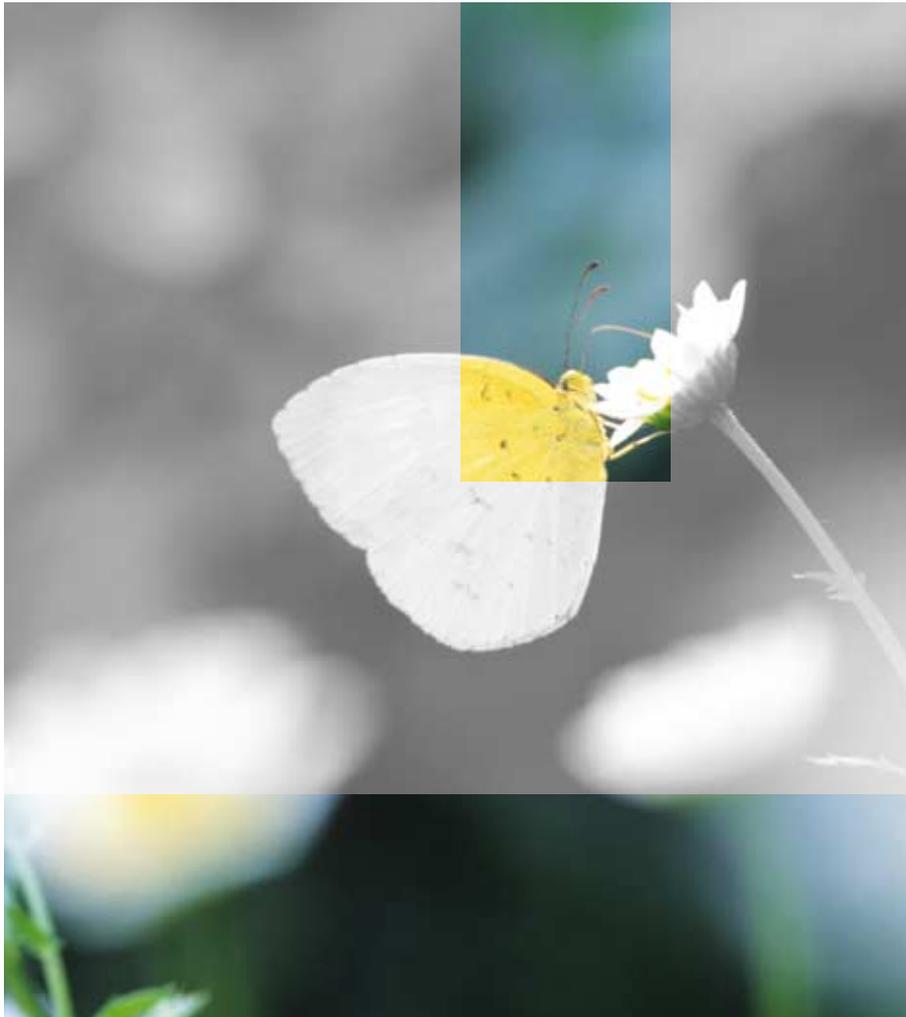




Environmentally Sound
& Sustainable Development

posco



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Enhancing Corporate Value through Environment Management

POSCO's environmental management is based on the principle of coexistence that simultaneously pursues both **environmental soundness and economic profitability.**

POSCO reduces the pollutants at their sources and implements thorough post treatment to realize **environment-friendly steelworks.**

POSCO made the comprehensive environmental evaluation possible by developing **POSCO Environmental Performance Index (POSEPI)** and has come to show you more **transparent and objective environmental management performance.**

POSCO will not spare its **efforts for R&D** of the cleaner environment and **for local communities.**

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“ The executives and staffs of POSCO are united to ensure the successful implementation of environmental management, a new business management paradigm. Continuously improving, our PI activities already on track will take our environmental management to new heights in the future. ”

A handwritten signature in blue ink that reads "S. B. Yoo". The signature is stylized and fluid.

Sang-Boo Yoo
Chairman of the Board
/ Chief Executive Officer

Enhancing Corporate Value through Environmental Management

With concerns growing over the increasingly severe global environmental problems such as environment contamination and natural resources depletion, industry's responsibility to the environment is more stressed than ever before. As making excellent environmental efforts has emerged as one of the key factors for evaluating corporate competitiveness, POSCO has been exerting its efforts to enhance POSCO's intrinsic value as well as help solve the Earth's environmental problems by systematically implementing an environmental policy that allows the economy and the environment to coexist. Beyond solving environmental problems in the production site, POSCO has implemented an enterprise-wide strategic environmental management policy that even considers the environmental effect of the work and decision-making of all our executives and staffs.

Declaring an environmental policy under the vision of 'Enhancing Corporate Value through Environmental Management,' POSCO has considered environmental aspects of the products and processes by using life cycle analysis, refined the organization structure to better comply with various international environment standards, and periodically evaluated environmental performance. In research and development, we are concentrating on new environment-friendly technologies and elsewhere, we are focusing on the development of an environmental accounting system that accurately values and accounts for environment-related investments and costs. Especially, we have implemented Process Innovation (PI) across the organization, and striven to achieve environmental process innovations.

As a result, work process has been able to flow more quickly and efficiently through the decision-making and work performed by considering various environmental aspects. Accordingly, we have come

to effectively cope with the drastically changing internal and external environment-related changes such as environmental conventions including the Framework Convention on Climate Change. Furthermore, we can openly report on the soundness of our environmental management, meeting the 'right to know' demands of our major stakeholders such as community members, environmental organizations, the government, investors, shareholders and so forth.

Above all, POSCO aims to maximize its market value by focusing on the following areas to improve environmental management activities. First, we will enhance the efficiency of resources and energy. Second, we will form a strategic decision-making system to systematically manage environmental problems as effectively as possible. Third, we will proactively improve the environmental problems through considering the whole life cycle of products and processes and solidifying ceaseless monitoring activities. Forth, we will fulfill the 'rights to know' of major parties of interest including community members, shareholders, and investors. Finally, we will advance the supply-chain management system to ensure that our steel products are produced and managed in the most environment-friendly ways possible.

The executives and staffs of POSCO are united to ensure the successful implementation of environmental management, a new business management paradigm. Continuously improving, our PI activities already on track will take our environmental management to new heights in the future.

We at POSCO fully understand the importance of environmental management as a core element of competitiveness in the 21st century. Thus, our concrete commitment to improving the environment is not only enhancing our world-class competitiveness but also safeguarding the environment for future generations.

“ POSCO's basic philosophy on the Environmental Progress Report has been to make the interested parties well informed through the transparent reporting of environment management performance. ”



Chang-Oh Kang
Senior Executive Vice President
/ Chief Technology Officer



Securing social credibility through transparent reporting of the operation results and the intrinsic excellence of management activities have become critical factors in enhancing a company's competitiveness in the 21st century. Especially, transparency in the environmental information, by which a company's social responsibility and philanthropy can be evaluated, plays an important role in the fulfillment of interested parties' 'right to know,' prompting the needs for the publication of Environmental Progress Report.

Various guidelines for Environmental Progress Reports have been presented domestically and internationally, setting standards for transparency in reporting and guiding the efficient environmental management of the companies. The number of the companies that publish Environmental Progress Reports under these guidelines is greatly increasing worldwide.

Having paid great attention to the Company's social responsibility since its foundation, POSCO published the Environmental Progress Report in 1994 for the first time in Korea in an effort to enhance the transparency of the Company's management. Ever since, POSCO's basic philosophy on the Report has been to make the interested parties well informed through the transparent reporting of environment management performance.

The 2002 Environmental Progress Report is also based on the above philosophy. Especially, the main considerations in 2002 Environmental Progress Report are on enhancing the understanding of readers by refining the structure and deepening the contents while maintaining consistency and transparency.

Accordingly, the format of the Report has changed to more clearly communicate the environmental policy, environmental objectives, and various activities associated with achieving the objectives to realize the environment management vision of 'Enhancing Corporate Value through Environmental Management.' While containing much information on environmental management activities and performance, comprehensive readability has remained our priority to ensure the readers can easily understand POSCO's environmental position by using simple sentence forms and easy terms to understand.

On publishing 2002 Environmental Progress Report, we would like to remind the importance of environmental management to a companies' competitiveness in the 21st century and present our pledge to continuously improve environmental performance and openly report our results. I express sincere gratitude for your support in the past and I hope for your continued support and encouragement in the future.

Environmental Policy



Environmental preservation has always been fundamental to POSCO's management approach. The Company has established and enacted measures to prevent pollution from the source. Steel products have been manufactured and supplied in the most environment-friendly ways possible. To contribute to the global environmental protection effort, POSCO has instituted and strictly adheres to the following Environmental Policy. This policy governs all activities being carried out at both Pohang and Gwangyang Works:



- POSCO recognizes that the environment is a key factor in corporate management strategy, and the company strives to harmonize environmental concerns with other aspects of business operation for greater overall competitiveness.
- POSCO acknowledges that all corporate activities impact the environment, and the company constantly strives to prevent pollution and improve environmental quality.
- The POSCO Environmental Policy begins with strict adherence to environment-related laws and regulations, and the Company establishes and implements in-house standards that take into account the local environment in which operations are situated.
- POSCO always seeks ways to use energy most efficiently and to conserve resources used in every business activity.
- POSCO efficiently re-uses and recycles waste materials generated during production to avoid secondary pollution problems.
- POSCO establishes and implements plans for improving environmental quality and sets detailed targets to ensure that the Environmental Policy is carried out. Moreover, an audit system is in place to routinely review and evaluate the results of environmental protection efforts.
- POSCO remains committed to developing environment-related technologies, particularly cleaner technologies.
- POSCO provides thorough training to all employees so that they can fully take part in the company's proactive efforts to improve environmental quality.
- POSCO provides all interested parties with reports on Environmental Policy and objectives, and all companies working with POSCO receive guidance on environment-friendly management practices.



Environmental Objectives



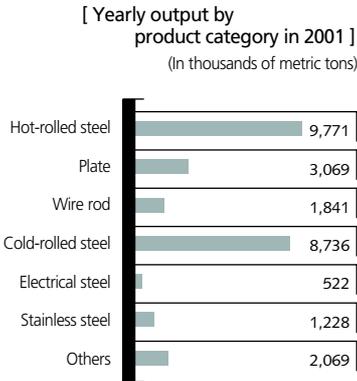
POSCO sets five major environmental objectives during 2001 to direct efforts to comply with environmental regulations and proactively seek to improve the Company's environmental management. To implement these objectives, POSCO incorporates new environmental management techniques with the existing management system backed by the executives and staffs' improved awareness and dedication to environment preservation. To date, continuous reduction of pollutants and their recycling have been enhanced, furthermore, POSCO has strengthened the Company's competitiveness by introducing cleaner production technology and developing environment-friendly products. Starting from the perception that the corporations and the community are coexisting, included in the environmental objectives in 2001 are POSCO's efforts to improve environmental quality of the community surrounding the steelworks.

Environmental Objectives in 2001

- 1 Proactively comply with tougher new environmental laws
- 2 Continue to reduce the volume of major pollutants and increase recycling rate
- 3 Develop cleaner technology and environment-friendly products
- 4 Manage the environmental quality of the community surrounding the steelworks
- 5 Introduce advanced environmental management tools and enhance the environmental training and social relations



Environmental Aspects of Iron & Steel Making Processes



POSCO has two steelworks each located in Pohang and Gwangyang. They are fully equipped with integrated iron & steel works including iron making, steel making, and rolling processes. Pohang Works includes a carbon steel mill that turns out hot-rolled coil, cold-rolled sheet, wire rod and plate, as well as a stainless steel mill. Gwangyang Works, meanwhile, is equipped with a carbon steel mill for both hot- and cold-rolled products as well as mini mill for producing hot-rolled products from scrap iron and hot metal.

Pohang Works, sitting in the coastal industrial complex at Yeongil bay, Gyeongsangbuk-do, looks over downtown of Pohang across the Hyeongsan river. As most of the wind in Pohang area blows from the southwest, most of air pollutants usually diffuse over Yeongil bay without reaching the land. Water for industrial use is supplied by the Yeongcheon Dam and the wastewater is discharged to Yeongil bay after treatment.

Gwangyang Works is located in the coastal industrial complex at Gwangyang bay, Jeollanam-do. Spread to the Northwest is Gwangyang downtown and the wind blows from land out to the sea. Water for industrial use is supplied from the Su-eo Dam and the wastewater is discharged to Gwangyang bay after treatment.

Both Works employ cleaner facilities for reducing environmentally harmful substances at the source during the production processes and highly energy efficient facilities in their production processes. Moreover, all the generated substances are treated thoroughly in end-of-pipe facilities.



