efficiency of the large-scale heat recovery facility. In addition, POSCO will consider introducing the latest heat recovery technology to recover more waste heat from its steelworks. Furthermore, POSCO believes that currently available commercialized technologies are insufficient in further improving energy efficiency and thus will accelerate its mid-to-long term development of innovative technology.



Activities to Increase Energy Efficiency

Using Off-Gas

Most of the gas created as by-product during the steelmaking process is recovered and fed back into the process as a source of energy or used to generate power. Pohang and Gwangyang Works self-generated 73 percent of the power they used in 2018 from off-gas, recovered energy and LNG. This figure is one percent higher than that of 2017 (72 percent).

Increasing Power Generation Efficiency and Restoring Heat Recovery Facility Performance

In 2016, Pohang and Gwangyang Works established project teams to raise power generation efficiency and carried out various activities. In January 2019, the teams were promoted to official organizations. In 2018, Pohang Works made power generation more efficient and generated more power by replacing gas turbine components and installing an evaporative cooling system, while Gwangyang Works implemented projects to improve LNG power generation efficiency and restore off-gas power generation condenser performance.

Improving Reheating Furnace Combustion Efficiency

Pohang and Gwangyang Works set up taskforce teams in 2011 to raise the combustion efficiency of all their reheating furnaces that consume the most amount of fuel. Annual projects are carried out to raise the combustion efficiency of reheating furnaces by diagnosing the furnace body, optimizing combustion, and improving heat exchanger efficiency.

Smart Factory

Smart Factory collects on-site data with IoT technology and analyzes and optimizes processes using Big Data and AI technologies and control automatically. Gwangyang Works transformed its plate plant into Smart Factory in 2017 and expanded this initiative to the automotive steel plant in 2018. Pohang Works plans to improve on its chronic inter-process defects by aligning its steel-making, hot-rolling, cold-rolling and STS rolling processes by 2019.



POSCO's Smart Factory Implementation Concept

Energy Saving Lighting in SteelWorks

Since 2011 Pohang and Gwangyang Works have been installing windows and relevant lighting circuit equipment to let in natural light and replacing existing lights with high-efficiency LED lights. As of 2018, about 350,000 lamps have been replaced with LED lights in plants and offices, with cumulative cost saving of around 32.2 billion KRW.

Developing Breakthrough Technology

Mid-to-low Temperature Heat Recovery for Power Generation Using Organic Rankine Cycle (ORC)

In 2016, POSCO started reviewing applicable measures to develop a power generation system using mid-to-low temperature heat released during the steelmaking process, completed its system design in 2017. Since 2018, a 1.2MW demonstration project has been under operation, generating power from mid-to-low temperature heat at the Ferro-Manganese Plant of Gwangyang Works.

Hydrogen Reduction Steelmaking

Hydrogen reduction steelmaking was developed to use hydrogen in place of carbon (coal) as an agent to reduce iron ore in the blast furnace in preparation for the upcoming future when hydrogen becomes available in large quantities at low prices. Since 2016, POSCO has participated in the government-led project to review the feasibility of hydrogen reduction steelmaking and select relevant elementary technologies. Of the technologies selected, POSCO will carry out a pilot-scale demonstration of blast furnace CO₂-mitigating steelmaking technology from 2018 to 2024 and also plans to conduct research on commercializing technologies that are economically viable and highly applicable. The goal of this technology is to develop a new process that can reduce CO₂ emissions by 10 percent from the existing blast furnace process.

Product Sales Contributing to Greenhouse Gas (GHG) Emissions Reduction

Automotive High Strength Steel

Automotive high strength steel (HSS)¹⁾ is as strong as ordinary, thick steel but is thinner, which allows for lightweight automobile production with improved fuel efficiency. Assuming that a passenger car made of HSS runs 19,000 km per year²⁾, one such vehicle can ultimately reduce around 1.8 tons of CO₂ emissions during the period of 10 years.

1) Automotive high strength steel refers to HSS (high-strength steel) and AHSS (advanced high-strength steel) with tensile strength of 340 Mpa or higher

2) Annual mileage of passenger cars (Transportation Safety Research and Development Institute of the Korea Transportation Safety Authority, 2006)

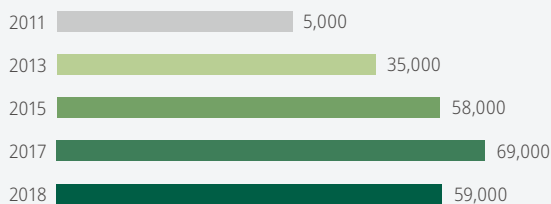
As fuel efficiency regulations grow stronger around the world, automobile manufacturers increasingly use AHSS to produce lighter cars. POSCO is proactively developing solutions with Korean car OEMs. For example, POSCO worked with SsangYong Motor on the SUV model Tivoli from its early stages of development, applying HSS to 70 percent of the car body. In 2018, POSCO's automotive HSS sales reached 4.53 million tons, reducing an estimated 3.65 million tons of GHG emissions per year.

High Efficiency Electrical Steel

High efficiency electrical steel, for its low iron loss and high magnetic flux density, contributes to improving the energy efficiency of finished products compared to ordinary electrical steel. Grain-oriented electrical steel can be used as core material for static machines such as power transformers, current transformers, and rectifiers. Non-oriented electrical steel is widely used as iron core material in rotating machines ranging from large power generators to small precision electric motors. It is also good material for small power transformers.

POSCO's Switch to LED Lighting Per Year

(Unit: Lamps)



Total Cumulative Savings of 32.2 billion KRW

Social CO₂ Emissions Reduction by Automotive HSS¹⁾

(Unit: 1,000 t-CO₂)

Category	2010	2012	2016	2017	2018
CO ₂ Emissions Reduction by Product Lifecycle ²⁾	20,230	25,382	34,046	36,081	36,512
Annual CO ₂ Emissions Reduction	2,023	2,538	3,405	3,608	3,651
Sales (1,000 Tons)	2,511	3,150	4,226	4,478	4,532

1) Calculated fuel efficiency improvements from weight reduction when applying automotive HSS to passenger car from company A (2,000 cc-grade)

2) Assuming 10-year use of end product (vehicle)

POSCO supplied 430,000 tons of high efficiency electrical steel in 2018, with an estimated annual GHG emissions reduction of 2.68 million tons.

Recycling Granulated Blast Furnace Slag (GBFS)

Since GBFS has similar chemical properties as cement, powdered GBFS can replace clinkers¹⁾ which is necessary in cement producing.

In particular, POSCO supplies PosMent – eco-friendly, economic, high-performance cement – developed with the Research Institute of Industrial Science & Technology (RIST) and POSCO E&C in an effort to boost the recycling of granulated slag.

PosMent is enhanced cement that has higher slag content as well as a better physical properties such as compressive strength when compared to slag cement. It also emits 60 percent less CO₂. In 2018 alone, 10.69 million tons of granulated slag from POSCO used to make cement, reducing GHG emissions by up to 8.39 million tons.

1) Clinker: Made by plasticizing cement ingredients such as limestone at high temperatures. When ground to fine powders, clinker becomes cement.

Carbon Fund

Since 2009, POSCO and the Ministry of Economy and Finance of the Republic of Korea have been taking part in the Asia Development Bank Future Carbon Fund, created to support GHG emissions reduction projects in developing nations. By 2023, POSCO plans to record around 1.2 million tons in overseas carbon reduction.



Future Carbon Fund Delivering Co-Benefits for Sustainable Development

CO₂ Emissions Reduction by High Efficiency Grain-Oriented Electrical Steel¹⁾

(Unit: 1,000 t-CO₂)

Category	2010	2012	2016	2017	2018
CO ₂ Emissions Reduction by Product Lifecycle ²⁾	5,560	6,571	7,172	7,099	6,393
Annual CO ₂ Emissions Reduction	185	219	239	237	213
Sales (1,000 Tons)	183	215	235	233	210

1) High efficiency grain-oriented electrical steel refers to products with iron loss of 1.05W/kg or less.

2) Assuming 30-year use of end product (power transformer)

CO₂ Emissions Reduction by High Efficiency Non-Oriented Electrical Steel¹⁾

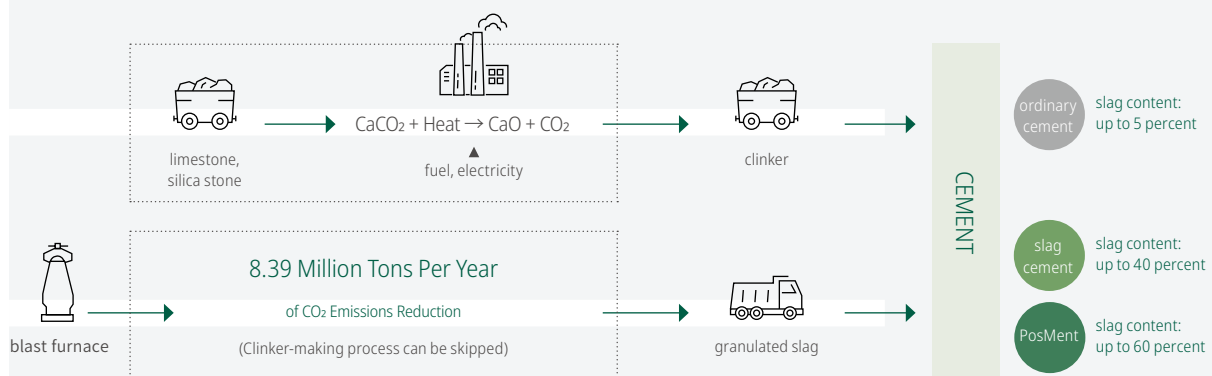
(Unit: 1,000 t-CO₂)

Category	2010	2012	2016	2017	2018
CO ₂ Emissions Reduction by Product Lifecycle ²⁾	33,507	41,343	36,577	41,252	42,704
Annual CO ₂ Emissions Reduction	1,861	2,291	2,032	2,292	2,372
Sales (1,000 Tons)	173	213	189	213	221

1) High efficiency non-oriented electrical steel refers to products with iron loss of 4.70W/kg or less.

2) Assuming 18-year use of end product (electric motor)

Cement Manufacturing Process



Green Business

PV Power Generation

POSCO ENERGY operates a 14.5MW PV project on a closed salt pond in Sinan-gun, Jeollanam-do. The site generates 20,000 MWh of power annually and is able to supply enough electricity each year for approximately 5,000 households for the next 20 years. This can reduce CO₂ emissions by more than 9,000 tons – equivalent to planting 2.6 million pine trees – each year.

Building-Integrated PV (BIPV)

POSCO is developing a BIPV system that integrates PV panels with building exterior materials. As BIPV replaces the exterior materials of the building, its application requires high structural safety, insulation and watertightness. On top of that, PV modules must deliver stable power generation efficiency. POSCO developed color modules that not only meet these performance requirements but also add to the aesthetics of the building. They are installed on the exterior of the Smart Data Center newly built in 2018 at Pohang Works, generating 130kW of electricity.

Smart Grid

POSCO ICT entered the smart grid market and built an Energy Storage System (ESS) that serves various purposes: managing industrial and building demand; replacing and saving power for emergency generators in plants; and stabilizing the output of generators that are linked to the system. Microgrid projects are also underway to build energy self-sufficient villages and eco-friendly energy self-sufficient islands. In 2017, distributed power infrastructure¹⁾ was built on the campus of Pohang University of Science and Technology. In 2018, a PV-ESS microgrid project applicable to high altitude environments (4,000m above sea level) was developed.

1) Distributed power infrastructure: POSCO's microgrid platform that combines supply-demand forecast based on big data and cost-saving smart operational technology

EV Charging Infrastructure

POSCO ICT launched Korea's very first private-sector EV charging infrastructure business in 2011. The company was selected as an EV charging infrastructure provider by BMW in 2014, Hyundai Motor in 2015, GM in 2016, Jaguar Land Rover in 2017, and Mercedes Benz in 2018. POSCO ICT provides not only home charging stations for EV customers but a shared charging service called "ChargEV." POSCO ICT installed 1,200 charging stations at such highly accessible buildings as E Mart, LG Bestshop, Shinsegye Premium Outlet, Hyundai Department Store, Accor Hotel, Daemyung Resort and Starfield. A mobile application service is also provided to make it easier for customers to search for charging stations and to make reservations.

High-Speed Lithium Extraction Technology

POSCO developed its own lithium direct extraction technology that does not require a wide evaporation pond as does the existing evaporative method. This technology is also minimally impacted by climate change. In addition, this technology is economic and eco-friendly; as there is nearly no loss of lithium during extraction, smaller amount of brine can be used to extract the same amount of lithium as the existing method.

In cooperation with Pilbara Minerals of Australia in February 2018, POSCO secured the supply of raw ores to produce 40,000 tons of lithium products per year and will construct lithium manufacturing facilities of the corresponding scale by 2020. In August 2018, POSCO bought lithium mining rights for the Hombre Muerto salt flat in Argentina, and it will build a lithium plant by 2022 with an annual production of 25,000 tons using POSCO's proprietary lithium extraction technology.



BIPV-Applied Pohang Smart Data Center



ESS (1MWh) for Emergency Generator Replacement at POSCO ICT Pohang Works

Triton Marine Forest

Triton is effective in restoring the marine areas bleached by higher ocean temperatures. It can be used to quickly restore damaged resources in the marine ecosystem. It is also capable of capturing CO₂ through slag carbonization and seaweed photosynthesis.

From 2011, POSCO has been a part of projects undertaken by central and local governments to create marine forests and marine ranches. In 2018, 1,418 Triton reefs and 12,200 rocks were provided in implementing fishery stock enhancement and platform projects to extend the scope of POSCO's clean marine ecosystem initiative. Triton marine forest technology was introduced as a best practice by the World Business Council for Sustainable Development to leverage the functionality of by-products from the steel-making process to conserve the environment, restore the marine ecosystem and reduce CO₂ emissions.

Climate Change Partnership

Carbon Disclosure

Since 2003, POSCO has been taking part in the RobecoSAM Dow Jones Sustainability Index (DJSI) and the Carbon Disclosure Project. Such efforts to respond to climate change have been well-received.

Between 2005 and 2013, POSCO was the first steelmaker to be selected as an outstanding company by the DJSI for 13 consecutive years. POSCO was also selected as a leading company in the steel industry. In October 2016, the CDP rated POSCO the top performer among 14 steelmakers based on their performance in responding to climate change. These achievements are attributable to POSCO's efforts to reduce GHG emissions and energy intensity and to develop low carbon technology.

Working with the World Steel Association on Climate Change Countermeasures

POSCO is part of the global initiative to counter climate change in the steel industry led by the World Steel Association (worldsteel). In 2003, the CO₂ Breakthrough Programme was launched to develop innovative technologies that can bring down CO₂ levels in the industry. POSCO has joined the effort from the very beginning and developed a methodology to calculate GHG emissions in the steelmaking process.

POSCO has been with the Climate Change Policy Group and the CO₂ Data Collection Project under worldsteel since their inception in 2007 and 2009, respectively. These activities also led POSCO to participate in ISO's standard-setting process¹⁾. On the back of its contributions to worldsteel's efforts to counter climate change, POSCO has been included as a worldsteel Climate Action Member for 10 consecutive years since its membership was initiated in 2008-2009.

1) ISO TC17/WG21, Calculation method of CO₂ emissions intensity from Iron and Steel production Part 1: Steel plant with blast furnace(ISO/CD 14404-1) Calculation method of CO₂ emission intensity from iron and steel production — Part 2: Steel plant with EAF(ISO/CD 14404-2).



2018-2019 Climate Action Logo

Certified Energy Champion – A Voluntary Program

The Ministry of Trade, Industry and Energy of the Republic of Korea, together with the Korea Energy Agency, performs objective assessments on companies for their voluntary efforts to raise energy efficiency, and recognizes top performers as Energy Champions. POSCO has joined this effort since 2018, the very first year of the program, and has been certified as Energy Champion.



Energy Champion Certificate

NEW GROWTH PROJECT

BUSINESS ▾

In 2019, we established the New Growth Division to identify and nurture new growth drivers. We plan to develop new business in accordance with new principles in order to complement our current business portfolio, which is heavily focused on steelmaking business, and to contribute to community development and job creation while ensuring that these new growth engines play a pivotal role in generating profits for the entire POSCO Group.

To this end, we established the New Growth Planning Office, the Secondary Battery Material Office, and the Industry-Academy-Research Cooperation Office, and these three offices will play a key role in developing future growth drivers. The Office of New Growth Planning will re-establish our business execution system and explore new large-scale impactful businesses opportunities. The Office of Secondary Battery Material will be in charge of technology development and investment in secondary battery material business, which is one of POSCO's new key growth drivers. The Office of Industry-Academy-Research Cooperation will be responsible for searching for seed businesses,



coordinating collaboration among industry, academia and research institutes, and nurturing venture companies to set POSCO for its long term success in the upcoming years.

In developing new growth drivers, we will bring innovation to our new business execution process, from the discovery of new business opportunities to their commercialization, as well as the entire organizational culture so as to improve the competitiveness of our new business. We will select the business areas that are aligned with the Group's future growth strategy, and collect data on various business opportunities from both domestic and foreign markets. We will perform thorough verifications on these opportunities in consideration of their growth potential, profitability, and our internal capabilities in conjunction with internal and external experts. In so doing, we aim to increase the success rate of these new business opportunities.

For chosen business opportunities, different approaches will be taken, from M&A and Joint Venture to internal development, to define detailed business strategy, and when deemed necessary, R&D will be performed to increase their competitiveness. Furthermore, we will make sure that we build a broad internal consensus on these opportunities, align them with Group's mid-to-longterm strategy, and promote their business expertise and sustainability.

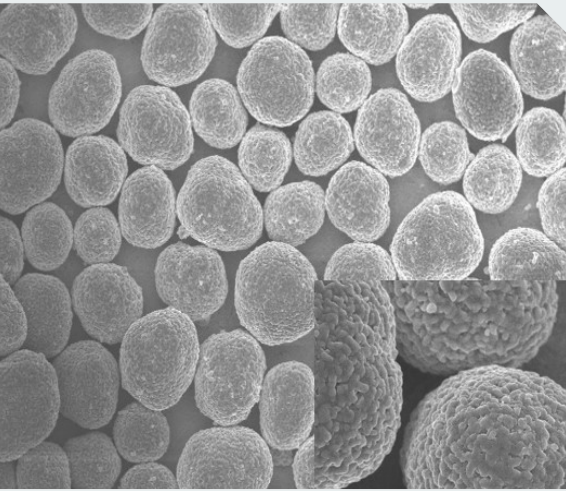
Starting with secondary battery material business, we plan to achieve KRW 20 trillion in sales from these new businesses by the year 2030, and create new value for the future together with our stakeholders including employees and local communities.

New Growth Business Execution Process



SECONDARY BATTERY MATERIAL

BUSINESS ▾



- 1 — Secondary battery cathode material
- 2 — Secondary battery material product analysis

Demand for cathode material with higher nickel content is rising as it contributes to increasing the driving distance of EVs. POSCO produces high-nickel cathode material which has 80% nickel to increase the storage capacity, while also lowering its production cost. Meanwhile, POSCO established a joint production corporation with Huayou Cobalt, the biggest cobalt producer based in China, to produce cathode precursors, with a view to securing raw material competitiveness and to enter the Chinese market.

POSCO CHEMICAL is the only domestic producer of anode materials in Korea, and is currently expanding its production capacity to meet global demand. A second plant will be built in Sejong City, bringing POSCO CHEMICAL's anode production capacity up to 44,000 tons per annum, and will keep increasing its production capacity to 74,000 tons per annum. This corresponds to 2.7 million units of EVs. POSCO CHEMICAL plans to expand its secondary battery materials business to reach 20% in market share and KRW 17 trillion in sales by the year 2030.

With the electric vehicle market growing rapidly, POSCO is aggressively driving its lithium secondary battery material business. POSCO produces high-purity lithium carbonate and lithium hydroxide from various sources such as ores, saline water, and used batteries, by using its direct extraction technology. "PosLX", POSCO's proprietary technology for direct lithium extraction has a lithium recovery rate of over 80%, which is higher than that of conventional commercialized technologies, and we have increased the production ratio of battery-grade products to over 80% as well. Driven by demand for smartphone secondary battery and the expanded distribution of electric vehicle, secondary battery lithium demand is forecast to rise from 136,000 tons in 2017 to 576,000 tons by 2025. POSCO made an equity investment in Pilbara Minerals of Australia to secure a steady and long-term supply of lithium raw materials, and also acquired the mining right of a salt lake in Argentina.

Anode material production capacity

74,000_{ton}

Sales forecast for secondary battery materials in 2030

17_{trillion KRW}



- 3 — PosLX Plant where Lithium is produced

INDUSTRY-ACADEMY-RESEARCH COOPERATION

BUSINESS ▾



4 — Pohang University of Science and Technology

Tapping into the excellent R&D infrastructure of POSTECH and RIST and their ability to turn technology into business, POSCO will build a new industry-academy-research cooperation system that contributes to value creation.

POSCO's industry-academy-research cooperation system has defined three goals. First, "Innovation in education" aims at establishing education infrastructure that enables excellent researchers, following their university graduation, to enter the venture startup ecosystem. Second, "Innovation in research" aims to provide researchers with greater autonomy in conducting research and to encourage them to use research resources to start their own venture business. Third, "Commercialization (start-up) innovation" aims to establish a support system by matching research outcomes with companies or research institutes so that these achievements do not simply stay within the boundary of research institutes but find their profitable applications through commercialization.

Venture business development aims to establish a phase-based venture support system by leveraging our top-notch research infrastructure and internal competency. In the first Start-up phase, we use our exceptional researchers and infrastructure – POSTECH and RIST – to create an R&D hub and attract venture companies in the three focus areas of materials/energy/environment, bio/new drug, and Smart City/Factory. The Incubating Center will accommodate entrepreneurs-to-be and venture business to provide them with comprehensive support. In the second Growth phase, top-performing venture companies in the Pohang and Gwangyang region are given assistance to move into the metropolitan business hub (Gangnam-Pangyo-Songdo) and commercialize their business ideas. In the last Globalization phase, POSCO and POSCO Group affiliates use their overseas network to assist these venture firms in growing into unicorn companies. Their success will be aligned with our new business conducted at POSCO and POSCO Group affiliates to generate synergistic effects while these globally-competitive venture companies will invest back in our R&D hub in the Pohang and Gwangyang region, creating a virtuous cycle of business.

Recently, global companies identify and invest in venture businesses as an essential part of their business strategy to secure their future growth drivers. POSCO plans to invest KRW 1 trillion in venture funds to discover new business opportunities that will drive POSCO Group's growth in the future, and such investments will be made in each phase of the entire venture business lifecycle, from the startup phase to the growth phase. This will help facilitate private sector engagement in venture investment and create a virtuous cycle within the venture ecosystem, and ultimately contribute to creating jobs for youth and revitalizing the local economy.

5 — Songdo Global R&D Center



Building a Support System Tailored to Each Stage of Growth

1 | START UP

Utilizing our excellent research personnel and infrastructure at POSTECH and RIST, we will build an R&D Hub and invite venture companies.

2 | GROWTH

We will help start-ups move to the metropolitan area (Gangnam, Pangyo and Songdo City) and support them with commercialization.

3 | GLOBALIZATION

We will use the overseas network of POSCO and POSCO Group subsidiaries to provide support.



02

SOCIETY WITH POSCO

We will create value society together with you

With our continued social contribution activities, we will create social value and contribute to improving the quality of life for all.

We will present a model of shared growth where business and society grow together by helping address various social issues, and we will cultivate venture start-ups and SMEs as a way to pursue the value of win-win partnership.

SOCIAL CONTRIBUTION

SOCIETY ▼

POSCO defines its management vision as 'With POSCO, We're the POSCO' in pursuit of its management philosophy, 'Corporate citizenship: Building a Better Future Together'. We value social coexistence and strive to fulfill our responsibility toward corporate citizenship. To strike the right balance between social and economic values and to actively participate in addressing social issues,

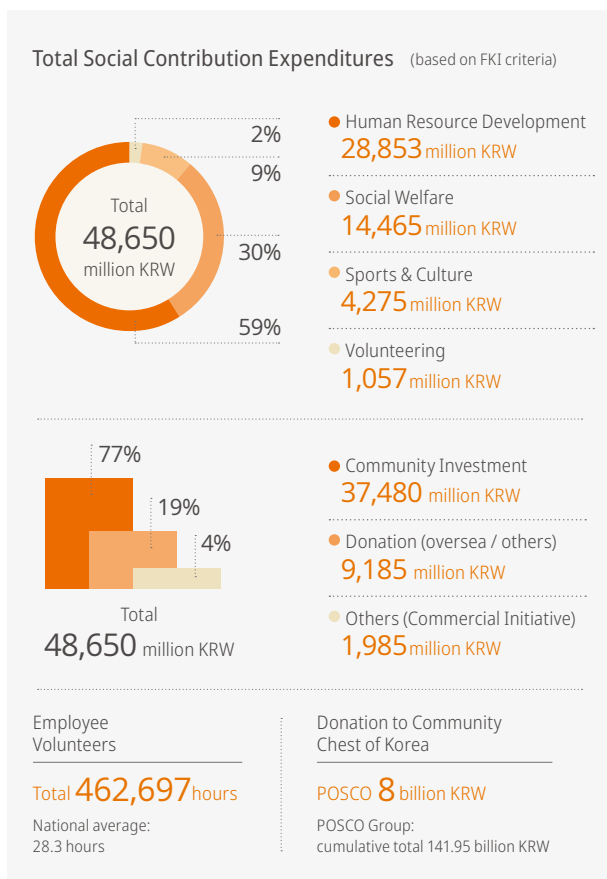
POSCO has carried out various corporate citizenship activities that are organized and implemented by our social contribution group under Corporate Citizenship Office. Fully leveraging POSCO Group's strengths, we endeavor to maximize their impact and create social values. We also continue to communicate with our stakeholders in making strides for a better society, 'Society With POSCO.'

Strategy Directions and Focused Areas

POSCO's corporate citizenship activities are undertaken in accordance with the following three strategy directions in three focused areas.

Strategy Directions	Specified targets	Taking the lead	Differentiated approach
	Focus on resolving social issues that are urgent and relevant to our business	Take the lead in the entire process of business discovery, planning and execution	Create a social role model through the use of distinctive brand
Three Focused Areas	 Community	 Future generation	 Employee participation

2018 Social Contribution Performance



Major Partners

Category	Project	Period
Habitat for Humanity	University student volunteers (Beyond) Construction of Steel Village	2007-present 2012- present
Food for the Hungry International	Building steel houses for fire damaged and low-income families	2009- present
Korea International Cooperation Agency (KOICA)	Social enterprise in Indonesia (PT.KPSE)	2014-2016

Awards received

Awards	Time	Agency	Content
Global Metal Awards (Metal company of the Year), Grand Prize	May, 2018	S&P Global Platts	Recognized for the corporate sustainable management and increased brand value
UN SDGs Business Practice	July, 2018	Korean Agency of UN's SDGs	Recognized for the corporate initiative in sustainable management

COMMUNITY

With a strong sense of community, POSCO clearly recognizes the pursuit of coexistence with local communities as a corporate citizen as its most important responsibility and value. As an active participant of the UN SDGs, POSCO complies with and practices these new sustainability goals set by the United Nation. Local community members in 53 countries where POSCO's operations are based are regarded as our most valued stakeholders. We support them to build a inclusive, safe and resilient community by assisting the expansion of their social infrastructure as a member of these local communities. POSCO's resources and competencies as a group are effectively utilized in pursuit of building a more equal and sustainable community.

POSCO Steel Village

POSCO Steel Village Project is POSCO's major corporate citizenship activity that utilizes our steel products and expertise in construction technology. The project was designed to build safe houses in local communities to promote their healthy life and contribute to the expansion of basic social services.

* POSCO Steel Village SDGs Initiative has been recognized and enlisted in the Partnership for SDGs section on the UN SDGs website since November, 2017.

1 Steel Village in Indonesia

BENEFICIARIES: 79 PEOPLE

- The environmental improvement project for the poor in the local community near POSCO Steel (PT.KP) in Indonesia since 2018
- Built new housings with bathrooms. Planning to build other public facilities (Water fountain, garbage incineration plant, school, etc.) and implement community education program (on construction, hygiene and economics).
- The construction was carried out by volunteers including employees from POSCO Global Volunteers, POSCO Chungam Foundation beneficiaries, and POSCO University Student Volunteers (BEYOND).

2 Construction of Steel Housing in Korea

BENEFICIARIES:
17 FAMILIES / 52 PEOPLE

- Provision of steel houses to support the recovery of fire damages and low-income families with residence stability
- The use of POSMAC (POSCO's steel product with greater corrosion resistance) as exterior and interior building material ensures the durability and safety of the houses.

* Total of 50 steel housing units were built across the country in the last nine years (2009-2018)

Supporting Self-Sufficiency of the Underprivileged

POSCO believes that supporting people to become financially self-sufficient is the ultimate solution to improve their quality of life. As part of our corporate citizenship activities, we provide decent jobs for the underprivileged people to ensure their stable settlement in our society. We support all male and female workers including married migrant women, seniors, youth and physically/mentally challenged individuals to help them improve their productivity and receive fair compensation for their work.

3 Café OAsia

BENEFICIARIES: 49 PEOPLE

- Café OAsia is a social franchise (co-op of small cafes) project established by POSCO and SESNET and the first Korea Social Co-op Union by the Ministry of Employment and Labor.
- It provides job opportunities for married migrant women who suffer from unstable employment.
- Profits from this franchise business are donated for multi-culture awareness campaigns and the creation of new jobs.

* Jan. 15th, 2013: Certified by the Ministry of Employment and Labor as the first social co-op union.

* As of December 2018: 49 employees from the multi-cultural & underprivileged groups are working in 25 sites.

4 Silver Home Care

BENEFICIARIES: 30 PEOPLE

- Home visitation care service provided to mobility-challenged seniors by healthy seniors.
- The caregiver makes 4 home visits per month to provide assistance in cleaning, meals and outing along with emotional support.



— Steel Village in Indonesia

5 Social Enterprise in Indonesia BENEFICIARIES: 325 PEOPLE

- PT Krakatau POSCO Social Enterprise Services Indonesia (PT. KPSESI) was established in 2014 in partnership with the Korea International Cooperation Agency (KOICA).
- It provides jobs and job training for youth primarily from three nearby villages in Cilegon where POSCO Steel of Indonesian (PT. KP) is located. The company also gives back to the community through its social contribution activities.
- The selected trainees perform maintenance work for six months in the steel factory while participating in weekend programs (computer, machinery maintenance, welding repair etc.) to improve their job competency.
- Job opportunities are provided to trainees with improved job competency to land a job in partner companies.

