

THE NEW VALUE FRONTIER



Kyocera Environmental Report



Living Together

Living together with the Earth.

We wish to work cooperatively together on environmental preservation activities to help preserve our one and only earth.

2002

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While technological progress and economic development have brought material wealth, along with a remarkably improved standard of living, they have also brought increased pollution and environmental disruption. The mass consumption of resources has resulted in a mass discharge of waste. In developing countries, explosive increases in population and rising poverty have exacerbated these ills through deforestation and other forms of environmental degradation.

Consequently, the socioeconomic activities of advanced and developing nations have not only become intertwined, but have exceeded our planet's restorative capacity, and are now well on the way to destroying the Earth's natural resource cycle. This fact has overturned a major premise of our modern world -- the assumption that our ecosystem is unlimited -- and revealed that it is indeed a closed system. The shattering of this false assumption now urges us to review human consumption anew from qualitative and quantitative standpoints, and to fundamentally change our systems of production.

From now on, we are expected to have a new policy of promoting economic development while preserving our global environment, by respecting the balance between nature and society. At the same time, we must embrace the idea of coexisting with each other in peace and prosperity -- as equal inhabitants of mother Earth -- without rivalry between advanced and developing nations, businesses and governments, or individuals and communities.

Based upon our corporate motto, "Respect the Divine and Love People," Kyocera has made its management rationale "To provide opportunities for the material and intellectual growth of all our employees, and through our joint effort, contribute to the advancement of society and humankind." Since the company's founding, Kyocera employees have worked together cooperatively to promote the harmonious coexistence of all life on Earth. Our company has been promoting Earth-conscious management based upon this philosophy for many years. Today, it is clear that all corporations must address environmental problems in like manner while promoting human dignity and sustainable development.

In 1990, to raise our environmental commitment further, we established the "Kyocera Green Committee," formally convening groups of internal experts to continually review the company's operations and promote environmental "best practices." The Kyocera Environmental Charter was established in 1991, delineating our mission to preserve the global environment.

Based on this mission, we launched Kyocera's Environmental Preservation Activities in 1992, using three-year plans to implement such tools as the Kyocera environmental management criteria; a Kyocera "eco-label" to certify Earth-friendly products; our own ozone-protection guidelines; and ambitious internal targets for waste reduction, energy and resource conservation, and recycling. A third phase in 1999 added commitments in the areas of preventing global warming and stricter controls on the use of industrial chemicals. Phase four is on the way.

The evolution of human society has, until now, included three stages of rapid progress: the agricultural, industrial, and information revolutions. The effort to solve today's ecological problems will go down in history as the "environmental revolution," our fourth historic stage. Recognizing that we have great roles to play and expectations to fulfill as a high-tech industrial manufacturer, we will keep raising our efforts and focusing the power of the worldwide Kyocera Group on these issues.

We have prepared this report to introduce our position and activities; and we hope it will help you understand our commitments for safeguarding the global environment we all share as human beings.



Yasuo Nishiguchi
President and Representative Director

A handwritten signature in black ink, appearing to read "Y. Nishiguchi". The signature is fluid and cursive.



Company policy

敬天愛人

< Respect the Divine and Love People >
Preserve the spirit to work fairly and honorably,
respecting people, our work, our company and our global community.

Management rationale

To provide opportunities for the material and intellectual growth of all our employees, and through our joint effort, contribute to the advancement of society and humankind.

Management philosophy

To coexist harmoniously with nature and society. Harmonious Coexistence is the underlying foundation of all our business activities as we work to create a world of abundance and peace.

Corporate summary

Corporate name : Kyocera Corporation
Established : April 1, 1959
President : Yasuo Nishiguchi
Capital : 115,703,320,000 yen
Sales : 2002 fiscal year
Non-consolidated : 499,264 million yen
Consolidated : 1,034,557 million yen
Employees : 14,568 (As of March 31, 2002)
Major business : Fine ceramic components
Semiconductors and electronic components
Fine ceramic consumer products
Optical and telecommunication equipment

Global Network



Network in Japan





Activity Development

Environmental-related movement (domestic and global)

Kyocera Environmental Commitments

	1985	Established an Environment Department at headquarters
Montreal Protocol	1988	
Law Concerning The Protection of Ozone Layer		
Establishment of the eco mark	1989	Began to regulate fluorine CFC
	1990	Established the Kyocera Green Committee (KCGC)
The Global Environmental Charter of the Japan Federation of Economic Organizations	1991	Established the Kyocera Environmental Charter Assigned an environmental director
Law for Promotion of Effective Utilization of Resources		Began activities to recycle used paper Established the Kyocera Group Green Committee (KGGC)
	1992	Began the first environmental preservation plan Completed elimination of specific fluorines CFC Established the Kyocera eco label
Basic Environment Law	1993	Released the FS-1500 (Ecosys), the world first non-cartridge type LBP The Ecosys printer was authorized as the first eco-marked product in office automation equipment
Agenda 21 Action Plan	1994	Completed elimination of trichloroethylene methylbromide
Basic Environmental Containers and Packaging Recycling Law ISO14000 series standards released	1996	Launched the second environmental preservation plan ISO14001 registration attained by the Mie Plant Complete elimination of tetrachloroethylene HCFC-141b
	1997	ISO14001 registration attained by nine production locations
COP3 Third Conference of the Parties to the United Nations Framework Convention on Climate Change (Kyoto)	1998	Began green procurement Completed the Ecology Headquarter building
Law Concerning Promotion of Measures to Cope with Global Warning	1999	ISO14001 registration attained by six major operation centers Launched the third environmental preservation plan Completed company-wide ISO14001 registration
Law for Recycling of Specified Kinds of Home Appliances		Global Environmental Grand Prix (received the Fuji Sankei group prize) Completed elimination of CFC alternative
PRTR Law		
Law Concerning Special Measures against Dioxins		
The Basic Law for Establishing the Recycling-based Society	2000	Consolidated all Kyocera group sites under one ISO-14001 registration Released the Environmental Report 2000 Edition on the Internet
Law on Promoting Green Purchasing	2001	Released the "Kyocera Environmental Report 2001" on the Internet Manifest the support for the e-mission55 movement which agrees on the enactment of the Kyoto Protocol
	2002	Launched the fourth environmental preservation plan



Kyocera Environmental Charter

Kyocera established the Kyocera Environmental Charter on October 1, 1991, and announced plans to implement comprehensive and continual activities to promote global environmental preservation.

Kyocera and its group companies world wide have committed themselves to environmental preservation, taking the Kyocera Environmental Charter as their action guide.

(An excerpt from the Kyocera Environmental Charter)

Basic Philosophy

Based upon the company policy, “Respect the Divine and Love People”, Kyocera has adopted the management rationale, “To provide opportunities for the material and intellectual growth of all our employees and, through our joint effort, contribute to the advancement of society and humankind.

Kyocera works to coexist harmoniously with nature and society.

Based upon this philosophy, all Kyocera Companies worldwide will take action to preserve the global environment including overall commitment to environmental preservation, conserving resources and energy, and developing Earth-friendly products.

Basic Environmental Policy

Kyocera will place a high value on preserving the global environment based upon its basic philosophy in all corporate activities.

The major focus will be on the following items:

1. Observing internal environmental criteria giving top priority to preserving the global environment.
2. Making the best possible use of resources and process technology innovations.
3. Developing products that are environment-friendly and have low environment impact.
4. Cooperating in environmental political measures and support related social activities.

Basic Environmental Goals

1. Formulating and observing voluntary internal standards that are stricter than international treaties, national laws and regulations, and local government ordinances where facilities are located, and other items in order to reduce the deterioration of the natural environment and our influence on the ecosystem.
2. Scientifically evaluating and studying environmental impact from all stages of corporate activities, and then implementing any necessary remedies.
3. Developing outstanding process technology and production facilities based on the best use of resources and energy for production activities while working on reducing the raw material costs for each process.
4. Expanding energy conservation by such means as more efficient use of electricity and fossil fuels; introducing efficient equipment; and waste heat recovery.
5. Making efforts to purchase materials that conserve resources and are renewable; Also, establishing recycling systems for wastewater and materials, and using resources more efficiently, and promoting detoxication.
6. Researching and developing environmentally-friendly products that contribute to global environmental improvement.
7. Researching and developing environmentally-friendly products that minimize the environmental impact for each stage of manufacturing, sales, distribution, use, and waste.
8. Our facilities with environmental considerations that create comfortable an environment with plentiful greenery and beauty.