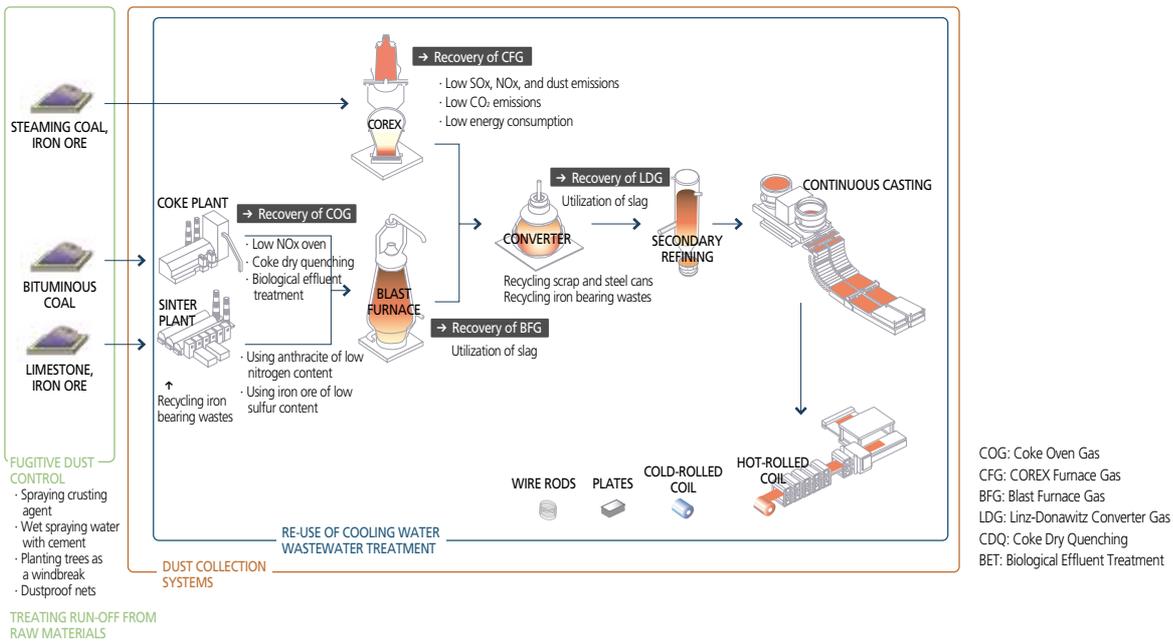
Pohang Works Location



Gwangyang Works Location

Environmental Aspects of Iron & Steel Making Processes

Carbon Steel Production Processes

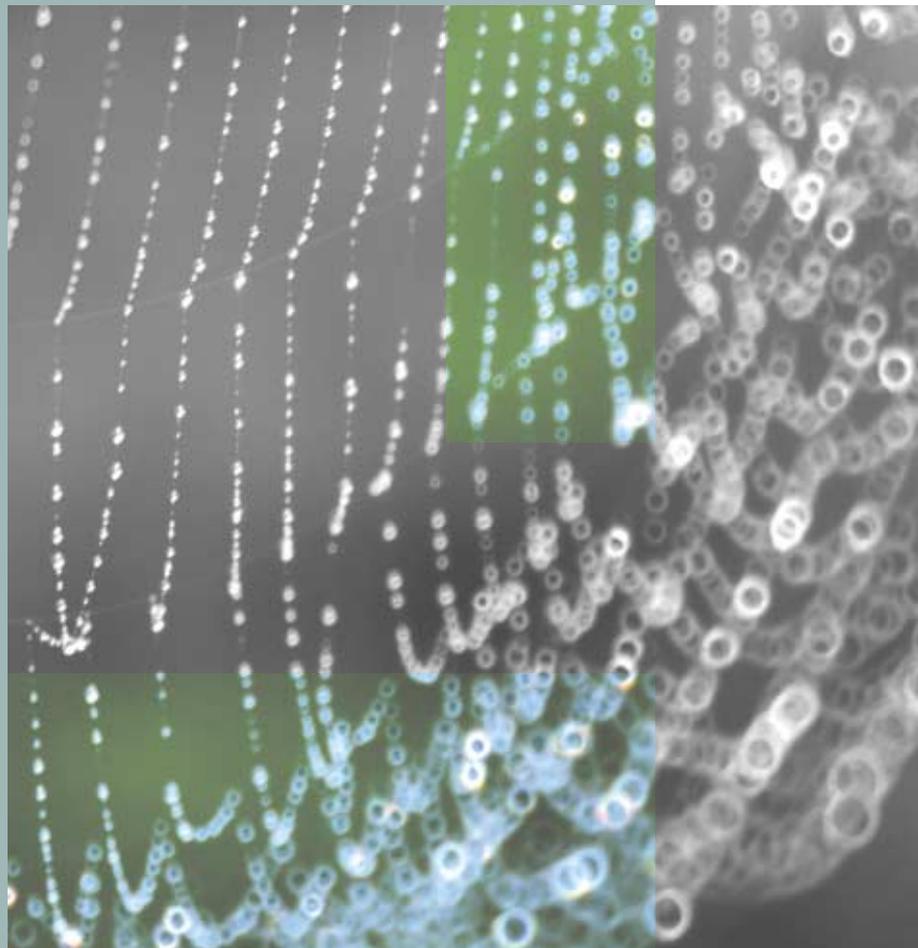


POSCO Key Figures

Type		Unit	2000	2001
Raw material & energy purchase	Iron ore	Thousands of metric tons	36,604	39,518
	Coal	Thousands of metric tons	18,573	18,542
	Electricity	GWh	4,210	3,264
	Heavy Oil	Millions of liters	198	71
	LPG, LNG, Light Oil	Tcal	2,308	5,714
Industrial Water Usage		Thousand m ³	95,175	96,579
Emissions	Dust	Kg/T-S	0.28	0.27
	SO _x	Sm ³ /T-S	0.39	0.34
	NO _x	Sm ³ /T-S	0.76	0.75
	Wastewater	Thousand m ³	39,346	35,077
	COD	g/T-S	11.9	9.7
Products	Crude steel	Thousands of metric tons	27,735	27,825
	Steel products	Thousands of metric tons	26,904	27,236
By-product Recycling	Blast furnace slag	Thousands of metric tons	8,193	8,240
	Steel making slag	Thousands of metric tons	4,589	4,433
	Others	Thousands of metric tons	3,484	4,056

* T-S: Tons of Steel

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RELIABILITY

ENVIRONMENTAL MANAGEMENT SYSTEM

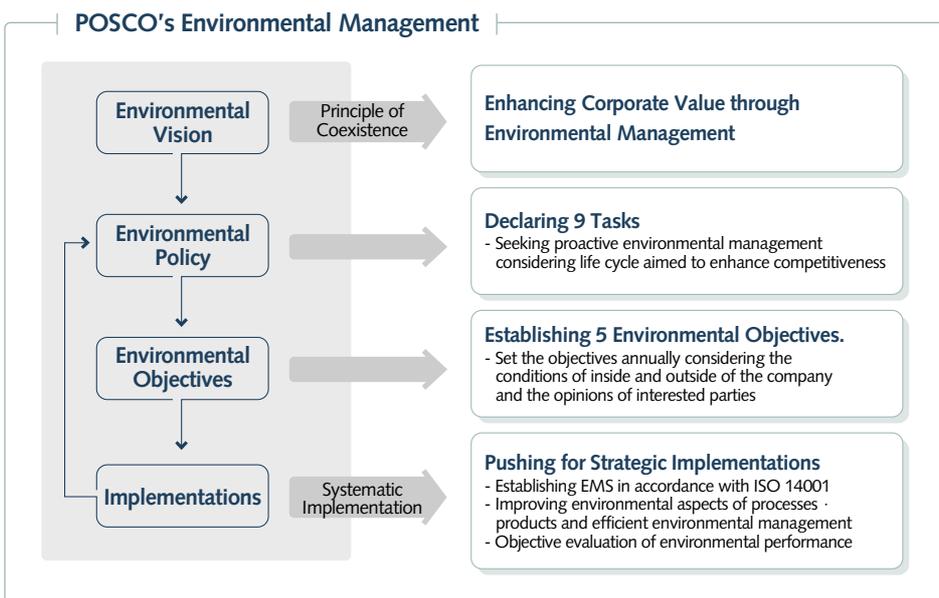
POSCO's environmental management is based on the principle of coexistence that simultaneously pursues both environmental soundness and economic profitability.

System · Organization · Communications



In line with its environmental management, POSCO set the environmental policy based on the principle of 'Enhancing Corporate Value through Environmental Management,' which aims at harmonizing environmental soundness and business benefit. An Environmental Management System (EMS) and its various tools such as life cycle assessment and environmental accounting have been applied and the existing environmental management activities have been enhanced in an effort to achieve environmental objectives.

Particularly, the ISO 14001 certification received in July, 1996 has enabled us to systematically plan for environmental improvements and implement procedures more effectively, such as refining the environmental management organization, managing the pollution prevention facilities, and delivering the training more effectively. As part of the monitoring procedures, periodic internal and external audits are also performed to ascertain how well the Environmental Management System is working, enhancing the transparency of the environmental management. The top management comprehensively reviews the internal and external condition changes as well as the audit results, enhancing the strategic environmental management.



System · Organization · Communications



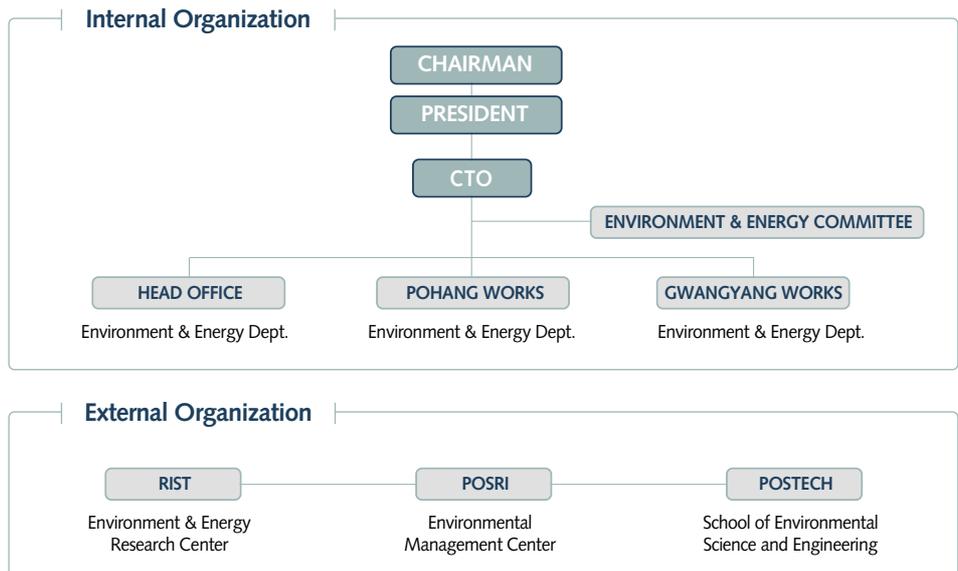
1994 Environmental Progress Report



POSCO's Environmental Management Homepage

As EMS has been introduced, the organization of POSCO's Environmental Management has been updated and refined. Within the Company's organizational structure, both the Head Office and Pohang and Gwangyang Works have Environment & Energy Departments. The Head Office Environment & Energy Department establishes the basic direction for environmental management and attends to external cooperation issues and international agreements while the two on-site departments carry out environmental management at the steelworks. The Environment & Energy Committee has top decision-making and inspection roles, supports the top management's decision making, extends environmental management through all departments and enhances POSCO's proactive environmental management.

Meanwhile, POSCO is supported by various external organizations including the Environment & Energy Research Center at the Research Institute of Industrial Science & Technology (RIST) and the School of Environmental Science and Engineering at the Pohang University of Science and Technology (POSTECH), and the Environmental Management Center at the POSCO Research Institute (POSRI) with regard to scientific and technical matters as well as the environmental management policy and related techniques.



Since 1994, POSCO has published the Environmental Progress Report annually to openly report on its environmental management position so that the stakeholders can be better informed. Further disclosure has been made through the environmental management homepage (<http://www.steel-n.com/posenv/index.html>) since December 2001, on which environmental management index of two steelworks and air environment status of surrounding areas have been reported. Through this interactive website, POSCO welcomes feedback and comments from interested parties. Currently, the site is operated only in Korean.

Training · Audit · Environment & Energy Committee



POSCO runs various in-house training programs to improve staffs' environmental awareness and work capabilities. Through offering 'Environmental Management' as a subject in the on-line education program (<http://e-campus.posco.co.kr/>), all the staffs have the opportunity to learn basic knowledge needed for Environmental Management. The environmental technology conference is held quarterly to exchange information regarding environmental issues, successful practices, and environmental R&D. POSCO sets work standards of environmental facilities based on the steelworks' environmental impact and mandates standard compliance with the operators and supervisors. POSCO is well equipped with the system by which it can quickly cope with the emergency through regular training more than once a year.