6 Social Enterprise: POSCO HUMANS, POSPLATE BENEFICIARIES: 282 PEOPLE (HUMANS: 213 / POSPLATE: 69)

- POSCO has established social enterprises and provided management support as a way to offer stable and quality jobs for the underprivileged.
- POSCO HUMANS is a social enterprise which was established in 2013 as Korea's 1st standard enterprise for physically/mentally-challenged. Precedence is given to people with disabilities and underprivileged individuals who stayed unemployed for an extended period of time during the recruitment process. This program provides job opportunities in the areas of office work support, IT, cleaning, vehicle support, and steel house construction within POSCO.

Supporting Arts & Culture

POSCO assists local community members in enjoying culture and builds a broader foundation for the advancement of arts and culture by offering a wide range of cultural and arts performances and operating diverse cultural spaces as part of its Mecenat initiative.

Supporting Arts & Culture

Category	Region	Content	Operation (number of events)	Beneficiaries (number of people)
POSCO Concert* (2017 ~)	Seoul	Pop music concert	7	3,215
POSCO Seoul Kids Concert (2015 ~)	Seoul	Children's musical	4	2,442
POSCO Art Museum (1998 ~)	Seoul	Art exhibition	6	45,000
The POSCO Museum (2003 ~)	Pohang	Introducing the history of POSCO	Year-round	41,380
Hyoja Art Hall (1980 ~)	Pohang	Culture and art performances, movies	1	1,462
Baekwoon Art Hall (1992 ~)	Kwang- yang	Performance spaces for rent	85	25,714

* POSCO Center Concert (1999-2014, total 167 concerts) was renamed and resumed starting in September, 2017.



Construction of Steel Housing in Korea

Cafe OAsia

Social Enterprise in Indonesia

Future Generation

Since its establishment, POSCO has provided extensive quality education opportunities that are inclusive and equitable for all children and youth. These opportunities help beneficiaries develop their ability for a more stable life with self-sufficiency. POSCO also provides university students with opportunities to communicate with their underprivileged neighbors at home and abroad under the principles of global citizenship. Through this program, students grow into able members of our society and learn to better coexist with others in their community. We provide support for children and youth to explore and experience a variety of career paths. We encourage young minds to discover their own potential and seize the endless possibilities ahead of them.

7 POSCO Global Youth Volunteers (Beyond) 100 VOLUNTEERS

- Beyond is a volunteer group comprised of university students with diverse backgrounds (age, region, school, major, etc.) with 100 volunteers recruited each year.
- These volunteers carry out various activities (steel house building, talent donation, cultural exchange etc.) for eight months at home and abroad.

8 Dream Bridge BENEFICIARIES: 269 STUDENTS

- Dream Bridge provides a career education program for middle school students living in regions with a high ratio of underprivileged individuals.
- This program aims to narrow the opportunity gap in education in order to help youth improve their self-esteem and inner-competence.
- Career exploration program in the context of the 4th industrial revolution was offered in 2018.

The 12th Beyond (2018) Volunteer Performances

Category	Region	Content
12th (100 volunteers)	Korea (Pohang, Namwon, Soonchang, Jangheung)	• Built 5 steel houses for the fire damaged and low-income household (July, 2018).
	Cilegon, Indonesia	• Built 10 POSCO Steel Village houses in the 4 villages near Cilegon (Jan. 2019).
		• Korea & Indonesia Cultural Exchange event
		• Conducted UN SDGs education programs in the local middle & high schools.
		• Launched the Beyond Indonesia initiative (23 volunteers) and carried out joint activities

Employee Participation

POSCO employees practice the corporate culture of 'volunteer service and sharing' to reinforce POSCO's corporate citizenship. In the year of 2018, POSCO employees have volunteered for an average of 28.3 hours per person. Over the last 30 years, they have actively contributed to earn the trust of their local community and build a better society through their continuous and self-initiated services. POSCO Employee Volunteers aim to provide services that create actual impact in the lives of beneficiaries.

9 Talent Volunteer Group (26 groups) BENEFICIARIES: 21,453 PEOPLE

- POSCO employees carry out a wide range of volunteer activities using their individual talents based on professional expertise as well as personal interests.



———— Beyond ———— Engineer Teaching Volunteer Group



———— POSCO Employee Global Volunteers

Talent Donation Groups

Service Corps	Region (no. of beneficiaries)	Activities
Clean Ocean Volunteer Group	Nationwide (4,500)	Conservation of the marine ecosystem which involves removing marine waste and starfish in the coastal areas in the vicinity of POSCO Group's worksites.
Cultural Assets Preservation Volunteer Group	Seoul (1,950)	Specialized education focused on the preservation of cultural assets around Seoul.
Volunteer Photographer Corps	Seoul (389)	Photoshoot services for senior citizens, single-parent families, and multicultural families who otherwise would have limited opportunities to visit photo studios.
Green Home Team	Seoul (7)	Consolidated support service by POSCO employees to help low-income families reduce energy cost through wallpapering, flooring improvement, replacement of LED lights, and energy-use assessment guidance.
Magic Arts Volunteer Corps	Seoul (TBA)	Cultural program for the underprivileged provided through arts and music performances in their local community facilities.
Techno Pro Bono Corps	Pohang (100)	Provision of various support for nearby agricultural and low-income communities by capitalizing on the scientific technology of the research lab including the development of ergonomic agricultural equipment and repair services.
Volunteer Corps for Children's Happiness	Pohang (28)	Provision of diverse and active education opportunities for elementary and middle school students to enhance their sense of achievement and self-respect.
Reform Volunteer Group	Pohang (12)	Renovation services designed to provide safe houses for low-income families. Focus groups would include: those who receive national welfare benefits, the elderly living alone and others.
Serving Volunteer Group	Pohang (43)	Contact-based service for the elderly in local areas to strengthen their relationship with the community through genuine sharing and heartfelt services.
Golden Time Service Team	Pohang (690)	Education program to teach the local residents about first aid treatment and cardio-pulmonary resuscitation (CPR) in order to promote the safety of Pohang citizens.
Happiness Sharing Mural Service Tea	Pohang (3,400)	Donation of artistic talents to make Pohang a beautiful city through mural paintings in residential neighborhoods.
Love Study Room Volunteer Team	Pohang (51)	Tutoring services by Steelworks employees for youths who face difficulties with advanced learning due to financial hardships.
Electrical Repair Volunteer Team	Pohang (189)	Provision of various preventative measures against electrical hazards including replacing old lighting systems and checking the electrical safety of local residences.
Hand Acupuncture Service Team	Pohang (2,588)	Provision of hand acupuncture and massage services, for the elderly with ailment, by the employees who completed the required trainings.
Technology Sharing Volunteer Group	Gwangyang (619)	Provision of technological expertise of the research lab and equipment sharing. Such projects have included, making vermin repellent kits as well as various sign boards using the Inkjet printing technology.
Friend Volunteer Group	Gwangyang (1,308)	Specialized support for multicultural families including group wedding ceremonies, farming assistance, and Korean culture education programs
Engineer Teaching Volunteer Group	Gwangyang (55)	Tailored education services to capitalize on engineers' talents on English, math, and science for the children in the local childcare centers.
Farming Machine Repair Service Volunteer Group	Gwangyang (438)	Provision of repair services of farming machinery, house gates, and steel structures for local families by employees with expertise in ironsmith and machinery maintenance.
Volunteer Wallpapering Service Team	Gwangyang (96)	Wallpaper and floor replacement service provided for the elderly living alone or children under the custody of their grandparents.
Foot Massage Volunteer Group	Gwangyang (559)	Foot massage services for the elderly living in community facilities.
PC Repair Volunteer Team	Gwangyang (156)	Provision of PC repair services for the local community centers welfare centers and other public facilities.
Electric Device Repair Volunteer Team	Gwangyang (87)	Provision of wire arrangement and electric repairs for welfare center facilities through semi-monthly visits
Hairdressing Volunteer Team	Gwangyang (1,045)	Provision of hairdressing services for the elderly with mobility challenges.
SNAP Photography Volunteer Team	Gwangyang (445)	Photoshoot services for the elderly in the senior centers of sisterhood villages located in the vicinity of our steelworks.
Medical Volunteer Team	Gwangyang (324)	Provision of medical checkups and supplies for elderly residents living in sisterhood villages.
Laughter Sharing Volunteer Team	Gwangyang (1,173)	Recreational activities for the local residents and the underprivileged with limited access to recreation and culture.

10 Sisterhood Villages, 'Sharing Saturday' Volunteer Activities

204 SISTERHOOD VILLAGES
(121 IN POHANG, 77 IN GWANGYANG)

- Since 1988, starting with Hagwang Village in Gwangyang, we have implemented "One Department for One Village" efforts and carried out our employee volunteer activities on a regular basis.
- We practice the principle of sharing with those who are marginalized in their community through our monthly "Sharing Saturday" program.

11 POSCO Employee Global Volunteer Corps

BENEFICIARIES: 38
(7TH: 14, 8TH: 24)

- Since 2015, POSCO Group employees have traveled abroad twice a year to volunteer for the construction of POSCO Steel Villages.
- In the first half of 2018, 47 volunteers (7th) were sent to Rayong, Thailand. This was followed by 49 volunteers (8th) who were sent to Cilegon, Indonesia in the second half of the year. The volunteers helped build a total of 12 houses for local residents.

CASE REPORT

Incentive Policies for Employee Corporate Citizenship Activities

■ **Volunteer Sharing Mileage** Employee volunteer activities are acknowledged through certification plaques for each 500 / 1,000 / 5,000 / 10,000 accrued hours of their volunteer works.

■ **POSCO 1% Foundation Matching Grant** The foundation is operated based on the funds donated (one percent of the monthly pay) by employees of POSCO Group and its partners. We make an equal amount of donations to match those made by employees in order to encourage the self-directed social contribution of our employees.

■ Corporate Citizenship Volunteer Award

- Every year, outstanding performance of our employee volunteer corps as well as external partners is awarded based on the impact of their contributions to society and the company.
- The objective of the annual volunteer awards is to share the examples of successful cases and to disseminate the spirit of sharing.

Operation of Non-profit Public Foundations

As a responsible corporate citizen, POSCO pursues the value of coexistence as well as economic profits. POSCO has established a number of foundations (POSCO 1% Foundation, POSCO Education Foundation, TJ Park Foundation, POSCO Smile Microcredit Bank) to undertake a wide array of social-giving programs.

POSCO 1% Foundation (2013-present)

It is a public welfare foundation operated on the fund donated (one percent of the monthly pay) by the employees of POSCO Group and its partners.

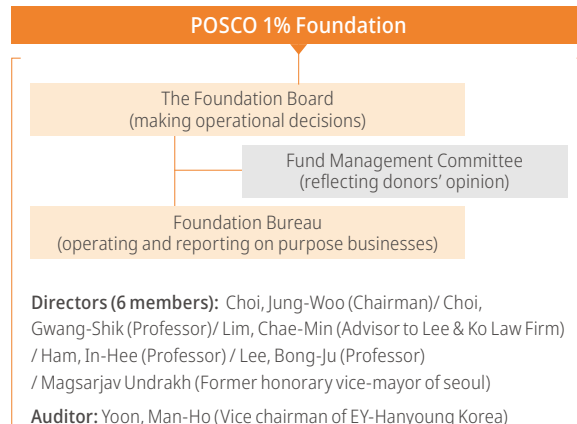
Number of donors	21,723 people as of December, 2018
Participating business partners	117 companies
Revenue	Total of 7.64 billion KRW (employee donation / matching grant / interest earnings etc.)



Scholarship Certificate Awarding Ceremony for the Chin Chin Rainbow Project



Briefing on the Do Dream Project



Major Projects Undertaken by the POSCO 1% Foundation

The foundation supports our next generation in building their self-sufficiency, builds steel welfare facilities, preserves traditional culture and implements other programs selected by our donors.

1 Support next-generations for their self-sufficiency	Do Dream beneficiaries: 78 people <ul style="list-style-type: none"> Support program for the future independence of children living in welfare centers who will reach an age of departure soon and leave their institution Provision of education funds to support them in obtaining vocational certifications and planning their career path, accompanied by the regular mentoring of employees. 	Chin Chin Rainbow Project beneficiaries: 69 people <ul style="list-style-type: none"> The project supports career planning programs for the youths from multicultural, defected North Korean and low-income families. It selects over 50 students each year across the country to receive scholarship support in various fields including IT, art, cosmetic service, music, cooking, sports and other desired areas. It provides a variety of programs year-round such as one-on-one mentoring, career counselling, volunteer activities and scholarship student reunion.
2 Build steel welfare facilities	Gwangyang Children's Shelter (structure: 1st floor-office, classrooms (200 m ²), 2nd floor-shelter (250 m ² for 14 people). <ul style="list-style-type: none"> The shelter is the first co-ed facility for abused children that provides living spaces, protection, medical care, education and other services. The shelter was built in collaboration with POSCO Steel Sheet and POSCO Humans using POSCO's Flow Coat technology. 	Chunglimdong Sharing Center (structure: 1st floor-cafeteria (330 m ²), 2nd floor- book café & study rooms (165 m ²). <ul style="list-style-type: none"> The center is built by POSCO Humans as a welfare facility for seniors, children and other residents in the community.
3 Preserve traditional culture	Little Concert for Our Heroes beneficiaries: 1,450 people <ul style="list-style-type: none"> 4 concerts were held in 2018 in Gwangyang, Incheon, Gumi and Iksan. The concert began since 2015 for the manufacturing workers in industrial complexes. It provides performing opportunities to new musicians while contributing to the popularization of traditional culture through its musical crossover with pop music. 	Yi-eum Exhibition: Connecting generations beneficiaries: 69,325 people <ul style="list-style-type: none"> Since 2015, Yi-Eum exhibitions have promoted the excellence of Korea's traditional metalworks through the artistic collaborations between the intangible cultural assets and contemporary metal artists. In 2018, a collaborative exhibition, "Steel Arts and Housing Culture of Korea," brought four holders of intangible cultural assets in metalworks, 16 contemporary metal artists and 2 craft studios to work together. The exhibition showed over 150 pieces of metalworks including farming tools and furniture.
4 Donor selected projects	Donor selected projects <ul style="list-style-type: none"> In 2018, 132 projects were supported by 18 companies. Various community-tailored social contribution programs were implemented near Pohang and Gwangyang Works. 	

POSCO TJ Park (Chungam) Foundation (1971-present)

- Since its inception as the 'Steel Scholarship Foundation' in 1971, the foundation has offered various scholarship programs such as POSCO TJ Park Prize, POSCO Asia Fellowship, POSCO Science Fellowship and POSCO Regional Scholarship.
- Scholarships are offered in Korea as well as in other Asian countries to extend the opportunities of advanced education to talented individuals in developing countries.

Beneficiaries: 493 people

Cumulative total beneficiaries: 11,334 people

Major Projects of POSCO TJ Park Foundation**POSCO TJ Park Prize**

This prize aims to commemorate the achievements of the founder, TJ Park, and uphold POSCO's founding spirit of "respect creativity, nurture talent, and promote philanthropy."

*Since 2006, 40 people have been awarded on 12 separate occasions.

POSCO Asia Fellowship

This is an academic and cultural exchange project designed to enhance mutual understanding among the Asian countries and promote a more positive view of Korea and POSCO.

Scholarship for Asian Students Studying in Korea
- Since 2005, 377 students from 29 countries.

Fostering Asia-specific experts
- Since 2006, 140 people from 22 countries.

Support for Asia-specific research on humanities and social sciences
- Since 2005, 306 projects from 15 countries.
(Korea: 214, Others: 67)

Scholarships for leading Asian universities
- Since 2005, 4,569 students from 33 universities in various countries

Quarterly literary journal 'ASIA'
- Since May 2005, 51 quarterly issues.

TJ Park Science Fellowship

The fellowship is offered each term to 30 selected graduates in Korea who are attending doctoral courses and/or working as postdoctoral researchers or young assistant professors in the fields of mathematics, physics, chemistry, and biology. It provides two to three years of support to these scholars in order to foster world-class scientists.

*Since 2009, supported 307 scholars over ten terms.

POSCO Regional Fellowship**POSCO Rising Star Scholarship**

The fellowship is offered to selected outstanding high school students in Pohang and Gwangyang to provide high school tuition assistance and special scholarships when they enter university.

*Since 2006, 853 students have been selected

POSCO Vision Scholarship

The scholarship is offered to hard-working students under disadvantaged circumstances to contribute to making our society a better place.

*Since 2006, 454 students have been selected

POSCO Educational Foundation (1971-present)

Established in 1971, the foundation aims to foster talented individuals with creative and ethical minds as responsible global citizens by providing education that is aligned from kindergartens to elementary/middle/high schools for the period of 13 years.

Beneficiaries: 2,441 people

Cumulative total beneficiaries: 122,195 people

Operational status of POSCO Educational Foundation**School Operation**

Total of 12 school
in Pohang, Gwangyang
and Incheon

- 2 kindergartens
- 4 elementary schools
- 2 middle schools
- 4 high schools

**Donations
(1971-2018)**

1,029.8 billion KRW

- Education and facility expenses: 956.6 billion KRW
- Profitable business fund: 68.8 billion KRW
- Employee welfare fund: 4.4 billion KRW

POSCO Smile Microcredit Bank

- The bank was established in 2009 to support the economic self-sufficiency of people with low-income, low credit and other financial vulnerabilities. The bank provides these individuals with business startup funds and management funds under its micro-credit programs without collateral.
- By facilitating the growth of social economy, it aims to help stabilize and improve the welfare of low-income people and contribute to balanced social growth.

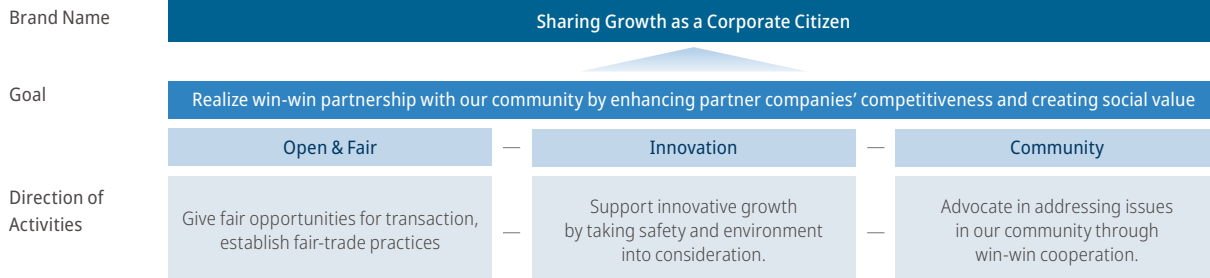
* 4,172 people received loans valued at 40.784 billion KRW.

SHARED GROWTH

SOCIETY ▼

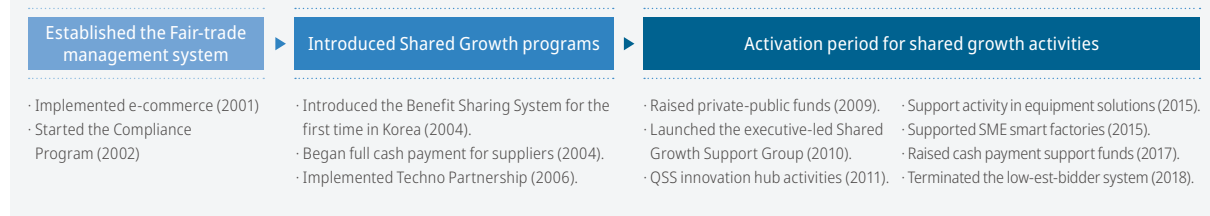
Policies and Programs for Shared Growth

Vision and Value System for Shared Growth



Shared Growth History

[Share Growth Began from the Day POSCO was Established]



1999	2005	2010	2013	Current
1999-2004 1999.02 · Early payment to suppliers during holiday seasons 2003.07 · Became the first Korean steel maker to adopt the SRM system 2004.07 · Became the first Korean company to adopt the Benefit Sharing System 2004.10 · Implemented network loans 2004.12 · Implemented whole cash payments for purchases from SMEs	2005-2007 2005.07 · Raised funds to support suppliers 2006.07 · Operated the patent consulting center 2006.08 · Transferred POSCO-owned patent technologies 2006.09 · Conducted Techno Partnership 2008-2009 2008.08 · Supported QSS innovation activities 2008.11 · Signed an agreement on raising special win-win cooperation funds 2008.12 · Signed an agreement on raising Public-Private joint R&D funds 2009.03 · Opened the "Recruitment Center for POSCO Partners" at Job World 2009.09 · Implemented network loans for POSCO Family companies	2010 2010.06 · Conducted Techno Partnership (tailored technical support for suppliers) 2010.09 · Reflected Shared Growth performance in executive evaluation 2010.10 · Published a guidebook introducing Shared Growth programs 2010.10 · Launched the executive-led Shared Growth Support Group 2011 2011.04 · Enacted the Code of Conduct for suppliers 2011.07 · Expanded the executive-led Shared Growth Support Group to affiliates 2011.10 · Held the Idea Market Place 2012 2012.07 · Established POSCO's unique Benefit Sharing model "FOCUS" 2012.09 · Won the Presidents' Award for Benefit Sharing	2013 2013.05 · Signed an agreement on voluntary practice of the Benefit Sharing System 2013.06 · Signed an agreement on promoting the Industrial Innovation Movement 2013.10 · Ran the POSCO WinC to promote fair trade between first and second tier suppliers 2014 2014.04 · Reformed the executive-led Shared Growth Support Group into a project-based operation system 2014.06 · Held open discussions between POSCO and suppliers 2014.10 · Opened the Shared Growth Portal site 2014.11 · Held the Partners' Day for Shared Growth 2015 2015.05 · Conducted facility solution support activities 2015.06 · Held the Shared Growth conference 2015.12 · Held the Partners' Day for Shared Growth 2018.04 · Signed an agreement on supporting SME smart factories 2018.10 · Won the grand prize at the Korea Shared Growth Awards	2016 2016.04 · Signed an Fair Trade agreement throughout the Group 2016.06 · Received the highest rating in Shared Growth index evaluation for four consecutive 2016.09 · Expanded support for SME smart factories 2016.11 · Held the Partners' Day for Shared Growth 2016.12 · Won the grand prize at the Korea Shared Growth Awards 2017 2017.09 · Improved the purchasing system, including the expansion of lower limit price bidding system. 2017.09 · Executed double-digit wage increases for the employees of partner companies 2017.11 · Expanded full cash payments to medium-sized companies and raised cash payment support funds 2017.12 · Held the Partners' Day for Shared Growth 2017.12 · Signed an agreement on the expansion of cash payments 2018 2018.04 · Terminated the lowest bidder wins system 2018.09 · Supported the nurturing of young talents and their employment and/or start-up 2018.10 · Signed an MOU to narrow the wage gap between large companies and SMEs 2018.11 · Held With POSCO Partners' Day for Shared Growth

Shared Growth

On the 50th anniversary of POSCO's establishment, we declared "Corporate Citizenship: Building a Better Future Together" as our new corporate vision and our plan to further advance our shared growth activities to fulfill this vision. In the rapidly changing business environment, it is necessary to join hands with SMEs to respond preemptively to such conditions based on a solid supply chain. Large companies are called upon to take stronger social responsibility, as their objectives go beyond just making profit.

POSCO strives to build a healthy industrial ecosystem where economic and social values are created in a virtuous circle. We believe undertaking shared growth activities together with our business partners to build a solid supply chain will make this possible. POSCO launched an organization that is solely responsible for providing support to SMEs in June 2005, and the Shared Growth Group under the Facilities and Materials Purchasing Office is currently implementing shared growth activities. Twenty shared growth programs in four sectors such as business stabilization support, technological innovation, nurturing venture companies and talents, and spreading the culture of shared growth are being implemented systematically, and we are actively pursuing programs to support not only first and second tier companies, but also other SMEs that we do not have trading relationships with.

POSCO's Shared Growth Program

Program structure

20 programs in four sectors

POSCO actively operates Shared Growth programs in all of its business areas that involve not only SMEs that we have transactions with, but also second and third-tier suppliers and companies we may trade with in the future.

Throughout the Supply Chain (Ecosystem's competitiveness)



Major Shared Growth Accomplishments in 2018



Supporting SMEs for Stable Management

Low-interest support funds

POSCO operates win-win cooperation funds from which SMEs can take loans at interest rates that are 1~2% lower than market rates. In 2018, we invested an additional KRW 100 billion to the funds to increase their value to KRW 516 billion, and we operated the funds with commercial banks to provide low-interest loans. In 2018, the funds provided loans worth KRW 483.8 billion to 333 of POSCO's partner companies.

Cash payment support funds

POSCO operates KRW 50 billion cash payment support funds to help first-tier suppliers make timely payments to second-tier companies. This helps first and second-tier companies in their fund operation and spreads the practice of making early cash payments.

Win-win payment system and POSCO WinC

POSCO introduced a win-win payment system to make sure that its first and second-tier suppliers can receive cash payments on their due date. This system enables suppliers to cash their payments even before their due date at a price as low as that of POSCO. We are also encouraging first and second-tier suppliers to proceed with cash payments through the POSCO WinC system.

Full cash payment for SMEs

To help our SME business partners do business in stable operating conditions, we have been making full cash payments to all our registered SMEs since 2004, twice a week, within three business days after delivery. In addition, during the holiday seasons when cash is most needed, we make payments everyday so that SMEs will have less issues with their cash flow. In November 2017, POSCO expanded the scope of full cash payments from small to mid-size companies.

Advance and interim payments for equipment purchase

In the event that SME partners have to invest an extended period of time in manufacturing equipment, POSCO pays advance and interim payments to help them maintain their financial liquidity. In addition to the equipment purchasing system that pays 20% of the total contractual amount in advance, POSCO introduced the interim payment system in 2010 to help SMEs with their operations and cash flow. Supplier companies who sign a contract exceeding KRW 100 million over a period of 180 days or longer are eligible for this system. Interim payments are made after half of the contract period has passed, within 30% of the total contractual amount. In 2018, KRW 151.9 billion (454 cases) was paid as advance, and KRW 24.5 billion (17 cases) as interim payment.

Full cash payment of transportation costs to delivery service companies

POSCO pays for transportation costs in cash to delivery service companies in order to encourage them to make cash payments to their subcontractors. We settle the invoice in the beginning of the following month of product delivery through full cash payments, and recommend transportation companies to pay their subcontractors within 30 days in cash as well. We check transportation company's compliance with this payment rule each quarter. In 2018, we made full cash payments worth KRW 188.9 billion for transportation costs.

Fair trade-type bidding system

In April 2018, POSCO terminated the "lowest bidder wins" system to prevent excessive competition among partner companies. The new "Fair trade-type bidding" system excludes bidders whose bids are too low (the lower price limit bidding method) and chooses the company whose tender is closest to market prices (market price bidding method). In addition, we introduced the "Total Cost of Ownership" that considers product's performance, maintenance costs, and lifetime in addition to bidding prices, to identify the most competitive bidder through comprehensive assessments. POSCO will continue to improve and advance its bidding system to support partner companies to do business under stable management conditions and invest for the future.

Global platform business

Based on our global network including the sales network, processing technology and processing centers, we establish joint ventures abroad with small and medium-sized component parts producers to help them tap into overseas markets and to create new demand for steel products. In 2018, we created seven joint ventures with four SMEs, creating USD 308.3 million worth of demand.

Support in opening overseas markets

POSCO uses its brand image, overseas network and infrastructure to support SMEs in opening new overseas markets and pursuing steady growth. POSCO makes it possible for partner companies to export as one of POSCO's overseas subsidiaries. In addition, we purchase products needed at our overseas subsidiaries from domestic partner companies in bulk, contributing to their sales volume. We encourage partner companies to participate in the establishment of our overseas subsidiaries, helping them to secure a sales base overseas.

Technological Innovation**Benefit Sharing**

The Benefit Sharing System aims to jointly conduct improvement activities and share the benefits with suppliers. It is recognized as an exemplary model of shared growth between large companies and SMEs. Partner companies can develop technology and increase their sales, while the purchasing party can secure quality improvement and enhanced competitiveness.

The Benefit Sharing System was introduced by POSCO in 2004 for the first time in Korea and has been promoted across the entire industries since 2012. As of March 2019, a total of 376 companies are operating the system. POSCO gives compensation worth 50% of the amount of benefits created through benefit sharing tasks, and provides diverse incentives including the signing of long-term contracts, awarding extra points for supplier SRM evaluation, and making joint patent applications. In 2018, KRW 24 billion was awarded to 420 completed projects.

Benefit Sharing Case Study

The blast furnace trough runner hot-air drying facility (Hwa Sung Tech Win)

Project details

Refractories, used to cover the passage of molten iron from the blast furnace, need to be dried to eliminate their moisture during the manufacturing process. While direct heat drying has been used instead of the highly time-consuming natural drying process, this resulted in manufacturing cost increases due to the ununiform quality of the drying process, the abrasion of refractories, and the large quantities of fuel consumed.



The refractory drying process was shifted to hot-air drying and its temperature discrepancies were reduced through the use of automatic temperature control technology, which led to the prevention of refractory abrasion and the reduction of manufacturing (fuel) costs (90% reduction in gas consumption)

Project result**Hwa Sung Tech Win**

Performance reward of KRW 107 million and supply deal worth KRW 777 million (will be applied to seven blast furnaces in Pohang Works' Blast Furnace No.2, No.3, and No.4)

POSCO

Annual cost saving of KRW 14.05 million (reduced cost in making the molten iron runner cover)



1 — [Before] Direct heat drying 2 — [Improved] Hot-air drying

Public-private joint investment for technology development

POSCO provides cash payment support to help SMEs undertake their R&D projects through the R&D funds raised in collaboration with the Ministry of SMEs and Startups. In case such projects generate successful outcomes, POSCO makes purchases from these SMEs for a determined period of time. An SME can receive up to KRW 1 billion within 75% of the total R&D expenses, reducing the financial burden of their R&D activities. For this, we spent the entire KRW 10 billion raised in 2008. Additional KRW 44.6 billion R&D funds were raised in December 2011 and are under operation currently. As of the end of 2018, we have supported a total of 68 SMEs' R&D projects.

Innovation support group

POSCO utilizes its human resource capacity and infrastructure to implement employee participation-based corporate citizenship activities. We will add new areas to our SME support activities currently under operation based on each department's field of expertise. When programs eligible for POSCO'S assistance are uploaded on the Shared Growth portal, SMEs can freely apply for the program they need.

Major Programs

Techno Partnership

2018 performance
18 companies
110 cases

Technological advisory groups composed of experts with PhDs from POSRI, RIST and POMIA help local materials suppliers solve technical difficulties and give them free access to testing equipment.

Technology Consulting for SMEs

2018 performance
37 cases

Internal and external specialists offer consulting service to SMEs to solve their weaknesses or challenging problems. In particular, we provide support in the areas of equipment, safety, energy and QSS to solve their issues and enhance their competitiveness together.