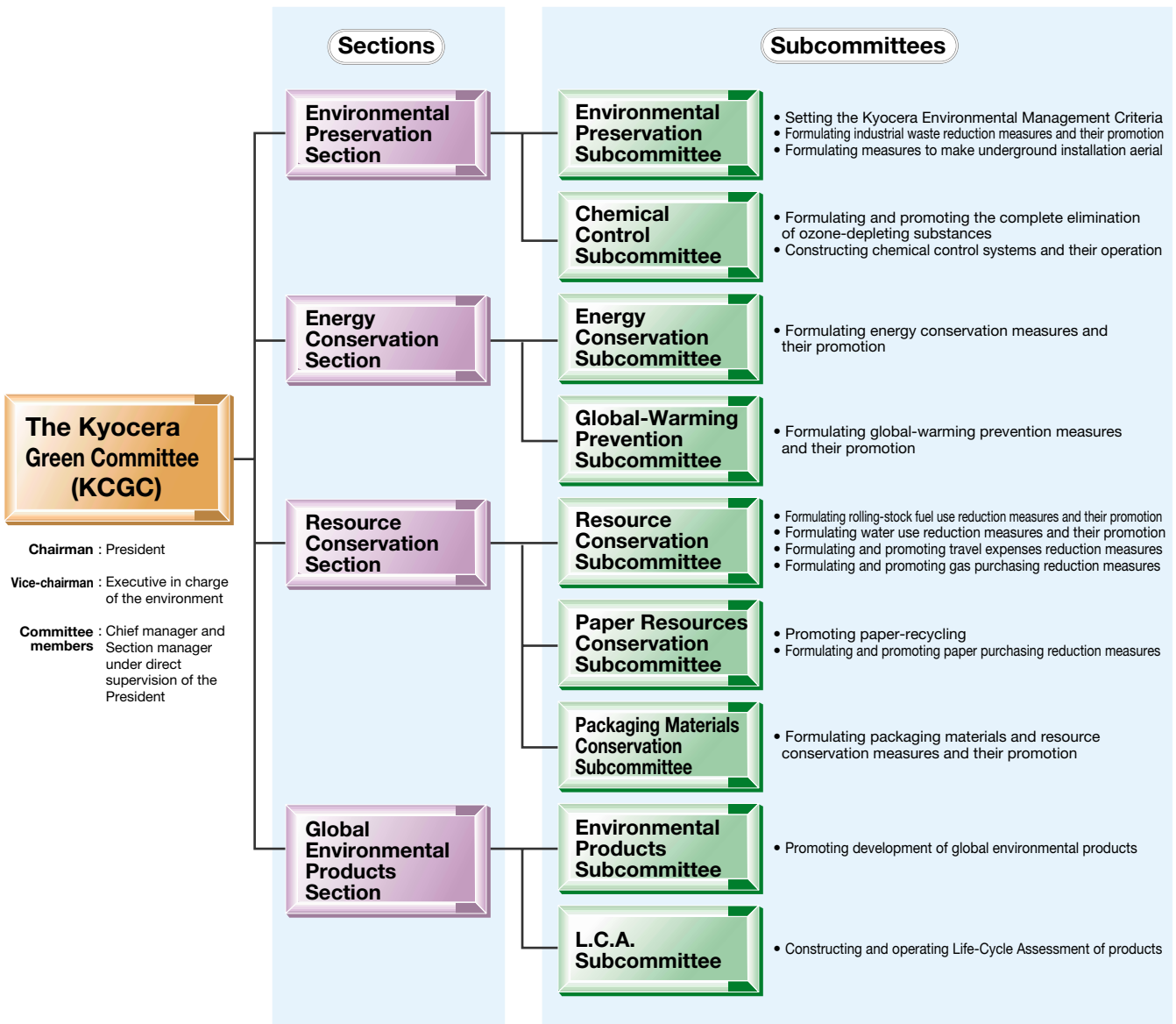
Environmental Management Organization

The Kyocera Green Committee (KCGC)

The kyocera Green Committee, which is chaired by the president and includes the subordinate sections and subcommittees shown below, was established in December 1990 for materializing the basic philosophy of the Kyocera Environmental Charter and for studying the internal company environmental preservation measures.

Each subcommittee prepares detailed goals and metrics. Then each Section makes further integrative studies. And Finally the Green Committee deliberates on the findings and assigns continual improvement actions to the Sections/Subcommittees.

Operational sections and centers then implement solutions to the specific actions they are assigned.



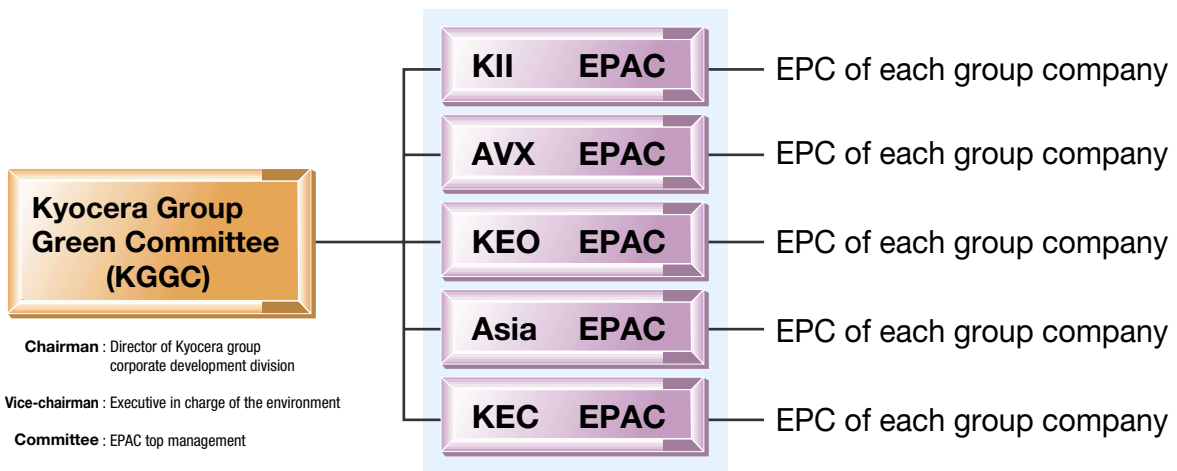


Environment Management Organization

○The Kyocera Group Green Committee (KGGC)

The Kyocera group companies established the Kyocera Group Green Committee in December, 1991. This committee includes the top members of the Environmental Protection Assurance Committee (EPAC) and is chaired to promote environmental preservation activities based on the Kyocera Environmental Charter.

The Kyocera Group Green Committee meets periodically, to review problems, exchange opinions and so on. Each group aims at being a good corporate citizen that gains respect from society by developing voluntary activities in accordance with each region.



○The Environmental Preservation Organization of EPAC

• EPAC (Environmental Protection Assurance Committee)

EPAC leads and supports the EPC of concerned group companies to promote environmental preservation activities based on the Kyocera Environmental Charter as the need arises.

EPAC's major activities are chairing EPAC meetings; leading, promoting, and supporting each group company's environmental efforts ; and implementing audits in concert with EPC.

• EPC (Environmental Protection Committee)

EPC promotes voluntary environmental preservation activities based on the Kyocera Environmental Charter by enlisting the lead and support of EPAC.

EPC's major activities are planning, implementing, evaluating, and reporting their own periodical environmental activity plans; chairing EPC meetings; and conducting audits in concert with EPAC.



The Kyocera Group Green Committee also implements environmental checks overseas. The Kyocera Group Green Committee expands the environment management activities appropriate for a global corporation.



Environmental Audits

Kyocera conducts environmental inspections to evaluate the environmental management status of the operation centers.

Besides constructing an environmental management system, Kyocera implements corporatwide environmental audits, internal environmental audits and supplier environmental audits on behalf of operation centers.

○Environmental Inspections

Environmental inspections have been implemented through Environmental Month every June since 1992 for the purpose of evaluating on environmental management system's status and improving the management level for operation centers.

The inspectors team is comprised of specialized staff at headquarters and other operation centers, and includes certified internal environmental auditors. They inspect the implementation of the environmental management activities, the progress of energy and resource conservation, among other items.



Environmental Inspection

○Corporatwide Environmental Audit

The team members are organized by independent auditors who do not have any direct relation with the operation center being audited. The auditors are chosen from the corporation based upon the directions of the total environmental manager, and they implement reciprocal audits of the operation centers.

Verifying the efficacy of the internal environmental audits and auditing the work performance of the general managers of operation centers are also included in the corporatwide environmental audits.



Internal Environmental Audit

○Internal Environmental Audits

Internal environmental audits of the operation centers are carried out as an important component of the environmental management system.

While these audits are conducted periodically in accordance with the annual plan, they also take place occasionally depending on the operation of the environmental management system.

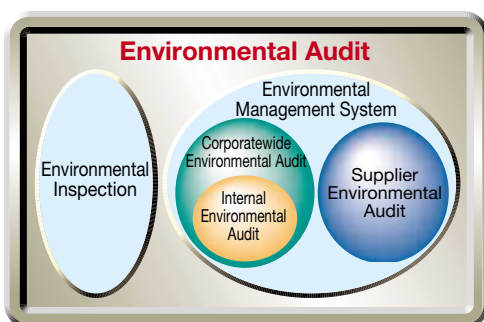
The audit results are reported to the general manager of the operation center to provide management review of the environmental management system.

○Supplier Environmental Audits

Kyocera understands that it must control the environmental impact of its purchased materials.

To this end, Green Procurement was formulated for the sake of selecting environmentally friendly Suppliers.

As part of this program, Kyocera evaluates environmental management system and performs Supplier Environmental Audits to transmit our ideas about the environment to them and to promote environmental preservation activities together.



Supplier Environmental Audit



Environmental Management System

Individual Management to System Management

Our corporation has developed environmental protection systems since the beginning of our operations as symbolized by our idea that industrial wastewater must be purer than in a natural river when it is discharged. The management methods; however, were left to the discretion of each operation center and there was no integration.

In October 1991, the Kyocera Environmental Charter, which shows our stance on global environmental problems and is our general action guide, was established to integrate our corporate-wide environmental preservation activities. In 1992, we implemented our primary plan that established in-company environmental management criteria, reduced waste materials, established targets such as energy and resource conservation, and established standards for recognizing global environmental products.