Periodic internal and external audits are also performed to ascertain how well the environmental management system is working. The audit results are reported to top management and the Environment & Energy Committee and then used to improve effectiveness and appropriateness of the environmental management system.

2001 Environmental Management System Audits

External Audit

Works	Period of audit	Audit organization
Pohang Works	'01. 3.12~ 3.15	LRQA Korea
Gwangyang Works	'01. 9.17~ 9.19	LRQA Korea

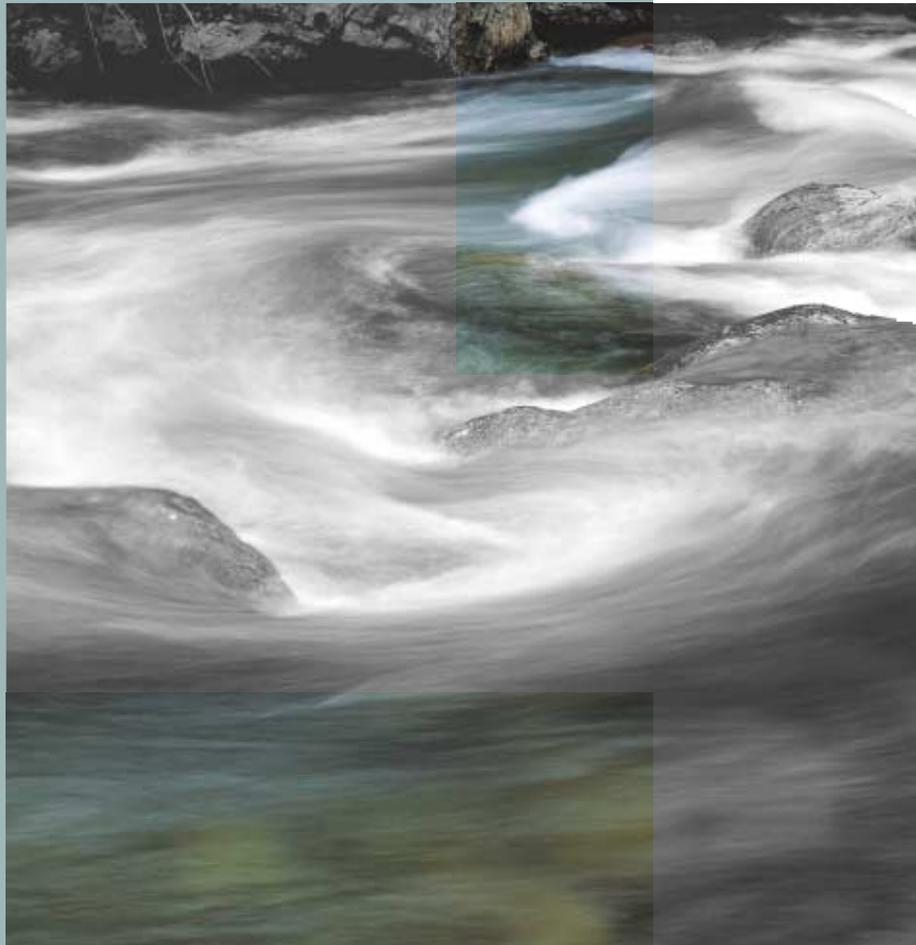
Internal Audit

Works	Period of audit	Administrator
Pohang Works	'01.11.26~11.30	Environment & Energy Department
Gwangyang Works	'01. 6.21~ 6. 30, '01.11.30~12. 4	Environment & Energy Department

2001 Environment & Energy Committee Meeting

Time	'01. 3. 7
Subjects	<ul style="list-style-type: none"> ■ 2000 Environmental Management status and plans for 2001 ■ Discussion <ul style="list-style-type: none"> ▶ Introduction of advanced environmental management tools ▶ Status of mid- and long-term energy saving plan ▶ Recycling of iron-bearing by-products

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ESSENTIAL

ENVIRONMENTAL IMPROVEMENT ACTIVITIES

POSCO reduces the pollutants at their sources and implements thorough post treatment to realize *environment-friendly steelworks.*

Environmental Investment and Costs



Since its establishment, POSCO has spent an aggregate of ₩2.2 trillion, or 8.9% of all new facility investments, on environment-related improvements. A total of ₩111.2 billion was spent on new environmental protection facilities in 2001 alone, an increase of ₩61.1 billion from 2000.

The operation and maintenance of environmental facilities cost ₩512.6 billion (excluding ₩14.8 billion invested in Environmental R&D) in 2001. The greatest portion (48%) of this outlay was on facility operations, among which the electricity for environmental facility operations accounted for the most with ₩133.9 billion. Recycling costs were increased by ₩7 billion compared to 2000 as the related costs increased with the recycling of dust and sludge increase. Depreciation increased by ₩7 billion compared to 2000 because of increase in facility investment such as dust collection system and claus plant installment in 2001.

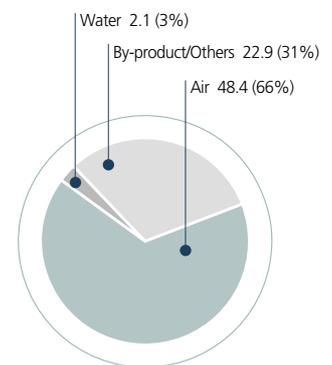
Environmental Protection Facility Investment in 2001

Type	Pohang Works	Gwangyang Works
Air	<ul style="list-style-type: none"> ○ Claus plant installation ○ Complement of iron making belt conveyer ○ Telemetry system complement ○ Installation of dust collection system, pretreatment process of hot metal 	<ul style="list-style-type: none"> ○ Telemetry system complement ○ Installation of roof dust collection system, steel making plant No. 2 ○ Complement of dust collection system, rotary lime kiln
Water	<ul style="list-style-type: none"> ○ Installation of wastewater treatment facility, pretreatment process of hot metal ○ Installation of wastewater treatment facility, continuous casting No. 3 	<ul style="list-style-type: none"> ○ Installation of drainage work at ore and coal yards No. 3, 4 ○ Complement of sewage treatment facility ○ Complement of drainage junction pit facility ○ Complement of effluent treatment facility, iron making facility No. 2 ○ Complement of biological effluent treatment facility buffer tank, cokes plant
Resources	<ul style="list-style-type: none"> ○ Installation of steelmaking slag crusher 	<ul style="list-style-type: none"> ○ Scrap treatment installation, hot rolling mill No. 1

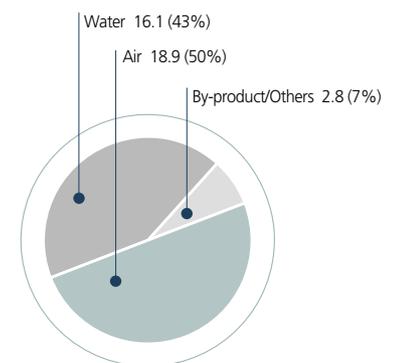
Environmental Costs Spent in 2001

Type	Contents	Costs (In billions of Korean Won)
Facility Operations	Electric power, labors, chemicals, maintenance of environmental facilities etc.	247.4
Recycling	By-product processing, transportation, incinerating, landfill	135.7
Depreciation	Environmental protection facility depreciation	123.0
General Management	Salary for environment related division, Environmental progress reporting costs, and etc.	6.5

[Environmental Investment in 2001]
(In billions of Korean Won)



Pohang Works



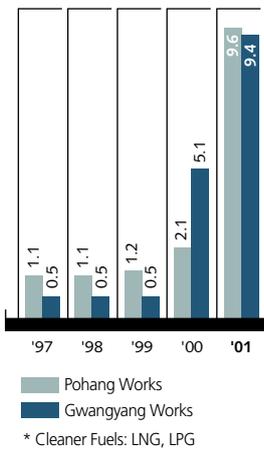
Gwangyang Works

Efforts to Save Energy

Coal is an indispensable raw material for steel production that, when used as an iron ore reducing agent, allows the collection of by-producing gases including Blast Furnace Gas (BFG). These gases can then be used as alternative energy sources in each iron and steel making process and self power generation. Electricity, liquefied natural gas (LNG), and heavy oil are also used as energy sources. POSCO used 14.5 million TOE* energy in 2001.

* 1 Ton of Oil Equivalent (TOE) is the calorific value of 1 ton crude oil, equivalent to 10 million kcal.
* LNG: Liquefied Natural Gas

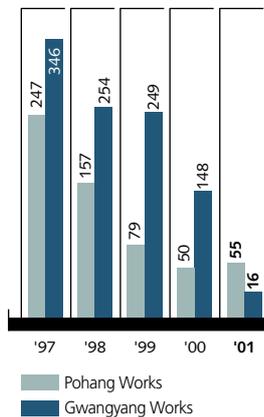
[Use of Cleaner Fuels] (%)



At steelworks, energy usage is major part of production cost. To actively reduce the amount of energy used, POSCO prepares medium- and long-term energy saving plans at the periodically held meetings of enterprise-wide Environment & Energy Committee and Energy Management Committee of both steelworks. The Company signed a voluntary agreement with the government and has been striving to reduce its energy usage by 5.9% of 1997 level over 5 years from 1999 to 2003. This plan will be achieved through various activities including replacement of cleaner fuel and raw materials, process improvement, facility investment and R&D.

As an exemplary case, POSCO has been increasingly using LNG, a cleaner fuel that reduces sulfur oxides and CO₂. LNG combined power plants, with total capacity of 845MW, began operation at Pohang and Gwangyang steelworks in March, 2000 and January, 2001, respectively. Since then, the heavy oil usage has declined to around 12% of total energy usage compared with 1997 level. POSCO is planning to construct an LNG terminal with a capacity of 1.7 million tons at the surrounding area of Gwangyang Works by March, 2005.

[Amount of Heavy Oil Use]
(In millions of liters)



Waste heat was utilized in place of fossil fuels such as heavy oil and liquefied gas to provide heat in local residential areas. The waste heat was collected from the cokes plants, sinter plants, continuous casting plants and reheating furnaces of hot-rolling mills. The collected heat is then used to heat boilers, which in turn, generate 260°C steam or 90°C hot water that is supplied to the surrounding residential areas. The pipe work construction connecting Pohang Works and local residential areas of Hyoja and Jigok was completed on October 31, 2001.

POSCO developed the Organic Rankine system that generates power by collecting heat under 300°C and has applied the system at the power plants, Pohang Works since June 2001. In technology development, POSCO has striven to develop energy saving technologies such as regenerative burner system for ladle heating and applied them in the industrial sites. Gwangyang

Efforts to Save Energy

Works has reduced its energy usage by 1.7% compared to that of 1997 level by replacing the steel making regenerative burner system for teeming ladle. POSCO is planning to continue its investment in energy saving with the construction of coke dry quenching facilities at cokes plant No. 4 at Pohang Works and cokes plant No. 2 at Gwangyang Works through 2006.

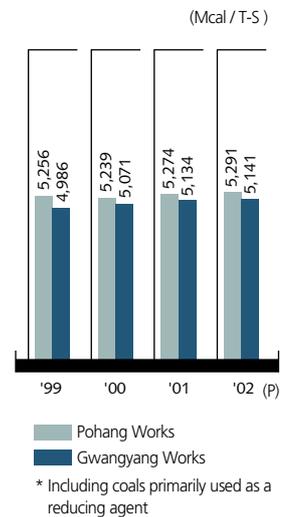
POSCO is actively participating in the worldwide efforts to prevent global warming by reducing the emission of greenhouse gases including carbon dioxides.

Since 1993, in cooperation with RIST and POSTECH, POSCO has been developing technology to separate CO₂ from waste gas using Pressure Swing Adsorption (PSA). A pilot plant utilizing this technology is currently processing waste gas from a power plant at Gwangyang Works. The pilot plant, constructed in October 2001, has an annual separation capacity of 500 tons of CO₂.

POSCO is actively participating in the government's efforts to establish global warming prevention policies and technological development strategies. The Company participated in establishing the 10-year plan to develop CO₂ separation and utilization technologies by taking part in the study group on the technologies, organized by the Korea Energy Management Corporation (KEMCO).



[Performance & Targets for Energy Needed to Produce 1 Ton of Crude Steel]



By-product Management



The by-products generated in the steelworks can be used in various ways and recycled to create both economic and environmental value through preserving domestic resources and reducing environmental pollution. Accordingly, POSCO has sought to minimize its waste and develop high value-added use of the by-products.