Solution Marketing

2018 performance
69 companies
85 cases

We help customers improve productivity and quality to enhance their value and grow together with POSCO. We provide support for technical and business issues across the whole process from steel procurement to final production.

Technology protection

The technology escrow system was designed to protect SMEs' intellectual assets such as technological know-how through the technology data escrow system. By depositing such assets in the Technology Escrow Center of the Large & Small Business Cooperation Foundation, partner companies' technology is protected, and the large company can secure a stable and safe supply of products and maintenance even if their SME partner company is closed. Since the introduction of this system in 2011, POSCO has signed 271 technology escrow agreements and paid an additional KRW 82 million as escrow commissions as of 2018.

To boost SMEs' technological competitiveness, POSCO offers a program that shares its patents through a website(www.steel-N.com) to allow SMEs to use them in production, and pays the entire administrative costs when applying for POSCO-SME co-applicant patents. If a company supplies products to POSCO by using POSCO's patents, we promote the company's patent utilization by exempting license fees. We also operate the "SME Patent Consulting Center" to offer consultation service on patents and intellectual property. In addition, we revised our work procedure to require SMEs to use a designated form that reflects legally-mandatory information, and we operate an electrical document system in order to protect SMEs' trade secrets.

QSS Innovation (Industrial innovation movement)

The industrial innovation movement is a consulting project across all economic sectors that aims to promote SMEs' management innovation and process improvement in order to enhance the productivity of the industrial ecosystem. POSCO started its unique innovation method named QSS and integrated it with the movement in 2013. As of July 2018, Stage One of the industrial innovation movement was carried out in 775 SMEs to support their innovation activities.

Smart Factory

POSCO operates the Smart Factory support program that integrates IT technologies into the production process to help SMEs build an intelligent and optimized factory. As of July 2018, we provided support to 101 companies through the Stage One Smart Factory support program. We plan to significantly expand this program, and link it to the QSS movement to maximize its benefits.

Supporting the construction of the Smart Factory

Innovation in productivity and reshaping the mind-set of the employees (Daesung MDI)

Project details

Inventory information for the silo's limestone was inaccurate and the visibility of production information was lacking.



A mobile monitoring system was created on silo level switch replacement and production information

Expected result

Improved information accuracy has made it easier to check the limestone inventory and has reduced accident risks.

—
The mobile system improved communication between production and sales and facilitated sales activities.

Fostering Venture Start-Ups and Talents

Supporting Jobs for Youths

In order to resolve youth unemployment, POSCO runs various programs to help SME (small and medium-sized enterprise) partners hire competent talents and to help youths land a decent job. POSCO became the first conglomerate to open an employment program for business partners in March 2009. We have been providing SMEs with information on talented individuals to help tackle youth unemployment and address SME's difficulty in recruiting workers. In 2018, 295 individuals were hired by 27 POSCO GROUP partners through this program. SME partners of the POSCO GROUP can join the employment website "Jobworld (www.ibkjob.co.kr/jw/)" as a member and post their job openings.

By hiring through Jobworld, an SME can benefit from lower commission fees to the Industrial Bank of Korea or lower interest rates on their bank loans (500,000 KRW per worker hired, up to 100 million KRW) and the free use of Jobworld's hiring and job finding site. Furthermore, POSCO assists partners in securing and training talents by operating an employment-aligned two-month education and training camp for job-seekers. In 2018, 112 individuals pre-trained by POSCO were hired by partners.

In 2018, POSCO also operated a large conglomerate-SME shared growth program on jobs, under which POSCO provided education and training allowances (400,000 KRW per month for up to two months). This led to the hiring of 35 individuals by POSCO partners.

Project to Support SME Education and Training

POSCO runs a national human resources consortium, where POSCO's own education facilities, workforce and systems are utilized to enhance the job skills of SME employees and to foster core talents. In 2018, 53,833 SME employees took part in this program. Meanwhile, POSCO also offers an education program called "PIUM" to senior management of outstanding partners, so that they may better respond to issues in the business management environment both at home and abroad and fosters their business mindset.

Expanding a Culture of Mutual Growth

Mutual Growth Council

For the mutual growth of first and second-tier partners, POSCO operates the PHP (POSCO Honored Partner) system. This system establishes a guideline for mutual growth between first and second-tier partners and runs a communication channel to foster mutual growth as part of our strenuous effort to spread the benefit of mutual growth.

SME Counseling Center

POSCO runs Sinmungo as a system to proactively receive and address complaints on inconveniences and difficulties that SMEs experience. Sinmungo is easily accessible through the Customer Support section on the top bar of POSCO's website (www.posco.com) and also through the counseling center for E-Procurement offered on the landing page of the e-commerce website, www.steel-n.com. Sinmungo consists of three parts: ethics (for reporting unethical practices), mutual growth (for SME counseling) and sales (for customer counseling), and complaints can be submitted by different category.

Sharing Our Welfare Facilities

In an effort to spread the corporate culture of shared growth and cooperation, POSCO makes its medical facilities available to partners free of charge and also shares its leisure facilities. Employees of partners can apply for the use of welfare facilities at the POSCO GROUP integrated portal system and use the facilities on a desired date.

Fair Trade Agreement

By signing fair trade agreements, POSCO and SMEs voluntarily comply with fair trade and shared growth regulations such as the subcontracting act and the fair trade act to pursue shared growth. In 2018, POSCO signed such agreements with 462 partners and has been engaging in mutual growth activities with these partners.

SHARED GROWTH PLANS IN 2019

Continued activities for shared growth with SMEs

Early cash payment to foster a stable business environment for SMEs and the operation of the fair trade-type bidding system

We will spread the best practice of “fair, timely payment” between large companies and their partner companies through early cash payments made to suppliers and by operating the “fair trade-type bidding” system. We will pay small and medium-sized companies twice a week in cash, and introduce the “Subcontracting win-win payment system” in order to reduce the risk of payment default between first and second-tier suppliers and to prevent wage delays.

We will also prevent excessive competition to offer practical assistance to partner companies by operating the fair trade-type bidding system.

Support for building POSCO-type Smart Factory to Help SMEs in their innovation and growth

POSCO has been providing support to SMEs in their management innovation and process improvement activities through QSS (Quick Six Sigma), which is POSCO's unique innovation program. We will support the establishment of the Smart Factory by investing KRW 20 billion in the next five years to help small and medium-size companies to adapt to the fourth industrial revolution age and to achieve innovation and growth.

As part of our activities as a corporate citizen, the “Innovation and Growth Support Group” will employ the competence and know-how of respective departments at POSCO to help partner companies to grow.

Vitalizing “Benefit Sharing” for value creation and the fair distribution of benefits between large companies and SMEs

POSCO will strengthen its benefit sharing program that was introduced in 2004 for the first time in Korea and has been recognized as a successful win-win cooperation model.

We will integrate the organizations involved in the Benefit Sharing Program to provide a one-stop service, and exempt companies that joined our program from receiving operational inspections so that they can easily participate. We will improve the practicality of this program by expanding benefits and lowering risks to encourage more active participation from our partner companies.

In addition, we will expand the program to include non-financial tasks such as safety and environment in order to create social values in the areas of disaster prevention and environment conservation.

ADDRESSING THE ISSUE OF LOW BIRTH RATE IN SOCIETY

SOCIETY ▾

As a corporate citizen, POSCO will actively partake in addressing one of the most challenging issues that our society faces today – low birth rates. The fertility rate of Korean women (in the fertile age group) in 2018 was 0.98, the lowest in the world. As the population shrinks due to low birth rates, this not only slows down our economic growth and the domestic market, but also leads to a greater social burden of supporting the elderly. Some also say that it will affect local community's sustainability which is the foundation of POSCO's existence. POSCO is thus approaching this issue at the corporate level to help address the low birth rate issue and to build "a society that provides a good environment for children to grow up in".

POSCO is taking an integrated approach in addressing this issue – within the company, in its local community, and throughout society. First, within the company, we start upgrading and adopting work/life balance policies and creating a family-friendly corporate culture. At the same time, we will develop the two cities of Pohang and Gwangyang as a model solution. Furthermore, we take the initiative to build social consensus on the need to address the issue of low birth rates and aging society.

Addressing the Low Birth Rate Issue

Within
POSCO

▼
Revise/expand programs that support maternity and childcare

Good company to raise children

Local Community
POSCO

▼
Upgrade the environment for childbirth and childcare in the cities of Pohang and Gwangyang

City that attracts young people

Throughout
Society

▼
Contribute to changing the social perception on low birth rates

A society that has solved the issue of low birth rates

POSCO's childbirth and childcare support system and program

We plan to advance the company's childbirth and childcare systems so that any POSCO member can better strike the work/life balance. POSCO has been providing comprehensive child care program for parenting employees. Some of the major policies include maternity leave of two years, reduced work hours during pregnancy and childcare, and flexible work hours. We plan to ensure that male employees can participate and take an active role in the maternity leave system. We will also directly address difficulties that may surface in marriage, childbirth and childcare so that employees will not hesitate when making their family plans, and thus playing a pioneering role in addressing the issue of low birth rates.

Improving the childbirth and childcare conditions in the local community

Pohang and Gwangyang serve as the two most important areas for solving the low birth rate issue. We are planning to make specific action plans that encompass the broad needs of the local community and contribute to improving the childcare infrastructure and the quality of life. For a start, we will build the "Childcare center at the Workplace" which is open to group employees as well as employees of the business partner companies. Most of our business partners are small-and-medium sized companies and rarely have childcare facilities. We hope to improve the welfare of the employees working at the Group subsidiaries and partner companies, enhance their competitiveness, contribute to increasing employment and birth rates, and enhance employees' satisfaction through the sharing such facilities.

Changing social perceptions about the low birth rate

POSCO believes that building public consensus in the society is the first step to address the issue of the low birth rate. In this regards, we plan to provide more varied opportunities for experts and the community members to engage with the public debate and discussions. POSCO can play an important role in promoting public-private cooperation to tackle the low birth rate-related issues and come up with the solutions. For our younger generations, we will also expand population education for elementary, middle, and high school students.



1 — Seoul POSCO Day Care Center

IDEA MARKET PLACE

SOCIETY ▾

POSCO Idea Market Place

POSCO has been running a program named IMP (Idea Market Place) to discover and foster venture companies since November 2011. The IMP plays a role as a business incubator and an angel investor. As a business incubator, the IMP fosters promising venture companies, and as an angel investor, it provides funding support to startups. To fulfill these roles, we provide venture companies with comprehensive support from the stage of idea creation to business model planning, investment, and growth management.

We select promising venture companies and startups through public contests. We then provide them with support through idea cultivation camps and mentoring with professionals. After completing these programs, they are given an opportunity to pitch their ideas and businesses to investors through IR events. The IMP also functions as a venture startup hub for the POSCO Family by discovering and fostering venture companies that are based on the seed technologies necessary in new businesses of POSCO and POSCO Family companies.

In 2018, IR events were held in Seoul and Pohang, where 23 startups had the chance to meet investors and showcase their prototypes. The six startups discovered and nurtured at the IMP were selected in the TIPS (Tech Incubator Program for Startups) sponsored by the Ministry of SMEs and Startups, and received R&D funding.

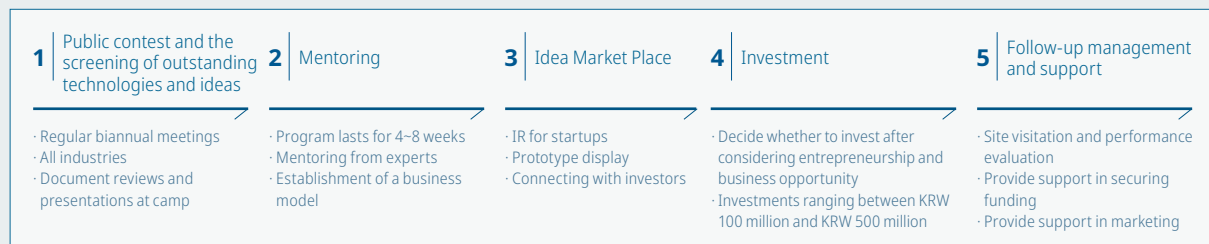


Total number of startups to receive support from the IMP

173

We are contributing to job creation and shared growth by nurturing venture companies, working in tandem with the government's job creation policy that was initiated in 2018. Starting with the new business idea contest in 2011, POSCO has held 16 IMP events. A total of 173 companies were nurtured by the IMP, and we made direct investments valued at KRW 14.2 billion in 87 companies.

POSCO Idea Market Place Operating Procedure



YOUTH EMPLOYMENT & START-UP SUPPORT

SOCIETY ✓






1 — Youth Employment & Start-Up Support

Creating jobs for young people is one of the top priorities of the Korean government, and POSCO strives to realize the vision “Society With POSCO” by implementing POSCO's unique employment and startup capacity-building program. We will create new training programs taking into account the difficult circumstances youths are facing in landing a job, the type of corporate training that is highly preferred, and POSCO's internal circumstances, to provide substantial assistance to youths in finding jobs and building startups.

Program Direction

We will open new training programs that will give direct assistance to youths preparing to find employment or begin a startup business. (1,100 trainees each year)

- 01** — Practical Employment Training to Increase Employment and Work Competence for Youths (800 trainees each year)
- 02** — AI / Big Data Academy for Cultivating Expert Human Resources in the Smart Technology Sector in the Era of the Fourth Industrial Revolution (200 trainees each year)
- 03** — Startup Incubating School that Helps Prospective Entrepreneurs to Prepare Thoroughly Prior to Building a Company (100 trainees each year)

	 Practical Employment Training	 AI / Big Data Academy for Youths	 Startup Incubating School
Purpose	Enhance the actual competitiveness of youths looking for employment	Cultivate experts in smart technology in the era of the Fourth Industrial Revolution.	Help prospective entrepreneurs prepare for a successful startup before building a company
Target	University (under)graduates	University (under)graduates	Youths and adults in their 40s
No. of Trainees	800 (30 groups) / year	200 (4 groups) / year	100 (4 groups) / year
Time/duration	From Nov. 2018 / 3-week camp	From Jan. 2019 / 3-month camp	From Mar. 2019 / 1-month camp
Location	POSCO Group University (Pohang, Gwangyang, Songdo).	POSTECH (Pohang)	POSCO Group University (Pohang, Gwangyang)
Benefits	Trainees receive KRW 500,000 in training compensation.	Extra points given during POSCO's recruitment process, opportunity to work as research intern at POSTECH (participants receive KRW 1 million / month in training compensation).	If an applicant passes the business feasibility evaluation, he/she can enter the POSCO Venture Valley (Office space is provided along with the opportunity to get funding from the POSCO Fund).



03

PEOPLE WITH POSCO

We will build a culture of trust and creativity together

We will build an environment in which all POSCO members can participate in our corporate citizenship activities, and an organizational atmosphere where everyone can share their brilliant and creative ideas through open communication. A passionate corporate culture founded on trust and consensus, a lively organizational culture, a horizontal culture with no discrimination – This is the POSCO culture that we aim for.

SAFETY AND HEALTH

PEOPLE ▾

Safety

Safety at POSCO

POSCO places employee-led and self-directed safety as its top management priority and strives to establish the world's leading safety culture. In April, 2018, POSCO celebrated its 50th anniversary and stated its new core values, highlighting the utmost importance of safety.

Safety Strategy

Safety / Health Strategy KPI / Goal

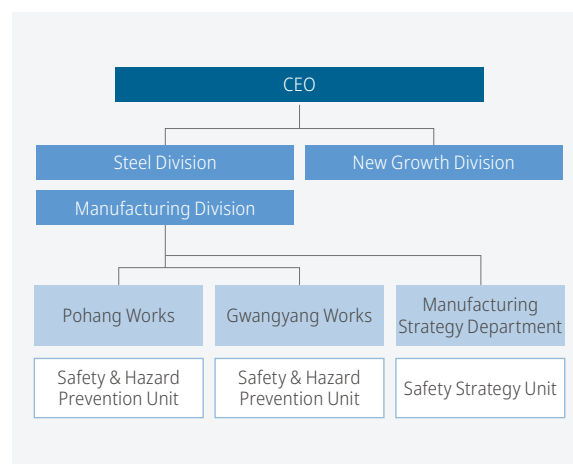
(included: 2019 major action plans for safety)



Safety System

In order to put POSCO's safety-first value into practice, the safety strategy unit under the manufacturing division implements the company-wide Total Safety Solution, which includes the Safety Control Tower, safety inspections and consultations. It also carries out the POSCO Family Safety Pledge Event hosted by the CEO at the beginning of each year. The Safety & Hazard Prevention Teams are under operation in each of our Steelworks in Pohang and Gwangyang to plan and execute steel safety measures, including offering employee safety training, patrolling vulnerable sites and responding to government (ministry of employment and labor etc.) agencies.

Safety Strategy & Measurement System

Safety Score¹⁾: 2016-2018 (Accident Rate)

No. of Accidents

(Unit: No. of persons, () indicates the number of the injured from fatal hazards²⁾)

Category	2016	2017	2018
POSCO	11(1)	3(0)	3(0)
Contractors	6(3)	4(0)	10(5)
Total	17(4)	7(0)	13(5)

Lost Time Injury Frequency Rate³⁾

Category	2016	2017	2018
POSCO	0.28	0.09	0.08
Contractors	0.16	0.11	0.19
Total	0.22	0.10	0.13

Accident Rate⁴⁾

Category	2016	2017	2018
POSCO	0.07	0.02	0.02
Contractors	0.04	0.03	0.07
Total	0.06	0.02	0.04

1) Covers 100% of the domestic sites

2) Fatal hazard injuries

① Resulted in one or more death

② simultaneously injured 2 or more people requiring over 3 months of rehabilitation

③ simultaneously resulted 10 or more injured, or work-related patients

3) Lost-time injury frequency rate = (number of lost-time injuries / total working hours in a year) X 1 million hours

4) Accident Rate = (No. of accident victims/No. of workers) x 100

* total work hours in a year (2018 standard): total (75,092,171 hours), POSCO (38,077,516 hours), Contractors (36,972,333 hours)

* Based on 200,000 work hours set by OSHA, 2018's LTIFR (Lost Time Injury Frequency Rate): total (0.03), direct operation (0.02), partners (0.04)

KOSHA 18001, OHSAS 18001

POSCO has been certified under the KOSHA18001 and OHSAS18001 health and safety management system standards. This upholds POSCO's autonomous and systemic management of all activities promoting safety & health. On the basis of the PDCA Cycle, we continue our systematic applications of the safety-first management principle and other safety measures to improve the level of our safety & health performance.

Certification Status

KOSHA 18001

- Pohang Works
Mar. 19, 2019
- Gwangyang Works
Feb. 21, 2018

OHSAS 18001

- Pohang Works
Apr. 14, 2017
- Gwangyang Works
Jun. 5, 2018

2018 Prevention Measures of Fatal Accidents

After the occurrence of a fatal accident in January 2018, safety education was provided to all employees as well as our business partners. Since July of 2018, in all of our steelworks, we have completed corrective measures on those sites operated under similar work conditions to prevent the recurrence of major injuries. In addition, company-wide improvements are being carried out in eight areas including core value, organization, human resources and safety budget. These measures aim to further raise the bar on our safety performance. Also, POSCO's new core values placing the highest value on safety were announced. Safety-centered facility upgrades have been carried out to address suffocation, fire explosion, falling and other vulnerabilities that are prone to fatal accidents. To strengthen the autonomy and accountability of safety practices, we have reinforced the safety management system across our head office and steelworks. We also appointed outside experts while establishing a system to develop internal expertise and competence. In order to promote the safety of all workers at all POSCO sites, reinforcement of the safety management structure and related staffing has been carried out with our business partners. We also have emphasized our commitment to strong safety-related communication through the coordination committee. Furthermore, Smart Safety has been implemented company-wide, and our safety budget was increased to ensure investment in safety-focused facility designs, process improvements and proactive measures to prevent man-made hazards.

2018 Company-wide Safety Training

Category	Direct Operation	Business Partner	2018
Pohang works	7,314	6,899	28,866
Gwangyang works	7,651	7,002	

Safety Education & Training

To raise safety consciousness among employees and minimize safety risks, legally-mandatory safety education is provided each year. This education is given to the employees of the directly-operated departments and partner companies. We also offer educational programs tailored to develop the safety competency required for each job level. To further our efforts in making POSCO a safe and healthy workplace, Felt-leadership is implemented among leaders. In addition, administrative supervisors receive training to enhance their competency for on-site safety management. We also educate general employees on basic safety regulations to raise safety awareness and protect them against safety risks. In October 2011, POSCO established the Global Safety Center equipped with an exhibition hall, a 4D theater and an experience lab as an educational platform to combine theory with practice. The center also offers safety education and tours to the general public including students. In 2017, the center introduced a VR (virtual reality) experience program to increase the effectiveness of such education.

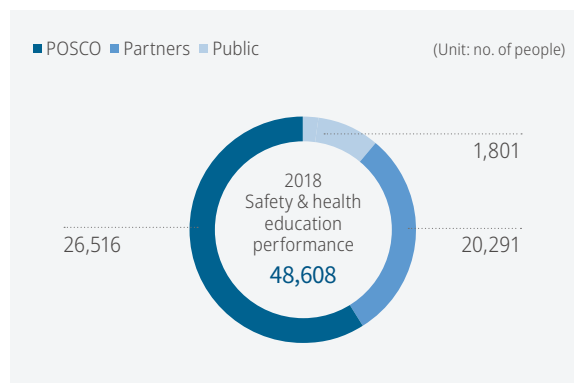
Education tailored for respective job levels



Safety Experience Kiosk, Gwangyang Works

2018 Safety & Health Education Performance

		POSCO	Contractor	Public
Pohang Works	Education tailored to different job levels	16,183	-	-
	Safety experience education	3,364	-	-
	Partner education	-	11,517	-
	Others	-	-	582
	Total	19,547	11,517	582
Gwangyang Works	Education tailored to different job levels	386	-	-
	Safety experience education	6,583	-	-
	Partner education	-	8,774	-
	Others	-	-	1,219
	Total	6,969	8,774	1,219
Total		26,516	20,291	1,801



POSCO Family Safety Management Awards

Since 2010, POSCO Safety Management Awards have been given to divisions and subsidiary companies for their contributions to the safety culture and respect for humans. One division and one company from each Steelworks (Pohang and Gwangyang) are selected, and one division within POSCO group and one overseas production subsidiary are also awarded each.

2018 Safety Management Awards Performance

Category	Name of the division / subsidiary company / corporation
POSCO (direct operation)	Pohang Works: the cold-rolled plating factory
	Gwangyang Works: the central repair section, facility & technology division
Business partners	Pohang: Sun-an
	Gwangyang: AERIX
Group company	SNNC Production Facilities
Oversea operation	POSCO-Maharashtra

Occupational Safety and Health Committee

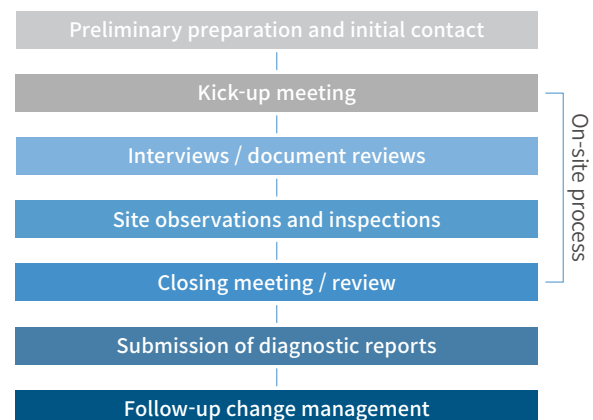
The Occupational Safety and Health Committee is launched in conjunction with our company-wide Labor Management Council. The committee is renewed every three years, and the seventh Occupational Health and Safety Committee was under operation as of 2018. The committee is set up at our Pohang and Gwangyang Steelworks and at the Technical Research Institute. Chaired by the heads of the steelworks and the research institute, the committee consists of eight members from management and eight members from labor, and regularly meets every quarter at the request of the chairmen to deliberate and decide on the set agenda items. Major agenda items include health and safety standards, the establishment of occupational injury prevention plans, and employee feedback on safety issues.

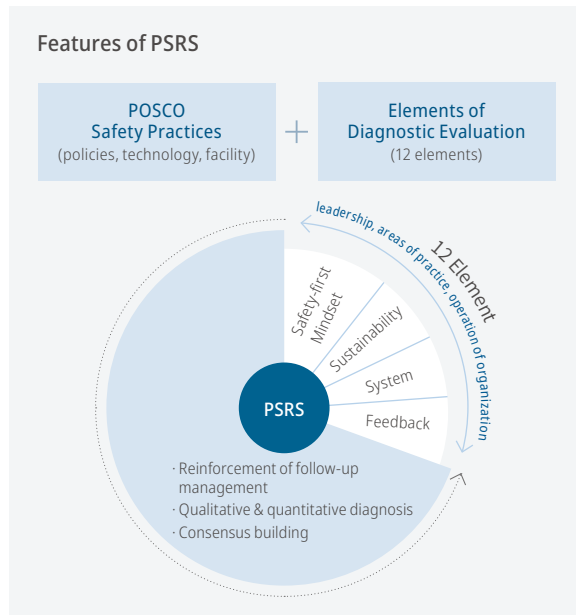
PSRS (POSCO Safety Rating System)

Safety Diagnosis Consultation

Based on safety management expertise, POSCO operates the Safety Rating System(PSRS), a safety diagnosis tool to quantitatively evaluate the level of its safety status in the areas of leadership, organization and practice. The PSRS process begins with establishing a diagnosis plan and an execution team. Relevant data is then reviewed prior to the diagnosis. As its next step, surveys, interviews and site diagnoses are conducted on 12 elements. This is then followed by encoding of the data onto the Bradley Curve to identify our current status of safety performance. Evaluation results are used as the basis in practicing change management and performing periodic reassessments in order to continuously elevate the level of our safety.

PSRS Diagnostic Process





ILS (Isolation Locking System)

Since 2008, the full implementation of ILS has taken place at POSCO. ILS serves as an effective practice of eliminating the fundamental causes of accidents. This practice involves shutting down energy sources while controlling access to the facility under operation.

There are two types of ILS: ILS during stop, and ILS during operation. The former shuts down the energy source to block, isolate and lock the facility under operation in order to ensure that the facility does not resume operation unexpectedly during maintenance or repair. The latter classifies facilities based on their risk level to manage and control the access of workers accordingly. For instance, a level 1 facility automatically stops its operation upon opening of its access door to ensure the safety of the worker who is in contact with the facility.

In order to secure worker safety and ease the process of facility inspections, model factories have been assigned in both Pohang and Gwangyang Works. These factories manage the risk of accidents by eliminating double-layered safety enclosure and taking other measures. Our effort to secure workplace safety extends beyond POSCO Group. We have established ILS for our business partners, offering education tailored to each company and monitoring the operational status of ILS to provide directions for improvement.

POSCO Safety Slogan

To stimulate the safety-first spirit, POSCO created its own safety slogan which is recited in meetings and company events.

Safety Slogan

We acknowledge that safety is the highest value in exercising our respect for humans.
We strive to ensure the safety of each other with care and the adoption of safe practices
Through this, we pursue a happy livelihood together.


(clapping three times) 🖐️🖐️🖐️

10 Iron Safety Rules & Co-worker Love Card

POSCO has enacted 10 Iron Safety Rules to be abided by at worksites in order to prevent accidents. Violations of these rules are followed by a supervisor's issuing of the 'co-worker love card(-SIR),' while safe behaviors are awarded with compliment cards. When a worker receives more than two SIR cards a year, a warning from the departmental head follows. If three or more cards are issued, the employee is summoned by the personnel committee which is viewed as a serious measure. All employees of POSCO and our business partners are strongly recommended to follow the 10 Iron Safety Rules.

10 Iron Safety Rules

- ① Wear safety gears (goggles etc.)
- ② Use handrails while using stairs
- ③ Wear seatbelts on all seats of vehicles
- ④ Stop at crossings and observe speed limits
- ⑤ Do not take off safety gears arbitrarily
- ⑥ Confirm indications before and during TBM work
- ⑦ Wear seatbelt while working in an elevated setting
- ⑧ Do not arbitrarily approach facilities under operation
- ⑨ Conduct power shutdown and voltage detection prior to electrical work
- ⑩ Indicate the level of oxygen and toxic gas in enclosed spaces

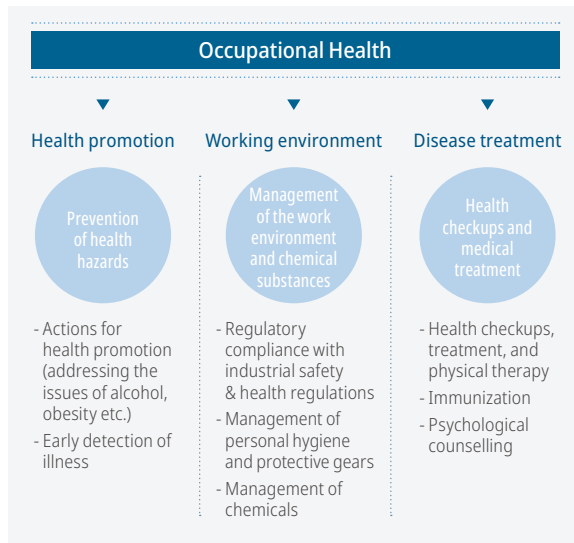


Smart Safety

POSCO carries out wide-ranging endeavors to prevent accidents and safety hazards. In particular, we implement 'Smart Safety' with new cutting-edge technology. Smart Safety aims to change the paradigm of safety practices by reducing accidents caused by worker's unsafe behaviors and enabling proactive response to potential dangers. We also host the Smart Safety Idea Contest among all employees and embrace worthwhile ideas (ex. Smart Safety Helmet) across the company as our commitment to establishing a safe workplace with zero injury.

Health

POSCO's Health Promotion Center at Gwangyang Works has been in operation to put our belief "Healthy Employees for a Healthy Company" into practice. We also operate our own affiliated clinic, the work environment assessment institute and the specialized health inspection institute within the Health Promotion Center.



Health Promotion

POSCO carries out activities to promote healthy practices such as smoking cessation, responsible alcohol consumption, obesity management or low-sodium diet. Our responsible drinking campaign is geared toward the health of our employees and their family life. At Pohang Works, the campaign entails 'no passing drinking glasses', 'no coerced drinking' and 'practice 123,' while the '2-2-2 campaign' takes place at Gwangyang Works. The culture of corporate dining which previously had been mostly drinking is now changing with a greater variety including gastro ventures, sports & cultural events. In Pohang, various obesity management programs are being implemented including the '8-week Health Up Project' involving the Walk for Health Campaign, the development of healthy meal plans, and riding bicycles. Our Seoul Office provides comprehensive support for fundamental improvement of employees' health through the 'Proud & Confident Health Up Program.' The program includes medical counseling, prescribed exercise, and dietary management. In addition, considering the high sodium content found in Korean diets which increases the risk of high blood pressure, obesity and other illnesses, POSCO launches low sodium diet campaigns by reducing the use of salt for the meals served in the company cafeteria.