Our corporation also created an environmental management system (EMS) based on ISO 14001 and worked on obtaining certification to this international standards, which was established in September 1996. Our environmental management was enhanced by the system because it established full employee participation for managing natural resource protection throughout the company.

ISO14001 Certification

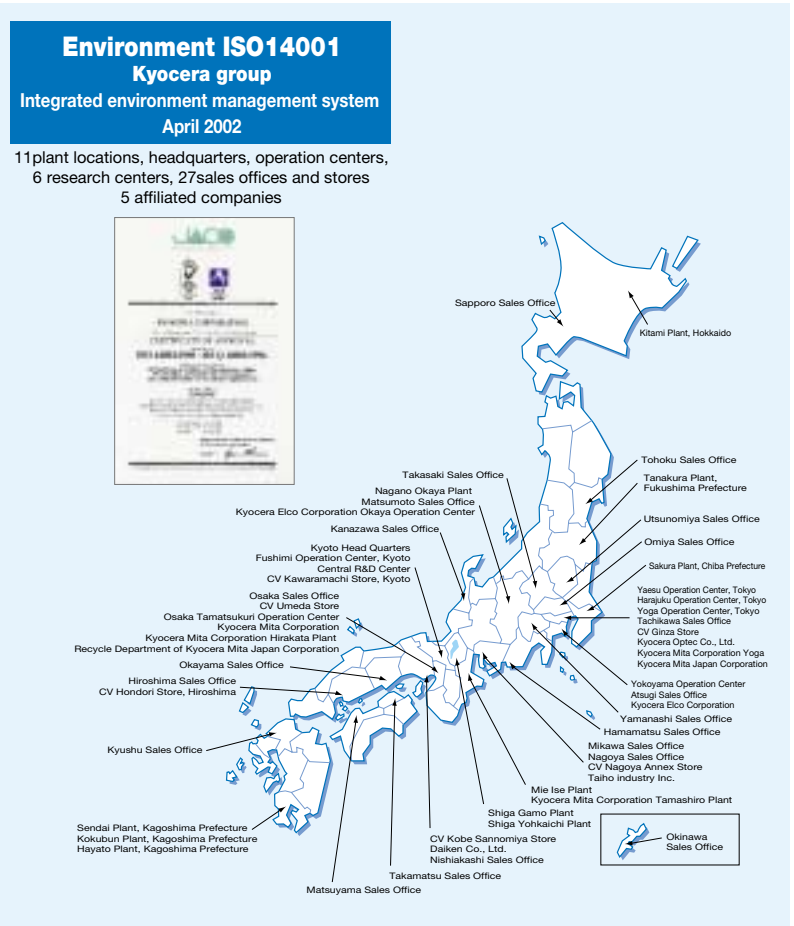
Kyocera constructed its environmental control system before the enactment of the international Standard in 1996. In October 1996, our Mie Plant attained ISO 14001 Certification-the first Kyocera site to do so. By September, 1997, all ten domestic production locations were registered to the Standard.

In order to achieve EMS integration for the whole Kyocera company, as we had planned from the beginning, we attained registration to operate 6 offices, including headquarters and general affairs/sales/research and development departments, in one environmental management system. In August 1999, 42 locations in total, including 26 previously uncertified sales offices and stores became certified in our corporate-wide integrated environmental management system.

Finally, in November 2000, Kyocera's EMS registration's scope was expanded to include all 48 sites of Kyocera Group forming one integrated environmental management system.



ISO Certification Examination





Environmental Management System

ISO14001-certified Global Kyocera Group Companies

The following global Kyocera Group companies have achieved ISO 14001 certification : KYOCERA AMERICA, INC, and Kyocera Wireless group (San Diego, U.S.A.), KYOCERA INDUSTRIAL CERAMICS CORPORATION (Vancouver, U.S.A.) and Kyocera Mexicana, S.A, de C.V. (Tijuana, Mexico), P.T. KYOCERA INDONESIA (Indonesia), SHANGHAI KYOCERA ELECTRONICS Co., Ltd.(China), DONGGUAN SHILONG KYOCERA OPTICS Co., Ltd.(China), KYOCERA YASHICA DO BRASIL INDUSTRIA E COMERCIO LTDA (Brazil), KYOCERA ELCO KOREA CO., LTD. (South Korea), KYOCERA ELCO SINGAPORE PTE LTD(Singapore), KYOCERA MITA INDUSTRY Co., Ltd. (Hong Kong), 12 companies in total, acquired the certification.



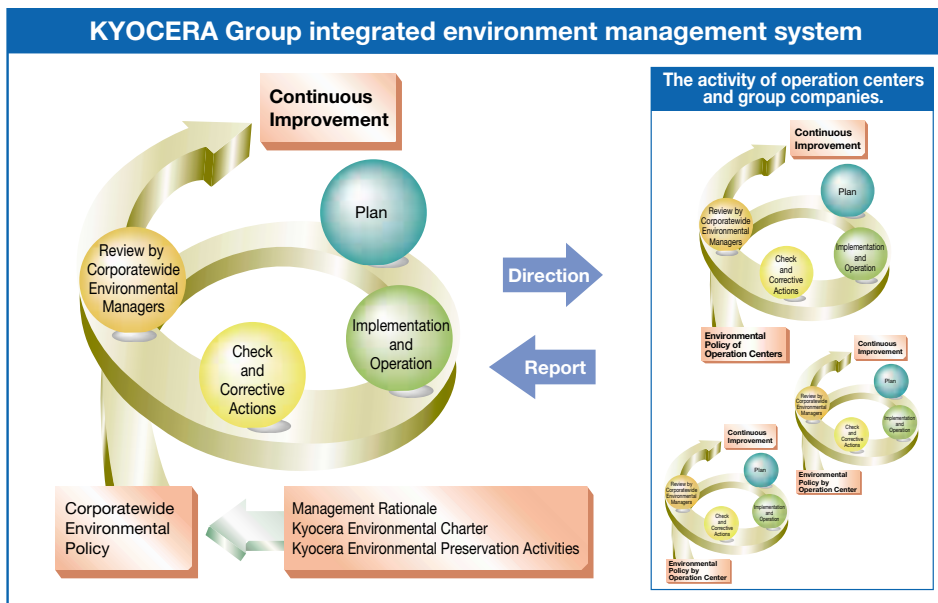
P.T.KYOCERA INDONESIA

Other affiliated companies are also proceeding with activities forward ISO 14001 registration.

Operating the Environmental Management System

Kyocera Environmental Management System operates as a corporate integrated system.

The PDCA (Plan, Do, Check, Act) cycle shown below has consolidated the whole company, operation centers and group companies, into one organic unit.



Features of KYOCERA group integrated Environmental Management System

1. Sharing information

Sharing environmental information laterally facilitates integrated operation of all operation centers.

2. Sharing technology

Organizing corporatewide projects with specialized staff in each operation center. By laterally spreading the outcome obtained through this project, the same effect can be obtained at all operation centers.

3. Improving the reliability of the internal environmental audits

The reliability of the internal environmental audits can be improved by implementing internal environmental audits conducted by both the corporation and each operation center.

4. Document streamlining

Level elevation and equalization can be provided by corporatewide sharing of system documents.

Document preparation is simplified in operation centers by preparing only the specific documents that are necessary.

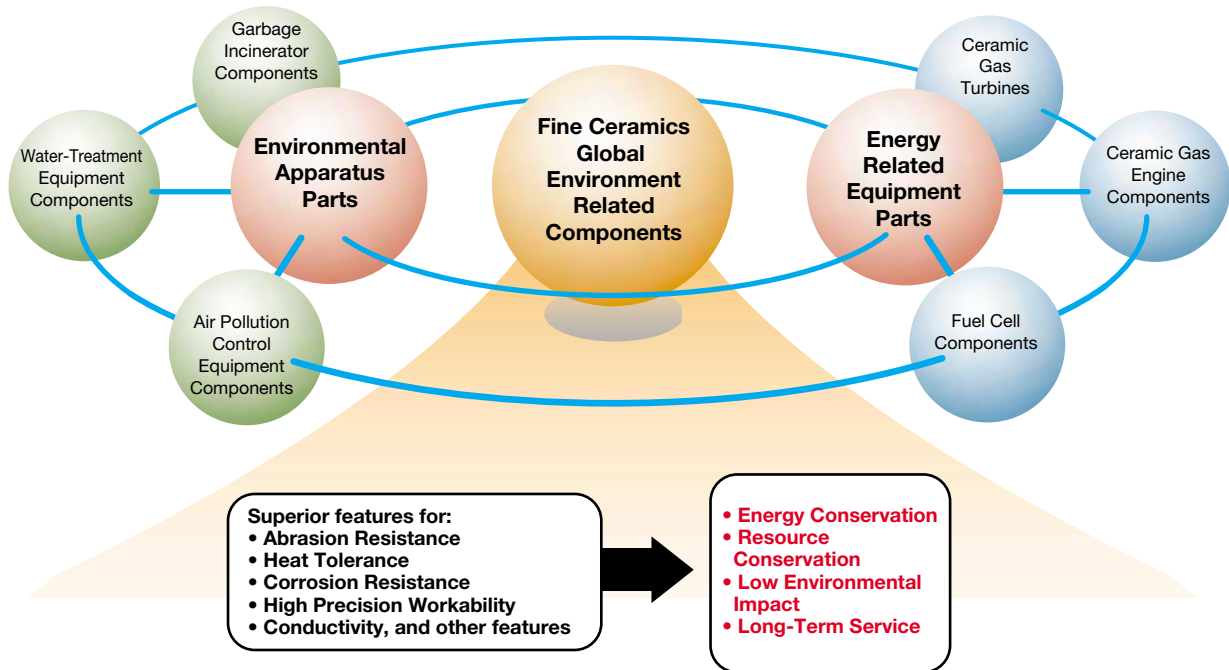


Fine-ceramics-based Product Development

Fine-ceramics products are ecological materials and offer superior abrasion resistance and heat tolerance, among other characteristics.