[By-products from Iron & Steel Making Processes]



>> Increasing Recycling Rate of By-products

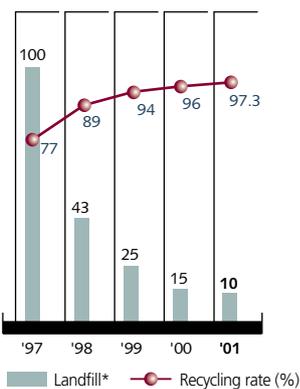
In 2001, POSCO generated 17.2 million ton by-products, equivalent to 62% of the crude steel output. Divided into each segment, blast furnace slag accounted for 48%, and steel making slag comprised 26%, bringing total slag to account for 74% of total by-products generated. Dust and sludge comprised 14% and the others accounted for 12% of total by-products.

The recycling rate of by-products has increased from 77% in 1997 to 97.3% in 2001. Furthermore, wastes disposed of at landfills in 2001 have declined to one tenth of those in 1997, greatly extending the life of landfills.

>> Developing High Value-added Usage of Slag and Contributing to the Environment Preservation.

Slag, a by-product generated after separating hot metal, is fully recycled as functional and raw materials.

[Recycling Vs. Landfill]



* Comparison with 1997 level at 100

Blast furnace slag is the by-product that is produced when non-ferrous metals in the iron ore, limestone and cokes are separated from the hot metal in the blast furnace. It consists of inorganic substance whose chief elements are lime (CaO) and silicon dioxide (SiO₂). Two types of blast furnace slag are produced, depending on how it is cooled. Granulated slag, which is cooled quickly in a water quenching facility, forms non-crystalline granules. Most of the granulated slag is put into cement and fertilizer production, while air-cooled slag is mostly used for granular base materials.

To enhance the added value and increase the demand of blast furnace slag, POSCO, through joint research with domestic societies of related fields and the Korean Institute of Construction Materials, identified fine particle properties of granulated slag and established application standards. The ground granulated blast furnace slag can be used as cement additives to improve the quality. Due to its advantage as a substitute for cement, the demand for granulated slag has drastically increased, thereby boosting the proportion of granulated slag produced to 71% of total blast furnace slag production in 2001, compared with 43% in 1998. POSCO is planning to increase the production ratio of granulated slag to 80% in 2002.

By-product Management

Granulated slag can greatly reduce CO₂ emissions and the amount of limestone required in the cement manufacturing process. About 1.3 tons of raw limestone is used to produce 1 ton of cement and 800-900kg of CO₂ is generated in the process. The total amount of recycled granulated slag reached 5.5 million tons in 2001, which effectively preserved 7 million tons of limestone and reduced CO₂ emissions by 4.7 million tons.

Environmental Benefits from Using Granulated Slag as a Cement Replacement (Million tons per year)

	1998	1999	2000	2001
Limestone Conservation	4.4	5.5	6.7	7.0
CO ₂ Emission Reduction	2.9	3.7	4.5	4.7

Steel making slag is generated during the refining of hot metal and is normally transported to a cooling yard. After cooling, the hardened slag is crushed and screened, during which, magnets are used to retrieve residual iron for recycling. The slag is then used as iron-bearing additives into cement, aggregates in civil works, and raw materials for bricks.

By combining the characteristics of air-cooled and steel making slag, POSCO has developed composite slag aggregates in granular base applications. The slag has substituted the air-cooled slag that previously used as base course materials for road construction. The excellent quality of composite slag has been confirmed through test construction, solving supply shortage of air-cooled slag and stabilizing the demand of steel making slag. At the same time, POSCO has been pushing for the development in new applications of steel making slag in harbor construction and the ocean.

Through these efforts, all steel making slag has been utilized since 2000 while only its 43% was recycled in 1997.



Composite slag for base course materials



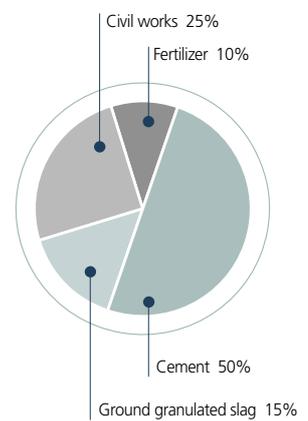
Sediment capping material



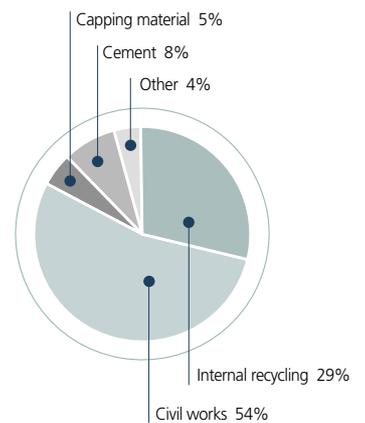
Artificial reef made of slag

[Slag Utilization]

- Blast Furnace Slag

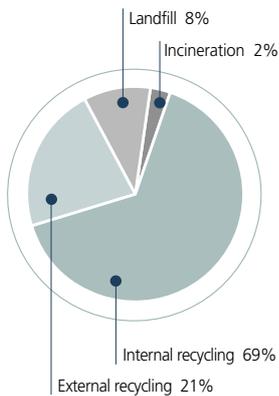


- Steel Making Slag



By-product Management

[Dust & Sludge Utilization]



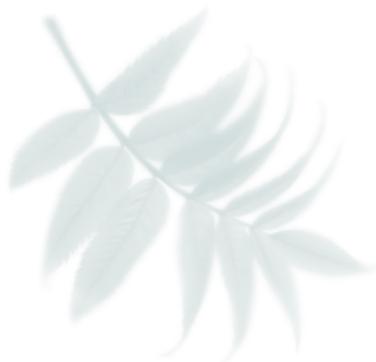
>> Recycling of Dust & Sludge and Other By-products

Dust and sludge are generated in overall steel making processes such as iron making, steel making, rolling and wastewater treatment and used as iron-bearing additives in the steel making processes, lime replacement, raw materials in sinter plants.

Containing much iron and lime substances, dust and sludge are used in cement manufacturing as iron material or in fertilizer production.

POSCO continues to utilize more of dust and sludge, with 90% being recycled in 2001, up 8% from 2000. The recycling rate of dust increased to 97% in 2001 from 95% in 2000 and that of sludge increased to 82% in 2001 from 69% in 2000, reflecting the increased use in cement and other applications both inside and outside the steelworks.

For waste refractories, POSCO is developing applications for aggregate of civil construction through the installation of crushing and screening facilities. POSCO is also continuing its efforts to improve processes, aiming to reduce waste to zero and pushing R&D for environment-friendly recycling and processing technologies.



Efforts to Improve Air and Water Quality

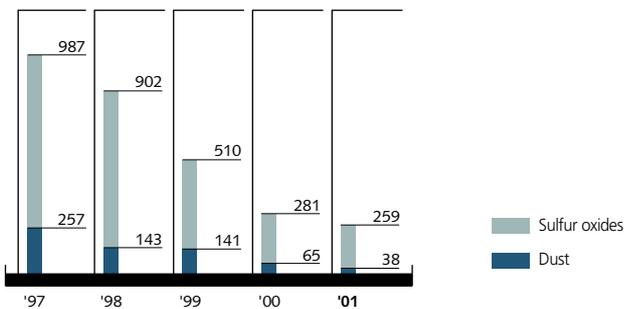
POSCO is committed to developing and improving processes that reduce pollutants at the sources as well as stably process the pollutants to realize environment-friendly steelworks.

POSCO has promoted the "Clean and Green Steelworks Campaign" since 1999 which encourages the improvement of environmental facilities and the enlargement of green areas. POSCO has continued its efforts to reduce pollutants through introducing cleaner production processes and using cleaner fuels and raw materials. Efforts have also been exerted to reduce the emission of volatile organic compounds and prevent odor. POSCO's commitment to environmental preservation is enduring to better the local community environment, irrespective of merely meeting the government's legal requirements.

>> Dust Emission Reduction

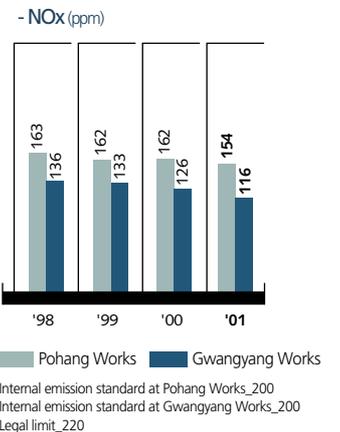
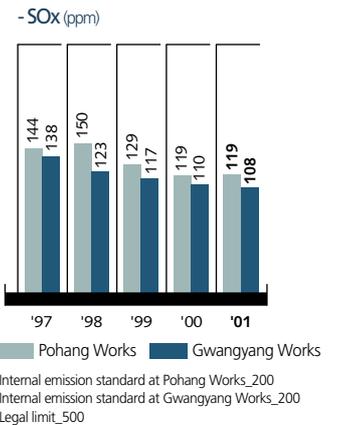
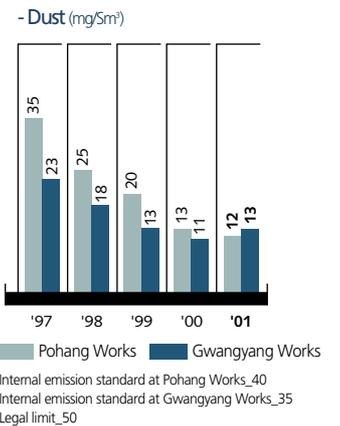
Pohang Works has reduced dust emissions through the development of environment-friendly manufacturing processes along with continuously upgrading 550 high-performance dust collectors. The dust emission basic levy in 2001 was ₩38 million, only 15% of 1997's ₩257 million. This decrease was a result of a 48% improvement in the dust collecting capabilities of the sinter plant through utilizing Micro-Pulse System (MPS) and upgrading the steel making dust collecting hood and filter materials of the converter dust collectors.

Pohang Works' Air Pollutant Emission Basic levies (In millions of Korean Won)



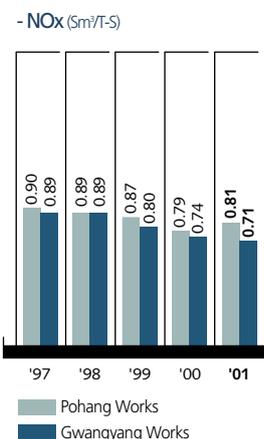
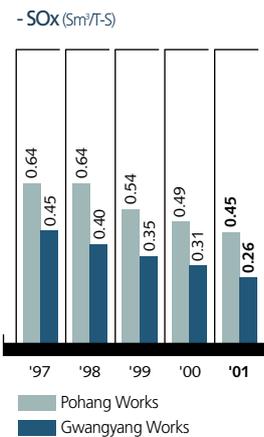
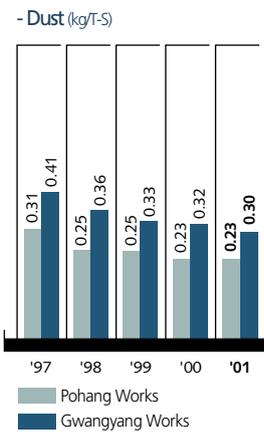
Pohang Works has reduced dust emissions by applying technologies to suppress slopping in full operation of converters. Steel making slopping can emit large amount of dust as the gas contained in the slag layer escapes during the blowing into converter. Through developing the variable blowing pattern and improving the additional material input method, not a single steel making seething has occurred since 2000, compared to its frequent occurrence of 8 times per month in 1999.

[Main Indices for Sinter Plants]



Efforts to Improve Air and Water Quality

[Total Dust, SOx & NOx Emissions]



Water and crusting agents are sprayed on the iron ore and coal stored in the yard to reduce fugitive dust at Gwangyang Works. A dustproof net, 17 meters high and 2,400 meters long, was installed over the outdoor storage yards in 1998, preventing fugitive dust from polluting the surrounding areas.

A sprinkler system installed 20 meters above the conveyor belt frame is activated 5-7 times every day, preventing iron ore dust at the crusher and on the conveyor system from being blown by the wind. The environment officer patrols various spots in the Works and checks the emissions of fugitive dust.

About 600 facilities of bag filters, electrostatic precipitators, and wet scrubbers are in operation to minimize the amount of dust being released into the air from the sinter plants and various other processes. By nurturing the specialized dust collector service company, facilities can be evaluated and parts supplied at optimal times to ensure the best capabilities are maintained.

>> Sulfur Oxide and Nitrogen Oxide Reduction

Since 1996, Pohang Works has reduced the emissions of sulfur oxides and nitrogen oxides through using low-sulfur and low-nitrogen coal and iron ore. The claus plant to treat coke oven gases from cokes plants No. 3, and No. 4 has been in operation since 1999. Additional plant for the cokes plant No. 4-2 will be installed by 2005. Approximately, 30% of electricity used is through LNG power plants to reduce sulfur and nitrogen oxides by reducing heavy oil use. In all, emission of sulfur oxides has been drastically decreased to 651Sm³/hr, almost half of the 1995 level while the basic levy for sulfur oxide emission has been reduced to ₩259 million in 2001 from ₩987 million in 1997.