- 1) 'Practice 123': for 1 week / less than 2 times / drink less than 3 glasses at a time
 2) 2-2-2 campaign: no more than 2 hours, 1/2 glass and 2 toasts at a company dinner

Management of Occupational Hygiene

POSCO is committed to creating a pleasant work environment and ensuring the health of its employees. As part of our various efforts to create a healthier workplace, we have established measures to reduce harmful substances, prohibit the use of carcinogenic agents, manage local ventilation systems and reduce worker exposure to potential hazards. We also work closely with the manufacturers of our safety gear to address any functioning problems and make improvements in order to ensure the hygiene and safety of our workplace. We have developed and implemented the 'Hearing Protection Program' and the 'Respiratory Protection Program' across those sites vulnerable to sound and dust pollution. The 'Healthy Work Program for Enclosed Areas' is also in place to prevent suffocation and satisfy industrial sanitary standards. We provide the Material Safety Data Sheet (MSDS) in compliance with GHS (Globally Harmonized System of Classification and Labelling of Chemicals) guidelines, to reinforce the proper use of chemicals. Workplace safety is also ensured by conducting asbestos tests prior to work, especially when demolishing buildings and replacing pipes.

Stress Management and Counseling

POSCO has been offering counseling services at Pohang & Gwangyang Works as well as the Seoul Office to promote the mental health and happiness of employees. Our employees and their families can make reservations to use these services through various channels such as visitation, phone, email and others. Using a wide range of techniques, our counseling center provides one-on-one counseling, group sessions, in-depth psychiatric counseling, and treatment in alignment with affiliated external clinics. All sessions are conducted confidentially under the supervision of professional psychological counsellors. To prevent the unstable behavior of workers while at work, POSCO also offers safety-focused counseling and education sessions as well as work stress prevention training.

Psychological Counseling Status

(Unit: No. of cases)

Category	2016	2017	2018
Pohang Works	767	901	707
Gwangyang Works	529	588	709
Seoul Office	850	668	401



Pohang Health Promotion Center



Gwangyang Health Promotion Center



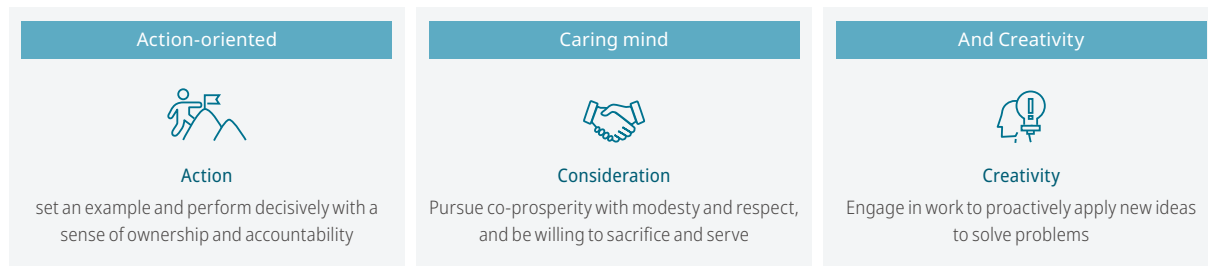
Seoul Health Promotion Center

RECRUITMENT

PEOPLE ▾

Recruitment / Employee Status

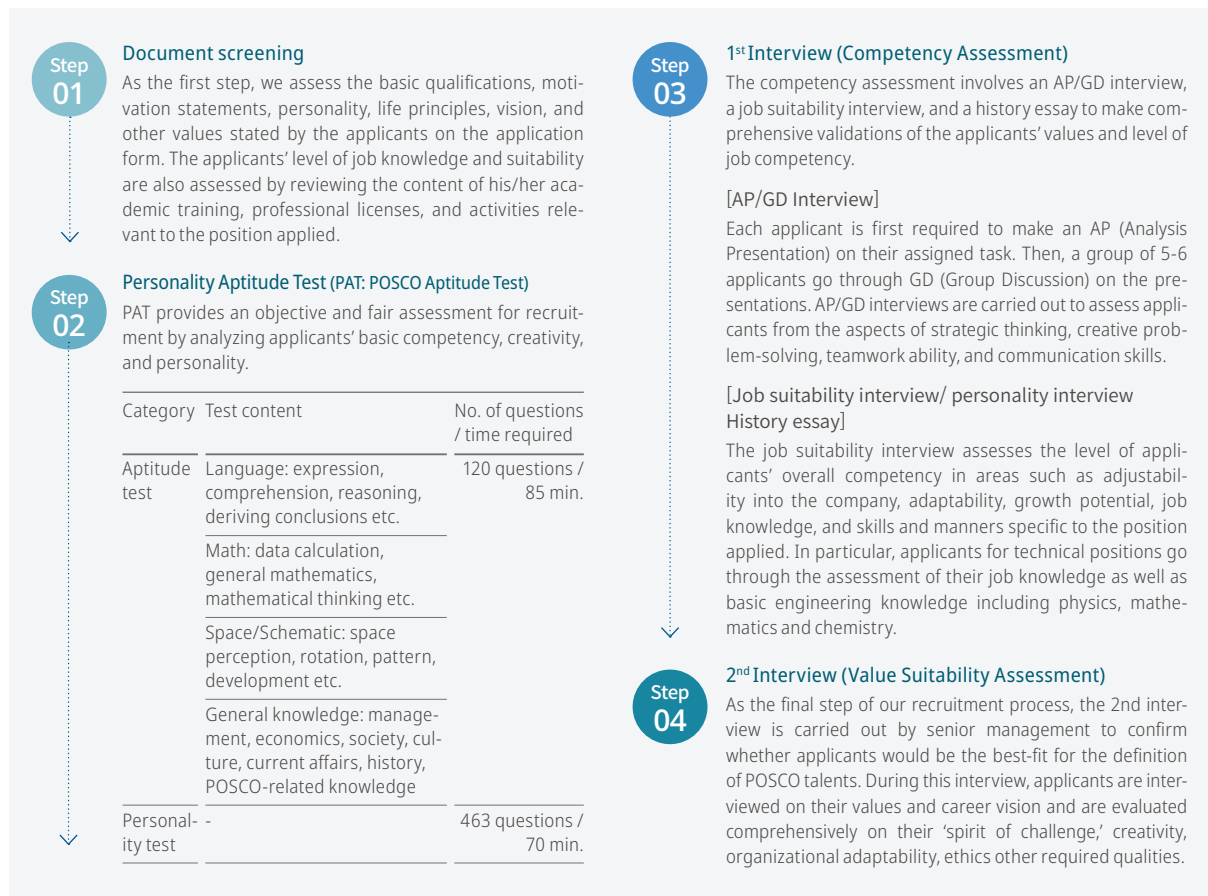
POSCO Talents



Recruitment Process

POSCO has implemented the 'Systematic Screening Method,' an effective tool for recruiting talents, since 2003, in order to make accurate assessments of candidates' competencies and select the best-fit for the company. The Systematic Screening Method minimizes discrepancies in the decisions made by assessors through the use of well-organized interview procedures and assessment criteria throughout the recruitment process. POSCO's recruitment process

generally involves document screening, personality aptitude test, competence assessment, and value suitability assessment. Starting from 2019, we have extended the recruitment interview period and given precedence to discharged military officers and top-performing social contributors to recruit talented individuals who fit our definition of corporate citizenship. The recruitment process below describes our standard procedure of hiring new employees.



Employee Statistics

Employee Data		(Unit: persons)		
Category		2016	2017	2018
Total No. of employees		16,957	17,055	17,150
Employment Type	Regular positions	16,756	16,885	16,899
	Contract positions	201	170	251
Gender-based	Male	16,106	16,145	16,301
	Female	851	910	849
Age-based	Under 30	2,590	2,614	2,638
	30 and older & under 55	12,130	11,645	11,299
	55 and older	2,237	2,796	3,213
	Pohang	8,162	8,186	8,269
Region-based	Gwangyang (including Sooncheon)	6,662	6,846	6,946
	Seoul (including Songdo)	1,982	1,883	1,809
	Overseas	151	140	126

Female Employees		(Unit: %)		
Category		2016	2017	2018
Ratio of female employees ¹⁾		5.0	5.3	5.0
Ratio of female BOD members		0	0	0
Ratio of female executives		1.0	1.1	1.1
Ratio of female managers ²⁾		12.6	13.5	13.4
Ratio of female junior managers ³⁾		23.7	25	25

1) Ratio of female employees against the total number of employees
2) Ratio of female managers against the total number employees and executives in manager or higher positions
3) Ratio of female junior managers against the total number of employees in junior manager positions

Employees with Disabilities		(Unit: persons)		
Category		2016	2017	2018
Ratio of employees with disabilities (%) ¹⁾		2.7	2.8	2.8
	POSCO (persons)	238	245	244
	POSCO HUMANS (persons) ²⁾	239	243	251

1) Ratio of employees with disabilities was calculated based on the number of regular workers at POSCO and POSCO HUMANS
2) Standard workplace for the disabled

Turnover & Retirement		2016	2017	2018
Category				
Total No. of turnovers (persons)		463	267	659
Retirement (persons)		-	-	356
Turnover rate (%)		2.7	1.5	3.8
Voluntary turnover rate (%)		2.7	1.5	1.5

Years of Service		(Unit: years)		
Category		2016	2017	2018
Average years of service		19	19.8	19.9

Childbirth / Childcare		2016	2017	2018
Category				
No. of employees who took maternity (childbirth) leave (persons)	Total	642	581	529
	Male	78	70	58
	Female	564	511	471
Rate of returning to job after maternity leave (%)		100	100	100
No. of employees who took parental (childcare) leave (persons)	Total	83	94	98
	Male	17	14	24
	Female	66	80	74
Rate of returning to job after parental leave (%)		98.5	87.7	95.1

TALENT CULTIVATION

PEOPLE ▾

POSCO Group University is fully committed to assisting all POSCO Group employees in building their capacity to realize POSCO's management philosophy, 'Corporate citizenship: Building a Better Future Together.' In 2019, supporting POSCO's growth into the global No. 1 company, our aim is to ensure that all POSCO Citizens are armed with POSCO values and philosophy. We will also provide support to promote their technological and professional competencies.

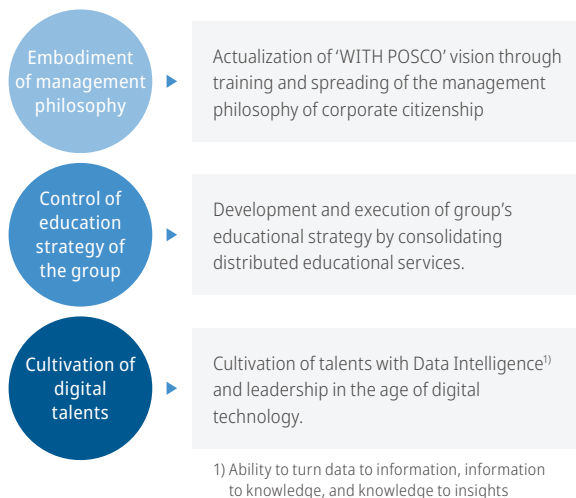
Talent Cultivation Policy / Strategy

Main strategy

Cultivation of POSCO talents for building a better future together



POSCO Group University's main role



Global Leadership Center

The Global Leadership Center has developed WPM (With POSCO Mindset) training materials and applied them across 27 training programs including programs for new recruits and newly promoted employees.

New Employee Program

The New Employee Program provides systematic training based on POSCO values and philosophy. It aims to strengthen the character and competency of new employees, and cultivate them to develop potential leadership for the future growth of the company. Reflecting the traits of the millennials, the program includes game-like activities that require trainees to put POSCO's management philosophy into practice. It also enhances their professional growth and competency through introductory training, onboarding training, and field rotation training. Their acquired knowledge, skills and perspectives are measured through learning assessments and behavior assessments.

Employee Career Development Program

The Employee Career Development Program includes the Executive Development Program (EDP) for executive candidates, and the Junior Executive Development Program (JEDP) for junior executive candidates. EDP is carried out in the frame of small-scale and intensive training. It supports candidates to enhance their management insights through POSCO Learning Project (PLP), which is also linked with strategic directions. JEDP provides training tailored to the specific needs of outstanding talents from each company within the group. The program is comprised of leadership assessments, business knowledge (strategy & finance) assessments and feedback.

Data-based Automatic Nomination System

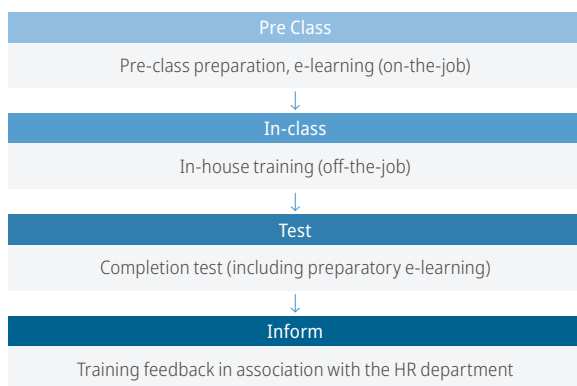
In the 2nd half of 2018, we established an Automatic Nomination System designed to automatically recommend most optimal candidates for specific positions on the basis of data with an aim to promote the fairness and objectivity of our HR operations. Our conventional appointment review system did not articulate the required experiences and qualifications of candidate employees, and this resulted in internal/external misunderstanding that appointments were made based on the subjective judgment made by incumbent employees and the HR department as well as in unjustified arguments that HR decisions were not made in a fair manner.

This new system identifies the best possible candidates by quantifying their experiences and qualifications (ranking and job fitness) through data mining. HR data of our top performing employees were analyzed to identify their common qualities, and this helped us define the ideal employee profile for respective job positions. It is based on this profile data that the Automatic Nomination System recommends candidates who best fit specific positions. This system has been used since the 2nd half of 2018 in making appointment decisions, and our 2019 plan is to develop a new 'nomination system for overseas subsidiaries' to extend the scope of this system globally so that it can be used in reviewing the qualifications of expatriate candidates.

Newly Promoted Executive Program

To ensure that newly promoted employees successfully fulfill their new role, the curriculum of this program focuses on the roles and responsibilities according to the level of their positions. The program aims to promote the spirit of taking the initiative and leading by example with respect to POSCO's management philosophy and talent profile. In 2018, the method of Blended Learning has been implemented broadly to increase the efficacy of this program. Blended Learning provides trainees with personalized e-learning to prepare them for in-class group discussions. The program also reinforces the application of trainees' executive capabilities by having them set their personalized 'Action Plan.' Action Plan is a three stage (measuring behaviors) assessment based on Kirkpatrick's model for assessing the efficacy of learning. Trainees are evaluated by their superiors and subordinates for the implementation of their Action Plan that they established three months ago.

Blended Learning (B/L) Process



3 Stage (3A) Assessment of Action Plan

Awareness	Alignment	Action
① Establishing values and consensus	② Broadening / internalizing perspectives	③ Putting into practice / feedforward
e-learning Value establishment and enrichment of loyalty	In-house training Pledge to practice with a sense of ownership	Follow-up Evaluation of three-month practice and mentoring

Global Program

POSCO's global education is offered through the two-track approach of an expatriate program and a locally-hired employee program. The expatriate program includes training for the head of overseas subsidiaries who is held responsible for the overall management of overseas operation. It also provides training for expatriate employees representing POSCO abroad through

their professional activities. The expatriate program is divided by assignment period for employees prior to their assignment, employees working abroad for two years, and employees who completed their expatriate assignment. The locally-hired employee program is carried out by bringing core personnel to Korea for training. In particular, the objective of new department head or team manager training is to make a head start for nurturing them into global talents. Its curriculum is based on Blended Learning entailing pre-class, in-class and follow-up processes. Furthermore, globally standardized training materials (POSCO G-TaLK) have been developed to support overseas subsidiaries with their independently-conducted training on POSCO values and leadership skills for locally-hired employees.

e-learning

At POSCO, e-learning takes place for all employees across the Group. In 2018, POSCuit (e-platform for micro learning) was launched to stimulate the e-learning culture. We also reinforced the online learning system by introducing 'chat-bot' for online counselling. The curriculum of e-learning has been developed with an objective to spread POSCO's renewed management philosophy among employees. It is also designed to encourage them to practice the spirit of 'With POSCO' based on POSCO corporate citizenship. The curriculum will be translated into 6 languages and be implemented in overseas subsidiaries. In addition, to support self-directed learning of our employees, we have created POSCO's special MOOC webpage with links to 200 recommended contents chosen from edX, K-MOOC and other lectures provided by global leading universities.

Digital Transformation Program

From 2017 to 2018, all POSCO employees across the Group were required to complete basic training on Artificial Intelligence (AI) to sharpen their competency in the age of Industry 4.0. In 2019, this basic training has been transferred to our e-learning program to support more sustainable learning. A 3-Step 'DT business practice program' has also been added in order to focus on training AI professionals.

3 Step DT Business Practice Program

Level 3 Intermediate II	▶ Provide solution and coaching for field assignment Field assignment practice, advanced AI / Big data
Level 2 Intermediate I	▶ Able to perform AI tasks independently AI / Big data field practice, theory of Design Thinking, entrepreneurship etc.
Level 1 Beginner	▶ Understand basic capacity through data analysis R statistics / introduction to python, theory of problem solving

Innovative Technology Training Center

TL Certification training

POSCO's field-oriented training system effectively enhances the competency of workers belonging to the job group E. As its first step, Technician Level (TL) certification training is carried out for field workers at POSCO's production sites. This on-the-job training facilitates a systematic transfer of technical skills between senior and junior workers as it aims to reinforce their on-site technical competency. Blended Learning process will be implemented in order to minimize the burden imposed on the site while maintenance workers take their leave for training. It will support trainees to learn theoretical aspects through online lectures as pre-class learning.

Facility Maintenance Specialist Development Program

Since 2017, the facility maintenance specialist development program has been in operation to establish a systematic transfer of on-site maintenance technology. The objective of the program is to develop facility maintenance specialists and prepare for the large-scale retirement of senior maintenance employees. In 2019, basic training for facility management was introduced to newly-hired maintenance workers in the job group E. This new training program supports our masterplan to establish our next-generation facility management along with our Jr. Master, and Master program for facility management.

Intergenerational / Interorganizational Communication Program

POSCO's 'Talk Talk Camp' promotes barrier-free communication between the older generation and the millennials to build a creative and innovative organizational culture. Both young employees (under 6 years of service) and employees in supervisory positions participate in the camp at the same time. The Empathy Talk, conflict resolution roleplays, and other activities of the camp are designed to engage employees in building intergenerational trust and empathy. The Empathy-plus Workshop is the one and only unit-based function and its operation principle is founded on the culture of trust. The workshop utilizes a mobile tool for the diagnosis of organizational culture to identify the perspective gap among employees. The identified issues are addressed for improvement by drawing on the value of empathy, our code of conduct, and action plans.

'100 Years Together' / New Road With POSCO Program

POSCO carries out various education and consulting programs for client companies, suppliers, stakeholders as well as small and medium-sized businesses (SMBs). The client company program, which was launched in 2015, broadened its service to include supplier companies in 2019. The renewed and expanded program will be in operation under its new title, '100 Years Together With Posco.' The program is centered on stimulating communication and promoting better knowledge of POSCO among our clients and suppliers.

POSCO also supports SMBs with 'QSS Innovation Activities,' which aim to raise their employee awareness for improving organizational culture and strengthen business competitiveness by improving the work environment. The 'New Road With POSCO' program specifically intends to enhance the global competitiveness of our client companies with overseas presence in the auto parts industry. The program addresses such topics as the global environment based on regions, overseas expansion strategy for the auto parts market, new smart factory technology, and others focused on global competitiveness.

POSCO Corporate Citizenship Culture Concert

POSCO endeavors to support an enriched and happy life for the local residents of Pohang and Gwangyang. In 2019, POSCO will carry out 'POSCO Corporate Citizenship Culture Concert,' as wide-ranging lecture series and events to provide quality cultural content in the community. This quarterly concert will take place in each region, involving lectures and events with various themes such as communication, parenthood, arts, and health.

POSCO Junior Character Education

In 2018, POSCO's Junior Creativity Program was offered to stimulate young minds in local elementary schools with creativity, and this was well-received by the community. In 2019, the POSCO Junior Character Education program has been introduced to encourage children to understand core ethical values and civic virtues for self and others. The program teaches sharing gratitude, courtesy, and the importance of communication and collaboration. It is carried out in fun and engaging game format and has received positive feedback from children.

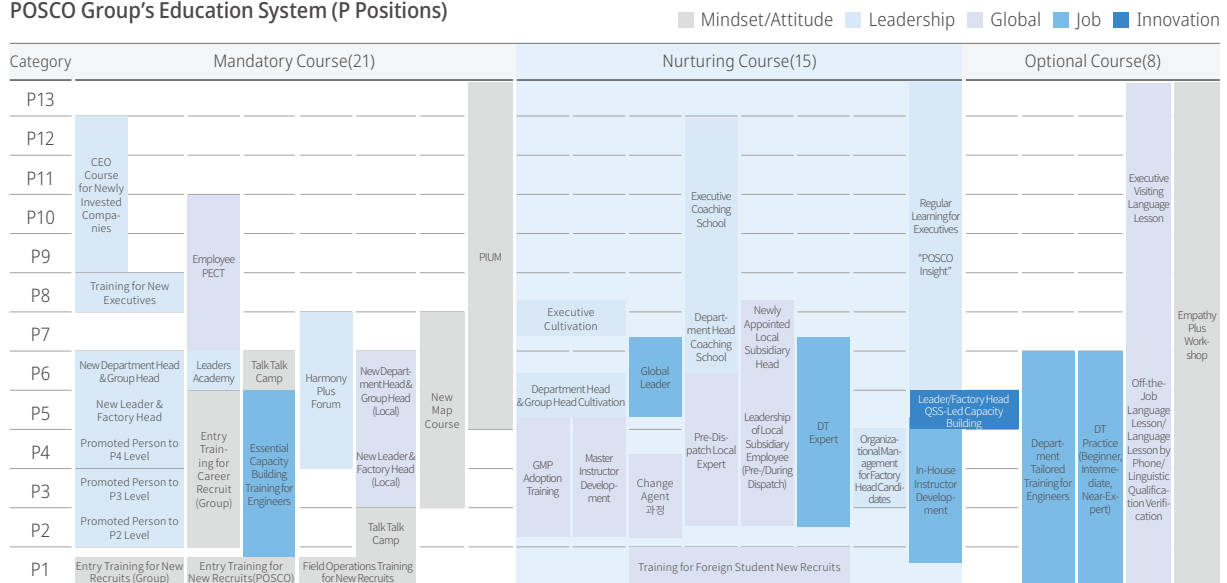


Facility maintenance specialist development program

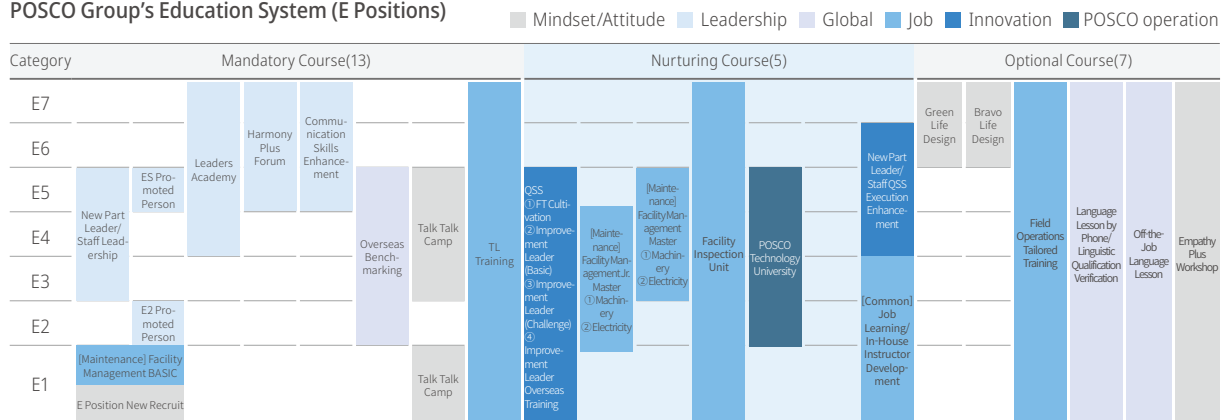


100 years together / New Road with POSCO program

POSCO Group's Education System (P Positions)



POSCO Group's Education System (E Positions)



Education Indices

Category	2016	2017	2018
Number of trainees (number of people)	384,228	296,557	260,719
Total training hours (hours)	48,412,728	31,138,485	25,811,181
Training hours per capita (hours)	126	105	99
Total training costs (100 million KRW)	204	221	198
Training cost per capita (KRW)	53,093	74,522	75,944
Trainee satisfaction (points)	4.70	4.77	4.64

Quantitative Measurement of the Education Program:
Results of Kirkpatrick Evaluation

FY 2015	FY 2016	FY 2017	FY 2018
96.9	97.5	94.2	95.5

WORK AND LIFE BALANCE

PEOPLE ▾

Improving the instruction/reporting/meeting culture

Our efforts for work & life balance

To minimize operational inefficiencies, POSCO is promoting activities to improve the culture of instruction, reporting and meeting. In 2018, we selected pilot departments and arranged for each of them to perform autonomous improvement activities reflecting their individual characteristics. Members propose their own ideas and personally create execution guides to bring change to the way they work. In 2019, we will distribute a guideline for department heads, conduct close monitoring, and welcome feedback so that the culture of “clear instructions,” “succinct reporting” and “efficient meetings” will be established throughout the organization. We hope this will improve the level of work engagement and help us realize true Work & Life Balance for employees.

Policies to prevent overtime work beyond statutory working hours

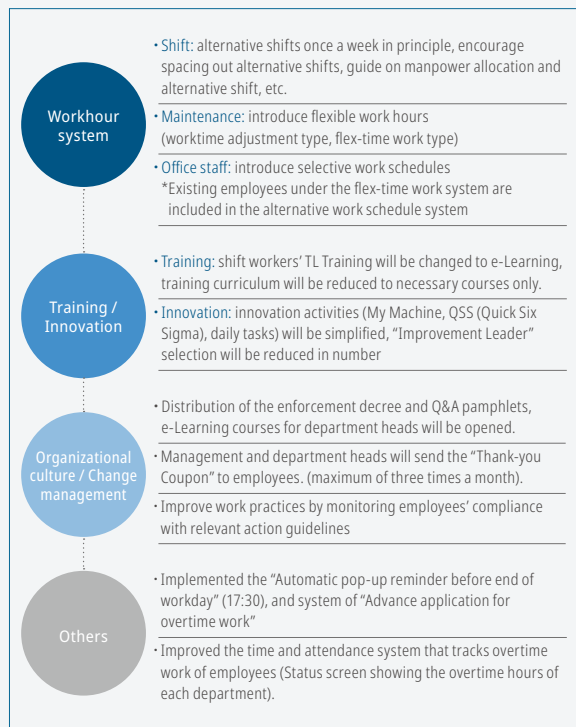
Preventing working longer than statutory working hours

In order to ensure the 52-hour workweek is observed, we operate flexible work hours and continually improve our organizational culture including employee change management and their working practices.



“Leave Work on Time” Campaign

The automatic pop-up at 5:30p.m. reminds workers that the workday is almost over, and if they want to stay after hours, they are to apply in advance for overtime. This is to encourage workers to finish up their work on time, prevent unnecessary late-night work and to plan ahead if they want to work overtime.



Selective / Flexible Work Hours

Selective Work Hours

- Only the total monthly work hours are set, and weekly or daily work hours are left to employees to decide (within 40 hours/week)
- An employee may work between a minimum of four hours and a maximum of 12 hours a day (within the 9-to-6 work day)
- Applicable employee: regular employees
- Duration: within one month
- Maximum work hours per week: no limit

Flexible Work Hours

- With the three-month payment period set, employees can decide their work days of the week, and their work hours of the day, flexibly managing their work hours. (within 40 hours/week on average)
- However, work hours in any particular week or in any particular day may not exceed 52 hours and 12 hours respectively

Worktime adjustment type

- Applicable employee: regular employee
- Duration: within three months
- Maximum work hours per week: 52 hours

Flex-time work type

- Applicable employee: resident maintenance staff
- Duration: one week
- Maximum work hours per week: 40 hours

*Separate overtime work of 12 hours/week is allowed



APPENDIX

SUSTAINABILITY POLICY & PERFORMANCE DATA

BUSINESS ETHICS

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Business Ethics

POSCO established and announced the Code of Ethics on June 2, 2003 in which to practice ethical management at the global level. Since then, POSCO has grown into a industry leader of ethical management and earned the trust and respect of stakeholders.

Given the CEO's solid philosophy and commitment to ethical management the Code of Ethics of POSCO has been deploying effective and substantive activities. This would include building systems and infrastructure befitting a global company, operating a group dedicated to ethical management and pursuing continuous and systematic education and advancement.



Ethics has been rated as one of POSCO's core values and a zero-tolerance policy (One Strike Out Rule). This applies to four major unethical behaviors including receipt of money or valuables and embezzlement. POSCO also operates an Ethical Management Secretariat dedicated to ethical management of the entire organization. Major issues and activities related to ethical management are reported to the management at the monthly meeting of executives who then have direct reporting to the CEO. In addition, the performance of ethical management from the previous year is compiled at the beginning of the year and reported to the Audit Committee for an impartial review.

POSCO's ethical management's adage is "doing the right thing in the right manner." In other words, substantial, actionable and practical work that is meaningful and necessary for the achievement of individual employees as well as management goals of the company are pushed forward in a clean and fair manner under the value of "business ethics". POSCO ensures that all employees proactively participate in and voluntarily practice ethical management and makes the utmost efforts to establish ethical management into our corporate culture.

Ethical Compliance and Systematic Education

Each January, the CEO relays a message to all employees regarding the company's strong commitment to ethical management. At the same time, all employees pledge to comply with the Code of Ethics, working together to bolstering the ethical mindset of the company.

Furthermore, mindful of the importance of ethics training, POSCO continuously develops and operates training programs for employees, both online and in person. Additionally, online classes on ethical management and sexual harassment prevention are presented as essential courses that all employees are strongly encouraged to complete in the given year.