Kyocera has utilized these features, and have developed environmentally-conscious products by marketing this highly integrated technology.

Environment-Conscious Features of Fine Ceramics



Fine Ceramics Features

- 1. Solid and hard to wear down (Abrasion resistance)**
More solid than metal, and hard to wear away.
- 2. Tough against heat (Heat tolerance)**
Silicon nitride is far superior for heat tolerance, and Kyocera engines that use turbo rotors and glow plugs provide high efficiency and high output.
- 3. Resist chemicals attacks (Corrosion resistance)**
Ceramics have high resistance to attacks from acidic and alkaline chemicals and offer superior corrosion resistance.
- 4. Capable of ultra-precision machining (High precision workability)**
The accuracy of the ceramic surface flatness is that an error of about a person's average height against 950 miles, the distance between Los Angeles and Seattle, will not be a problem for ultraprecision machining.
- 5. Stores electricity (Conductivity)**
Containing barium titanate and other materials, ceramics have the ability to store electricity as capacitors.
- 6. Generates power voltage by transformation due to power voltage and external pressure (piezoelectricity)**
A buzzer takes advantage of this feature to vibrate by applying power voltage.
- 7. Bending (elasticity)**
Zirconia ceramic provides elasticity with the technology for sheet processing.
- 8. Electric resistance virtually eliminated (superconductivity)**
Superconductivity is a phenomenon where electric resistance vanishes in some kind of simple metal or a metal/intermetallic compound at the ultra-cold temperature close to absolute zero, and complete diamagnetism appears in a super conductive state.
Many high-temperature superconductors showing superconductivity at the temperature of liquid nitrogen have been found in ceramics. Super conductive ceramic holds significant promise for practical applications.



Research/Development/Design

Research/Development/Design of Environment Related Products

As requests for environmental preservation and conservation have increased the importance of reducing the environmental impact from product manufacturing, use and disposal, has become recognized.

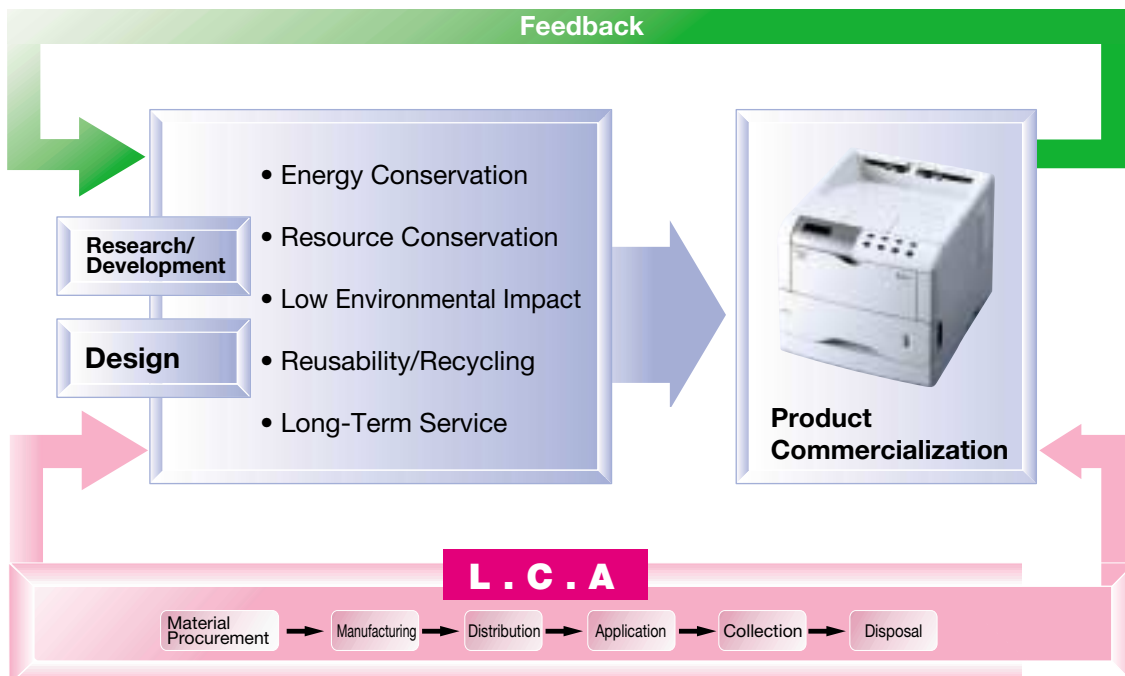
Kyocera hopes that all products manufactured and sold will be global environmental products. We engaged in the research and development of global environmental products.

In addition, Kyocera pays particular attention to control the environmental impact of our manufacturing of those products.



Research and Development of Environment Related Product

The Concept of the Research, Development, and Design of a Product



Addressing Life Cycle Assessment

Kyocera has promoted research/development with attention to the environment, the optimal design of the product, material procurement, and other factors through quantitative analysis/evaluation of environmental impact based on the product life cycle from Material Procurement -> Manufacturing -> Distribution -> Application -> Collection -> Disposal.



In-company Authorization System

○Kyocera Global Environmental Product Authorization System

By establishing the Global Environmental Product Promotion Program, Kyocera has promoted research/development of environmental preserving products that contribute to improving the global environment and environmental-impact-reducing products which minimize environmental impact in each stage of the manufacturing, sales, distribution, application, and disposal of the products.

The Global Environmental Product Authorization Criteria has been established as a guideline for individual components and finished products respectively. The products that meet this criteria designed and developed using this criteria are evaluated. Only products that meet this criteria are authorized as global environmental products.

Authorization criteria of the component group

- a. Safety
- b. Energy conservation
- c. Resource conservation
- d. Others items with striking features
(Consists of items not included above, but that have striking features on the whole)

Authorization criteria of the finished product group

- a. Reusability/Re-resource nature
- b. Environmental preservation/safety
- c. Resource conservation
- d. Energy conservation
- e. Long-term usability
- f. Packaging material

○Authorization of Global Environmental Products Applicable to the Kyocera Eco Label

The authorization criteria for Kyocera Eco Labeling was established for the purpose of giving corporate-wide acknowledgement to products that contribute to improving global environmental issues and facilitating the development of global environmental products.



Kyocera Eco Label



Environment Related Products

The development of environmentally-contributing technology such as new energy, energy conservation, and resource conservation has been realized utilizing various advanced features of fine ceramics. By making good use of the technologies that we have nurtured as a ceramic manufacturer, we have sent many environment-compatible products to the market, thus contributing to the global environment.

Gas turbine components

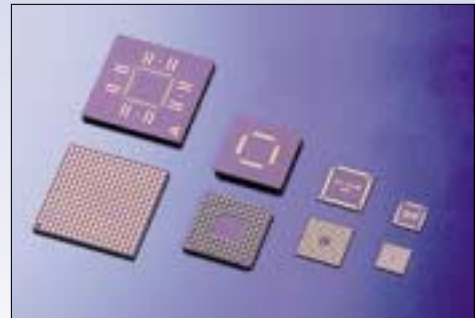
Gas turbine engines that adopt ceramics with excellent heat tolerance have high heat efficiency and results in CO2 reduction. Also, the combustion has been improved to reduce NOX output.



Semiconductor Package

Although most conventional packages have adopted metal pins to install on circuit boards, the form for directly installing on circuit boards without using metal pins has recently become mainstream due to resource conservation and package downsizing.

Considering the environment, Kyocera's package allows the use of a lead-free solder when installing on a circuit board.



Sliding parts for fuel injection

Fuel injection uses higher pressure to enhance energy combustion efficiency. Our sliding parts for fuel injection pumps have higher seizure and abrasion resistances, thus enabling higher injection pressure.



Handset

Handsets play an important role in today's information society.

Kyocera uses its ecology concept in the design stage of the handset to focus on resource conservation, downsizing, power conservation abilities; and improvement of recycling upon disposal.



Honeycomb filters

Using a catalyst is one method to eliminate detrimental constituents in gas exhaust from plants and motor vehicles.

The ceramic honeycomb filters that combine heat tolerance with high permeability are used in concert with a catalyst for exhaust gas purification, general antipollution device and odor removal. Ceramic Filters are also used for filtering when casting metal.



Gas Separator modules

Gas separator modules are used for organic vapor segregation such as solvent collection and evaporated gas-component collection for environmental preservation. these modules exploit a multiporous material structure of ceramics and show excellent resistance to high heat, chemicals, among other characteristics. Gas separator modules also sport high separation efficiency around the membrane dimensions.





Environmental Related Products

ECOSYS Printer

Photoreceptor drum for normal printers have a life span of around ten thousand copies.

The Ecosys Printer, however, has adopted an amorphous silicon drum with excellent durability and a long-life OPC drum, to create the world's first non-cartridge design. This design requires only supply of the toner eliminating the need for cartridge replacement.