Pohang Works plans to install FINEX facilities that can eliminate sinter and cokemaking by greatly improving the existing blast furnace operations. Accordingly, the FINEX demo plant with annual production capacity of 600,000 tons is being installed. The FINEX plant of commercial scale will substitute blast furnaces No. 1 and 2 and drastically reduce sulfur oxides and nitrogen oxides emitted in blast furnace operations.

After desulfuration, Gwangyang Works uses by-product gases as clean alternative energy fuels. Use of iron ore of Peru origin was discontinued in 1996 due to its high sulfur content. In July 1998, the on-site power plant began to use heavy oil with 0.5% or less sulfur content, and LNG was introduced in 1999, pioneering great reductions in sulfur oxide emissions. POSCO is increasing the use of raw materials with low sulfur and operating a circulating system for generator waste gas and a combustion burner that emits less nitrogen oxides.

Efforts to Improve Air and Water Quality

>> Digital Environmental Monitoring System

POSCO is establishing an environmental monitoring system with real-time feedback on pollutant levels and a forecast system of pollutant density in surrounding areas, pioneering new ground in environmental management.

For this, the Company installed a telemetry system to monitor gas emissions for 30 major emission facilities in Pohang Works, and 13 additional systems are under installation. The air quality changes of the steelworks boundary are also monitored. POSCO is planning to incorporate the real-time monitoring of odor substances and volatile organic compounds into the existing digital environmental monitoring system.

Gwangyang Works also operates an environmental monitoring center that systematically monitors the environment conditions of the entire worksite as well as the surrounding community. In real time, the center monitors approximately 190 variables in 76 spots, which include the emission of stacks, the air quality of surrounding areas, noise, and weather. Surveillance cameras are installed at vulnerable areas and monitored 24 hours a day. The measured results are compiled and transmitted along with a report on current and forecasted weather conditions to the steelworks so that operations can be carried out in consideration of environmental concerns. When a potential environmental problem arises, a warning system is used to instruct operational units so the problem can be quickly addressed. These efforts help to suppress the generation of pollutants as much as possible. The real-time conditions of major facilities including the electric arc furnace and incinerator are transmitted to the environment authorities.



Spraying water at sinter plants



Environmental monitoring center at Pohang Works

Efforts to Improve Air and Water Quality



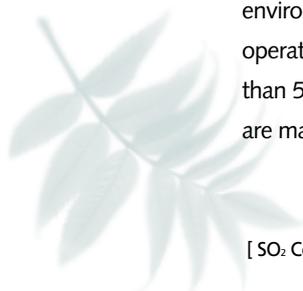
Dustproof net

>> Improving Community Environment

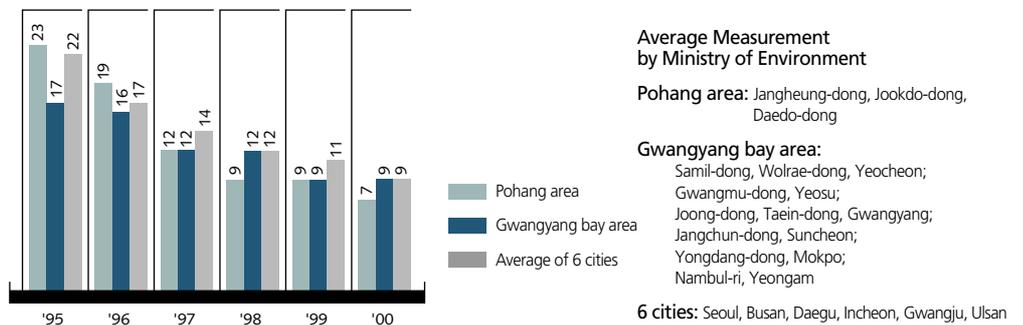
The effectiveness of POSCO's environmental management, which includes the use of cleaner fuel of less sulfur content, pollutant treatment facilities and enlarged investment, are substantiated through the air quality data of the local community.

The particulate density of Pohang area is measured as 45-49 $\mu\text{g}/\text{m}^3$, relatively lower than the 51-65 $\mu\text{g}/\text{m}^3$ level of domestic metropolitan cities in 2000, reported by the Ministry of Environment and much lower than the 70 $\mu\text{g}/\text{m}^3$ average annual air quality standard of particulates. Especially, the particulate and SO_2 concentration at Haedo-dong, a vicinity of Pohang Works, have been reduced to 41 $\mu\text{g}/\text{m}^3$ and 7ppb, compared with 49 $\mu\text{g}/\text{m}^3$ and 10ppb in 1995.

Gwangyang Works is located in Gwangyang bay area surrounded by Gwangyang city, Hadong-gun, Namhae-gun, and Yecheon Industrial Complex. According to 2001 data released by the Ministry of Environment, the average annual density of SO_2 was 10ppb, half of the environment standard level of 20ppb. This level is very stable and remains below 14ppb, as found in an environmental effect evaluation executed by Jeollanam-do in 1986 when the Works was not in operation. In 2001, the density of nitrogen oxide chemicals was measured as 20ppb, much lower than 50ppb average annual environmental standard. Other particulate and ozone concentrations are maintained at levels 50% lower than environmental standards.



[SO_2 Concentration in Air Surrounding Pohang and Gwangyang Bay Areas] (ppb)



Efforts to Improve Air and Water Quality

>> Water Quality

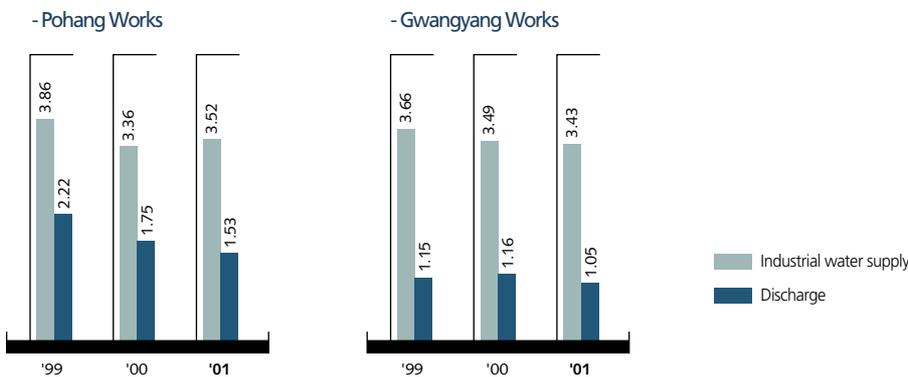
More than 100m³/T-S is required in the steel making process if industrial water is not recirculated. Most steelworks in the world use less than 10m³/T-S through recycling industrial water.

POSCO has been reducing water usage through wastewater recycling and scientific management of water used in the Works. The water usage in 2001 was only 3.52m³/T-S at Pohang Works and 3.43m³/T-S at Gwangyang Works.

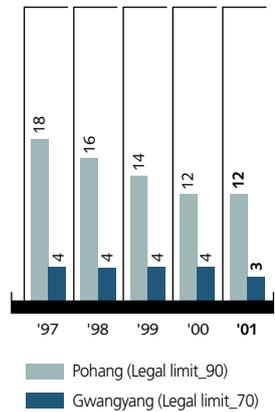
The wastewater generated from steelworks is first treated at wastewater treatment facilities of each plant and 98% is recycled during the process. Once again treated at final treatment facility, a part of the remaining wastewater is re-used as spray to prevent dust at raw material yard and the other is released into the nearby ocean.

Gwangyang Works has a final treatment facility with an activated carbon adsorption system normally used to purify tap water to minimize the generation of water pollutants including Chemical Oxygen Demand (COD). A high-performance activated carbon adsorption system with a capacity of 7,000m³/day is being installed at Pohang Works to improve the existing cokemaking wastewater treatment facilities and the system is scheduled for completion in October 2002.

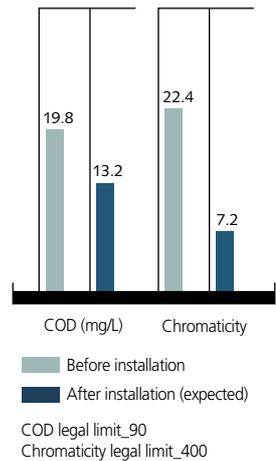
[Industrial Water Supply and Discharge] (m³/T-S)



[COD in Effluents] (mg/L)



[COD and Chromaticity Improvement by Activated Carbon Adsorption System at Gwangyang Works]

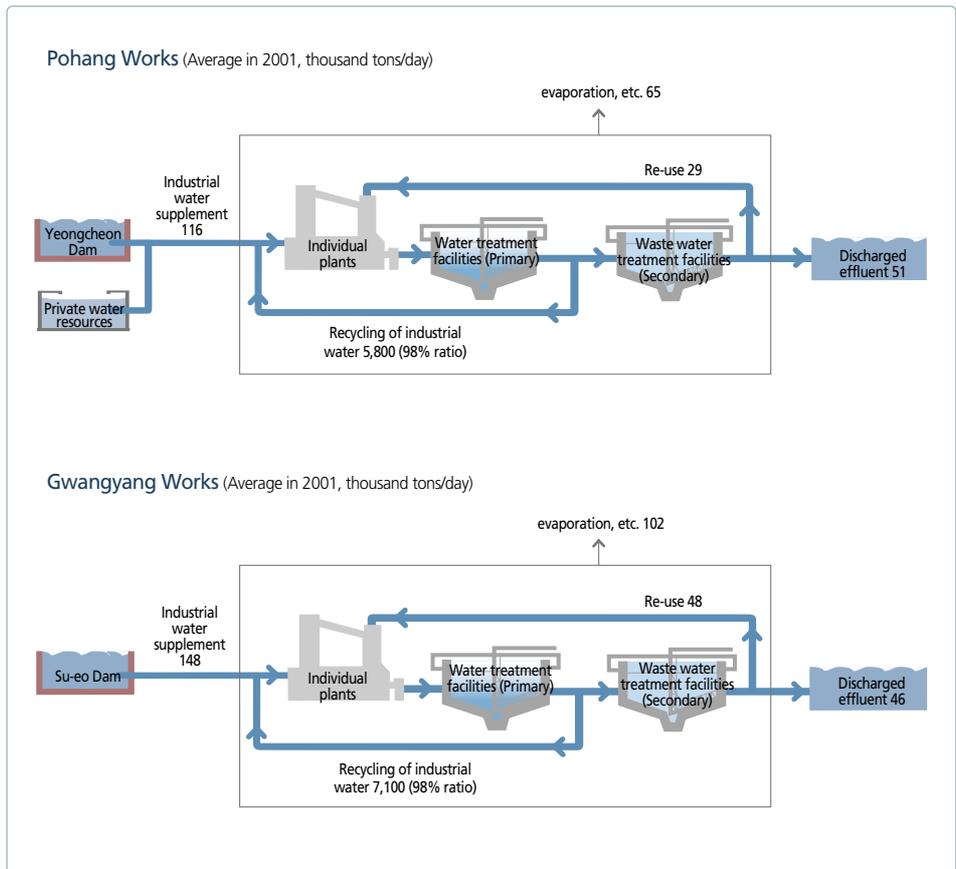


Efforts to Improve Air and Water Quality

A total nitrogen discharge standard of 60mg/L, which is currently applicable to certain rivers and lakes, will be applied to every river and lake nationwide from January 1, 2003. POSCO has been trying to proactively prepare for this environment regulation through an economical and stable total nitrogen reduction plan, R&D and consultation with experts. In part, the Company decided to introduce a denitrification facility for cokemaking wastewater and stainless steel wastewater, both major sources of total nitrogen discharge.

In case of wastewater from stainless steel plant, POSCO has decided to extend the acid regeneration facility to reduce total nitrogen generation at its source. The denitrification facilities for treating coke plant effluents at both steelworks are scheduled for completion in October 2002. That at the stainless steel plant of Pohang Works is scheduled for completion in December 2002.

Water Balance



Developing Environment-Friendly Products



Steel products are easy to recycle because they can be easily separated from trash using magnets and recycled when put into the electric arc furnace as scrap iron. In this respect, steel has a lot more environment-friendly factors including resource preservation, energy saving, and minimization of harmful substance release.

Steel-framed structures are not only lighter than concrete structures but also highly energy efficient and stable. Steel cans can easily be separated from trash with magnets and then recycled. Automobiles made with high-strength steel sheet require less material, conserving resources, while making them lighter and more fuel-efficient. Corrosion-resistant steel extends the life of automobile bodies, also helping in the conservation of resources.

POSCO is taking advantage of the environment-friendly properties of steel to develop and supply 'eco-products' that satisfy the needs of various customers.