Ethical Training Completion Rate of 2018 (e-learning system)

Category	Trainees	Completed Trainees	Completion Rate
Sexual Harassment Prevention	16,749 people	16,687 people	99.6%
Ethical Management	16,749 people	16,519 people	98.6%

Along with online courses, the company offers in-person courses to a variety of employee groups, on various topics. For example, in order to create a more healthy workplace culture free of sexual harassment, special training was provided to the management and leader groups with the participation of 1,200 executives, group leaders and plant heads.

In addition, for ethical training to be more effective, training is provided to new recruits with or without prior work experience, newly appointed managers and employees assigned overseas.

Ethics Training for Overseas Employees in 2018

(Unit: people)

Training	Pre-Dispatch Training	Training During Dispatch	Return-from Dispatch Training
Trainee	39	130	14

It is possible that shift workers at steelwork sites have fewer training opportunities, which could lead to lower ethical awareness. As such, on-site shift workers, team leaders charged with job positions and unit staff received an intensive ethical training on respecting humanity in the first half of the year.

Team Leader/Unit Staff Ethics Training in 2018 (Collective Training)

Region	Trainees	Sessions and Period
Pohang Works	1,430 people	Six (March 27-April 26)
Gwangyang Works	1,195 people	Six (May 9-June 27)

Also, in an effort to ensure compliance with the anti-graft law, actual cases of counseling were published into an e-book, which is classified into different topics such as meals, gifts and conveniences. This e-book was distributed to all employees to then be used for training and as a source of reference during work. It is also linked to all group affiliates, guiding the entire POSCO GROUP to comply with the anti-graft law. For business partners, an annual online training program is provided on the theory of our Code of Ethics. This is our way to put this into action, as the Code of Ethics forms the basis of ethical management. For new suppliers, briefing sessions are held regionally in Pohang and Gwangyang where training and a pledge of ethics take place.

Ethics Training Completion Rate of Partners in 2018 (Unit: %)

Category	Completion Rate
Business Ethics	88.4

Moreover, POSCO continues to carry out PR and campaigns on business ethics in order to enhance ethical awareness. Through pop-up notifications and bulletin boards in POSCO's internal business system, various ethical activities including lecture fee deposits, Holiday Gift Return Center and online charity auctions are announced to employees for their understanding and practice.

Entrenching the Corporate Culture of Respecting Humanity and Operating Systems and Campaigns for Ethical Practice

For an ethical corporate culture to take shape, POSCO has developed and carries out various systems and campaigns.

POSCO Code of Ethics	
CEO's Message	Expresses the CEO's ethical management philosophy and strong commitment
Ethics Charter	<ul style="list-style-type: none"> • Preamble: Meaning and value of Code of Ethics, history of establishment and revisions, composition and format • Ethical Principle: Duty to comply with Code of Ethics, roles and responsibilities of employees, punishment upon violation
Practice Guidelines	Specific criteria of action to practice Code of Ethics

Code of Ethics is an ethical standard by which all employees must comply with. It consists of the CEO's ethical management message, an ethics charter that prescribes the goal and direction of

the Code of Ethics and practice guidelines that describe specific criteria for action. POSCO thereby attest that all employees place top priority on ethics when making ethics decisions.

In addition, four major unethical behaviors of receipt of money or valuables, embezzlement, violation of sexual ethics and information manipulation are subject to the One Strike Out Rule and stern sanctions, regardless of job position. Any improper solicitation is recorded and administered on the Clean POSCO System – even those cases that were withdrawn. This is part of an ongoing and proactive effort to create a clean corporate culture that has no place for improper solicitation or recommendation.

In order to empower a corporate culture of respect for humanity, relevant activities have been bolstered this year. In particular, a preventive guideline on workplace harassment was established. An ethical session for heads of department was newly developed to strengthen ethical leadership. A survey was also conducted to diagnose the ethical level and respect for humanity that the department leaders currently share. Based on the results, feedback and tailored training were provided. Moreover it was decided a poll to be conducted on a regular basis to address any abusive attitude of employees toward partners. For any violations found or issues raised in the process, corrective actions were taken. A survey to empower a corporate culture of respecting humanity was also conducted on employees of POSCO, overseas subsidiaries and affiliates. Violators found through the survey were subject to stern action.

Activities to prevent and eradicate sexual harassment were also bolstered. The preventive guideline on sexual harassment was revised to reinforce victim protection and confidentiality. POSCO leaders including executives and group leaders received special training on preventing sexual harassment.

POSCO also operates at all times reporting centers for unethical behavior, abuse of power, and workplace harassment. There are several channels available for counseling and reporting – including phone, postal and online venues. In any and all cases, the identity of the reporter and the content of counseling are kept strictly confidential.

During the New Year and Chuseok holidays, POSCO operates a Holiday Gift Return Center and launches an ethical practice campaign on exchanging words of gratitude instead of gifts. Items that cannot be returned are auctioned to employees with all profits deposited to POSCO 1% Foundation for charity.

Any congratulatory or condolence money unknowingly received from stakeholders that cannot be returned to the giver or fees that employees received by giving lectures based on knowledge obtained from work are also donated in its entirety to POSCO 1% Foundation.

Through these various systems and campaigns for ethical practice, POSCO endeavors to lay a foundation for all employees to enjoy understanding business ethics with a positive mindset and to foster ethical awareness on their own.

Tips Received by POSCO's Unethical Behavior Reporting Center



(Unit: Number of tips)

Category	2016	2017	2018
Tips on Unethical Behavior	283	303	340
Reports of Corruption (personal corruption, waste of corporate asset, etc.)	149	76	95
Complaint (customer complaint, partner grievance, etc.)	121	146	185
Others (violation of respect for humanity, etc.)	13	81	60

Action Taken on Unethical Behavior in the Past Three Years by POSCO

(Unit: Number of cases (%))

Category	2016	2017	2018
Disciplinary Action	67(39%)	16(73%)	40(54%)
Warning	37(21%)	4(18%)	29(39%)
Caution	70(40%)	2(9%)	5(7%)
Total	174(100%)	22(100%)	74(100%)

Ethical Management Activities Deployed by POSCO GROUP

POSCO enacts various activities to promote ethical management to group affiliates and to elevate the ethical level of POSCO GROUP. A business ethics index evaluation system is operated on group affiliates to encourage them to proactively participate in business ethics activities. The business ethics index consists of 13 action items under four areas: Code of Ethics and Operational Organization; Effective Operation of Systems; Monitoring and Ex-Post Management; and Recurrence Prevention of Violations.

In addition, the Clean POSCO System that was adopted to prevent improper solicitation was expanded to all group affiliates as part of strenuous efforts to create a clean and transparent corporate culture at the GROUP level. In order to ensure thorough, group-level compliance with the anti-graft law currently in effect and to prevent the risk of violating the law, an e-book that illustrates actual cases of counseling on the anti-graft law was distributed. Also various systems and campaigns were disseminated to affiliates with a view to preventing workplace and sexual harassment.

In addition to affiliates, continuous activities are carried out with partners and suppliers to spread ethical management further by conducting regional ethics training and ethical pledges.

Business Ethics Index – Evaluated Items

Area	Number of Items	Content
① Code of Ethics and Operational Organization	4	· Code of Ethics, preventive guidelines on sexual and workplace harassment, operation of dedicated groups, etc.
② Effective Operation of Systems	6	· Preventive training, whistleblowing/counseling system operation
③ Monitoring and Ex-Post Management	1	· Continuous monitoring, activities to lower ethical risks, etc.
④ Recurrence Prevention of Violations	2	· Actions to prevent recurrence, activities to spread ethical management, etc.

Ethical Risk Prevention at the Global Business Level

In order to rise above and become a leading company in global ethics, POSCO not only strives to abide by the global standard but also endeavors to prevent ethical risks at overseas subsidiaries and offices.

To begin in 2016, the Guideline on FCPA Compliance developed in 2011 was supplemented into the Guideline on Anti-Corruption Compliance. Previous guidelines were adjusted so as company regulations can serve as a basis of punishment. Also, the scope of guideline applications was expanded to include not only public officials but also stakeholders. This is to offer additional prevention measures to anti-corruption risks.

In addition to the pledge by all employees to comply with the Code of Ethics, all employees at overseas subsidiaries also held an anti-corruption compliance pledge. This was to ensure increased compliance with global rules and regulations. Newly appointed heads and employees of overseas subsidiaries received collective training with a view to enhancing ethical leadership. As such, various ethical management activities continued to be deployed.

Global Human Rights Management

A facilitator was appointed at each representative overseas operation. This person is charged with training and coaching Korean and local employees to bolster their ethical mindset and capability to act. Facilitators also handle compliance work through monitoring activities, thereby supporting preemptive risk prevention measures.

Corruption and Bribery Cases in Violation of the FCPA Guideline

Category	2016	2017	2018
Corruption and Bribery (Number of Cases)	0	0	0

CASE REPORT

Regulations on Prohibiting Political Donations in Accordance with Anti-Corruption Guidelines

Article 6 (Entertainment and Conveniences)

6.1 General Principles

No POSCO employee shall give or receive any money or valuables to or from any stakeholder, including Korean and non-Korean public officials and transaction counter-parties, in connection with entertainment or conveniences with improper intent to obtain business gain. Examples of valuables are as follows:

- Marketable securities, real estate, meals, gifts, golf
- Expenses for transportation, accommodations, etc.
- Usage rights or discounts for products or services
- Political contributions
- Other tangible or intangible economic gains such as cancellation or transfer of debts, offering of employment, or granting of rights

Human rights management is becoming more important as companies become more global and wield greater social influence. In addition, human rights issues including protection of human rights, elimination of forced labor and no tolerance for discrimination. These issues continue to emerge in the international community and the role of companies to resolve such issues is being highlighted. In order to grow with the local community, POSCO proactively steers forward activities to protect human rights aimed at creating a working environment free of discrimination for all employees and fulfilling the role and responsibility as a global corporate citizen.

Human Rights Management Based on the Code of Ethics

As a member of the UN Global Compact, POSCO upholds the international standard on human rights and labor. Additionally, POSCO GROUP Code of Ethics dictates compliance with international human rights standards including the Universal Declaration of Human Rights, UN Global Compact and the OECD Guidelines for Multinational Enterprises. We also pursue a corporate culture and working environment that is free of discrimination or harassment on grounds of race, nationality, gender, age, academic background, religion, region of origin, disability, marital status or sexual orientation and respects diversity.

The global trend of ethical management is moving beyond preventing unethical behavior and towards proactive practice of protecting customers and investors. We promote sharing growth with the surrounding ecosystem, contributing to society and protecting the environment as well as anti-corruption activities for transparent business management and respect for local law and human rights.

In step with this trend, we incorporated global standards such as the OECD Guidelines on Multinational Enterprises into our Code of Ethics. We are set to operate in a timely manner important regulations including the Korean anti-graft law (Improper Solicitation and Graft Act), in-house environmental management rules, quality charter and action guidelines on preventing conflict of interest.

The Code of Ethics currently in effect stipulates prevention of discrimination, provision of equal employment opportunities, respect for cultural differences, guarantee of legitimate and humane employment conditions and efforts to respect human rights in the local communities.

As such, POSCO's Code of Ethics is regarded as the first of its kind in the Korean business community to have a separate item that specifies and stipulates regulations on protecting and respecting human rights, thereby asserting the commitment to respect human rights to a level that meets the global corporate standard.

Human Rights Management Advancement Based on Ethics

Under the vision, "With POSCO," we pursue our philosophy of becoming a "corporate citizen that advances together with the society." POSCO intends to become a member of society, growing with various stakeholders including employees, shareholders, customers, suppliers, partners and local communities, and together pursuing values such as caring, co-existence and co-prosperity.

Instead of stopping at merely declaring this philosophy, POSCO built effective connecting systems and puts ethics into action in daily life. By operating 24/7 counseling centers for unethical behavior, workplace harassment and sexual harassment, POSCO receives reports on behaviors in violation of guaranteeing or respecting human rights and any harm done. Appropriate actions are taken on reports received.

In particular, a preventive guideline on workplace harassment was developed in 2018, which was incorporated into our e-learning ethical management course. We also provide a course on preventing workplace sexual harassment.

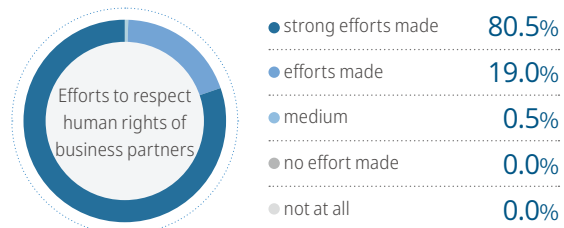
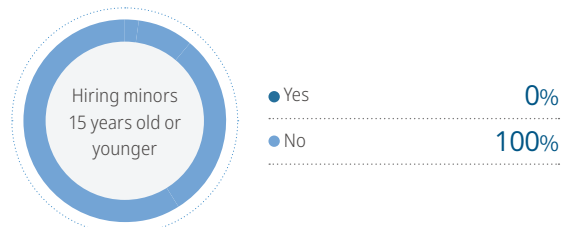
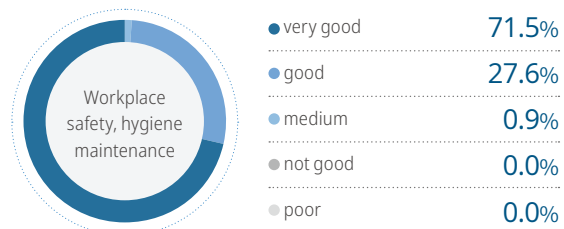
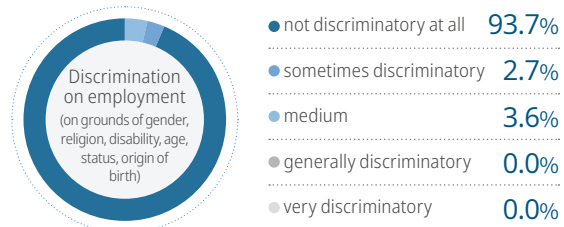
A survey on respecting humanity is conducted yearly on a regular basis to reveal violations of respect for humanity including workplace harassment and sexual harassment, in a preemptive effort to prevent infringement on the human rights of each and every individual employee. Particularly, since 2017, we have been conducting a Respecting Humanity Survey on our partners to learn about abusive behavior by POSCO employees in an effort to safeguard and respect the rights of employees of our partners.

With a view to take stock of human rights management status and level of implementation at overseas operations, POSCO conducted a self-review using the human rights management checklist it compiled in 2016 that incorporates global standards. From 2017, human rights items were added to the Respecting Humanity Survey. Since 2018, heads of overseas subsidiaries have been providing preventive training on sexual harassment, in addition to e-learning courses. POSCO continues its efforts to detect and minimize the risks of human rights violation in global business, thereby reinforcing awareness of human rights management at overseas subsidiaries.

Human Rights Management Status Review of Overseas Operations in the Last Three Years

Category	2016	2017	2018
Subsidiaries	78	60	62
Status Review	47	49	46
	60.2%	81.6%	74.2%

2018 Human Rights Management Review of Overseas Operations – Major Outcomes



2018 Preventive Training on Sexual Harassment at Overseas Operations (Collective Training)

Category	Subsidiaries	Trained Subsidiaries	Ratio	Participants
Session 1(March)	62	52	83.9%	726
Session 2(September)	62	36	58.1%	666
Total (redundancy removed)	62	58	93.5%	1,392

Human Rights Grievance Handling System – Mechanisms (Unethical Behavior Reporting Center, Abusive Behavior Reporting Center, Workplace and Sexual Harassment Reporting Center)

POSCO is mindful of voices of stakeholders through various channels and reflects them into business management to make progress. Notably, POSCO runs a number of grievance mechanisms at our website (www.posco.com) and e-commerce site (www.steel-n.com). The mechanisms are where we receive and resolve questions, troubles and grievances from stakeholders. They are online corridors that connect stakeholders in and out of POSCO. These channels are available for not only reporting human rights infringements but reporting unethical or abusive behaviors, requesting rectification of unfair practice and counseling work grievances.

CASE REPORT

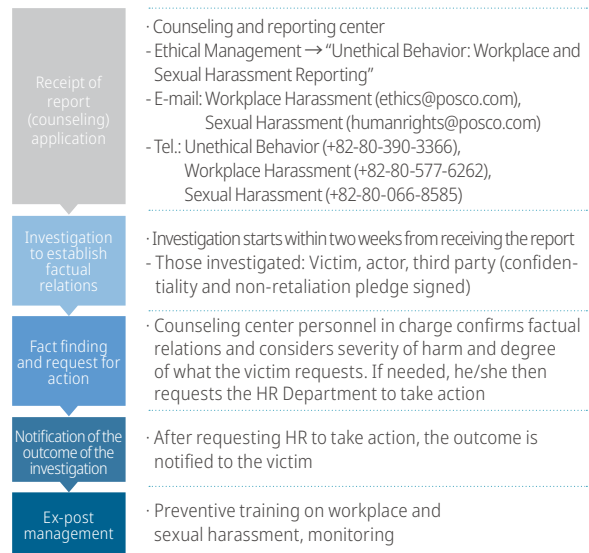
Human Rights Due-Diligence Process

In order to fulfill its responsibility of respecting human rights, POSCO carries out due diligence to identify, prevent and mitigate negative impacts on human rights and to impose responsibility. Due diligence also includes assessing real and potential impact on human rights, recording actions taken on identified facts and communicating to relevant stakeholders how the impact was handled. The Human Rights Due-Diligence Process is as follows:

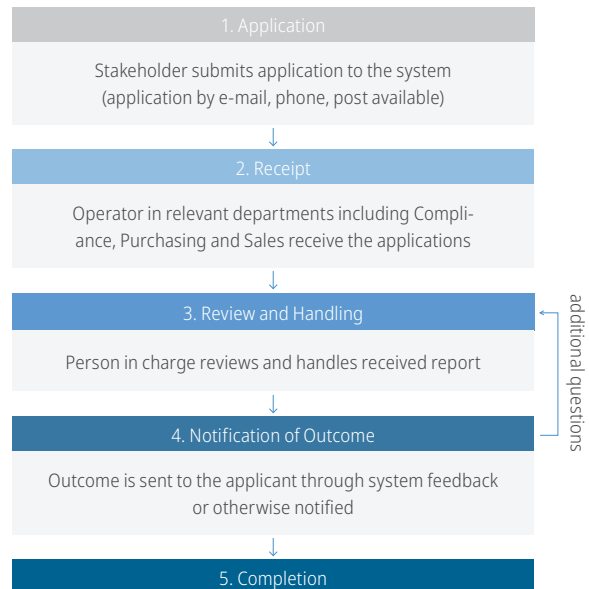
- ❶ Fact finding: Self-review by major business sites using a self-evaluation checklist
- ❷ Compiling: Putting together the outcomes of human rights management review and understanding the situation
- ❸ On-Visit Due Diligence: Due diligence on site upon detection of serious human rights management risk
- ❹ Follow-up: Analyzing the situation through due diligence, producing improvement measures and carrying out relevant action

Meanwhile, POSCO prohibits any behavior that can lead to the disclosure of the content of reports or the identity of informants and stipulates punishment for violations, so that the reporting system may work properly. Employees of the Compliance Department – our auditing organization – electronically pledge to protect the identity of informants at the beginning each year, making full efforts to keep informant identities confidential.

Grievance Handling Process for Unethical Behavior, Abuse of Power and Workplace and Sexual Harassment



Grievance Handling Process



Fair Trade

POSCO strives to comply with relevant fair trade legislations and regulations and to abide by fair and free market competition order. To prevent violations of fair trade legislations ex-ante, POSCO adopted a Fair Trade Compliance Program¹⁾ in 2002 and declared the POSCO Code of Ethics in June 2003, proclaiming compliance commitment and measures, starting with the CEO. Also, the yearly CEO message stresses the importance of fair trade and urges employees to comply so that they faithfully fulfill their roles as corporate citizens.

1) Fair Trade Compliance Program: An internal compliance system including training and review autonomously established and operated in accordance with fair trade compliance norms, with the purpose of preemptively preventing violations of fair trade legislations and regulations.

Fair Trade Compliance Organization

The Legal Department oversees fair trade compliance and engages in compliance activities including fair trade training, counseling and review for employees. The Head of Legal Department is the Compliance Officer responsible for designing and executing the Fair Trade Compliance Program.

POSCO GROUP's Adoption of the Fair Trade Compliance Program

A total of 22 affiliates of the POSCO GROUP operate fair trade compliance programs. POSCO also strives to spread the culture of fair trade compliance throughout the POSCO GROUP by organizing the POSCO Compliance Academy (PCA) – a study group of POSCO GROUP affiliate employees in charge of compliance.

POSCO GROUP's Adoption of Fair Trade Compliance Programs

Year of Adoption	Affiliates	Total
Until 2003	POSCO, POSCO E&C, POSCO ICT	3
2006~2010	POSCO C&C, POSCO MTECH, POSCO, POSCO PLANTECH, POSMATE, POSCO A&C, POSCO ENERGY, SNNC	8
2011	POSCO DAEWOO, eNtoB	2
2013	PNR, SRDC, POSCO HUMANS, POSCO TERMINAL, BLUE O&M, POSCO ESM	6
2014	POSCO RESEARCH INSTITUTE, POSCO CAPITAL	2
2015	PMCTECH	1
22 Affiliates Total		

Fair Trade Compliance Program

POSCO's purpose of operating the fair trade compliance program is to effectively run the compliance system (prevention – detection – response), thereby preventing risks ex-ante and enrooting a fair and transparent corporate culture.

POSCO operates a fair trade compliance program that consists of seven items recommended by the KFTC (Korea Fair Trade Commission) as well as voluntary items developed internally.



Fair Trade Compliance Program – Status of Operations

Program	Goal	Applied to
Online fair trade review program (website, smart phones)	Self-review of fair trade	All employees
Fair trade manual publication and distribution	Fair trade work guidance	Field operations departments including Purchasing and Marketing
Operation of Fair Trade Compliance Sessions	Reviewing risks, tailored coaching (training), work improvement	Field operations departments and GROUP affiliates
Fair Trade Compliance Pledge	Raising awareness of fair trade compliance	Field operations departments and GROUP affiliates
Fair Trade Compliance Council	Bolstering executional capabilities of fair trade compliance led by field operations	Heads of major field operations departments (group leaders)
Fair trade practice leaders	Supporting compliance activities of affiliated departments	Fair trade practitioners of field operations departments

Information Security

Achievements of Fair Trade and Plans for 2019

In order to spread and entrench the compliance program group wide, POSCO actively participates in and is well-received by the Evaluation of Fair Trade Compliance Programs led by the KFTC.

As a result of striving to firmly establish a fair trade order and cooperate on shared growth with SMEs, POSCO received high scores (given highest grade in 2018) on the corporate partnership index evaluation by the Korea Commission for Corporate Partnership.

In 2019, POSCO plans to continue revitalizing fair trade practices led by field operations, bolstering tailored training, conducting self-reviews on major risk areas and engaging in improvement activities, thereby making best efforts to enroot a fair and transparent corporate culture throughout the POSCO GROUP.

Fair Trade Training Statistics (2018) (Unit: Number of Participants)

Category	Course Title	POSCO	GROUP Affiliates	Total
Online training	Fair Trade Explained, Case Examples of Fair Trade Violations	323	612	935
Collective training	Fair Trade Training by Topics, CP Session Training, Disclosure Training	976	319	1,295

Legal Actions on Unfair Trade Practices including Practices that Undermine Competition, Monopoly and Oligopoly

Category	2016	2017	2018
Number of Violations	0	0	0
Amount of Fines (KRW)	0	0	0

POSCO has been actively engaging itself in information security activities with controls in place at managerial, technical and physical levels in full compliance with the International Standards for information security as well as domestic and international rules and regulations. These efforts to enhance information security and cybersecurity efforts enabled us to safeguard core technologies and workforce that make up the source of our competitiveness. Our dedicated information security team has been tasked with closely monitoring and incorporating changes in rules and regulations, business environment, and technologies around information security into corporate policies to ensure full regulatory compliance and risk mitigation. To heighten the level of security at our overseas subsidiaries and affiliates, the team offers assessments and advisory services to close any security gaps.

Protection of Core Technologies

POSCO has instituted rigorous controls to protect its core technologies from R&D centers. The dedicated security team spearheads a collaboration of around 400 employees, including security system administrators and physical security staff.

Each business department is required to assign a security champion (200 in total) to carry out autonomous security activities. Even more stringent security protection controls are in place for Pohang and Gwangyang Works, designated as Class "A" Facilities under the National Information Service Management Guidelines on National Security Objectives.

Adapting to Domestic and International Regulatory Changes

Going beyond merely staying compliant with rules and regulations that impact POSCO, we have been following regulatory trends and proactively address them as has been the case with the Personal Information Protection Act and the Act on Promotion of Information and Communications Network Utilization and Information Protection. To satisfy statutory requirements, we have been certified with the Information Security Management System (ISMS) schemes since 2014 for our online steel commerce system (e-Sales). POSCO ceaselessly works on enhancing organizational capabilities around the protection of information security and privacy.

Our security standards and policies are updated regularly to ensure safety and continuity in managing the personal information of our customers.

Employee Information Security Training

Training programs and activities tailored to job roles and responsibilities are provided to meet the security needs of our workforce.

Category	Security Training in 2019
Training	e-learning and offline training for entire workforce
Digital Board Posting	Security policies and guidelines
E-mail Distribution	Newsletters on the latest security trends Guidance on security practices
Groupware Posting	Preventive campaigns on data loss and breaches

EMPLOYEE

Employee Satisfaction

Every year, POSCO conducts 'P-GWP (POSCO-Great Work Place)', a company-wide survey of all employees to measure the level of employee satisfaction and work engagement. In 2018 we instituted changes on the survey agency, questionnaire and method of measurement. In this past survey the total score POSCO received was 67 (out of 100). This score is slightly lower than the previous year, but still remains well above the industrial average. The survey result shows that POSCO employees are trying to build positive relationship with the stakeholders based on their consideration of corporate citizenship, which is at its top level with the global standard. POSCO promises to make positive efforts to enhance the employee self-esteem and the level of satisfaction with the organization as well as their work through improvement in work method and two-way communications.

Employee Satisfaction Survey Result ¹⁾

Category	2015	2016	2017	2018
Employee satisfaction score ²⁾	71	77	78	67 ³⁾
Survey participation (%)	70	75	70	59

1) Surveys and interviews were conducted to measure the pride in the company, work engagement, policy/work environment satisfaction and other overall level of work ethics in the organizational culture.

2) The criterion used in the survey: scale of 1 to 6 (strongly agree – agree – somewhat agree – somewhat disagree – disagree – strongly disagree)

3) The result of 2018 requires more cautious interpretation compared to the ones from previous years due to the changes in the survey agency, questionnaire and method of measurement.

Improving Work Environment for Women

POSCO provides various support to ease the burden of childbearing and childcare for women employees in order to enhance their work engagement. We also present the vision for advancement through education and comprehensive information tailored to our women employees so as they reach their full career potential.

Diversity / Prohibition on Discrimination

In pursuit of employees' human rights protection, prohibition on discrimination and diversity practice, POSCO has stated the related terms in its code of Ethics.

Practice Guidelines for Code of Ethics | ④ Respect and equality

- We will not discriminate or harass on the grounds of race, nationality, gender, age, educational background, religion, regional origin, disability, marital status, and sexual orientation.
- We will provide equal opportunity of employment to those who possess necessary qualification and capability.
- We will maintain our work environment that respects diversity.

Employment Stability and Job Security

In confidence of POSCO's labor relationship since establishment, the company has never carried out large-scale layoff or forceful termination of employment for business recovery or as an increase in profitability. At POSCO, job security is assured in the Article 36 of Employment Regulations which states, "The company shall not terminate the employment of, or dismiss employees without just cause." Even in the event of dismissal based on a clearly just cause, such as violation of laws, the case is strictly reviewed by 'The Company-wide Personnel Committee' before a final decision is announced. Notification must be made a minimum of 30 days prior to the date of dismissal. Failure to do so requires compensating 30 days of regular wage as a protective measure for the employee. POSCO will continue to endeavor to improve its policies and operational procedures in order to improve employment stability and job security.

Employment Regulation

- Article 36. (Job security) The company shall not take disciplinary action against, terminate the employment of, suspend or dismiss employees without just cause.

Childcare Solutions

▶ Operation of Daycare center	In Pohang, Gwangyang and Seoul, daycare centers are in operation accommodating a total of 430 children in order to ease the burden of childcare, expand employment of women, and contribute to addressing the issue of low birthrate.
▶ Resting lounge for women	The resting lounge is designed so as to offer ease for women, especially the mothers who breastfeed. It also helps pregnant women to relax and ease their difficulties at workplace.
▶ Parental leave system	Our policy allows a maximum 2 years of parental leave in addition to the 90 day leave prior and after childbirth. This ensures no obstacle in promotion and employee evaluation.
▶ Spousal accompaniment leave system	Our policy allows a leave of absence for POSCO employees during the period of their spouse's dispatched service abroad so that the family can stay together.

Long-Term Service Vacation

POSCO supports the recuperation of its long-term employees by providing long term service vacation days (2 days for 10 years, 3 days for 15 years and 5 days for 20 / 25 / 30 years of service.) These vacation days can be used within 1 year from the date of employment.

Employee Welfare and Services

POSCO contributes a portion of its profit to the Inter-company Employee Welfare Fund to enhance the quality of life of POSCO employees. The wide-ranging service area provided by the fund includes loans for housing, tuition support for employee's children, optional welfare packages, family events, and support for disabled family members.

Posco's recreational facilities inside as well as outside the company help support leisure activities for employees. We also operate the Health Promotion Center to provide employee health checkups, workplace inspections and other health-related services. We continue to build (Pyeongchang With-POSCO Residence, 2018) and expand recreational and health facilities for the benefit of our employees.

In addition, spousal health checkups and group insurance were introduced while improvement was made in medical expense support in order to promote healthy family life. In 2016, we revised our tuition support system to improve for multi-child families. We also included death of maternal grandparents in the bereavement

leave system in order to elevate gender equality. Since 2017, we have introduced POSCO's first rate system for working with childcare. It includes flexible work hour system to support pregnancy, birth and childcare. The system also entails increase in childbirth grant, and expansion of our kindergarten scholarship.

Labor Unions

The POSCO Labor Union, established in June, 1988 has been the only labor union which belonged to Federation of Korean Metal Workers Trade Unions affiliated with the Federation of Korean Trade Unions. Recently since September 2018, the company has more than one union as The POSCO Branch of Korean Metal Worker's Union was formed affiliated with the Korean Confederation of Trade Unions. As of February, 2019, 56.6% of workers are unionized, 6,459 under the POSCO Labor Union and 2,855 under the POSCO Branch respectively. The company and the labor unions reach wage agreement annually, and collective agreement biannually. In October, 2018, the POSCO Labor Union obtained the representative bargaining agent status of labor unions followed by the unification of bargaining agents under the Labor Union and Labor Relation Adjustment Act. Consequently, the POSCO Labor Union will negotiate wage and collective agreement with the company until 2020. In compliance with the article 33 of the Constitution and the Labor Regulations, POSCO ensures its workers' freedom to carry out their activities with the labor union. POSCO is also committed to the win-win relationship of the labor-management and improvement of the labor conditions.