Other environmental consideration includes the utilization of PET bottle recycled material for the fixing unit and the use of molded pulp made of 100% waste paper for packing materials.

These environmentally friendly designs have been recognized around the world, and the Ecosys Printer received the Blue Angel Eco Label certification from Germany, the first printers in the world - so honored page printers. The Ecosys Printer's reputation as an eco-friendly product is recognized around the world.



Solar Energy Related Products



Solar-power system for housing

Solar energy has received the most attention of any clean and inexhaustible energy source. Kyocera began research and development of solar energy systems in 1975, Kyocera is now the world's leading solar-cell manufacturer.

This system with self-supporting power for areas without electricity has been used in many countries around the world. Solar energy street lamps, traffic signs, and other items have also been marketed.

Home solar power systems are in widespread use today.

Various PV and solar water-heating systems have been developed and manufactured, and they are being used in many homes.



Schematic Diagram of a Solar Water-Heating System

Digital Camera

Digital cameras eliminate conventional film by electronically recording picture images on a memory card. This reduces the use of resources such as synthetic resin and silver in the photosensitizer that is required for conventional cameras.

Photos can also be seen directly through computer and TV screens so paper resources used for photographic paper can be also saved.

Adopting rechargeable high-capacity miniature lithium-ion batteries have lengthened their life span and also contributed to preserving the global environment by reducing land fill.



Digital camera "Finecam S3x"



Environmental Preservation

○Kyocera's Common Standards for Environmental Management

Water contamination, air pollution, soil contamination and underground water contamination are considered to be highly accumulative and cause great impact on the natural environment and ecosystem. Kyocera has established strict standards. In order to drastically manage these contaminants and reduce environmental impact, in many instances, Kyocera's standards surpass applicable laws and regulations.

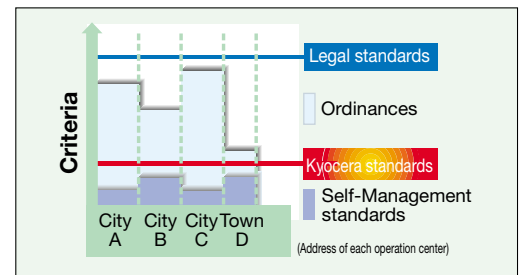
Each operation center has enthusiastically installed various kinds of environmentally-friendly equipment. This has resulted in dramatic improvement in processing capabilities and environmental management status which has satisfied Kyocera's Environmental Management Standards.



Discharged plating water processing facility (Kagoshima Kokubu Plant)

○Self Management Standard for Each Operation Center

Management at each operation center have set their own environmental standards that meet or exceed Kyocera's common standards.



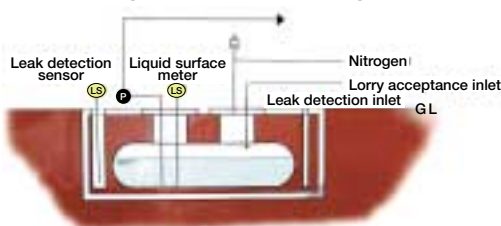
Kyocera's Environmental Management Standards regarding water contamination

NO	Items	Unit	Water Contamination Prevention Law	Kyocera's Environmental Management Standards
1	Concentration of hydrogen ions	pH	5.8 ~ 8.6	6.2 ~ 8.2
2	Biochemical oxygen demand (BOD)	mg/l	160 or below	10 or below
3	Chemical oxygen demand (COD)	mg/l	160 or below	10 or below
4	Suspended Solids (SS)	mg/l	200 or below	5 or below
}	}	}	}	}
43	Selenium and selenium compounds	mg/l	0.1 or below	0.01 or below

○Moving underground installations overhead

Periodic inspections are conducted for underground installations such as pipes and tanks. These inspections are important, because soil and underground water could be contaminated in the event of a leakage. A standard for handling underground installation has been established, however, to enable easy visual inspection for the early discovery of leakage and to prevent contamination from spreading, Kyocera has taken such measures as moving the underground installation overhead or by using double-layered tanks.

Underground tank storage space



Making underground tanks double-layered (Kagoshima Sendai Plant) Underground tanks are placed in concrete rooms and this structure helps the early discovery of leakage and prevents further leakage.



Moving underground pipes overhead (Kagoshima Kokubu Plant) allows for easy visual inspection and leakage detection.



Environmental Preservation

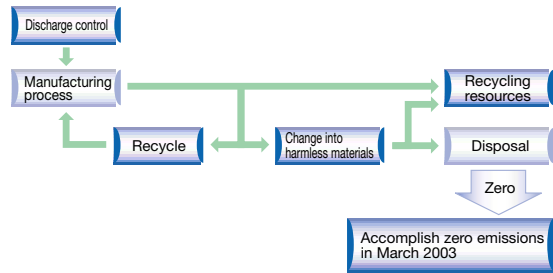
Reduction of Industrial Waste

The capacity of final disposal sites for industrial waste is decreasing and it's getting more and more difficult to find land for industrial waste in Japan. Therefore, it will be more difficult to release industrial waste in dumps and landfills in the near future.

Kyocera has anticipated this circumstance and has set up a basic policy to promptly work on reducing industrial waste. A reduction goal has been established every three years since 1992 for specific actions.

Basic Policy

1. Reduce industrial waste discharged from manufacturing processes
2. Recycle industrial waste
3. Change nonrenewable waste into harmless materials



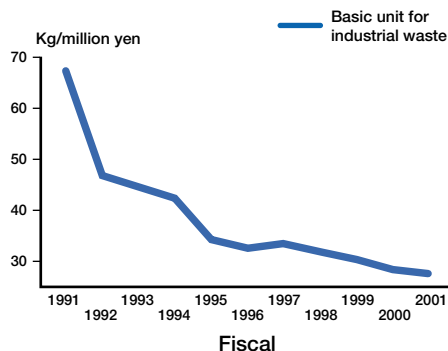
Firstly, along with the basic policy, Kyocera has been actively working to minimize industrial waste. Secondly it has been working to recycle industrial waste, and thirdly to process the waste that could not be recycled into harmless materials.

Based on this policy, the whole company organized one big project in order to actively work on reducing industrial waste and recycling industrial waste by analyzing the industrial waste, improving the manufacturing process, and introducing intermediate processing equipment.

[Reduction goal for industrial waste]

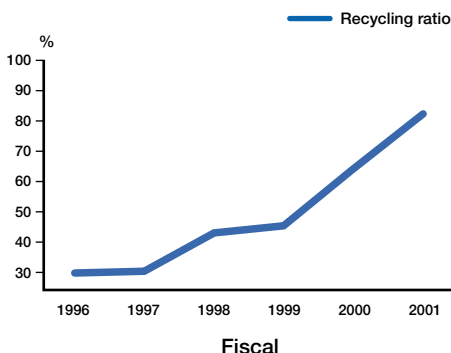
1. Reduce industrial waste by 70 percent from 2001 levels by March 2005.
2. Accomplish zero emission (100 percent recycling) by March 2003.
3. Reduce the cause of industrial waste by 20 percent from the levels of the first half term of 2002 fiscal year by March 2005.

Transitions in reducing industrial waste



Intermediate processing complex facility (Kagoshima Sendai Plant)

Transitions in recycling industrial waste



Denitrification processing facility (Shiga Yohkaichi Plant)

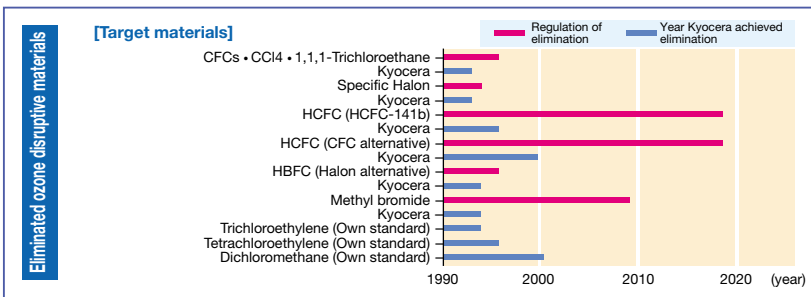


Environmental Preservation

Protecting the Ozone Layer

In order to protect the ozone layer actions were carried out to fully eliminate the materials regulated by the Montreal Protocol as well as other chlorine solvents having smaller ozone depletion potential.

Based on this policy, CFCs and CFC alternatives, carbon tetrachloride, 1,1,1-trichloroethane, and halon were completely eliminated at the end of 1992, which was three years ahead of the ordinance. CFC alternatives were eliminated at the end of 1999, twenty years ahead of the ordinance. The rest of the chlorine solvents made from trichloroethylene, tetrachloroethylene and dichloromethane” were also eliminated at the end of September 2000.