>> Environment-friendly Steel for Structural Use

POSCO has successfully developed and is ready to commercialize next-generation steel for structural use that improves the hardness and life of the existing steel two-fold. Conventional steel for structural use contains chrome, molybdenum, and nickel to increase the hardness. In the production of the environment-friendly steel for structural use, the hardness is enhanced by strong rolling at low temperature to make the particle size inside the steel minute rather than heat treatment, drastically reducing the used amount of chrome, molybdenum, and nickel.

>> Lead-free Steel Plate for Automobile Fuel Tanks

Steel plates for automobile fuel tanks need to be anti-corrosive and easy to manufacture, coat, and weld. Conventional automobile fuel tanks are made of terne sheet (steel sheet plated with lead and tin) in order to prevent corrosion, but generate shredder dust with lead content when dismantled for scrap. Overcoming this environmental problem, POSCO has developed and is now supplying lead-free plated steel sheets for automobile fuel tanks that are coated with an organic, special-purpose liquid resin substitute. In the test evaluation performed with the members from the domestic automotive industry, the lead-free steel plate showed its excellence in various properties such as ease in coating, malleability, and environmental friendliness.



Next-generation steel for structural use



Lead-free plated steel sheets for automobile fuel tanks

Developing Environment-Friendly Products



>> Chromium-free, Chemical-treated Galvanized Steel Sheet

Galvanized steel sheets are highly resistant to corrosion and a solution containing chromium is normally applied to them during the finishing process to ensure that paint adheres well to the steel. POSCO has developed a special chemical solution that does not contain chromium. Galvanized steel sheets that have been treated with the new solution are now being used by major Korean electronic companies, preventing the discharge of chromium from electronics waste and in the recycling process.

>> Ultralight Steel Automobiles

In its effort to begin an era of economical and environment-friendly ultra light cars, POSCO has actively participated in the Ultra Light Steel Auto Body (ULSAB) project jointly led by the members of the International Iron & Steel Institute (IISI).

The developments of ULSAB and Ultra Light Steel Auto Suspensions (ULSAS) project were successfully completed in 1998 and 2000, respectively. Furthermore, POSCO completed Ultra Light Steel Auto Closures (ULSAC) project in 2001.

Led by the International Iron & Steel Institute from 1994, the ULSAB project successfully developed the Ultra Light Auto Body by using high-tensile steel and hydroforming technology*.

* Hydroforming: The technology through which any complex shape can be made into the same thickness by exerting the same pressure onto the whole plate using high-pressure water until the panel shape is completed.

Through ULSAC, POSCO managed to lighten doors, hoods and other automobile parts by 22-29%. POSCO also substantiated through ULSAS that the steel suspension system can be lightened by 34% with the introduction of advanced design concept and use of high-tensile steel.

When the Ultra Light Steel Auto Body-Advanced Vehicle Concepts (ULSAB-AVC) project is successfully completed in late 2003, an automobile that once weighed 1,300kg can be produced weighing just 900kg, improving fuel efficiency to 34km/L from 13km/L. As such, the ULSAB-AVC is expected to continue its reputation for stability, economic value and environmental friendliness.

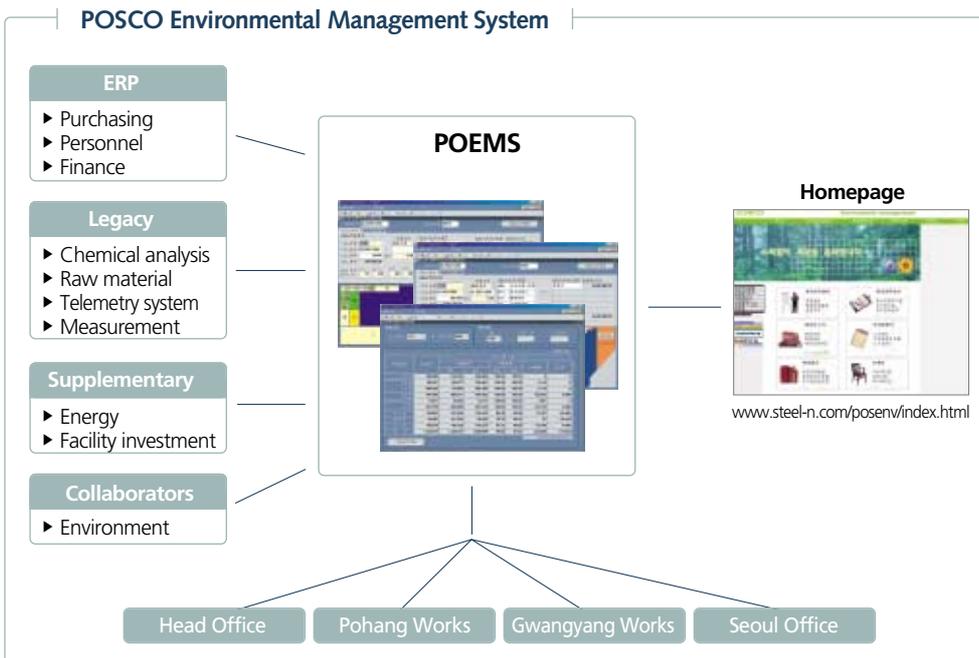
Process Innovation in the Environmental Sector



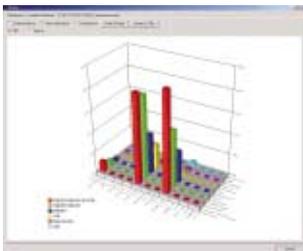
POSCO has been pursuing enterprise-wide Process Innovation (PI) in the Environmental Sector. As a result, the POSCO Environment Management System (POEMS) was established and launched into full operation starting December 15, 2001. POEMS has helped the standardization, improved data integration and enhanced transparency and efficiency in the environmental management.

Air emission and water discharge data are managed in the enterprise-wide integrated database and internally shared, thereby streamlining the procedures needed for data collection and analysis. In the management of steel by-products, of which there are over 155 types through over 800 generating processes, POEMS' by-product management system allows a real-time data search and analysis possible on-line, which previously was possible only monthly and took long time.

The by-product management system is divided into work management and performance management. The work management program consists of incineration, landfill, recycling operations, and by-product in/out & transportation inside and outside of the company. The performance management program enables better planning of recycling programs and compiles various statistics to create optimal feed-back to ensure the recycling plan is realized.



Adopting Advanced Environmental Management Tools



LCA Performing Screen

>> Life Cycle Assessment

LCA is an environmental management tool which evaluates the environmental impacts of the energy, fuels, raw materials, products, by-products and pollutants used and generated in the whole life-cycle of the product's manufacturing process. For example, in the production of one ton of hot-rolled steel, the iron ore, coal, limestone and other raw materials must first be extracted from the earth and transported to the steelworks. Then, the materials that are fed into the processes at the steelworks and the volumes of emissions generated are all factored into computational evaluation. Interrelationships among the various categories are considered for quantification, and the categories are distributed and standardized according to pertinent environmental issues. They are shown as eco-indicators of environmental impact in general as well as on specific issues. These data can then be used to compare the environmental aspects of each product and process.

POSCO began taking part in the LCA program in 1995, adopting LCA for steel products that were being promoted by the International Iron & Steel Institute. Since, the LCA program has grown in applications through enterprise-wide implementation of LCA and providing training programs to operational departments. Currently, an automated client and sever system is being established to link the LCA program with the existing database in order to save both time and money.

Completion of the LCA project will enable more macroscopic, objective and systematic analysis of the amounts of energy and raw materials consumed as well as the volumes of pollutants generated for each product during each steel making process at each facility. The results will be used to formulate programs to systematically improve the Company's environmental protection efforts.

LCA Project Achievement

Dec. 1995 - Mar. 1998	Participated in LCA project by the International Iron & Steel Institute
Oct. 1998 - Mar. 1999	Pushed for LCA for stainless steel <ul style="list-style-type: none"> ▶ For 4 stainless steel products ▶ Developed LCA Software(Stand-alone)
Dec. 1999 - Nov. 2000	1 st Stage Enterprise-wide LCA System Establishment <ul style="list-style-type: none"> ▶ 65 plants at Pohang Works, 43 plants at Gwangyang Works ▶ LCA Software(Client/Server), POSCO-Wide LCI Database establishment
Apr. 2001 - Feb. 2002	2 nd Stage Enterprise-wide LCA System Establishment <ul style="list-style-type: none"> ▶ Connected with Enterprise Resource Planning

Adopting Advanced Environmental Management Tools

>> Environmental Accounting

Environmental Accounting is an environmental management tool that supports the internal decision-making to enhance internal environmental performance and eco-efficiency by measuring, apportioning and evaluating the environment-related costs and benefits. Furthermore, this tool enables information regarding environmental activities to be provided to various stakeholders including investing institutions, shareholders, consumers, local communities, and non-government organizations.

Especially, it is a useful method for maximizing the efficiency of environmental investment and environmental performance by supporting top management's decision-making as the aggregation of environmental costs and benefits is considered in product pricing, environmental investment feasibility reviews for the product mix.

POSCO has been publicly reporting the environmental costs usage results in the Environmental Progress Report since 1995. As the environmental costs have been considered a major factor in management decision-making, POSCO started its environmental accounting project in cooperation with POSRI to quantitatively analyze the costs and benefits of environment related activities by currency units and quantity units in 1997. Starting July 2001, the first stage of activity based management (ABM) was applied to staff level, which apportions the environmental costs by each environmental activity.

POSCO is currently participating in model business of domestic environmental accounting, led by the Ministry of Commerce, Industry and Energy. The Company is planning to aggregate the environmental costs in accordance with the government's guidelines soon expected to be officially announced. At the same time, as part of the second stage of enterprise-wide ABM implementation, POSCO is planning to establish a system to aggregate the environmental costs of all departments by late 2004.

Utilization and Benefits of Environmental Accounting

- ▶ Aggregation of Environmental Costs
- ▶ Feasibility Study for Environmental Investment
- ▶ Product Mix Decision
- ▶ Environmental Performance Evaluation
- ▶ Offering Environmental Accounting Information to Interested Parties



Maximization of Environmental Efficiency and Environmental Performance

Cooperating with External Organizations



POSCO is actively supporting environmental preservation through close cooperation with non-government environmental groups. The Company supports the Citizens' Movement for Environmental Justice (CMEJ) research on 'Establishment of policies to efficiently manage the water resource demand in the 21st century and the water quality management for South Korea's five major river basins.' The Company also supports Institute of Pohang Community's research on pollution levels of the Hyeongsan river and the restoration of the local ecosystem.

The Company has undertaken various environmental preservation activities with Gwangyang city and Green Gwangyang 21. POSCO also supports environmental preservation studies of Gwangyang bay areas, led by the Jeonnam Environmental R&D Center.

Cooperating internationally for environmental improvements, technology exchanges are carried out regularly with leading steel makers in Japan, Europe and China. POSCO is actively participating in the efforts of steel makers worldwide for environment preservation as a member of the International Iron & Steel Institute (IISI), International Stainless Steel Forum (ISSF), and South East Asia Iron and Steel Institute (SEAISI). As such, the Company can quickly get the latest international trends related to environmental technology.

POSCO has pursued involvement in various other activities with research centers, environment-related academic societies and non-government organizations at home and abroad and is planning to expand its cooperation with companies, universities and research institutes to better address environmental problems.





posco

NATURE
ENVIRONMENTAL PERFORMANCE EVALUATION

POSCO made the comprehensive environmental evaluation possible by developing POSCO Environmental Performance Index (POSEPI) and has come to show you more transparent and objective environmental management performance.

Environmental Performance Index



POSCO has developed and applied the POSCO Environmental Performance Index (POSEPI) since late 2001 to evaluate the comprehensive enterprise-wide environmental management performance periodically and support top management's decision-making. The POSEPI rating is recorded as a key performance indicator on the Balanced Score Card (BSC) for Pohang Works, Gwangyang Works and the Company as a whole.

Taking into account the specific circumstances of each steelworks, POSEPI factors in the operational performance, management performance, and environmental conditions over a specified period to arrive at a single index. The index is based at 100 on the average performance over 1997 to 1999 to relatively evaluate and score the improvement made during the current year.

POSEPI is an index to systematically support decision-making by top management. It also allows for a comprehensive environmental performance assessment and feedback, and provides interested parties with transparent reporting on environmental performance.

The POSEPI in 2001 showed a big improvement in operational performance, while the factors in the environmental conditions and management performance showed a little decrease, resulting in increased environmental improvement of over 20% compared with the base.

The improvement in operational performance has been achieved mainly due to increase in sludge recycling, use of low sulfur content coal, the installment of a claus plant, and the decrease in discharged water with improved efforts in wastewater recycling. Meanwhile, the environmental facility investment has contracted, resulting in a little decrease in the index for management performance.