Employee Welfare Fund

(Unit: billion KRW)

Category	2016	2017	2018
Amount of contribution	62.0	57.2	55.0
Cumulative amount of contribution	1,054.1	111.3	1,166.3

Labor Cost

(Unit: billion KRW)

Category	2016	2017	2018
Payroll ¹⁾	1,492	1,490	1,628
Retirement allowance ²⁾	161	130	133
Legal welfare expense ³⁾	117	125	127

1) Payroll: Monthly salary, bonuses, welfare expenses (meal allowance, personal pension subsidy, performance-based bonus, incentives)

2) Retirement allowance: Allowance for retirement benefits for the year (excluding executives)

3) Legal welfare expenses: a total amount of national pension, health insurance, employment insurance, industrial accident compensation insurance, and wage claim guarantee insurance charges

Amount of Pension Subsidy

(Unit: billion KRW)

Category	2016	2017	2018
National pension (company contribution)	39.2	39.6	41.3
Personal pension subsidy	8.2	8.1	5.6
No. of beneficiaries of personal pensions	6,646	6,478	6,759

Unionization Rate

Category	The end of 2016	The end of 2017	The end of 2018	February 2019
Unionizable workers (persons)	16,482	16,881	16,227	16,342
Unionized workers (persons)	10	10	6,467	9,314
Unionization rate (%)	0.1	0.1	39.9	56.6

Labor-Management Council

In accordance with 'the Promotion of Worker Participation and Cooperation Act,' the Labor-Management Council was established as an organization for employee representation in November 17th, 1977. It is comprised of 20 representative members from both labor and management. The labor representatives are elected through a direct and confidential vote by employees for a 3-year term. The current labor representatives were elected in November, 2018 to serve until November, 2021.

The labor representatives negotiate the terms of company-wide employee interests such as wage, work system, welfare, productivity, payment by results, safety, health and other areas of improvement. They also play a role as the labor-management communication channel. These representatives attend operation meetings, and regular as well as ad-hoc sessions with the management representative in order to share the operational status of the company. Besides the quarterly meetings, POSCO holds discussions and workshops with the representatives of all units and divisions. These meetings encompass the presentation of the corporate activities and policies to form a consensus among the employees

The Labor-Management Council has a number of affiliated organizations: Steelworks Council, Division Council, Department-Office Council and Factory-Section Council. The Factor-Section Council is the smallest organization under the Labor-Management Council, made up with 390 members from both factories and sections. It holds quarterly meetings to address their specific topics. The Labor Management Council and its affiliated councils strives for a collaborative growth of the employees and the company while improving the employee welfare. The council also puts in effort to gain trust of the employees as their representative through prompt responses to their grievances and concerns. POSCO carries out One Percent (1% of wage) Sharing and Great Work Place (GWP) Campaign as part of its corporate initiative for reinforcing competitiveness, preventing safety accidents and overall improvement of the organizational culture.

Fair Evaluation and Compensation

POSCO ensures proper rewards for employee performances through a equitable and objective employee evaluation system. Employees set the individual aim of MBO plans and compile yearly performances accordingly based on the goals set by their organizations. The evaluations of employee annual performances are made up in 4 stages (self-assessment, 1st, 2nd and 3rd assessment.) In particular, the 2nd and 3rd stages involve a group discussion and calibration of evaluators on performances of all members in the organization in order to assure fair assessment. The evaluator then delivers the feedback to the individual during

a one-on-one interview. An appeal can be made in case anyone finds the result unjust or unacceptable. Multifaceted evaluations in all aspects are carried out particularly for the employees in supervisory positions (heads of department / group / onsite section) due to their critical role in performance of their organizations. The 360-degree of feedback on their leadership and core values are actively used to enhance the competencies of the leaders and cultivate human resources.

POSCO's wage system considers two aspects: the stability of employees' livelihood and proper rewards based on their performance. Wage increases reflect inflation rates and service period to support the household livelihood security. The rate of wage increase is differentiated based on the result of their performance evaluation. We administer the outcome of our collaborative performances through implementation of a flexible performance-based bonus system, agreed upon by both labor and management. We also follow the wage equity standards (single wage table) for both genders.

Sharing Gratitude: 'Thanks Sharing' Program

To make gratitude a custom at POSCO, we have created 'Thanks Sharing' app through which employees may exchange greetings and gratitude with one another. The thanks sharing program also includes thank-you cards and coupons.

Using the 'thank-you coupon' program which expanded in 2019, supervisors may present employees with various mobile coupons (coffee, movies etc.) The program is a readily available instrument for the leaders to set the example of expressing gratitude and appreciation for an employees' hard work.

Through 'Thanks Sharing' program, POSCO aims to cultivate positive communication culture with gratitude, compliment and encouragement within the organization. In return, it will assist employees to engage themselves and collaborate with others.

Reinforcing Suppliers' Sustainability Competitiveness

POSCO wishes to create a business environment where it grows soundly together with partners and contributes to society. As such, POSCO devised the Supplier Code of Conduct that prescribes basic requirements that all suppliers must adhere to. In order to bolster POSCO GROUP suppliers' competitiveness, POSCO also developed an evaluation system for suppliers. While sharing POSCO's sustainability competitiveness to reinforce suppliers' competitiveness, POSCO also preemptively prevents environmental and social risks that may arise.

POSCO GROUP Supplier Code of Conduct

For the purpose of ensuring all companies that does business with POSCO GROUP to fulfill their responsibilities as global corporate citizens, POSCO developed the POSCO GROUP Supplier Code of Conduct in June 2010. The Code consists of basic norms such as human rights, labor, environment and anti-corruption as defined by the UN Global Compact as well as fair trade, quality management and mutual growth – a total of 21 items under seven categories. This Code of Conduct defines the basic requirements that must be adhered to by all suppliers that wish to do business with POSCO GROUP. In order to do business with POSCO, suppliers must electronically sign the Supplier Code of Conduct as they register onto our e-procurement website (www.steel-n.com).

Supplier Relationship Management (SRM)

Supplier Classification: Supplier Group Management

POSCO manages Sourcing Groups of suppliers classified by items, taking into account the supply market of items to be purchased, item characteristics and convenience of securing a contract. We

also deliberate on a supplier's fundamental production factors including basic financial capabilities and facility capacities before registering the supplier onto a Sourcing Group and qualifying the supplier for bidding and negotiation. The performance of suppliers is evaluated quarterly on a Sourcing Group basis and the outcomes are provided in a report so that suppliers can voluntarily analyze strengths and weaknesses as well as establish plans for improvement

SRM Evaluation including Supplier CSR Evaluation

SRM evaluation of POSCO GROUP suppliers consists of seven categories – credit, price, quality, delivery-on-time, level of cooperation, safety and environment and additional or subtractive points. CSR items encompass all areas of economy, society and environment. In addition, POSCO also pushes forward mutual growth policies aimed at enhancing competitiveness of the entire supply market. POSCO also supports primary suppliers and encourages their cooperation so that secondary and tertiary suppliers also become competitive in the market. To this end, the evaluation of primary suppliers on their level of cooperation regarding SRM supply performance includes payments to secondary and tertiary suppliers as well as mutual growth agreements and benefit sharing programs the carry out with secondary suppliers.

In order to establish the most robust supply chain possible, POSCO is improving the supply market ecosystem. Furthermore, POSCO adopted TCB (Tech Credit Bureau) certification, volunteer activity hours and fair trade compliance program activities as evaluation items in order to boost technological development and social responsibilities of suppliers. These items add points to per-

Summary of POSCO GROUP Supplier Code of Conduct



formance evaluation, encouraging suppliers to proactively engage in CSR activities. The Safety and Environment category is also included as an evaluation criterion for suppliers. Notable subtractive points in this category are incurred by the number of accidents occurred and the number of rule violations within steelworks.

In terms of environment, evaluation criteria include environmental certification such as ISO 14001, green purchase amount, eco-friendly product proposal and carbon emissions management, thereby contributing to make our supply chain greener. In addition, to ensure that suppliers practice respect for humanity, additional points are given to those who adopt OHSAS 18001, as a means to encourage voluntary safety and health activities.

Outcomes of Supplier Evaluation and Support for Improvement

Evaluation and analysis on suppliers are published into quarterly and yearly reports and provided to suppliers to encourage them to voluntarily work on improving. The reports provided to suppliers are graded into three groups – excellent, good and poor. Bidding restriction including suspension of transaction applies to suppliers that receive with a “poor” report for a prolonged period.

A supplier with a yearly report rated “poor” is suspended from transactions for one year and their registration on the Sourcing Group is cancelled. To rejoin the Sourcing Group, the supplier must repeat the steps taken for initial registration. On the other hand, suppliers with a report rated “excellent” can be selected as a POSCO Honored Partner and benefit from preferential treatment, including preferred negotiation rights and exemption from various guarantee payments in relation to contracts.

As of 2018, there were 2,011 suppliers (228 new suppliers) subject to SRM evaluation. Removing redundancies, 865 suppliers received SRM evaluation: 440 suppliers were rated “excellent” (90 points or higher), 1,313 (70 points or higher) rated “good” and 258 suppliers (lower than 70 points) “poor”. 22 suppliers either had their Sourcing Group registration cancelled or received a one-year suspension and 21 suppliers were restricted from bidding for six months, which means 43 suppliers were either removed or restricted from bidding.

Meanwhile, we selected 40 POSCO Honored Partners by evaluating “excellent”-rated suppliers on their overall contributions to POSCO. Through this performance evaluation, POSCO provides feedback to suppliers on their strengths and weaknesses, thereby creating an environment where suppliers can voluntarily improve.

This evaluation also contributes to making our business ecosystem healthier by serving as criteria of support for or elimination of suppliers. Transaction is restricted on suppliers that engaged in socially condemnable behavior or caused complaints. Suppliers that violated POSCO ethical guidelines, caused complaints or caused environmental pollution are met with stern sanctions, including a maximum of five years of bidding restriction. Companies that are not socially sound cannot do business with POSCO.

Supplier Status of 2018

Category		Number of suppliers	Share of purchase from these suppliers
Tier1 (primary suppliers)	All suppliers	2,011	86%
	Key suppliers	894	75%
Non-Tier1(non-primary suppliers)	Key suppliers	2,105	14%

Exchange of Information with Suppliers

Two information exchange seminars per year are held on a regular basis with suppliers in order to boost their competitiveness – one in the first half of the year and another in the second half. In 2018, the first half seminar was held with 125 suppliers (improving purchasing measures and systems, compliance with purchasing ethics, etc.) and the second half seminar with 115 suppliers (cash payment support fund, mutual growth program, improving the bidding system, etc.) – a total of 240 suppliers participated in the information exchange seminars. Every quarter, the POSCO management visits SME suppliers in each region and holds roundtables to bolster communications with stakeholders.

Fair Purchasing Policy and Internal Transactions Committee: Raising Transactional Transparency

We put in place fair purchasing policies including the disclosure of transaction records and expansion of competitive purchasing. We also fully disclosed Sourcing Group information such as materials, facilities, raw materials and logistics. Moreover, in order to raise transactional transparency, we are expanding competitive purchasing by convening the Internal Transactions Committee. We also continue to newly source from POSCO Honored Partners and reinforce criteria to eliminate poor suppliers, thereby bolstering our supply chain.

Quality Audits on Suppliers

With a view to reinforce quality-side capabilities of suppliers, we conduct quality audits on suppliers with doubtful quality. For four years from 2015, a total of 196 suppliers were audited on quality and 35 suppliers with poor quality control were cancelled from their Sourcing Group. 37 suppliers were recommended to improve their level of quality control and were given support on training and consulting.

In 2019, more audits will be conducted with 120 suppliers planned to be audited. Improvement will be made on designing and producing capabilities as well as quality control. Furthermore, as part of activities to assist SMEs on boosting quality control competitiveness, quality enhancement training for suppliers will be expanded to include the CEO.

Supplier Risk Management

Suppliers with a lower credit rating than the requirement for Sourcing Group registration (B or above), those that disposed of essential equipment or facilities after Sourcing Group registration, those that have poor quality control capabilities and those that do not have bidding records in the past year or transaction records in the past two years have been eliminated from the Sourcing Group (144 suppliers total).

In 2019, we plan to improve and reinforce the refresh review criteria to minimize supplier-side risks. To encourage suppliers to enhance their technological capabilities and for us to verify such capabilities, we adopted the TCB system in 2018. As such, we are encouraging suppliers to reinforce their competitiveness.

Conflict Minerals

Mines in areas of conflict such as DR Congo have fallen under control of armed rebels who sell the extracted minerals for profit which feeds back into the conflict. Moreover, rebel-controlled mines are of particular concern globally, as child labor, sexual assault and other human rights infringement occur in the mining process. Industrial minerals produced in conflict areas are called “conflict minerals”. The US SEC requires corporations to report whether their products were made with conflict minerals such as gold, tungsten, tin and tantalum from the DRC or neighboring states. POSCO uses tin and ferrotungsten, which is a ferroalloy. The tin originates from Indonesia and the ferrotungsten used to make stainless steel products is from Korea, Russia and Vietnam. Under the principle of restricting transactions with suppliers that engaged in socially condemnable behavior, POSCO GROUP endeavors to stay away from using raw materials from areas of conflict. To fundamentally prevent the use of conflict minerals, POSCO’s raw material purchasing contract includes a clause prescribing that no conflict mineral shall be used and that if the use of such mineral is later revealed, the contract shall be terminated immediately and bidding restricted thereafter. Going forward, POSCO GROUP will also internally train affiliates and maintain constant monitoring to ensure that conflict minerals are not used.

SRM Evaluation Items

Category	Items
Credit	Credit rating
Price	Bidding participation rate, competition rate of submitted price, optimal bidding rate, quotation reliability
Quality	PosQC rating, ISO certification, quality defect rate, defection occurrence rate, quality satisfaction
Delivery-on-time	Delivery delay rate, average days of delay, number of long-term delays
Level of Cooperation	Number of benefit sharing tasks, financial performance amount from benefit sharing, payment-on-time to secondary, tertiary and quaternary suppliers, mutual growth agreement between primary and secondary suppliers, level of participation in WinC (primary-secondary supplier payment condition improvement program)
Environment / Safety	Supplied amount of eco-friendly items, eco-friendly mark certification, ISO 14001 certification
Additional points	OHSAS 18001 certification, TCB, volunteer activities, fair trade compliance program, mutual growth agreement between secondary and tertiary suppliers, shared benefit cash compensation distributed to employees, use of standard subcontracting agreement between primary and secondary suppliers
Subtractive points	<ul style="list-style-type: none"> · Cautioned by the Compliance Department: 2 points per caution · Accident: 3 points per severe accident, 1 point per general accident, 0.25 point per safety violation · Unethical behavior as defined by POSCO GROUP: 15 points per quarter for two years

Sustainability Risk Evaluation: Scope and Goal

Category		Unit	2016	2017	2018
Tier1 (primary supplier)	All suppliers	Number of suppliers	1,284	2,202	2,011
	Evaluated suppliers	Number of suppliers	1,284	2,202	2,011
	Paper evaluation	Number of suppliers	1,251	2,142	1,911
	On-site evaluation	Number of suppliers	33	60	100
	Third-party evaluation	Number of suppliers	-	-	-
	Evaluation rate	%	100	100	100
Non- Tier1	Key supplier	Number of suppliers	1,838	2,003	2,105
	Evaluated supplier	Number of suppliers	1,838	2,003	2,105
	Evaluation rate	%	100	100	100

Rate of Suppliers with High Sustainability Risk

Category	Content	Unit	2018
Tier1	Number of suppliers with high sustainability risk	Number of suppliers	79
	Percentage of primary suppliers with high sustainability risk	%	8.8
Non-tier1 Key non-primary suppliers	Number of suppliers with high sustainability risk	Number of suppliers	178
	Percentage of non-primary suppliers with high sustainability risk	%	15.9

Accounting for ESG Elements when Selecting Suppliers

Category		Minimum Requirement
Evaluation on existing and new suppliers	Separate points allocated to ESG as part of SRM evaluation	Points allocated to payments to second- or lower-tier suppliers, fair trade agreement, voluntary activities, safety certification and other social activities as part of supplier evaluation
Category	Weight	Subjected Supplier
Weight given to ESG when deciding to select or retain suppliers	30%	All suppliers

Monitoring Supplier Sustainability

Category		Unit	2018
Key Suppliers (Tier 1 and Non-Tier 1)	Percentage of suppliers evaluated annually	%	100
	Total	%	100
Suppliers with high sustainability risk	Percentage of suppliers evaluated annually	%	6.2
	Total	%	6.2

Corrective Action on Risks by Suppliers

Category		Unit	2018
Percentage of high-risk partners that established improvement plan		%	5
		%	0
ESG performance improvement rate within 12 months from establishing improvement plan		%	0
Suspension of transactions	Number of cases		121
Temporary suspension of transactions	Number of cases		121
Permanent suspension of transactions	Number of cases		0

Risk Management

POSCO prevents risks by responding promptly to a rapidly changing business environment, and makes company-wide effort to secure sustainable growth base by maintaining favorable relations with stakeholders.

Risk Management Overview

POSCO established the Enterprise Risk Management (ERM) system that included preparing risk management policies, establishing regulations, and launching a responsible organization, in 2010. In 2011, the Investment Risk Management (IRM) Department was newly established, reinforcing risk management on growth investment projects. In 2012, POSCO bolstered its risk management process of monitoring, detection, assessment and improvement by linking business assessment to risk management. Since 2015, the Corporate Strategy & Finance Center in charge of POSCO Group strategies has taken over risk management duties in order to reinforce risk management at the Group level. The Center completed restructuring in 2017, by liquidating poorly performing affiliates at home and abroad, bringing down financial risk. Furthermore, POSCO made risk management more effective and responsive by preventing ethical risks within the POSCO Group preemptively through the Clean POSCO System. In 2019, the Corporate Strategy & Finance Center was renamed as the Corporate Strategy & Planning Division and the Investment Strategy Office and Business Assessment Office were newly established to constantly monitor risk factors in investments and projects around the world that could undermine our achievement of the GROUP management goals and to carry out substantive risk mitigation activities as a top priority.

Group Risk Management System and Governance

POSCO's risk management system is composed to manage each risk by individual departments who are responsible for. Risks are classified into Business Risks, Non-Business Risks and Disasters and Crises. Five offices under Corporate Strategy & Planning Division are in charge of managing Business Risks.

The Corporate Strategy Office manages risks related to strategies and competitors and the Investment Strategy Office is in charge of risks in investment and overseas business. The Finance Office is charged with financial risks including foreign exchange rate or funds and the Global Infrastructure Business Management Office handles risks of major affiliates in Korea. The Business Assessment Office responds to business risks preemptively by assessing businesses with poor management records and high risks. Among business risks, external risks like steel market, financial market, raw material market and competitor's strategies are monitored regularly by the POSCO Research Institute (POSRI). Monitoring results are reported to POSCO on a regular basis or distributed Group-wide through the Global Information Hub (GIH) – the Group information hub. The Corporate Audit Office and Legal Affairs Office lead the management of Non-Business Risks including ethics, compliance and reputation of the Company with the risk management system(RMS). Respond to disasters and crises, POSCO have upgraded the safety organization at the Pohang and Gwangyang works to the executive level. And POSCO have created Deputy Head of Works for safety and environment, and is promoting safe, accident-free workplaces centered on Safety & Disaster Prevention Groups at each steelworks.

POSCO Group's Risk Management System



Monitoring External Economic Risks

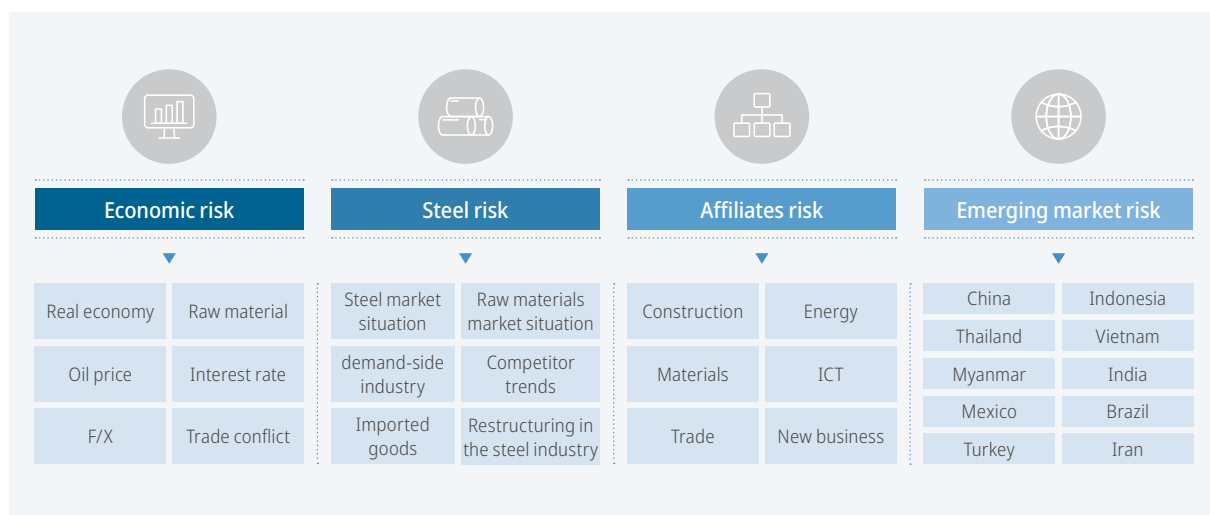
As the steel industry is largely impacted by changes in the external market, constant monitoring of the economy and business conditions in the steel and raw material market is required. As POSCO expands its global business, risk management in the nations where POSCO has presence has become ever important. Such external economic risks are constantly monitored by POSRI, which publishes the “Global Steel Market Outlook” every half year on the market situation of steel and raw materials. An outlook on the supply, demand and price of steel is also presented every quarter. In addition, on a monthly basis, POSRI monitors fluctuations in the foreign exchange rate in major nations and presents a market situation analysis and a supply-demand forecast on major raw materials such as iron ore, coking coal and nickel. Monitoring and analysis outcomes are reported on a regular basis and incorporated into the quarterly business plan and mid-term management plan.

POSCO group's Information Hub GIH(Global Information Hub) compiles and presents daily information on GROUP business, new growth sectors, global economy, trends of competitors and strategic target nations and technological trends. GIH also enhances monitoring function on external economic risks through publication of issue reports on major issues. In particular, POSCO applies big data and AI methods to predicting raw material and steel prices in order to raise accuracy and predictability of risk management. In 2018, a warning model was developed and has been in operation to preemptively identify risks in raw material supply arising from recurring extreme weather events such as la niña.

Sensitivity Analysis on Major Risk Factors and Scenario-Based Management

The external factors that have the largest impact on POSCO's management performance are foreign exchange rate, oil prices, iron ore prices and coal prices. POSCO and each affiliate monitor the possibility of changes in sales, costs and profits driven by fluctuations in the aforementioned indicators, at least once a month. When the fluctuations indicate business risk, a response plan is immediately established and carried out. When approving investments, sensitivity to fluctuations in foreign exchange rate, sales price and major materials prices is analyzed and considered during decision-making. In 2019, investment risk management organization and functions have been bolstered and the investment risk management process has been overhauled to enable preemptive response to risks arising from changes in the internal and external investment environment, thereby reinforcing our monitoring and substantive response to investment risks. Our business plan is developed into three scenarios – moderate recovery, continued low-growth and double-dip. The current business goals are based on a “continued low-growth” scenario, assuming that recovery in the steel market will be slow. And management performances are analyzed and reported to the group steering meeting monthly.

External Risk Monitoring System



Self Risk Check System (RMS)

For systematic internal risk management purposes, a RMS(Risk Management System) has been up and running in POSCO since 2004 as a risk management system for overall work processes of POSCO. RMS systematically classifies all business tasks of the company into finance, purchasing, marketing, investment and production/facility management, etc. After selecting and assessing individual risks, RMS manages the risks based on severity. In order to ensure effective RMS operations that reflect changes in the business environment, POSCO linked risk management with internal audit activities. In addition, POSCO have continuously improved the system by reflecting the feedback from the field departments, and each department can inquire and check the risks, so that POSCO have an organic risk management system between the business departments and the internal audit department.

Since 2013, RMS has been further developed to collect real-time data from the ERP(Enterprise Resource Planning) system and assess risks. In 2017, POSCO developed a smart Self Risk Check System based on big data analysis, enabling field departments to conduct their own inspection immediately upon detection of abnormalities. The Corporate Audit Office supports continuous risk updates through the circulatory process of control and monitoring based on risk selection, assessment and auditing. Also, best practices are proactively promoted as an effort to firmly establish the Self Risk Check System.

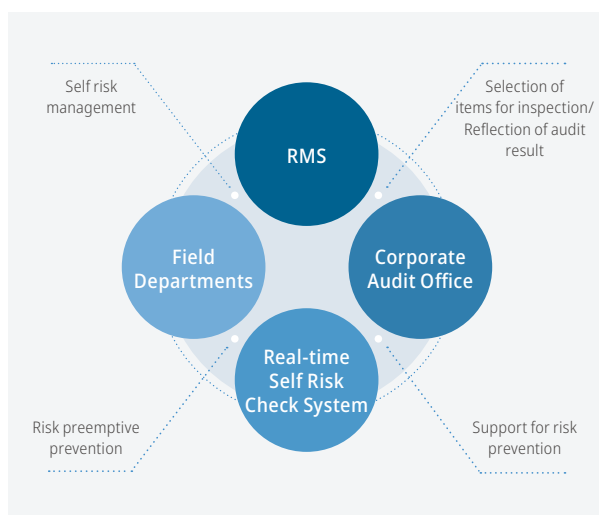
Internal Control of Financial Reporting

Listed on the Korea Exchange and the New York Stock Exchange, POSCO established a CEO and CFO approval procedure on disclosure and internal control in December 2003. POSCO also operates a Disclosure Committee as part of a system to evaluate internal control of the financial reporting process and has been conducting self-evaluation since 2004. POSCO established a group internal control evaluation system in March 2005. Since FY 2006, we have heightened reliability of our financial reporting and disclosure, as external audit became mandatory in accordance with the Sarbanes-Oxley Act¹⁾. Our internal control evaluation system was developed by an external specialist, based on the New COSO²⁾ Framework revised in 2014. The system assess business risks which affect the financial statements with the documentation of the company-wide and department-specific processes, and operate them as control activities based on consolidated financial statements. This system ensures that our internal control items fulfill the process-based control targets and are designed in a way that enables prevention and detection of any material misstatement in the financial statement. At the same time, this system evaluate whether it is operating according to design through test procedure such as inquiry, evidence test. As per the Act on External Audit of Corporation amended in November 2018, the CEO reports the status of operation of the internal accounting control system to the Audit Committee, Board of Directors and General Meeting of Shareholders.

1) SOX (Sarbanes-Oxley) Act : A US legislation on corporate accounting reform enacted in July 2002 that allows stringent sanction on accounting fraud

2) COSO (Committee of Sponsoring Organizations of the Treadway Commission) : A US internal control committee

Framework of Risk Management System



Internal Accounting Control Process

Selection of control activities and organization mapping	Major control activities of POSCO are selected or added and mapped to the designated relevant department
Control activity design testing (Test of Design)	Evaluation on whether major control activities of POSCO are designed properly (whether internal control is implemented into all major work processes of POSCO)
Design testing audit	Design evaluation by POSCO is audited by external auditor
Control activity operation testing (Test of Control)	Evaluation on whether evaluation-verified control activities work properly according to design
Operation testing audit	Operation evaluation by POSCO is audited by external auditor

Sustainability Policy

As companies wield greater social influence, they are increasingly expected to co-exist with local communities as modern citizens, resolve social issues alongside pursuing economic value and play an active role in creating a better society. In order to meet this expectation, POSCO celebrated the 50th anniversary of its foundation by declaring the management philosophy for the next 50 years: Corporate Citizenship: Building a Better Future Together. POSCO also adopted three reform tasks to fulfill this philosophy: Business with POSCO, Society with POSCO and People with POSCO. We are also pushing ahead with core tasks designated under each of the reform tasks.

Corporate Citizenship Vision



Compliance with and Support for Global Sustainable Management Guidelines

POSCO strives to engage in responsible management activities as a member of society. To this end, POSCO strictly adheres to sustainability policies including internal Code of Ethics, safety and health policies and human rights policies, and also endeavors to bring these regulations in line with the global standard. As such, POSCO upholds and endorses globally recognized sustainable management standards such as the UN Global Compact, OECD Guidelines for Multinational Enterprises and ISO 26000. Furthermore, on grounds of the Code of Ethics and aforementioned international standards, POSCO prohibits child labor and forced labor at all of its worksites around the world and endorses international norms on human rights including the Universal Declaration of Human Rights and the UN Guiding Principles on Business and Human Rights.

- UN Global Compact The 10 principles of the United Nations Global Compact (joined in May 2012)
- The OECD Guidelines for Multinational Enterprises
- The Universal Declaration of Human Rights and United Nations covenants on human rights
- ISO 26000(Guidance on social responsibility)

Linking the Corporate Citizenship Vision with UN SDGs

UN SDGs are a promise of the global community that all members of the world must keep for sustainable development and growth. POSCO is in full support of the SDGs and intends to join the effort in resolving social issues faced by the global community. In linkage with our management philosophy of corporate citizenship, activities that can contribute to achieving the SDGs will be pushed forward.