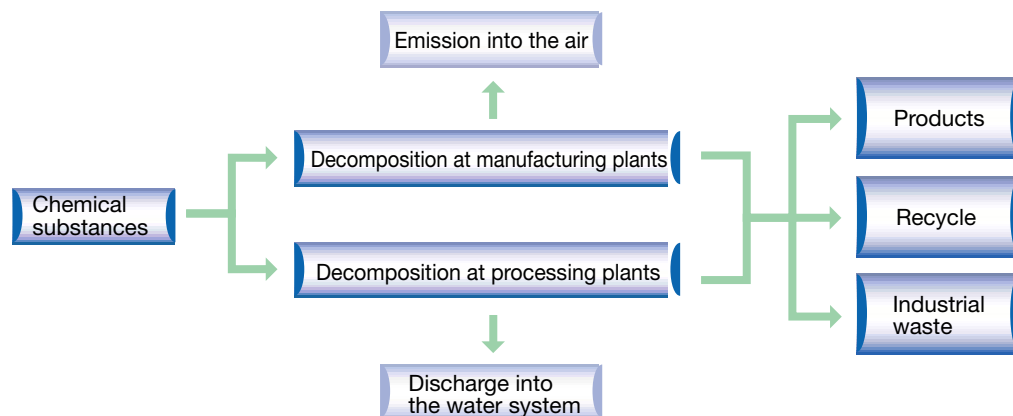


CFC free washing equipment (Nagano Okaya Plant)

Introducing PRTR [Pollutant Release and Transfer Registers]

Chemical substances are useful if used properly, but they are likely to have a significant impact on the environment or ecosystem if they are used improperly. Our chemical substance management system was established in order to know the accurate amount of chemical substances discharged into the air and water and to understand what is contained in the discharged waste.

Concept of balance management of chemical substances



PRTR requires to seize, aggregate and publish the total amount of target chemical substances released into the air, water and soil or transported in industrial waste.

[Reduction goal for chemical substances]

1. Reduce the volume of water to treat chemical containing drain water by 10 percent from 2001 levels by March 2005.
2. Reduce the total volume of exhausted and transferred chemicals by 5 percent from the levels of the first term of 2002 fiscal year by March 2005."



Saving Energy

The energy saving promotion

Ever increasing energy consumption has greatly influenced the global environment. Therefore human beings all over the world have tried to utilize limited energy efficiently, especially for industrial activities.

Kyocera has also been promoting highly effective utilization of energy including recycling exhaust energy, which is based on a specific goal for energy reduction.

Goals are set for both electricity and fuel savings.

[Goal for saving energy]

Reduce energy (electricity/fuel) consumption by 26 percent from 2001 levels by March 2005.

[Main activities]

- Developing energy saving items in other plants and offices
- Reducing energy consumption on manufacturing lines
- Studying the concentration and expansion of facilities.
- Introducing ice thermal storage systems by utilizing late-night energy
- Promoting the effective usage of non-utilized energy
- Developing energy saving projects

Preventing global warming

Global warming is accelerating and is becoming a severe problem due to increased emissions of green house gases and decreasing carbon dioxide absorbing resources. Carbon dioxide has been causing the concentration of green house gases, which has been critically disrupting the global climate system. Considering the seriousness of the anticipated impact, global warming is one of the most significant environmental issues today.

Kyocera has set up specific goals to reduce greenhouse gases in order to prevent global warming.

[Goals for preventing global warming]

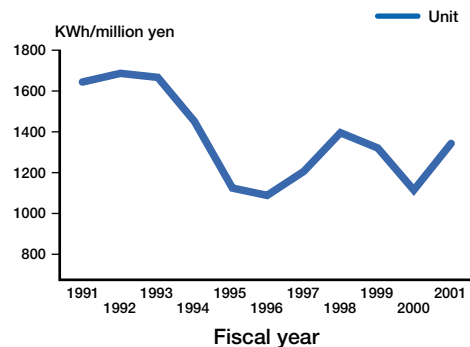
Cut emission of greenhouse gases by 6 percent from 1990 levels by March 2005.

Accomplish zero emission of PFCs by March 2005.

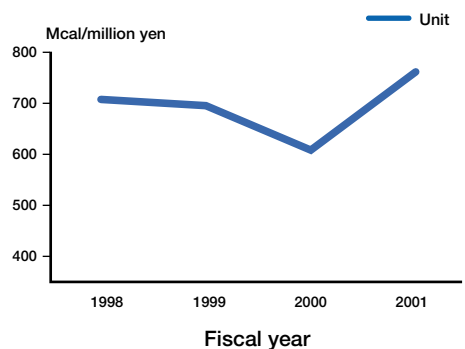
[Main activities]

- Reduction of PFC and other emissions (Methane, nitrous oxide, HFC, PFC, SF6)
- Reducing greenhouse gases by utilizing alternative energy sources
- Promoting introducing of cogeneration systems
- Promoting introduction of solar cell power generation systems
- Improving facilities and introducing new facilities for saving energy
- Introducing energy saving equipment when replacing the existing equipment

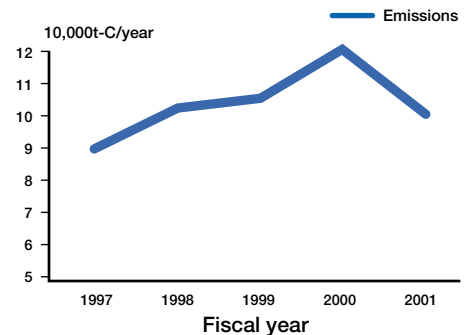
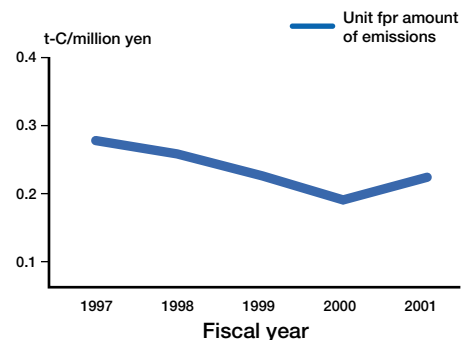
Transitions in reducing electric energy



Transitions in reducing fuel energy



Transitions in global warming prevention policy



We agree on the enactment of the Kyoto Protocol to prevent global warming, and promote reduction of greenhouse gas emission.

In July 2001, we demonstrated our commitment to prevent global warming by signing the e-mission55, which is the signature-collecting campaign from enterprises that agree on the enactment of the Kyoto Protocol. We have made great contributions in preventing global warming by using energies of lower warming coefficients and by abandoning energies of high coefficients such as PFCs.





Saving Resources

○ Saving resources

Recently resources have been rapidly consumed and we are concerned that these resources may be exhausted. Kyocera has set up specific goals and is promoting using fewer resources by utilizing our limited resources effectively in order to contribute to environmental protection.

1. Reducing fuel consumption for automobiles

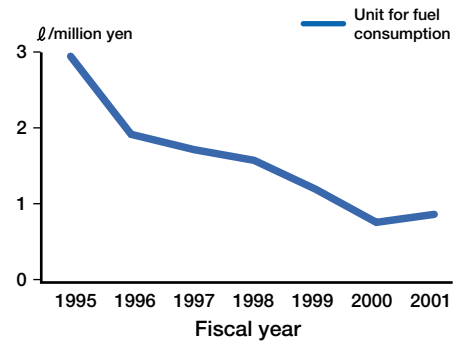
[Goal for reducing fuel consumption for automobiles]

Consumption of fuel for automobiles is to be cut by 30 percent from 2001 levels by March 2005.

[Main activities]

- Switching to more fuel-efficient cars for company use
- Stopping idling
- Promoting utilization of public transportation

Transitions in reducing energy consumption for automobiles



2. Reducing water consumption

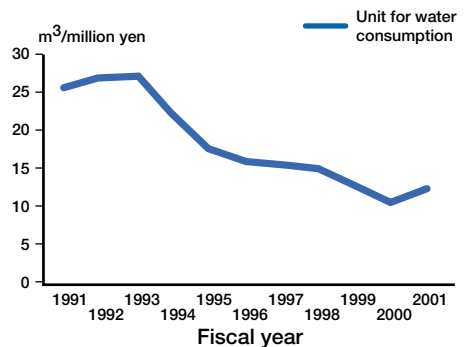
[Reduction goal for water consumption]

Consumption of water is to be cut by 30 percent from 2001 levels by March 2005.

[Main actions]

- Recycling water discharged during the manufacturing process
- Recycling washing water used in the manufacturing process
- Circulation of cooling water
- Adjusting the amount of water used for toilets and hand washing
- Reexamining the pressure on the water supply pump
- Utilizing rainwater for water sprinklers

Transitions in reducing water consumption



3. Reducing gas expenses

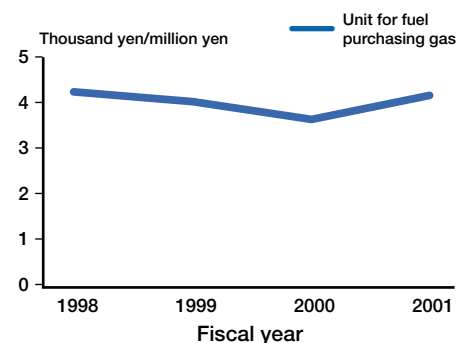
[Goal to reduce gas expenses]

Expense for gas is to be cut by 15 percent from the 2001 levels by March 2005.

[Main actions]

- Utilize gas more effectively
- Introduce low energy consumption equipment

Transitions in reducing costs for purchasing gas



4. Reducing transportation costs

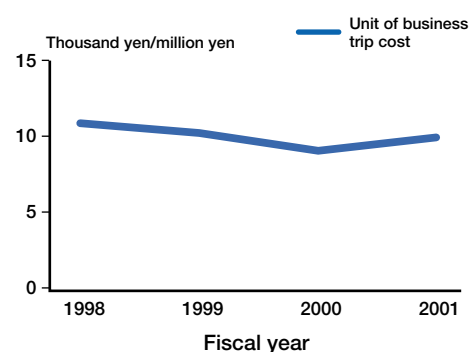
[Goal for transportation cost cuts]

Transportation cost is to be cut by 10 percent from the 2001 levels by March 2005.