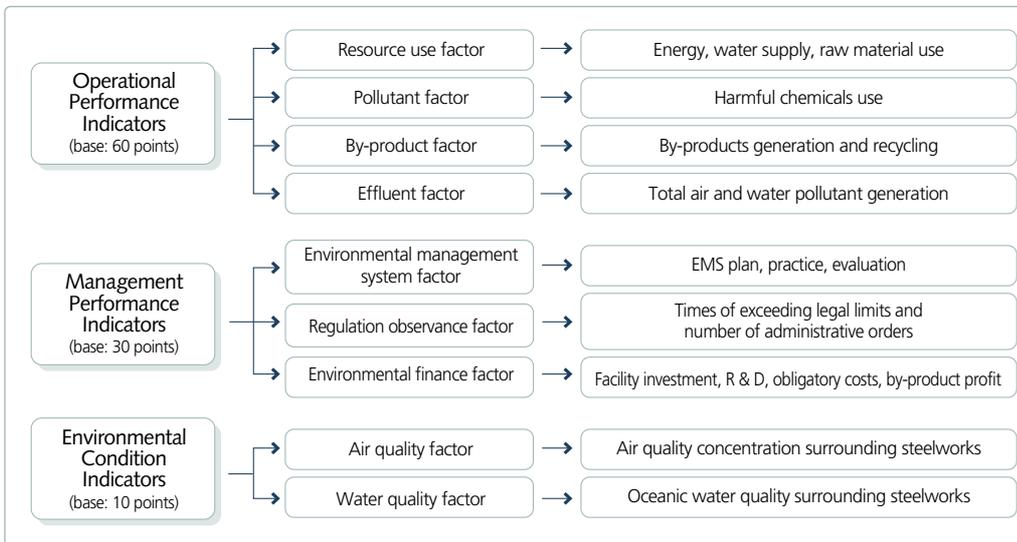
The index for the environmental conditions is used to evaluate changes in the air and water conditions of the surrounding areas of steelworks, therefore, it is susceptible to external factors including the nearby industrial complex, residential areas, and weather conditions. The slight decrease in the index for environmental conditions is caused by a little increase of Chemical Oxygen Demand (COD) concentrations in nearby oceans of the steelworks. The quality of air including SOx and ozone concentrations has been improved compared with that of the base year.



Environmental Performance Index

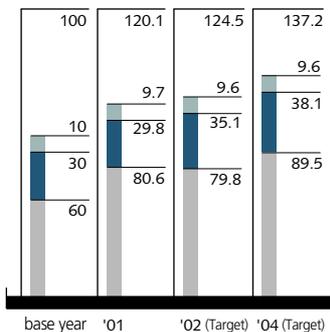
Composition of Environmental Performance Index

Calculated in accordance with ISO 14031 guidelines
 Performance comparison based at 100 on the average performance over 1997 to 1999

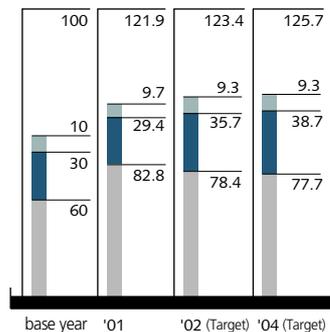


[Performance and Targets of Environmental Performance Index]

- Pohang Works



- Gwangyang Works



Environmental Condition
 Management Performance
 Operational Performance

posco



DREAM
SPECIAL REPORT

POSCO will not spare its efforts for R&D
of the cleaner environment and for local communities.

Environmental R&D

POSCO remains committed to reducing the generation of pollutants and developing technology that will improve the effectiveness of treating pollutants once they have been generated. Since 1997, the company has invested an average ₩13.3 billion a year in environment and energy R&D. In 2001, the largest amount of approximately ₩17.25 billion was invested in the R&D.

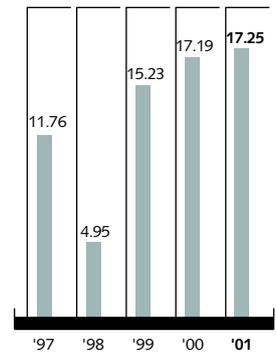
>> New Environment-friendly Iron Making Technology: FINEX

Historically, the technology that produces hot metal by using blast furnaces has been considered the most efficient iron making technology available. Even today, almost all integrated iron and steel works employ the blast furnace production method. However, in using the blast furnace method, steelworks must separately be equipped with sinter plant that changes ore fines into sinter ore and cokes plant that processes the expensive bituminous coal (coking coal) into cokes. Additional environmental facilities have to be required to treat pollutants generated from the sinter and cokes plants. POSCO has been developing an environment-friendly FINEX process that can reduce the cost of hot metal manufacturing and the amount of pollutant generation through producing hot metals directly using cheap and the abundant ore fines and steaming coal (non-coking coal) rather than processing through sintering and cokemaking.

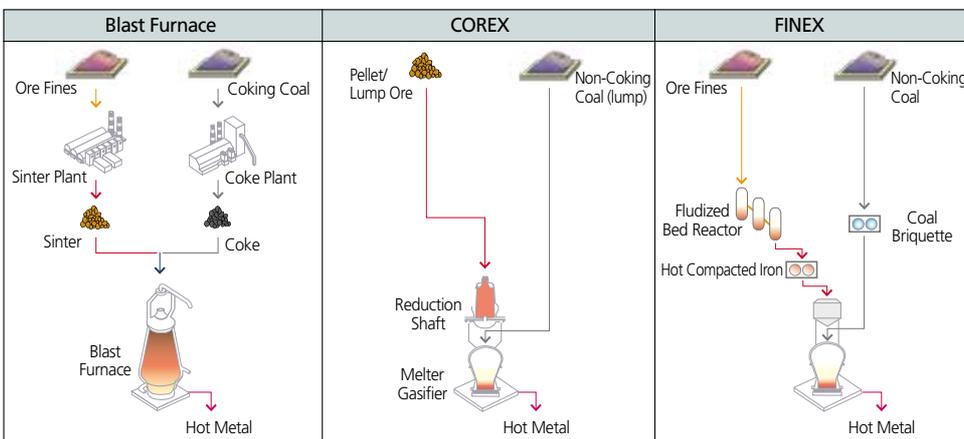
The FINEX is generally divided into two stages. Iron ore is put into the upper part of fluidized bed reactor and reduced in the solid state by CO and H₂ gases. These reducing gases are generated by the combustion and pyrolysis of coal put into the melter gasifier. Accordingly, the by-products such as tar and BTX are not generated in the coal processing and the emissions of the aromatic organic compounds can be substantially reduced through high-temperature combustion. The reduced iron ore is molten to be hot metals and slag by the heat generated from coal combustion. The sulfur elements contained in the coal are discharged harmlessly in a solid state mixed with slag. The sulfur emission to the air is reduced to a 10% level of the amount generated from the blast furnaces, cokes plants and sinter plants of the conventional blast furnace method.

In 1992, POSCO undertook the R&D of FINEX, a revolutionary iron making technology. Since November 1995, POSCO has successfully been operating COREX facilities with an annual capacity of 600,000 tons to secure the technology of coal processing and melting. Since starting the operation of ore fines fluidization reduction pilot plant (150T/D) in June 1999, technological and economical feasibility has been confirmed. Based on the R&D results, POSCO undertook the construction of a FINEX demo plant with an annual capacity of 600,000 tons in January 2001. The plant is scheduled to begin its operation in May 2003.

[Investment in Environmental & Energy R&D]
(In billions of Korean Won)

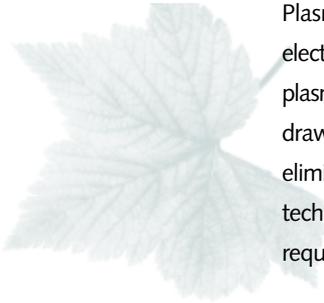


Comparison of Ironmaking Processes



Environmental R&D

>> Simultaneous Removal of Pollutants in the Waste Gas Using Low-temperature Plasma



Plasma is a state in which energy density is increased as gas molecules are ionized and the electron, active radicals along with molecules coexist. Waste gas treatment using low-temperature plasma that eliminates pollutants through the high reactions of active radicals generated in, has drawn a lot of attentions as a next-generation environmental technology in four respects: it can eliminate various air pollutants simultaneously, which was hardly done with the conventional technology; no secondary wastewater treatment is required because of dry state treatment; it requires less initial investment and installment sites; and the by-product is easily treated.

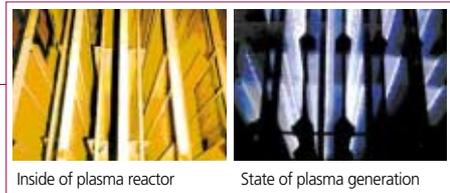
After successfully developing the low-temperature plasma technology with the RIST, which simultaneously eliminates sulfur oxides, hydrogen chlorides, nitrogen oxides, and volatile organic compounds, POSCO installed a pilot plant with a capacity of 5,000Nm³/hr at a sinter plant, Pohang Works in 1997.

Based on its operational experience and accumulated technology of the pilot plant, POSCO has developed a 120kW high-voltage pulse plasma generator and a plasma reactor with exclusive electrostatic precipitator structures. POSCO is currently test operating commercial scale facility with a capacity of 50,000Nm³/hr at the incinerator, Gwangyang Works.



Commercial-scale low-temperature plasma facility at incinerator No. 2, Gwangyang Works

Plasma reactor



Inside of plasma reactor

State of plasma generation

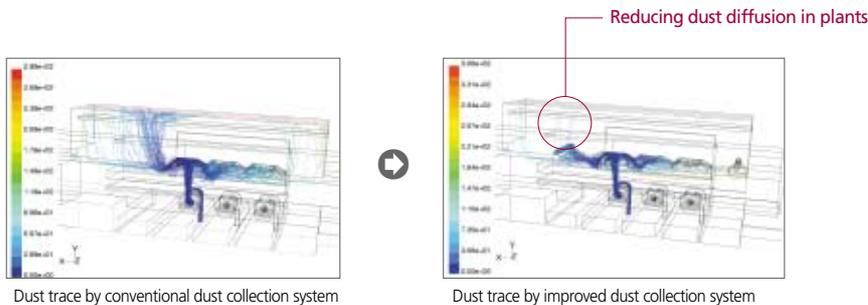
Environmental R&D



>> Optimization of Dust Collection Systems through Computational Fluid Dynamics Analysis

The design technology of large-scale dust collectors is vital in achieving the efficient collection of the dust generated in the production of iron and steel. The existing dust collection system calculated the size of dust collecting hood and airflow amount based on simple experimental equations. However, it did not consider the variables such as the characteristics of dust and the effect of outside air and thus lacked precision in design. POSCO, in cooperation with RIST, has developed and applied technology to optimize the dust collection systems using the computational fluid dynamics. The technology considers the source of dust generation, characteristics of dust particles and outside air flow effect on dust collecting areas. Thus, a more efficient dust collecting system has been designed that can forecast dust collecting efficiency as well as dust movement.

Before the implementation of this technology, the dust, which could not be discharged through the hood, diffused on the ceiling of the Works, aggravating the working conditions. The new technology alleviates this problem by adding two auxiliary hoods onto each side of the existing hood and appropriately distributing the additional dust collector airflow by each hood. Consequently, the efficiency of dust collecting drastically improved from 68.5% to 94.3%. The following figures show the track of dust particles generated at the steel converters before and after applying the technology.



Environmental R&D



Leachate treatment facility at landfills, Pohang Works

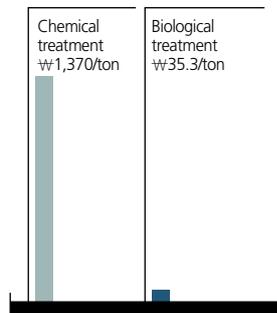
>> Biological Treatment of Leachate

The leachate generated in manageable reclamation facilities contains a little amount of SCN^- that is recycled or discharged after chemical treatment using oxidants. However, the conventional chemical treatment method had various problems including the high cost of chemical use, odor caused by the oxidant ($NaOCl$), and the possibility of secondary contamination. In cooperation with POSTECH, POSCO has successfully developed a biological leachate treatment technology that builds on the existing leachate treatment facilities and solves the problems of previous chemical treatment methods.

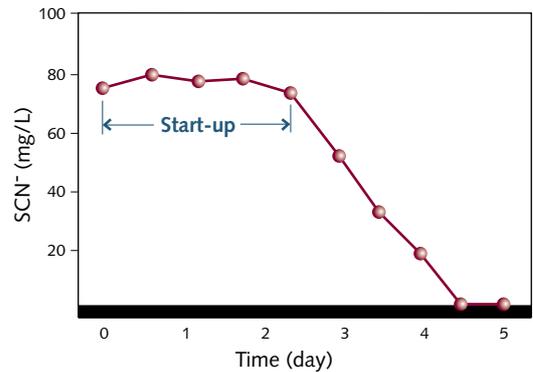
The new biological treatment technology decomposes and eliminates SCN^- contained in leachate by using it as energy for metabolism and nutrition for individual organism multiplications, thereby it does not generate secondary contaminations other than chemical treatment. At the same time, POSCO has reduced initial facility investment by operating a sequencing batch reactor (SBR), which maximizes the use of existing facilities.