Category	Focus	Main activities	Sustainable Development Goals
Business With POSCO	Raising business competitiveness	<ul style="list-style-type: none"> Expand sales of premium steel products and reinforce response to protectionism (secure competitiveness in the global infrastructure business) Trading: Pioneer new steel markets, secure LNG trading capacity Construction: Internalize smart construction and focus on core products and nations Energy: Upgrade our purchasing strategy through direct imports of LNG, etc. New growth business: Raise competitiveness in secondary cell materials and maximize integrated synergetic effect 	 
	Boosting environmental investment and management	<ul style="list-style-type: none"> Cut fine dust emissions by 35% by 2022 Invest KRW 1.07 trillion in environmental management by 2021 	 
	Contributing to GHG reduction	<ul style="list-style-type: none"> Social GHG reduction as a result of supplying high-efficiency steel materials 	
	Operating shared growth programs with partners	<ul style="list-style-type: none"> Program on closing the wage gap: Pay incentives to outstanding partners, improve treatment of partner company employees 	  
Society With POSCO	Joining efforts to resolve social issues	<ul style="list-style-type: none"> Support for tackling low fertility: Improve childbirth/childcare environment of local communities through shared daycare centers at the workplace Resolve youth unemployment: Venture start-up support program to create jobs, youth employment and youth support programs 	  
	Fostering venture start-ups	<ul style="list-style-type: none"> Creating self-sufficient venture valleys in Pohang and Gwangyang regions 	 
People With POSCO	Realizing safe worksite	<ul style="list-style-type: none"> Zero severe disaster, zero major industrial accident 	 
	Improving the way we work	<ul style="list-style-type: none"> Entrench the 52-hour work week: Operate flexible working system, improve the way we work, etc. 	 
	Work-life balance	<ul style="list-style-type: none"> POSCO Lifecycle childbirth encouragement scheme 	 



Good Health and Wellbeing



Decent Work and Economic Growth



Industry, Innovation and Infrastructure



Reduced Inequalities



Sustainable Cities and Communities



Responsible Consumption and Production



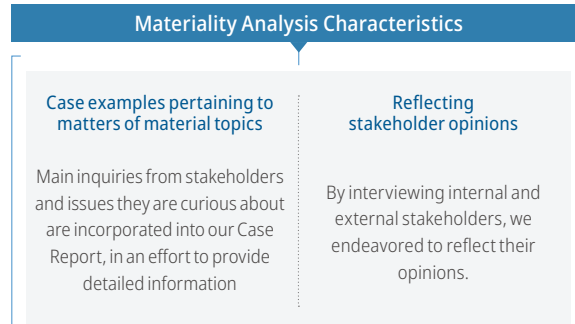
Climate Action



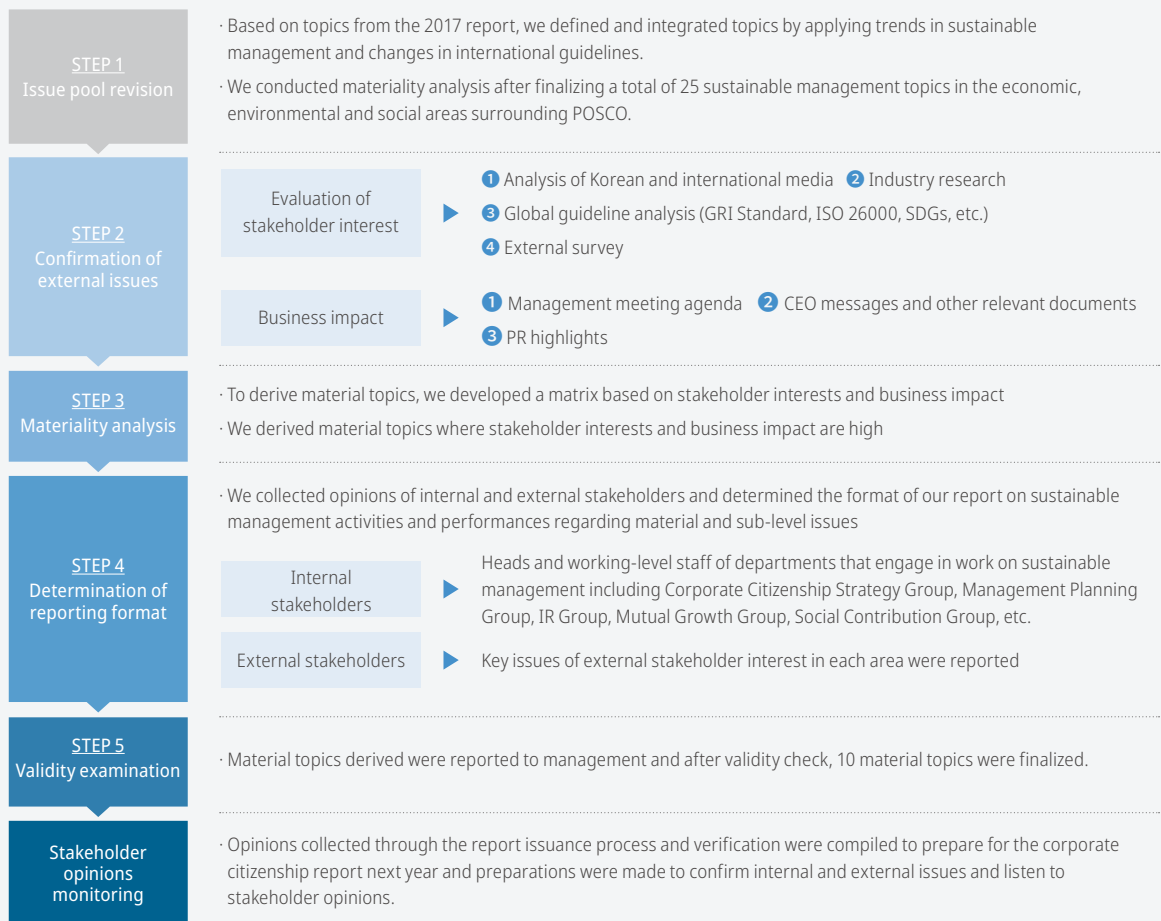
Life on Land

Materiality Analysis

In order to derive material topics that impact sustainable management, POSCO conducts a materiality analysis each year taking into account areas of interest among stakeholders and level of business impact. In 2018, a total of 10 material topics were selected from materiality analysis on 25 topics. POSCO will communicate to stakeholders the sustainable management performances and efforts under the derived topics through the Corporate Citizenship Report.



Materiality Analysis Process and 2018 Implementation Procedure



Materiality Analysis Results

Rank	Sustainable Management Issue	Page	Rank	Sustainable Management Issue	Page
①	Safety and Health Activities	77~81	⑥	Compliance with Legislations and Global Regulations	108, 113
②	Environmental Investment and Management	36~37	⑦	Improving Organizational Culture	88
③	Climate Action	42~54	⑧	Improving Energy Efficiency	50~51
④	Supply Chain Risk Management	101~104	⑨	Product Eco-Friendliness	38~39
⑤	Contribution to Revitalizing Local Economy	74~75	⑩	CSR Activities of Partners	66~72

Stakeholder Engagement Policy

POSCO heeds voices of various stakeholders and incorporates them into business management. Stakeholder relations are classified into partner, customer, supplier, local community and shareholder/investor with tailored communication channels in operation for each group of stakeholders.

Category	Main Issues	Communication Channels
Customer	<ul style="list-style-type: none"> · Raising customer satisfaction 	<ul style="list-style-type: none"> · CRM system · Customer satisfaction survey · Joint research (EVI: Early Vendor Involvement) · Thank You Night for Customers
Employee	<ul style="list-style-type: none"> · Work-life balance · Raising employee satisfaction · Securing top talents · Fair evaluation of performance · Talent development 	<ul style="list-style-type: none"> · Labor-Management Council/ labor unions · Young Board · Employee satisfaction survey · POSCO Today · Operational meeting
Partners/suppliers	<ul style="list-style-type: none"> · Fair trade · Mutual growth · Securing stable suppliers · Quality enhancement 	<ul style="list-style-type: none"> · SRM system · Mutual Growth Council · Information exchange seminars with suppliers · Roundtables with POSCO Honored Partners (PHP) · Information exchange meetings with partners
Local community	<ul style="list-style-type: none"> · CSR activities in local communities · Capacity building for local communities · Developing local talent 	<ul style="list-style-type: none"> · External cooperation sections in Pohang and Gwangyang · Exchanges with NGOs · Environmental Improvement Council (Pohang/Gwangyang)
Shareholder/investor	<ul style="list-style-type: none"> · Share price · Stable governance · Business management performance 	<ul style="list-style-type: none"> · CEO Forum (annual) · IR Sessions (quarterly) · Disclosure (website) · Face to Face Meeting (any time as needed) · Regular consultations on credit rating

Worksites and Projects in Need of Local Community Consultations

Category	FY2018
Worksites in need of local community consultations	0
Worksites with ongoing local community consultations	0

Code of Ethics Practice Guidelines: Contribution to the Nation and Society

On grounds of the Code of Ethics Practice Guidelines, POSCO endeavors to contribute to nations and societies that host its worksites by fulfilling its responsibilities and duties as a corporate citizen.

Contribution to Nations and Societies

We contribute to national and social development by fulfilling the roles and duties as a global corporate citizen.

① Roles and Attitude as a Corporate Citizen

- We will respect local legislations and regulations as well as local culture and tradition, and endeavor for mutual development with the nation and society.
- We will engage and communicate with stakeholders in the process of performing management activities that are relevant to the nation and society.
- We will encourage business partners to participate in activities for national and social development.

② Contribution to National and Social Development

- We will fulfill our duties in the local community by creating and maintaining stable jobs and paying taxes faithfully.
- We will actively participate in social service activities such as volunteer work and disaster relief and launch public service activities in various fields including culture, arts, sports and academics.
- We will provide support for residents to improve their quality of life and pursuit of happiness in life.

Local Community Consultation Policy

- When engaging in local community consultation, confirm the communities and stakeholders in the worksite area that can be affected.
- Establish a participation plan on items to be discussed with stakeholders.
- During stakeholder consultation, provide information on impacted local communities.
- Support communities so that those impacted can express their views on the risks of operations and projects, safeguarding cultural heritage, other environmental and social impact and mitigation measures.
- Operate a grievance handling process for impacted communities that includes mechanisms to safeguard cultural heritage.
- Report to impacted communities and stakeholders on relevant information.

Relocation Programs

There was no project that required physical or economic resettlement of a local community in the past decade.

Indigenous Peoples and Safeguarding Culture

POSCO strives to safeguard the culture of indigenous peoples and local communities on grounds of the Code of Ethics Practice Guidelines.

Category	Code of Ethics Practice Guidelines
Confirm impacted indigenous people	• We will engage and communicate with stakeholders in the process of performing management activities that are relevant to the nation and society.
Local community's understanding of indigenous people participation	• We will respect local legislations and the regulations as well as local culture and tradition, and endeavor for mutual development with the nation and society.
Principle of participation of indigenous people	• We will engage and communicate with stakeholders in the process of performing management activities that are relevant to the nation and society.
Provision of information and time for decision-making	• We will communicate with relevant stakeholders regarding activities related to human rights and results thereof.
Efforts to safeguard and conserve cultural heritage from reverse impact of local activities	<ul style="list-style-type: none"> • We will respect local legislations and the regulations as well as local culture and tradition, and endeavor for mutual development with the nation and society. • We will actively participate in social service activities such as volunteer work and disaster relief and launch public service activities in various fields including culture, arts, sports and academics.
Grievance handling procedure	• We will endeavor to collect opinions and resolve issues if human rights violation is suffered by the local community due to our management activities.
Audit and evaluation on relocation/settlement	<ul style="list-style-type: none"> • If needed, we may conduct due diligence on management activities that violate human rights or cause complaints. • In the case evaluation results show the company's business operations have caused violation of human rights or discontent, the company will seek reasonable solutions. • We will communicate with relevant stakeholders regarding activities related to human rights and results thereof.

*Code of Ethics Practice Guidelines are available on POSCO website
http://www.posco.co.kr/homepage/docs/kor6/jsp/ethics/newEthics_main.jsp

Local Employment

On grounds of the Code of Ethics Practice Guidelines, POSCO endeavors to fulfill its duties in the local community by creating and maintaining stable jobs and paying taxes faithfully. POSCO steelworks are located in Pohang and Gwangyang, creating stable jobs in the local communities. In order to protect and respect human rights, equal employment opportunities are provided to those equipped with the right qualifications and skills.

Code of Ethics Practice Guidelines on Local Hiring

- Contribution to nation and society: 2. Contribution to national and social development
 - We will fulfill our duties in the local community by creating and maintaining stable jobs and paying taxes faithfully.
- Protecting and Respecting Human Rights: 4. Respect and Equality
 - Equal employment opportunities are provided to those equipped with the right qualifications and skills

Employment Training for Local Communities

POSCO provides training for local job seekers and aspiring entrepreneurs in the communities that host our worksites.

Employment Training for Local Communities

Training on establishing social enterprises and start-ups and finding jobs provided in the community that hosts our Steelworks in Indonesia

*For more details please refer to page 61, "Social Enterprise in Indonesia"

Three new courses are up and running on finding jobs and starting businesses for local job seekers and aspiring entrepreneurs (around 1,100 trainees per year)

*For more details please refer to page 75, "Youth Employment & Start-Up Support"

Tax Policy

Managing Tax Risk

As a corporate citizen, POSCO has a tax policy that places the highest priority on compliance with tax legislation in all business activities, faithful filing and payment of taxes, contribution to government finance and social contribution through tax policy advancement. To this end, POSCO strives to prevent tax issues preemptively through ex-ante response and management, enabled by continuous review and improvement of systems. Furthermore, POSCO assesses various aspects of tax risks and gives legislative compliance top priority in risk management.

Tax Risk Management Activities

To ensure compliance with legislations in all transactions, POSCO set up a decision-making system founded on careful assessment and review of tax risks. In addition, POSCO meets all tax return filing and payment deadlines and archives adequate supporting documentation on all transactions. Furthermore, POSCO makes utmost efforts to maintain transparent relations with tax authorities and to respond swiftly and accurately to their request for data. In particular, POSCO maintains fair price for its domestic transactions with third parties and special concerned parties in accordance with relevant legislation. POSCO also endeavors to prevent international taxation risks by ensuring fair transfer price for international transactions.

Tax Policy

01 As a corporate citizen, POSCO abides by legislations of nations where it does business, faithfully fulfills its tax duties and refrains from transferring income to tax havens or other low-tax nations in a bid to avoid taxes. POSCO also maintains honest and open relations with tax authorities and submits relevant factual data and legitimate supporting materials upon request.

02 As a company that is actively doing business around the world, POSCO is aware of differences in tax legislations among nations and is thereby able to prevent tax risks. POSCO also carries out all transactions within the scope allowed by tax legislations. In particular, taxable value created locally is prohibited from being transferred to low-tax nations or tax havens.

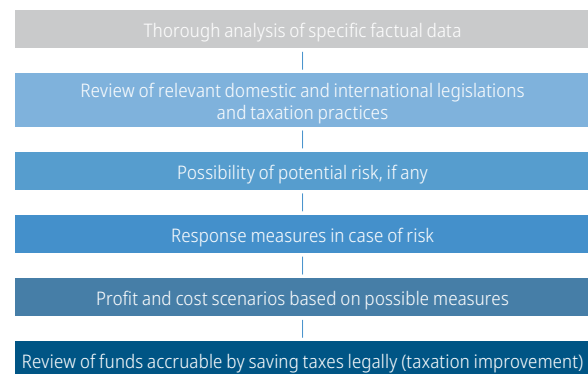
03 All POSCO subsidiary employees in charge of tax affairs comply with tax legislations of each nation in accordance with POSCO's tax policy and perform their work under the principle of maintaining transparent relations with tax authorities.

04 POSCO pays legitimate taxes but fights unreasonable taxation by taking legal action, including appealing to the tax tribunal and filing administrative litigation. POSCO also utilizes funds accrued from legal tax-saving to share the result of growth with the society.

Assessing Tax Risk

In all of its transactions of goods and services, M&A, restructuring, international transactions, pursuit of new businesses and changes in transactional structure, POSCO makes efforts to prevent any and all tax risk. As such, when business decisions need to be made, POSCO's tax organization collaborates with outside experts to carefully review tax risks. Relevant departments comprehensively consider the results of the tax risk review together with various other factors and reach a final decision. In assessing tax risks regarding business activities, POSCO focuses on the following major items.

Tax Risk Assessment Process



Contributing to Local Communities through Tax Management

As a corporate citizen, POSCO makes various contributions to the economic development of local communities. POSCO fulfills its role as a major tax payer and investor in various nations and also strives to create jobs. Furthermore, POSCO boosts the local economy by using locally produced products and engaging the local workforce to the maximum extent possible. POSCO also drives local development by generating tax revenue with the payment of corporate tax, value-added tax, withholding tax, local income tax, acquisition tax, etc.

Corporate Tax Payment

(Unit: 100 million KRW)

Category	Sales Revenue	Operating Profit	Paid Corporate Tax
Korea	416,719	47,683	(9,425)
Japan	20,841	274	(144)
China	69,453	721	(276)
Indonesia	15,921	2,037	(105)
Asia (Others)	73,125	1,706	(458)
North America	18,345	1,684	(866)
Europe	20,005	289	(45)
Other regions	15,369	1,032	(79)
Total	649,778	55,426	(11,398)

*Compiled based on consolidated financial statement

(Unit: 100 million KRW, %)

Category	2017	2018	Average (note)
Profit before tax	33,547	22,349	
Nominal tax	8,091	11,623	
Nominal tax rate	24.1%	52.0%	35.27%
Effective tax	4,840	6,890	
Effective tax rate	14.4%	30.8%	20.99%

(Unit: 100 million KRW)

Reason	FY 2017	FY 2018	Explanation
Nominal vs. effective tax amount	3,251	4,733	Difference in tax amount paid and accounting cost
Difference in attributable period - Corporate tax payment: March of following year	748	3,642	Difference in corporate tax payment due date - 2018: Paid in August 2018, March 2019
Temporary difference - Items recognized as deferred corporate tax - Increase in corporate tax rate (24.2% → 27.5%)	2,773	79	Difference to be temporarily added or subtracted - Increase or decrease in deferred corporate tax liabilities and assets
Tax credit - Tax credit and loss carried forward	△13	119	Tax credit based on Corporate Tax Act and Restriction of Special Taxation Act
Additional corporate tax paid	△285	842	Impact of tax audit - Differing views between tax authorities and POSCO
Other differences - Difference in final tax return, etc.	28	51	Difference in settlement of accounts, tax return, etc.

Main Performance Data

Economic Data

Summary of Consolidated Statement of Income

(Unit: million KRW)

Category	2016	2017	2018
Revenue	53,083,513	60,655,100	64,977,777
Cost of sales	46,393,962	52,299,189	57,005,396
Gross profit	6,689,551	8,355,911	7,972,381
Selling and administrative expenses	3,845,226	3,734,077	2,429,781
Operating profit	2,844,325	4,621,834	5,542,600
Share of profit(loss) of equity-accounted investees, net	(88,677)	10,540	112,635
Finance income and costs	(782,210)	(111,610)	(538,446)
Other non-operating income and expenses	(540,584)	(341,072)	(1,553,968)
Profit before income tax	1,432,853	4,179,692	3,562,821
Income tax expense	384,685	1,206,223	1,670,757
Profit (loss)	1,048,169	2,973,469	1,892,064

Separate Statement of Income

(Unit: million KRW)

Category	2016	2017	2018
Revenue	24,324,933	28,553,815	30,659,425
Cost of sales	19,903,596	23,832,803	25,728,293
Gross profit	4,421,337	4,721,011	4,931,132
Selling and administrative expenses	1,786,000	1,818,558	1,121,756
Operating profit	2,635,337	2,902,453	3,809,376
Finance income and costs	(126,031)	476,485	171,614
Other non-operating income and expenses	(319,973)	(24,196)	(1,746,091)
Profit before income tax	2,189,334	3,354,741	2,234,899
Income tax expense	404,288	809,056	1,162,307
Profit (loss)	1,785,046	2,545,685	1,072,592

Production Performance

(Unit: 1,000 Tons)

Category		2016	2017	2018
Crude steel production	Consolidated	42,199	42,193	42,867
	POSCO	37,496	37,206	37,738
Product production	Consolidated ¹⁾	45,764	45,781	48,634
	POSCO	35,940	35,210	35,989

1) Product production is total production by major associates. Internal transactions between affiliates are not offset in this number.

Evaluating Mid-to-Long Term Performance for Remuneration of High-Ranking Executives

As per the Director Remuneration Criteria, bonus salary can be paid as short-term bonus based on a fiscal year business performance evaluation, and long-term incentive can be paid as long-term bonus based on a three-year, long-term business performance evaluation. As of 2018, Representative Director and CEO Choi, Jeong-woo receives a three-year evaluation on quantitative items including stock price fluctuation rate versus KOSPI and competitors, ROE and debt/EBITDA fluctuation rate as well as qualitative items in terms of efforts made in investment, technology and talent areas to raise long-term competitiveness. Mr. Choi receives a deferred long-term incentive for three years after the completion of the evaluation (KRW 284 million). POSCO did not postpone payment of any short-term remuneration for the CEO or management in 2018.

Board of Directors – Period of Service

(As of May 2019)

Category	Name	Period of service (months)
Outside directors	Shin-Bae Kim	26
	Byong-Won Bahk	50
	Joo-Hyun Kim	50
	Moon-Ki Chung	26
	Seung-Wha Chang	26
	Sung-Jin Kim	14
	Heui-Jae Park	2
Inside directors	Jeong-Woo Choi	10
	In-Hwa Chang	26
	Jung-Son Chon	14
	Hag-Dong Kim	2
	Tak Jeong	2
Average		20.6 months

CEO-to-Employee Compensation Ratio

CEO remuneration (million KRW)	Average employee remuneration (million KRW)	Ratio ¹⁾
1,822	98	18.6

1) Percentage calculated by dividing CEO remuneration by average remuneration of employees (CEO remuneration/average of employee remuneration)

Stocks Owned by the CEO and Inside Directors¹⁾

Category	Number of stocks owned	Stock-to-annual salary ratio
CEO	911	0.46 ²⁾
Inside directors	537 ³⁾	0.27 ⁴⁾

1) As of December 31, 2018

2) Value of owned stocks, based on the closing price on December 28, 2018 (243,000 KRW), is divided by basic salary (4.78 million KRW)

3) Registered directors excluding the CEO own an average of 537 shares

4) Value of average stocks (243,000 KRW) owned by registered directors is divided by average basic salary (4.77 million KRW)

Contributions for Membership Associations (Unit: thousand KRW)

Category	2015	2016	2017	2018
Amount	8,680,820	9,283,080	6,405,343	6,693,557

Political donations (Unit: KRW)

Category	2016	2017	2018
Amount	0	0	0

*In accordance with the Political Funds Act of the Republic of Korea and POSCO Code of Ethics, using POSCO assets and budgets for political donations or sponsorships is strictly prohibited. In 2018, there was no expense by POSCO on donation to lobbying, representation of interests or political party/candidate/political campaigns.

Major Groups for Contribution

(Unit: thousand KRW)

Category	Fees paid in 2018
Korea Iron & Steel Association (KOSA)	2,639,799
World Steel Association	969,048
KOSA Steel Structures Center	422,000
KOSA STS Club	415,385
Korea Employers Federation	256,000
Energy and Mineral Resources Development Association of Korea	55,000

Social Performance KPI

KPI	Unit	Goal	Target Year	Definition of indicators and calculation method	Information
Accident Rate ¹⁾	%	0	2019	<ul style="list-style-type: none"> Definition: Number of Accident victims out of total number of employees Calculation: Accident Rate = (No. of accident victims / No. of workers) x 100 	<ul style="list-style-type: none"> POSCO places the highest priority on safety in business management and strives to build one of the best safety cultures in the world. With the goal of 0 accident rate in 2019 as its safety KPI, POSCO is making efforts to make worksites safe.
Win-win Index ²⁾	Grade	Best grade	2019	<ul style="list-style-type: none"> Definition: Mutual growth of large conglomerates and SMEs as evaluated by the Korea Commission for Corporate Partnership (KCCP) Calculation: Grades announced by the KCCP annually. Best, outstanding, good, ordinary, poor 	<ul style="list-style-type: none"> The KCCP is a private non-profit organization established with the purpose of mutual growth cooperation between large companies and SMEs. The KCCP evaluates and announces the level of efforts made by large companies each year. POSCO provides technological and financial support as well as training for SMEs to bolster their competitiveness and continues to push forward activities to create an industrial ecosystem based on a virtuous cycle of economic and social values.
Satisfaction Level of Employment and Start-up Training	Points	4.5 (out of 5)	2019	<ul style="list-style-type: none"> Definition: Employment, start-up, AI and Big Data training satisfaction Calculation: Average level of satisfaction of three training courses Employment camp, AI and Big Data training, Start-up school 	<ul style="list-style-type: none"> POSCO not only provides free programs to substantively support youth employment and entrepreneurship but offers outstanding trainees opportunities to join POSCO GROUP, do research internship at POSTECH or start their own business. The trainings are on essential capacities required for actual corporate work, starting business and the 4th Industrial Revolution.

1) Serious accident rate in the past three years : 0.06 in 2016, 0.02 in 2017, 0.04 in 2018

2) Win-win index record in the past three years : Best in 2016, outstanding in 2017, best in 2018

*Coverage : All POSCO worksites in Korea

Domestic and Overseas Awards

Category	Date	Award
Domestic	2018. 12. 10	Grand Prix, 2018 Republic of Korea Win-Win Growth Award (KCCP)
	2018. 11. 29	MOTIE Award, CSR Film Festival of the Republic of Korea
	2018. 11. 28	Korea Standards Association Award, The 6 th Republic of Korea Government Award for Loved Companies
	2018. 11. 16	MOTIE Award in Energy Category, 2018 Republic of Korea Climate Management Award
	2018. 8. 28	IR52 Jang Young Sil Award for Energy-Saving Air Drying System with Phase Change Material
	2018. 7. 11	Corporate Implementation Award, Association for Supporting the SDGs for the UN
Overseas	2018. 6. 27	World's Most Competitive Steelmaker for 9 th consecutive year, WSD (World Steel Dynamics)
	2018. 9. 7	Selected into DJSI Asia-Pacific Index for 10 th consecutive year
	2018. 5. 17	Global Metal Awards "Steel Industry Leadership" "Metal Company of the Year"

Integrated ESG Performance¹⁾

Category	Evaluated Items	Unit	2016	2017	2018
R&D ²⁾	R&D expenditure	million KRW	482,150	520,382	582,625
	R&D expenditure to sales ratio	%	0.92	0.87	0.90
Employee	Total	Number of people	26,815	28,975	29,184
	Full-time workers	Number of people	26,261	27,824	28,073
	Contract workers	Number of people	554	1,151	1,111
	Ratio of contract workers	%	2.1	4.0	3.8
	Women workers	Number of people	1,750	1,892	1,870
	Ratio of women workers	%	6.5	6.5	6.4
	Total number of women executives	Number of people	1	2	4
	Workers with disabilities	Number of people	640	645	649
	Ratio of workers with disabilities ³⁾	%	1.7	1.8	1.8
	Training hours per capita ³⁾	hours	77	71	61
	Training expenses per capita	thousand KRW	1,010	1,091	1,023
	Employee satisfaction ³⁾	points	72.0	71.9	69.0
	Continuous service ³⁾	years	12.9	13.7	13.8
	Turnover rate	%	5.1	2.5	3.4
	Rate of return from childcare leave ³⁾	%	74.0	77.4	97.4
Safety	Operations halt frequency rate	Per million hours	0.3	0.3	0.4
	Number of accident victims	Number of people	63	54	60
Social contribution	Volunteering hours per capita	hours	28.6	27.8	24.1
	Social contribution expenditure	million KRW	47,406	96,017	56,702
Energy	Energy consumption	TJ	484,300	471,404	489,745
	GHG emissions Scope 1 (direct)	1,000 tCO ₂ e	81,346	81,403	83,701
	GHG emissions Scope 2 (indirect)	1,000 tCO ₂ e	3,719	3,250	3,111
Environment	Water consumption	1,000 ton	160,866	190,608	167,734
	Recycled water	1,000 ton	48,715	52,628	56,584
	Generated waste	1,000 ton	11,955	11,670	12,464
	Disposed waste	1,000 ton	735	631	863
	Recycled waste	1,000 ton	11,221	10,937	11,602
	Amount of green purchasing ⁴⁾	million KRW	105,567	143,867	156,441

1) The integrated ESG performance index applies to: POSCO, POSCO INTERNATIONAL, POSCO E&C, POSCO ENERGY, POSCO CHEMICAL, POSCO ICT, POSCO M-TECH and POSCO C&C.

2) R&D expenditure was prepared based on a POSCO consolidated basis.

3) Ratio of disabled workers, employee satisfaction, years of continuous service, rate of return from childcare leave are affiliate averages

4) Based on POSCO separate basis.

* Parameters related to the number of employees including rates per capita, turnover rate, and ratio of contract workers are based on disclosure in the business report. However, the number of employees for POSCO E&C excludes contract workers employed on-site.

* Employee satisfaction, volunteer hours per capita and social contribution expenses differ from the 2017 report as internal management standards have changed.

* Rate of contract workers, energy and environment data have been partially corrected from the 2017 report to rectify errors.