[Main actions]

- Promoting utilization of television conference systems
- Promoting utilization of conference calls
- Reexamining routes for business trips

Transitions in reducing costs for business trips





Saving Resources

Efficient utilization of paper resources

Utilizing paper materials more effectively is one of the most simple and familiar activities for environmental protection.

Kyocera has established and promoted specific goals to reduce paper consumption in order to protect our forest resources.

1. Recycling papers

In order to promote paper recycling, 2,044 tons of paper was collected in fiscal year 2001. This means approximately 40,880 trees of 14 centimeters in diameter and 8 meters in height were saved from being cut down.

[Goal of collecting paper to recycle]

Continue to recycle 100 percent of office-use papers. Paper recycling cost is to be cut by 15 percent from the 2001 levels by March 2005.

2. Reduction of paper to be purchased

In order to reduce purchasing paper, goals were set for office-use paper and factory-use paper respectively and we are acting based on these goals.

[Goal for reducing paper to be purchased (office-use paper)]

Reduce the amount of paper to be purchased by 15 percent from 2001 levels by March 2005.

[Main actions]

- Efficient utilization of E-mail
- Introducing electronic filing systems

[Goals for reducing paper to be purchased (paper used in the manufacturing process)]

Reduce the amount of paper to be purchased by 15 percent from 2001 levels by March 2005.

[Main actions]

- Reexamining materials and the quality
- Study for recycling

Improving packing materials

Dealing with used packaging is an important issue since packing materials are usually only used once.

Kyocera has set up specific goals to reduce environmental impact brought by package waste and is promoting its actions in order to save resources used for packing.

[Goal for reducing packing materials]

Reduce costs for purchasing packing materials by 15 percent from 2001 levels by March 2005. (Reduce costs of vinyl chloride and styrene foam by more than 15 percent.)

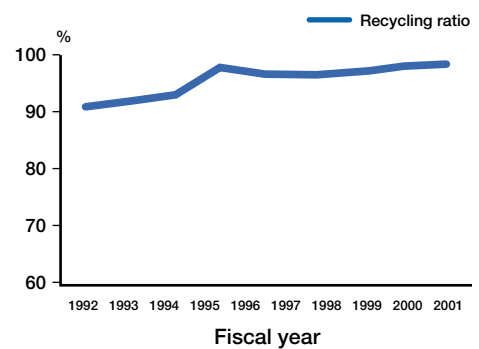
[Main actions]

- Investigating components in the packing materials
- Reexamining and improving packing methods
- Retrieving and recycling packing materials
- Switching from designated materials to alternatives
- Complying with Container and Packaging Recycling Law

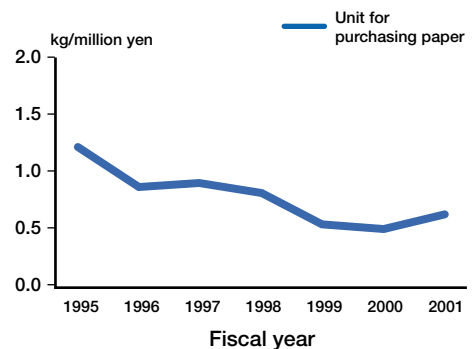


Separate disposal boxes for paper trash

Transitions in recycling papers



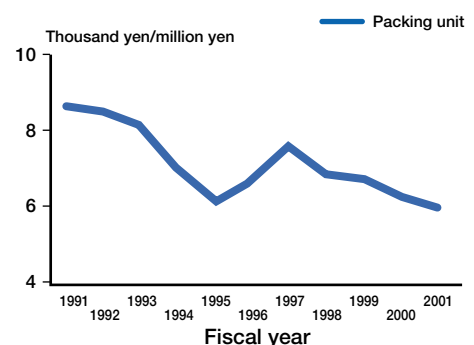
Transitions in cost reduction for office-use papers



Transitions in reducing packing materials

Basic Policy

1. Do not use packing materials that include toxic substances.
2. Minimize the use of packing materials.
3. Recycle packing materials or adopt containers for repeated use.
4. Use packing materials that can be easily recycled.
5. Establish appropriate systems for disposing of package waste.





Contributions to Society and Communities

Kyocera maintains its role as a good corporate citizen based on following the management rationale of contributing to the advancement of society and humankind while pursuing material and emotional well-being of all its employees.

1. Campaign to beautify the regions

Each operation center has been focused on being a regionally-oriented company by cleaning around the operation center and participating in the environmental beautification campaigns promoted by administrations and local governments.



Cleaning campaign around operation centers

2. Participation in environment related exhibitions

Kyocera has been exhibiting environmentally-friendly products and EMS activities at environmental exhibitions held all over the country.



Environmental Exhibition

3. The Kyocera headquarters facility is introduced to the public

Our headquarters annex facility, Kyocera Museum of Art and Kyocera Museum of Fine Ceramics History are open to the public. Many people have visited.



Headquarters environmentally oriented facility tour

4. Lectures on environmental issues

Kyocera has been presenting environmental protection activities at information about our lectures held by administrations and various groups.



Lecture for environmental issues



Development and Management of Green Procurement

Developing a circulating economy and society is a significant challenge, but essential to achieving environmental preservation and sustainable economic development. Enterprises have big roles to play in this development process.

Companies need to establish systems to reduce environmental impact in the processes from manufacturing, distribution, and usage to recycling. They are required to manufacture products considering reduction of resource and energy consumption, utilization of recycled materials, reduction of emissions that cause impact on the environment, and production of recycling-oriented products through the product life cycle.

Kyocera's Green Procurement is designed to procure environmentally friendly materials in order to minimize environmental impact, set and achieve the standards for each action. Suppliers' observance of laws related to environmental management, environmental management organization and environmental protection activities are investigated and evaluated in order to prioritize the suppliers.

Specific standards are set based on the Green Procurement Instruction for the following items and cooperation with suppliers is requested in order to reduce the environmental impact caused by products and to carry out environmental management activities. Cooperation with suppliers is sought.

1. Display the chemical substances and chemical components included in the supplies (Obtain MSDS)
2. Evaluate machinery to consider the environmental impact of the purchased machinery
3. Specify regulated packing materials used for supplies and display packing material names
4. Display material names of resinous supplies



Kyocera Green Procurement Guideline



Environmental Contribution Award

Establishing the Kyocera Environmental Contribution Awards

The Kyocera Environmental Contribution Awards were established in 1996 in order to encourage and reward environmental protection activities. The awards are designed to recognise groups and individuals who have significantly contributed to environmental protection activities. The winners are decided after discussion and approval by the Green Committee every year.

[Target department for nomination]

- | | |
|---|---|
| a. Reducing industrial waste | f. Measures for chemical substance management |
| b. Saving energy | g. Development of environmentally friendly products |
| c. Saving resources | h. Other outstanding activities, plans, or achievements |
| d. Efficient utilization of paper resources | |
| e. Improvement of packing materials | |

[The flow for nominating a prize winner]



Actual examples of the Kyocera Environmental Contribution Award (Extracted)

First : Fiscal 1997

- **Most Excellent Award** (Development of environmentally friendly products segment)
Item : The amorphous silicon drum and the Ecosys printer FS-1700 which uses the amorphous silicon drum.
Contents : This product helps to reduce waste and save energy by adopting the highly durable amorphous silicon drum.



Chairman of Green Committee (then the President) offered the award.



Amorphous Silicon Drum

- **Excellent Award** (Development of environmentally friendly products segment)
Item : Home-use solar power generation system.
Contents : Realized the world's highest cell efficiency and inverter efficiency as a mass produced product by adopting 15 centimeters square cells.
- **Excellent Award** (Saving energy segment)
Item : Energy and power saving by automatic temperature controlling system in a spray dryer tower.
Contents : Power and water consumption used for a spray dryer were reduced and unmanned operations were made possible.
- **Excellent Award** (Improvement of packing material segment)
Item : Improvement of Slum Array type packing.
Contents : Improved packing by changing the packing method based on the characteristics of the product. (Less materials and less volume for packing)

Second : Fiscal 1998

- **Excellent Award** (Improvement of packing material segment)
Item : Improvement of packing materials for printer.
Contents : Improvement of the shape of shock absorber material and the methodology (Styrene foam was eliminated.)
- **Excellent Award** (Reduction of industrial waste segment)
Item : Reducing industrial waste by utilizing exhaust heat.
Contents : A complex intermediate processing facility was developed to utilize exhaust heat generated by incinerating waste to dry and vaporize other industrial waste. Industrial waste was widely reduced and recycled.
- **Excellent Award** (Development of environmentally friendly product segment)
Item : KT-09D Ecosys minute dust returning toner.
Contents : Improved manufacturing technology for printer toner (Reducing the environmental impact during the manufacturing process, efficient utilization of resources, and reducing industrial waste)
- **Excellent Award** (Development of environmentally friendly product segment)
Item : 14-inch thermal printer head for medical use.
Contents : Development of a large scale printer head using thermal technology.

Third : Fiscal 1999

- **Most Excellent Award** (Development of environmentally friendly product segment)
Item : 600 dpi LED Array
Contents : The environmental impact was widely reduced by changing circuit boards used for products.