The technology has been applied to leachate treatment processing facilities that have a capacity of $700m^3$ at the operation site, thereby improving the working conditions, reducing pollutants levels well below the limits, reducing odor and decreasing the costs of chemicals.

[Comparison of Leachate Treatment Cost, landfill No. 3]



[SCN^- Concentration Change in Leachate by Biological Treatment]



Environmental Preservation in the Local Community



>> Comprehensive Environmental Assessment

POSCO carries out comprehensive studies on the air quality, water quality and eco-systems in the vicinity of the steelworks.

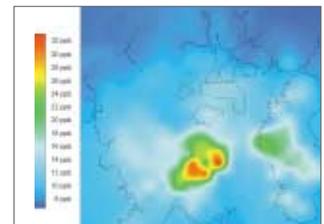
Between January 1999 and August 2000, POSCO completed a comprehensive environmental assessment in the Gwangyang region and a similar study has been undertaken in the Pohang area since December 2000. The purpose of these studies is to actively realize the environmental preservation in the local community by monitoring the environmental impact of steelworks on the surrounding areas. The results of the study were used as basic data for long-term planning. Improvement of the local community environment is aimed at rather than merely abiding by the regulations regarding pollutant discharge.

The air pollution emission sources are concentrated around Pohang Works and steel making industrial complex. As the wind flows from the southwest year round, most of the air pollutants diffuse across the ocean over Yeongil bay.

The study shows environmental impact rate of steelworks, steelmaking industrial complex, and moving pollution sources on sulfur oxide and nitrogen oxide concentrations in the air. Great amount of environmental data have been collected and analyzed by linking with weather and topographic information.

For the oceanic environment of Yeongil bay, Pohang Works' environment impact rate to chemical oxygen demand (COD) and total phosphorus (T-P) was less than 10% due to the thorough treatment of wastewater. However, the impact rate on total nitrogen (T-N) was more than 10%. When the denitrification facility is completed by the end of 2002, it is expected to reduce the current total nitrogen discharge by more than 90%.

The calculation results of the land pollutants load inflowing to Gwangyang Bay, when split into the 5 polluting sources of living sewage, Gwangyang Works, Yecheon industrial complex, affiliated industries, non-point sources, showed that Gwangyang Works had an environmental impact rate of less than 1% for all the items including COD, T-N, and T-P. The studies have been conducted in close cooperation with external research institutes such as Yeosu University and Inje University. The study on effect of Gwangyang Works warm effluent on the ecosystem showed that the animal and plant planktons and benthic organism congregates are well balanced and their congregate structures not specially changed. The results also showed that the warm effluent affected very limited area of surrounding oceanic surface.



Map of average annual NO_x concentrations in the Gwangyang area



Measurement of air quality of Pohang by moving measurement vehicle

Environmental Preservation in the Local Community



Environmental forestation over landfills, Pohang Works

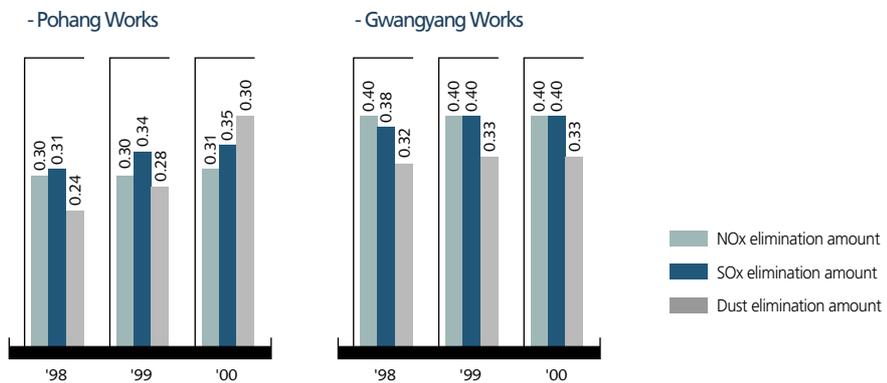
>> POSCO's Forestation over Landfills

Since 1997, POSCO has forested landfills 9,918m² of wastes respectively generated from the two steelworks and monitored the ecological changes of the forest. Such artificial forestation over landfills is expected to be a good example for ecological restoration deviating from the concept that considers the steel industry as a development-oriented one. At the same time, the forestation over landfill is being utilized as scientific ecological restoration data to estimate the steelworks air pollutants' effects on the surrounding land environment and to establish countermeasures to address the effects, additional to the scenic and environmental benefits of the forest.

The average pH of soil at Pohang and Gwangyang Works environmental forestation over landfills was 6.5 and 6.2, respectively, a very suitable level for plant growth. The organic content needed for plant growth was 5.5% at Pohang Works forestation and 5.0% at Gwangyang Works, which were less than that of forest soil in nearby mountain, Jirisan. The content of nitrogen in soil, an indispensable element for plant growth, was 0.053% at Pohang Works forestation and 0.057% at Gwangyang Works. The contents of harmful elements to plants growth of heavy metals in soil such as arsenic (As), cadmium (Cd), nickel (Ni), lead (Pb), chromium (Cr), mercury (Hg), copper (Cu) and zinc (Zn) were less than the environmental regulations and far less than concentration amounts that harm plant growth.

The soil microorganisms play a very important role in substance decomposition and energy circulation functions. The total number of germs, bacteria and actinomycetes at the two steelworks environmental forestation over landfills was similar to that of general soil. The yeast fungi and mold are gradually increasing, showing the stabilization of soil microorganism aggregation.

[Pollutant Elimination Capacity of Environmental Forestation] (ton/ha/yr)



Environmental Preservation in the Local Community

>> Studies on the Water Environment and Cultural Relics of the Hyeongsan River

POSCO has conducted research for the environmental preservation in the local community in cooperation with local civil groups and academic societies. The studies on the water environment of the Hyeongsan river, conducted with Institute of Pohang Community and the Gyeongju Federation for Environmental Movement, involved various studies on the water quality, soil contamination of waterside and riverbed, and the ecosystems of the main stream and tributary streams.

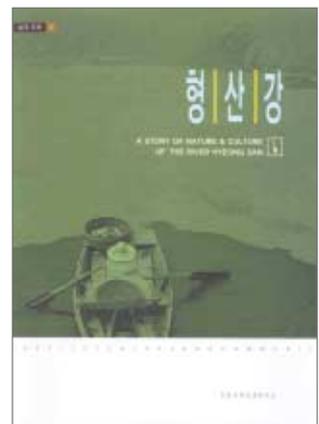
In order to improve the Hyeongsan river, most of whose contamination stems from upstream stockbreeding facilities, it was concluded that various problems should be solved including major spot contamination sources of the Gyeongju community living sewage, wastewater from the steel making industrial complex, dumped waste at the waterside and pesticides and fertilizers used at unlawful arable land. During the research of the ecosystem, unrecorded shellfish in Korea named 'Anodonta SP.1' was found near Gukdang Bridge.

POSCO has supported the research on the history, geography, culture, and people related to the Hyeongsan river, a major lifeline for Pohang and Gyeongju residents. The results of research were published in 'the Hyeongsan river' by Institute of Pohang Community. The book analyzes the geography and geology of the Hyeongsan river, investigates its origin and shows the river's changes through old maps. In the 'River in the History' section, the Bronze Age culture of the Hyeongsan river areas, rock art, and the history of Shilla age people who lived along with the river are described. The 'River of Culture' section deals with seasonal customs, common beliefs, labor songs, and traditional literature relating to the river.

POSCO will always be the leader in awakening the importance of coexistence of civilization and nature and in preserving the Hyeongsan river, the water artery in Gyeongju and Pohang areas.



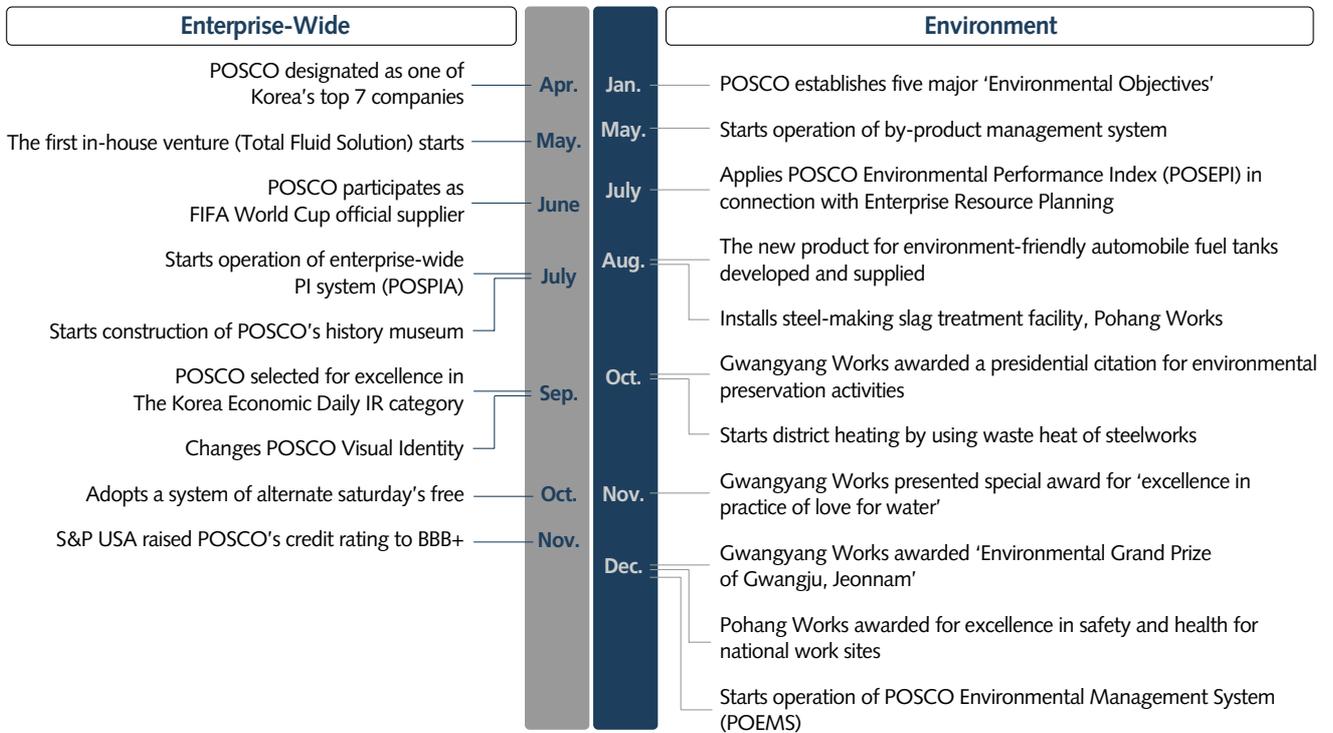
Unrecorded shellfish in Korea



POSCO Today ■■■

In just 30 years, POSCO has grown into a world-class steel company that turns out some 28 million tons of crude steel annually. Through its operations, the Company contributes to national economic development. Today, POSCO stands as one of the World's most competitive steelmakers, thanks to ongoing efforts to add value to products as well as rationalize and upgrade facilities.

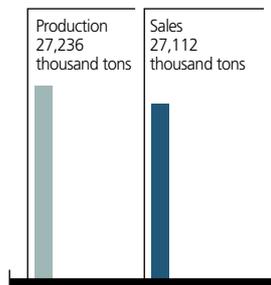
>> Key Developments in 2001



>> Vital Statistics

- Establishment: April 1, 1968
- Total assets: ₩17,616 billion
- Shareholders' equity to assets: ₩10,196 billion
- Employees: 19,193
- 2001 Sales: ₩11,086 billion
- 2001 Net Income: ₩819 billion
- 2001 Crude steel output: 27,825 thousand tons

[Production & Sales Volumes]



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Kwangyang Works has been changed to Gwangyang Works due to the changes in foreign language notation from 2001.

The contents of this report are based on data as of December 31, 2001. The plans or indices indicated here may change without prior notice, due to changing conditions around the steelwork.

This is a translation of the Korean language version. In case of language dispute, the Korean text applies.

The financial statements in the report are expressed in Korean Won (₩) and, solely for the convenience of the reader, these financial statements may be translated into United States dollars at the rate of ₩1,313.50 to US \$1.00, the rate posted by the Federal Reserve bank of New York on December 31, 2001.

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