Material Issues*

Category	Material Issue 1	Material Issue 2	Material Issue 3
Title	Safety and Health Activities	Environmental Investment and Management	Climate Action
Sub-categories	Occupational health & safety	Environmental management	Climate strategy
Reason for selection	<ul style="list-style-type: none"> • POSCO operates multiple worksites around the world, including Pohang and Gwangyang Works. In addition, employees of various partners work alongside our own employees. Any large accident on the production site constitutes materiality, as it not only harms people but incurs serious management losses. 	<ul style="list-style-type: none"> • Air pollutants have grave impact on on-site employees of POSCO and partners in terms of health and working environment as well as local residents in terms of health and quality of life. In particular, a Special Act on Fine Dust was announced in Korea, reflecting the growing social interest and concern towards air pollution. 	<ul style="list-style-type: none"> • Climate change is a pan-global issue. The rise in sea level, extreme weather events and other phenomena have material impact on human life and socio-structural change. POSCO is aware that climate action and carbon management activities present significant risk, but at the same time present strategic opportunities to enhance our corporate competitiveness.
Business Impact	Risk	Risk	Risk
Response plan	<ul style="list-style-type: none"> • Celebrating its 50th anniversary, POSCO declared the core value in April 2018, with safety as its top priority. To boost responsibility in the area of safety, POSCO established the Safety Strategy Bureau under the Production Division. At the two Steelworks, Safety and Disaster Prevention Group oversees safety activity planning all the down way to execution. • To operate all safety and health management activities in an autonomous and systematic manner, we received KOSHA 18001 and OHSAS 18001 certifications for our safety and health management system (April 2017-March 2019) • To guarantee the safety of everyone who works at POSCO, we provided safety training to 28,866 POSCO and partner employees. Moreover, in order to prevent all accidents, POSCO is making utmost effort to implement safe worksites by spreading "Smart Safety," which combines IoT and Big Data. 	<ul style="list-style-type: none"> • In order to minimize emissions of air pollutants, POSCO plans to invest 1.07 trillion KRW by 2021 – selective catalytic reduction facilities will be expanded mitigate Nox and six of our old off-gas power generation facilities will be replaced with state-of-the-art facilities. To reduce scattering dust, POSCO plans to install more on-premise storage facilities including silos, which are enclosed structures. Through these efforts, POSCO expects to reduce around 35 percent of air pollutant emissions by 2022. • Prior to the announcement of the Special Act on Fine Dust, POSCO signed an Agreement on Joint Response for Fine Dust Mitigation with the Ministry of Environment in January 2019. In February, we signed the Agreement with Gyeongsangbuk-do and Daegu City. Furthermore, POSCO plans to lead the way in mitigating fine dust emissions by improving environmental facility performance and developing technologies for process innovation. 	<ul style="list-style-type: none"> • In 2010, POSCO publicly declared the 2020 POSCO GHG Reduction Goal, under which POSCO plans to reduce GHG emissions per ton of crude steel from steelworks from 2.18 tCO₂/t-S in 2010 to 2.0. In line with the government's 2030 GHG Reduction Roadmap revised in 2018, POSCO will establish its own 2030 reduction goals. • With the launch of GHG emissions trading system in 2015, POSCO built a carbon accounting system that predicts the supply and demand of carbon credits and incorporates carbon credit costs. POSCO also established a system to support verification of emitted amounts, raising transparency and reliability of verification. By producing automotive HSS that boosts fuel efficiency, utilizing GBFS to replace cement material and more, POSCO has contributed to reducing social GHG by 14.62 million tons in 2018.
Long-Term Goal	Zero percent accident rate, zero victims of serious accidents	<ul style="list-style-type: none"> • Air pollutant intensity reduction (1.24) Air pollutant intensity: $\Sigma(\text{dust} + \text{SOx} + \text{NOx emissions}) / \text{crude steel production (T-S)}$ 	<ul style="list-style-type: none"> • CO₂ emissions intensity 2.0tCO₂/t-S
Target Year	2019	2024	2020
Executive KPI	Incorporate into evaluation of Head of Steel Business Unit	Incorporate into evaluation of Deputy Head of Steelworks for Safety and Environment	Incorporate into evaluation of Head of Technology Strategy Office
Relevant Report	POSCO Corporate Citizenship Report p.77~81	POSCO Corporate Citizenship Report p.26~37	POSCO Corporate Citizenship Report p.42~44

*Material issues are selected by PWC through level of interest evaluation, materiality evaluation, validity testing, etc. (POSCO Corporate Citizenship Report p.110)

Emerging Risks

Category	Emerging Risk 1	Emerging Risk 2
Risk Definition	We are subject to environmental regulations, and our operations could expose us to substantial liabilities.	Further increases in, or new impositions of, anti-dumping, safeguard or countervailing duty proceedings may have an adverse impact on our export sales.
Potential Business impact	<ul style="list-style-type: none"> • We are subject to national and local environmental laws and regulations, including increasing pressure to reduce emission of carbon dioxide relating to our manufacturing process. • And our steel manufacturing and construction operations could expose us to risk of substantial liability relating to environmental or health and safety issues, such as those resulting from discharge of pollutants and carbon dioxide into the environment, the handling, storage and disposal of solid or hazardous materials or wastes and the investigation and remediation of contaminated sites. • We may be responsible for the investigation and remediation of environmental conditions at currently and formerly operated manufacturing or construction sites. 	<ul style="list-style-type: none"> • As a steel producer with global sales and operations, we are involved in trade remedy proceedings in markets worldwide, including in the United States. • We proactively participate in and plan for such proceedings to minimize any adverse effects and associated risks. The increase in the number of trade regulatory cases and the growing voice of governments to strengthen protection trade are expected to have a negative impact on our business.
Mitigating actions	<ul style="list-style-type: none"> • POSCO plans to invest KRW 1.70 trillion by 2021 to minimize air pollutant emissions. To reduce Nox, selective catalytic reduction facilities will be expanded and replaced with the latest facilities after the closure of six old gas generating facilities. In addition, we plan to install an indoor storage facility such as a silo, which is an enclosed structure, to reduce scattered dust. Through these efforts, we expect to reduce air pollutant emissions by 35% by 2022. 	<ul style="list-style-type: none"> • We continue to carefully monitor developments with respect to trade remedy policy in all markets in which we participate and, where necessary, vigorously defend our rights through litigation before tribunals such as the U.S. Court of International Trade. • To cope with protectionism, POSCO is striving to enhance the quality of its steel products, strengthen countermeasure capabilities, and develop technologies to secure cost competitiveness. We are expanding sales of premium products to enhance the quality of steel products. The overseas steel business, which is vulnerable to changes in the international financial market and trading environment, is preparing preemptive countermeasures such as strengthening local trade cooperation and reducing foreign exchange risk. Internally, in order to secure cost competitiveness, we are developing technology to reduce costs and building a smart / eco-friendly production system.
Related reports	Form 20-F p.15, POSCO Corporate Citizenship Report p.36	Form 20-F p.13, POSCO Corporate Citizenship Report p.9

Independent Assurance Report



To the management of POSCO

We have been engaged by POSCO (the “Company”) to perform an independent assurance engagement in regard to the following aspects of Corporate Citizenship Report 2018 (the “Report”).

Scope and subject matter

The information for the year ended December 31, 2018 (hereinafter, collectively referred to as the “Sustainability information”) on which we provide limited assurance consists of:

- The Company's conclusion on meeting the principles of Inclusivity, Materiality and Responsiveness in the AA1000 AccountAbility Principles
- The non-financial information, stated in “GRI (Global Reporting Initiative) Standard Index (the pages 124- through 129)” as subject to an external assurance (the “Sustainability Data”) is prepared based on the reporting principles set out on GRI Standard with Core option

We read the other information included in the Report and considered whether it was consistent with the Sustainability Information. We considered the implications for our report in the case that we became aware of any apparent misstatements or material inconsistencies with the Sustainability Information. Our responsibilities do not extend to any other information.

Assurance work performed

We conducted our engagement in accordance with ISAE 3000¹⁾ and AA1000AS²⁾

The term ‘moderate assurance’ used in AA1000AS (2008) is designed to be consistent with ‘limited assurance’ as articulated in ISAE 3000. Our assurance is a Type II assurance engagement as defined in the AA1000AS (2008).

1) International Standard on Assurance Engagements 3000 – ‘Assurance Engagements other than Audits or Reviews of Historical Financial Information’ issued by International Auditing and Assurance Standards Board

2) AA1000 Assurance Standard(2008), issued by AccountAbility

Our work involved the following activities:

1. Interviews with the personnel responsible for internal reporting and data collection to discuss their approaches to stakeholder inclusivity, materiality and responsiveness
2. Visits to the Company's headquarter in Pohang, Pohang Works, Seoul office and 7 POSCO subsidiaries' headquarters to understand the systems and processes in place for managing and reporting the Sustainability Data
3. Review of samples of internal documents relevant to output from the risk assessment process, sustainability-related policies and standards, the sustainability materiality assessment matrix and other documents from stakeholder-engaged activities

4. Evaluating the design and implementation of key processes and controls for managing and reporting the Sustainability Data
5. Limited testing, through inquiry and analytical review procedures, of the preparation and collation of the Sustainability Data

Respective responsibilities of the management of the Company and Samil PricewaterhouseCoopers

The management of the Company is responsible for establishing reporting principles that meet the principles of Inclusivity, Materiality and Responsiveness in the AA1000APS, measuring performance based on the reporting principles, and reporting this performance in the Report.

Our responsibility is to provide a conclusion based on our assurance procedures in accordance with ISAE 3000 and AA1000AS.

This report, including the conclusion, has been prepared for the management of the Company as a body, to assist the management in reporting on the Company's sustainability performance and activities. We do not accept or assume responsibility to anyone other than the management of the Company as a body and the Company for our work or this report save where terms are expressly agreed and with our prior consent in writing.

Inherent limitations

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the subject matter and the methods used for determining such information. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments.

A limited assurance engagement is less in scope than a reasonable assurance engagement under ISAE 3000. Consequently, the nature, timing and extent of procedures for gathering sufficient, appropriate evidence are deliberately limited relative to a reasonable assurance engagement.

In particular:

- We did not attend any stakeholder-engaged activities. Therefore our conclusion is based on our discussions with the management and the staff of the Company, and our review of sampled documents provided to us by the Company.
- The scope of our work was restricted to 2018 performance only, as set out in the scope and subject matter section above. Information related to the year ended December 31, 2017 and earlier periods have not been subject to assurance by us.

Conclusion

Based on the results of the assurance work performed, our conclusion is as follows

- On the AA1000APS principles

Inclusivity

- The Company has collected concerns and opinion through stakeholder communication channels that include those of Customers, Partners, Stakeholders, Communities and Employees.
- Nothing has come to our attention to suggest that material stakeholder groups were excluded from these channels.

Materiality

- The Company has identified most relevant and significant sustainability issues through process for identifying material issues.
- Nothing has come to our attention to suggest that material issues were omitted in this process.

Responsiveness

- The Company has included in the Report its response to the material sustainability issues which are defined through process for identifying material issues.
- Nothing has come to our attention to suggest that there were material deficiencies in the issue management system.
- Nothing has come to our attention that causes us to believe that the Sustainability Data for the year ended December 31, 2018 is not fairly stated, in all material respects, in accordance with the Company's internal reporting principles set out on GRI Standard with Core option.

Recommendations

As a result of our work, we have provided the following recommendations to the management.

- The company presents corporate citizen as the management philosophy and pursues various corporate civic activities in the categories of Business, Society, and People. In particular, POSCO's Corporate Citizenship Committee, established as a top strategic advisory body, recommends that the company play an important role in co-developing with the society in the future by continuously listening to stakeholders' opinions.
- The company annually compiles and reports the ESG performance of major affiliates including the company and this year, additional reporting indicators have been added in response to the demands of the stakeholders. In the future, it is recommended that the sustainable management performance to be systematically managed in addition to continuous reporting.
- It is recommended that the company enhance the global sustainable management communication capabilities and expand the scope of the GRI standard, a sustainable management guideline, in order to provide a coherent report to the stakeholders.

Samil PricewaterhouseCoopers
Jae Heum Park, Partner

Samil PricewaterhouseCoopers
Jaeheum Park

Seoul, Korea
May 29, 2019

Independent Assurance Report on Carbon Reporting



To the management of POSCO

We have been engaged by POSCO (the “Company”) to perform an independent assurance engagement in regard to the following aspects of Climate Change of Corporate Citizenship Report 2018 (the “Report”) on the pages 42 through 54.

Scope and subject matter

The information for the year ended December 31, 2018 (hereinafter, collectively referred to as the subject matters) on which we provide limited assurance consists of:

- Direct (Scope 1) and indirect (Scope 2) CO₂ emissions per ton of crude steel for the year ended December 31, 2018 as described in table on page 45 and page 47.
- Social GHG Reduction Effect data and the amount of investments in energy recycling facilities and process innovation that were completed in 2018 and investments initiated in 2018 for the research and development projects to reduce CO₂ emissions on page 46.

We read the other information included in the Report and considered whether it was consistent with the subject matters. We considered the implications for our report in the case that we became aware of any apparent misstatements or material inconsistencies with the subject matters. Our responsibilities do not extend to any other information.

Assurance work performed

We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements 3000 – Assurance Engagements Other than Audits or Reviews of Historical Financial Information (“ISAE 3000”) and in respect of direct (Scope 1) and indirect (Scope 2) CO₂ emissions per ton of crude steel, International Standard on Assurance Engagements 3410 - Assurance Engagements on Greenhouse Gas Statements (“ISAE 3410”) issued by the International Auditing and Assurance Standard Board.

For the subject matters of limited assurance, our work included primarily inquiries of Company's personnel and analytical procedures applied to the subject matters. We planned and performed our work so as to obtain moderate assurance as to whether the subject matters are free of material misstatement.

Respective responsibilities of the management of the Company and Samil PricewaterhouseCoopers

The Company's management is responsible for the preparation and fair presentation of the subject matters in accordance with the criteria set forth in the POSCO GHG Accounting Guidelines and the POSCO Carbon Reporting Procedures.

Our responsibility is to provide a conclusion on the subject matters based on our assurance procedures.

This report, including the conclusion, has been prepared for the management of the Company as a body, to assist the management in reporting on the Company's carbon emissions performance and activities. We do not accept or assume responsibility to anyone other than the management of the Company as a body and the Company for our work or this report save where terms are expressly agreed and with our prior consent in writing.

Inherent limitations

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the subject matters and the methods used for determining such information. The absence of a significant body of established practice on which to draw allows for the selection of different but acceptable measurement techniques that can result in materially different measurements and can impact accuracy and comparability. The precision of different measurement techniques may also vary. Furthermore, the nature and methods used to determine such information, as well as the measurement criteria and the precision thereof, may change over time. It is important to read the subject matters in the context of the POSCO GHG Accounting Guidelines and the POSCO Carbon Reporting Procedures.

A limited assurance engagement is less in scope than a reasonable assurance engagement under ISAE 3000. Consequently, the nature, timing and extent of procedures for gathering sufficient, appropriate evidence are deliberately limited relative to a reasonable assurance engagement.

In particular, the conversion of material used to carbon emissions is based upon, inter alia, information and factors derived by independent third parties and our assurance work has not included examination of the derivation of those factors and other third party information.

Conclusion

Based on the results of the assurance work performed, our conclusion is as follows.

- Direct (Scope 1) and indirect (Scope 2) CO₂ emissions per ton of crude steel for the year ended December 31, 2018 are fairly stated, in all material respects, in accordance with the POSCO GHG Accounting Guidelines.
- Nothing has come to our attention that causes us to believe that Social GHG Reduction Effect data for the year ended December 31, 2018, and the amount of investments in energy recycling facilities and process innovation that were completed in 2018 and investments initiated in 2018 for the research and development projects to reduce CO₂ emissions are not presented fairly, in all material respects, in accordance with the POSCO Carbon Reporting Procedures set out on GRI Standard guidelines with Core option.

Samil PricewaterhouseCoopers
Jae Heum Park, Partner

Samil PricewaterhouseCoopers
Jae Heum Park

Seoul, Korea
May 29, 2019

GRI Index

GRI Standard		Disclosure	ISO 26000	Page / URL	Assurance
GRI 101: Foundation 2016					
General Disclosures					
Organizational Profile					
GRI 102	102-1	Name of the organization		6	●
	102-2	Activities, brand, products, and services		6	●
	102-3	Location of headquarters		6	●
	102-4	Location of operations		6	●
	102-5	Ownership and legal form		6	●
	102-6	Markets served		6	●
	102-7	Scale of the organization		6, 115	●
	102-8	Information on employees and other workers		83	●
	102-9	Supply chain		104	●
	102-10	Significant changes to the organization and its supply chain		Form 20-F p10~p21	●
	102-11	Precautionary Principle of approach		105~107	●
	102-12	External initiatives		108 ~ 109	●
	102-13	Membership of associations		116	●
Strategy					
GRI 102	102-14	Statement from senior decision-maker	4.7, 6.2, 7.4.2	4~5	●
Ethics and Integrity					
GRI 102	102-16	Values, principles, standards, and norms of behavior	7.7.5, 4.4, 6.6.3	90~93	●
Governance					
GRI 102	102-18	Governance structure	6.2, 7.4.3	11~14	●
Stakeholder Engagement					
GRI 102	102-40	List of stakeholder groups	5.3	111	●
	102-41	Collective bargaining agreements		99~100	●
	102-42	Identifying and selecting stakeholders		110~112	●
	102-43	Approach to stakeholder engagement		110~112	●
	102-44	Key topics and concerns raised		110, 119	●
Reporting Practice					
GRI 102	102-45	Entities included in the consolidated financial statements	7.5.3, 7.6.2	Form 20-F p3~p10	●
	102-46	Defining report content and topic Boundaries		2	●
	102-47	List of material topics		110, 119	●
	102-48	Restatements of information		2	●
	102-49	Changes in reporting		110	●
	102-50	Reporting period		2	●
	102-51	Date of most recent report		2	●
	102-52	Reporting cycle		2	●
	102-53	Contact point for questions regarding the report		2	●
	102-54	Claims of reporting in accordance with the GRI Standards		2	●
	102-55	GRI content index		124~129	●
	102-56	External assurance		121-123	●

GRI Index

GRI Standard		Disclosure	ISO 26000	Page / URL	Assurance
Material Topics_GRI 200 Economic Topics					
Economic Performances					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary		105~107	●
	103-2	The management approach and its components		105~107	●
	103-3	Evaluation of the management approach		105~107	●
GRI 201: Economic Performances 2016	201-2	Financial implications and other risks and opportunities due to climate change		42~45	●
	201-3	Defined benefit plan obligations and other retirement plans		99	●
	201-4	Financial assistance received from government		Form 20-F p189, p192, p265	●
Indirect Economic Impacts					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary		59	●
	103-2	The management approach and its components		59	●
	103-3	Evaluation of the management approach		59	●
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	6.3.9, 6.8.1-6.8.2, 6.8.7, 6.8.9	59~65	●
	203-2	Significant indirect economic impacts	6.3.9, 6.6.6-6.6.7, 6.7.8, 6.8.1-6.8.2, 6.8.5, 6.8.7, 6.8.9	59~65	●
Anti-Corruption					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary		90, 93	●
	103-2	The management approach and its components		90, 93	●
	103-3	Evaluation of the management approach		90, 93	●
GRI 205: Anti-Corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	6.6.1-6.6.3, 6.6.6	90~94	●
	205-3	Confirmed incidents of corruption and actions taken	6.6.1-6.6.3	92	●
Anti-Competitive Behavior					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary		96	●
	103-2	The management approach and its components		96	●
	103-3	Evaluation of the management approach		96	●
GRI 206: Anti-Competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	6.6.1-6.6.2, 6.6.5, 6.6.7	None	●
GRI 300 Environmental Topics					
Materials					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary		26~27	●
	103-2	The management approach and its components		26~27	●
	103-3	Evaluation of the management approach		26~27	●
GRI 301: Material 2016	301-1	Materials used by weight or volume	6.5.4	48	●
	301-2	Recycled input materials used	6.5.4	31, 40~41, 52	●
Energy					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary		50	●
	103-2	The management approach and its components	6.5.4	50	●
	103-3	Evaluation of the management approach		50	●

GRI Index

GRI Standard		Disclosure	ISO 26000	Page / URL	Assurance
GRI 300 Environment					
Energy					
GRI 302: Energy 2016	302-1	Energy consumption within the organization	6.5.4	46, 47	●
	302-2	Energy consumption outside of the organization	6.5.4	46, 47	●
	302-3	Energy intensity	6.5.4	46, 47	●
	302-4	Reduction of energy consumption	6.5.4-5	45~52	●
	302-5	Reduction in energy requirements of products and services	6.5.4-5	38~39, 46	●
Water					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		26~27	●
	103-2	The management approach and its components		26~27	●
	103-3	Evaluation of the management approach		26~27	●
GRI 303: Water 2016	303-1	Water withdrawal by source	6.5.4	29~30, 35	●
	303-2	Water sources significantly affected by withdrawal of water	6.5.4	29~30	●
Biodiversity					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		26~27	●
	103-2	The management approach and its components		26~27	●
	103-3	Evaluation of the management approach		26~27	●
GRI 304 Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas of high biodiversity value outside protected areas	6.5.6	34	●
	304-2	Significant impacts of activities, products, and services on biodiversity	6.5.6	34	●
	304-3	Habitats protected or restored	6.5.6	34	●
Emissions					
GRI 103 Management Approach 2016	103-1	Explanation of the material issue and its boundary		26~27, 36~37, 42	●
	103-2	The management approach and its components	6.5.5	26~27, 36~37, 42	●
	103-3	Evaluation of the management approach		26~27, 36~37, 42	●
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	6.5.5	47	●
	305-2	Energy indirect (Scope 2) GHG emissions	6.5.5	47	●
	305-3	Other indirect (Scope 3) GHG emissions	6.5.5	46	●
	305-4	GHG emissions intensity	6.5.5	45	●
	305-5	Reduction of GHG emissions	6.5.5	50~54	●
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	6.5.3	35	●
Effluents and Waste					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		29, 40	●
	103-2	The management approach and its components		29, 40	●
	103-3	Evaluation of the management approach		29, 40	●
GRI 306: Effluents and Waste 2016	306-1	Total amount and quality of water discharge by destination	6.5.3-4	35	●
	306-2	Total amount of waste by type and disposal method	6.5.3	35	●
	306-3	Total amount of significant spills	6.5.3	32	●
	306-4	Total amount of transported hazardous waste	6.5.3	31~32	●
	306-5	Water bodies affected by water discharges and / or runoff	6.5.3	31~32	●

GRI Index

GRI Standard		Disclosure	ISO 26000	Page / URL	Assurance
GRI 300 Environment					
Environmental Compliance					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		26~28	●
	103-2	The management approach and its components		26~28	●
	103-3	Evaluation of the management approach		26~28	●
GRI 307: Environmental Compliance 2016	307-1	Penalties due to non-compliance with environmental laws and/or regulations	4.6	None	●
Supplier Environmental Assessment					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		100	●
	103-2	The management approach and its components		100	●
	103-3	Evaluation of the management approach		100~102	●
GRI 308: Supplier Environmental Assessment 2016	308-1	Percentage of new suppliers that were screened using environmental criteria	6.3.5, 6.6.6, 7.3.1	101	●
	308-2	Percentage of suppliers identified as having negative environmental impacts and corrective actions taken	6.3.5, 6.6.6, 7.3.1	101	●
GRI 400 Social Topics					
Employment					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		82, 84	●
	103-2	The management approach and its components	6.4.3	82, 84	●
	103-3	Evaluation of the management approach		82	●
GRI 401: Employment	401-1	Total number and rates of new employee hires and employee turnover	6.4.3	93	●
	401-2	Benefits provided to full-time employees only	6.4.4, 6.8.7	73, 99	●
	401-3	Parental leave	6.4.4	83	●
Labor / Management Relations					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		99~100	●
	103-2	The management approach and its components		99~100	●
	103-3	Evaluation of the management approach		99~100	●
GRI 402: Labor/Management Relations 2016	402-1	Minimum periods of notice in advance regarding operational changes	6.4.3, 6.4.5	98	●
Occupational Health and Safety					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		77, 81	●
	103-2	The management approach and its components	6.4.6	77, 81	●
	103-3	Evaluation of the management approach		80	●
GRI 403: Occupational Health and Safety 2016	403-1	Percentage of total workforce represented in formal joint management-worker health and safety committees that evaluate and advise on work safety and health programs	6.4.6	79	●
	403-2	Rates of injuries, work-related illnesses, absences as well as the total number of work-related fatalities by region and gender	6.4.6, 6.8.8	77	●
	403-4	Work safety and health issues covered in formal agreements with labor unions	6.4.6, 6.8.8	79, 100	●
Training and Education					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		84	●
	103-2	The management approach and its components		84~87	●
	103-3	Evaluation of the management approach		87	●
GRI 404: Training and Education 2016	404-1	Types and number of average hours of training per year per employee	6.4.7	87	●
	404-2	Programs that support the continued employability of employees and their career advancement	6.4.7, 6.8.5	84~85	●

GRI Index

GRI Standard		Disclosure	ISO 26000	Page / URL	Assurance
GRI 400 Social Topics					
Diversity and Equal Opportunity					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary	6.2.3, 6.3.7, 6.3.10, 6.4.3	93	●
	103-2	The management approach and its components		93	●
	103-3	Evaluation of the management approach		93	●
GRI 404: Diversity and Equal Opportunity 2016	404-1	Diversity in governing bodies and among employees	6.2.3, 6.3.7, 6.3.10, 6.4.3	83, 93	●
	404-2	Ratio of basic salary and remuneration of women to men	6.3.7, 6.3.10, 6.4.3, 6.4.4	100	●
Non-discrimination					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary	6.3.6, 6.3.7, 6.3.10, 6.4.3	93	●
	103-2	The management approach and its components		76, 93	●
	103-3	Evaluation of the management approach		93	●
GRI 406: Non-discrimination 2016	406-1	Total number of discriminatory incidents and corrective actions taken	6.3.6, 6.3.7, 6.3.10, 6.4.3	92, 94	●
Freedom of Association and Collective Bargaining					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary	6.3.6, 6.3.7, 6.3.10, 6.4.3	99~100	●
	103-2	The management approach and its components		99~100	●
	103-3	Evaluation of the management approach		99~100	●
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	6.3.3, 6.3.4, 6.3.5, 6.3.8, 6.3.10, 6.4.5, 6.6.6	99~100	●
Child Labor					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		103	●
	103-2	The management approach and its components		103, 108	●
	103-3	Evaluation of the management approach		103	●
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor and corrective actions taken to abolish child labor	6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.10, 6.6.6, 6.8.4	103	●
Human Rights Assessment					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		93	●
	103-2	The management approach and its components		93	●
	103-3	Evaluation of the management approach		94	●
GRI 412: Human Rights Assessment 2016	412-1	Operation that has been subject to human rights review or impact assessments on	6.3.3-6.3.6	94	●
	412-2	Employee training on human rights policies and procedures	6.3.3-6.3.6	90~91, 94	●
Local Communities					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		72~75, 60	●
	103-2	The management approach and its components		72~75, 60	●
	103-3	Evaluation of the management approach		72~75, 60	●
GRI 413: Local Communities 2016	413-1	Percentage of operations with local community engagement, impact assessments, and development programs	6.3.9, 6.59~65	59~65	●

GRI Index

GRI Standard		Disclosure	ISO 26000	Page / URL	Assurance
GRI 400 Social Topics					
Supplier Social Assessment					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		101~104	●
	103-2	The management approach and its components		101~104	●
	103-3	Evaluation of the management approach		101~104	●
GRI 414: Social Supplier Assessment 2016	414-1	Percentage of new suppliers that were screened using social criteria	6.3.5, 6.6.1-6.6.2, 6.6.6, 6.8.1-6.8.2, 7.3.1	102, 104	●
	414-2	Percentage of suppliers identified as having negative social impacts and corrective actions taken	6.3.5, 6.6.1-6.6.2, 6.6.6, 6.8.1-6.8.2, 7.3.1	102, 104	●
Public Policy					
GRI 103 Management Approach 2016	103-1	Explanation of the material issue and its boundary		-	●
	103-2	The management approach and its components		-	●
	103-3	Evaluation of the management approach		-	●
GRI 415: Public Policy 2016	415-1	Political contributions	6.6.1-6.6.2, 6.6.4	116	●
Marketing and Labeling					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		97	●
	103-2	The management approach and its components		97	●
	103-3	Evaluation of the management approach		97	●
GRI 417: Marketing and Labeling 2016	417-2	Total number and types of incidents of non-compliance concerning product and service information and labeling	4.6, 6.7.1-6.7.5, 6.7.9	None	●
	417-3	Total number and types of incidents of voluntary non-compliance concerning marketing communications	4.6, 6.7.1-6.7.3	None	●
Customer Privacy					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		97	●
	103-2	The management approach and its components		97	●
	103-3	Evaluation of the management approach		97	●
GRI 418: Customer Privacy 2016	418-1	Total number of substantiated complaints concerning breaches of customer privacy and losses of customer data	6.7.1-6.7.2, 6.7.7	None	●
Socioeconomic Compliance					
GRI 103: Management Approach 2016	103-1	Explanation of the material issue and its boundary		96	●
	103-2	The management approach and its components		96	●
	103-3	Evaluation of the management approach		96	●
GRI 419: Socioeconomic Compliance 2016	419-1	Penalties due to non-compliance with laws and/or regulations in the social and economic area	4.6, 6.7.1-6.7.2, 6.7.6	None	●

1) 206-1, 307-1, 416-2, 417-2, 417-3, 418-1, and 419-1 were verified in the sanction status of POSCO (special standard) during the reporting period in accordance with the 2018 POSCO Business Report Sanctions announced on DART (Data Analysis, Retrieval and Transfer System by Financial Supervisory Service).

UN SDGs(Sustainable Development Goals)

NO.	SDGs	Activities	Page
Goal 1	End poverty in all its forms everywhere	-	-
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	-	-
Goal 3	Ensure healthy lives and promote well-being for all at all ages	Environmental investment and management to reduce air pollutant emissions Support to address the issue of low-birthrate	36~37 73
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Dream Bridge POSCO Youth Volunteer Corps, "Beyond" POSCO Educational Foundation POSCO TJ Park Foundation Facility maintenance specialist development program (preparing for retirement of senior employees) POSCO Youth Character Education Program	62 62 65 65 86 86
Goal 5	Achieve gender equality and empower all women and girls	-	-
Goal 6	Ensure availability and sustainable management of water and sanitation for all	Expansion and optimized management of recycling industrial water Partaking in 'Water Management Project' hosted by World Steel Partaking in the CDP Water Disclosure project	28~29 30 30
Goal 7	Ensure access to affordable, reliable, sustainable and clean energy for all	Generation of solar power using rooftop panel inside the steel plants Generation of small hydropower using raw water of Sueo dam Investment and R&D efforts in GHG reduction facilities	45 45 46
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Venture support programs Youth employment and startup support programs Operation of Café O Asia Operation of social enterprises (POSCO HUMANS, Songdo SE, POSPLATE etc.)	74 75 60 61
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	-	-
Goal 10	Reduce inequality within and among countries	-	-
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable	Steel Villages (Indonesia), Steel Houses (Korea) Silver Homecare Talent Volunteer Groups, POSCO Global Volunteer Corps Sister villages, 'Sharing Saturday' volunteer activities	60 60 62~63 63
Goal 12	Ensure sustainable consumption and production patterns	Pursuing second battery material business Development of new environmentally friendly products Support for SMBs through technical cooperation, financial assistance, and partnership programs	56 38~39 67~72
Goal 13	Take urgent action to combat climate change and its impacts	Setting 2020 POSCO's Voluntary GHG Reduction Target Energy efficiency improvement activities (power efficiency improvement etc.) Innovative POSCO technology (steelmaking through hydrogen-based reduction process etc.) Contributing to GHG reduction through products (high-efficiency, high-strength steel sheet etc.)	44 50~51 51 51
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Marine waste removal by Clean Ocean Volunteer Corps Coastal marine forest formation of Project	34 34
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt diversity loss	-	-
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Campaign for establishing corporate culture of respect for humans and ethical practices Introduction of the Fair-Trade Compliance Program (CP) Policy provision for stakeholder engagement activities	91 96 111~112
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	Building a model for POSCO Research and Industry – academia cooperation World Steel UN Global Compact	57 30 131

UN GLOBAL COMPACT Communication on Progress(CoP)

NO.	SDGs	Activities	Page
Human Rights	“Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2: make sure that they are not complicit in human rights abuses.”	Global human Rights Management	93
		Non-discrimination and Diversity	98
		Code of Conduct for POSCO Group Suppliers	101
		Sustainability Management Policies	108
Labour Standards	“Principle 3 : Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4: the elimination of all forms of forced and compulsory labour; Principle 5: the effective abolition of child labour; and Principle 6: the elimination of discrimination in respect of employment and occupation.”	Global Human Rights Management	93
		Non-discrimination and Diversity	98
		Employment Stability and Job Security	98
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