LED printer head



- **Excellent Award** (Development of environmentally friendly product segment)
Item : Handset HD-60K/HD-61K series
Contents : Development of the nation's lightest handset. (Downsizing/light weight/lower power consumption/better recycling)
- **Excellent Award** (Development of environmentally friendly product segment)
Item : Ni electrode laminating ceramic chip condenser
Contents : Protect scarce materials by using nickel for internal electrodes

Fourth : Fiscal 2000

- **Most Excellent Award** (Development of environmentally friendly product segment)
Item : The G3 base station
Contents : Resource saving by miniaturization and lightening of the product, energy saving by the reduction in power consumption, and environmental impact reduction by the design for easy disassembly and separation.
- **Excellent Award** (Development of environmentally friendly product segment)
Item : The 200SQ tape specification SMD / the MEP manufacturing technology for PKG
Contents : Resource saving by the miniaturization of the product and energy saving in the production process
- **Excellent Award** (Development of environmentally friendly product segment)
Item : Ecosys Printer FS-1750/3750
Contents : Basic performance of the Ecosys Printer is inherited, and besides, power saving is realized.
- **Excellent Award** (Saving energy segment)
Item : Improvement of the production air supply system
Contents : Energy saving by the review of piping and automatic control of the air supply system.

Fifth : Fiscal 2001

- **Excellent Award** (Global warming prevention segment)
Item : Reduction of PFCs emission
Contents : Improvement of resin materials used in our products greatly reduces the amount of PFCs, i.e. greenhouse gases.
- **Excellent Award** (Development of environmentally friendly product segment)
Item : Two types of SMD packages: sealing electron beam type and sealing direct seam type
Contents : Development of groundbreaking new seal technology, which overcomes problems that no ordinary seam weld sealing could.



Education

In terms of environmental protection, the relationship between humans and the environment has to be understood by each individual employee through their work and daily life. Therefore, in-house awareness activities regarding the environment have been developed in order to make environmental protection more effective. These activities include improving employers awareness by providing environmental information in the employee magazine and offering environmental education.

Seminars to train internal environmental inspectors

Since internal environmental inspectors have significant roles for continuously improving environmental management systems, in-house training seminars are held periodically to authorize successful applicants as internal environmental inspectors.

This authorization system consists of two types of inspectors, general internal inspectors and chief internal inspectors who supervise the entire inspection process.



Seminar to train internal environmental inspectors

Environmental education for employees

Higher awareness of environment, duty, and responsibility by individual employees is necessary for successful environmental management. Therefore classified education (such as for newly hired employees, supervisors and other levels) is provided as well as specialty education for employees who are responsible for environmental protection.



Environmental education

Training to handle emergencies

The construction of breakwaters and other preventive measure is proactively set to prepare for accidents or emergencies affecting the environment that may occur. Procedures to handle emergencies are also provided. Emergency equipment is prepared as well as training given to instruct employees on how to handle emergency situations and how to report them.



Training to handle emergencies

Kyocera Group Environment Month

Kyocera Group Environment Month

June is designated as Kyocera Group's Environment Month every year. Various events are held to heighten employees' awareness and to fulfill environmental management system requirements.

During this month, a focal topic regarding the environment is selected so that individual employees can enthusiastically think of the environment and take action. This has produced excellent results.

Suggestions for environmental posters and slogans are invited from employees in order to heighten their awareness. Excellent ideas are recognized and introduced to the whole company activities for environmental protection.



Poster for promoting activities for environmental protection



Awards

**○Eighth Global Environmental Grand Prix
Fuji Sankei Group Prize**

Kyocera was awarded the Fuji Sankei Group Prize at the eighth Global Environmental Grand Prix Awards sponsored by the Japan Industrial Newspaper publishing company.



Global Environmental Grand Prix
Commendation Ceremony

[Contents of the award]

Kyocera was evaluated and awarded for achieving environmentally oriented management as well as the following activities. These achievements were carried out based on the management rationale of contribution to the advancement of society and humankind under the company policy, "Respect the Divine and Love People".

1. Constructing the ecologically oriented headquarters building
2. Development and sales of environmentally friendly products
3. Achievement of environmental protection



Headquarters building

**○New Energy Grand Prix
New Energy Foundation Chairman's Prize**

Kyocera was awarded the New Energy Foundation Chairman's Prize at the New Energy Grand Prix Awards (Award for new energy equipment for the twenty-first century) sponsored by the New Energy Foundation.

[Contents of Award]

The reduction of carbon dioxide is one of the major challenges to deal with for environmental problems.

Kyocera has constructed an environmentally friendly high-rise building that incorporates solar power generation and city gas cogeneration systems. This building was highly evaluated because it became an advanced model for introducing high-rise buildings for the twenty-first century.



**○Others
Meritorious Award for a Person Preserving the Environment (Prevention of global warming segment)**



Environmental Measures at Headquarters

Kyocera's slogan of being environmentally friendly and coexisting with the region was conceptualized at the time headquarters being built, so the building was designed in harmony with the surroundings. It creates a nice landscape and also offers the local citizens a place for recreation and relaxation. Approximately 3300 square meters of space is open to the public.

The following environmental protection activities are also carried out.

[Environmental protection movement]

1. Solar power generation systems

Solar cells were placed as much as possible on the roof and walls of the southern side higher than three stories. This is the world largest class of solar cells placed vertically on a wall for one high-rise building. The capacity is 214 kW, which is 12.5 percent of the projected maximum consumption of 1,700kW. It generates a yearly total of 182,860kWh*1, which allows 45,000 liters of oil to be saved in the case of thermal power generation. That means 97.2 tons of carbon dioxide and 133 kg of sulfur oxide as be reduced. This solar power generation system can be used in parallel with an electric system, providing a system that allows the surplus electricity to be sold back to the utility company.

Note) *1 : The value is calculated by our calculation formula.

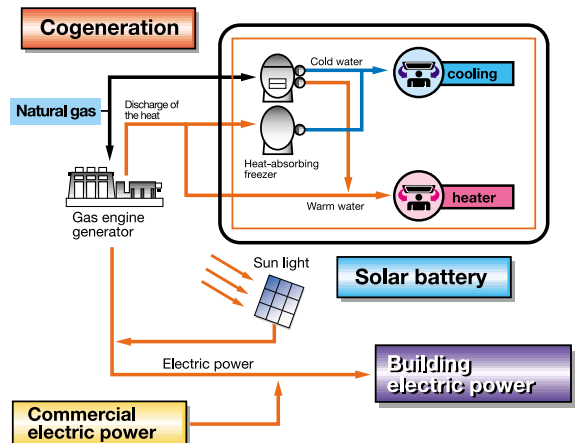
2. Gas Cogeneration Facility

City gas is adopted as fuel because of the lower carbon dioxide and nitrogen oxide and because it is sulfur oxide free. Since the usage of heat is lower in office buildings, a gas engine was adopted as the motor, by attaching importance to power generation efficiency rather than the usage of exhaust heat. Generated power is utilized for lighting and power supply, and exhaust heat is effectively retrieved by a heat-absorbing freezer. There are two power generators of 520kW that generate 69 percent of the current power consumption of 1,500 kW.

A cogeneration system, solar power generation, and power for commercial use supply power for the building as a combined system, which is a pioneering innovation for the nation.



Headquarters building that was completed in August 1998



3. Adoption of ice thermal storage air conditioner

Ice thermal storage equipment operates utilizing surplus energy generated by electric power companies during night hours. This stored power can be utilized for air conditioning during daytime peak hours and allows leveling the load as well as reducing the disparity of power consumption between day and night in summer time, which is a serious social problem.

1. Adoption of the perimeter zone ventilation system
2. Adoption of a separated system for individual air conditioning
3. Adoption of inverters as air conditioning motors
4. Adoption of an air adjusting system in the air conditioning ducts
5. Adoption of air conditioning control from a central supervising panel
6. Reduction of unnecessary lighting due to a subdivided system
7. Adoption of lighting using a high efficiency inverter
8. Adoption of a measuring system for energy consumption on each floor
9. Adoption of high efficiency heat reflection glass
10. Automatic escalator operation
11. Utilizing ground water and rainwater



This report, based on our achievement and specific data, was created to introduce you to Kyocera's environmental activities.

We hope this transparent view into our environmental management efforts results in your better understanding at our Company, its philosophy and how we work to improve our global environment. Your frank opinions and thoughts about this report are highly appreciated and will be taken into consideration for future Environmental Reports. We would be grateful if you could answer the questions and mail or Fax the survey back to us.

November 2002
Kyocera Corporation.
General Affairs Head Office,
Environmental Safety
Department,
Environmental Section



Your opinion and thoughts are appreciated.

To Kyocera Corporation Environmental Safety Department, Environmental Section

Q1 : What is your impression about this report on the whole?

1. Excellent 2. Good 3. Okay 4. Not very good 5. Poor

What is your reason for the answer above?

()

Q2 : What information was most impressive on worthwhile to you?

1. Basic policy 2. Organization 3. Environmentally friendly products
4. Environmental Protection Activities 5. Contribution to Society 6. Green Procurement
7. Systems and Awards 8. Ecology Building

Please specify what was especially impressive.

()

Q3 : If you want to know more about anything, please choose an item from Q2 and specify what you would like to know about it.

Item	More detailed information required

Q4 : If you find something insufficient or requiring improvement, please mention it.

1. () 2. Nothing specifically

Q5 : What do you think about Kyocera's environmental protection activities?

1. Highly evaluated 2. Well evaluated 3. Not evaluated well 4. Very poor

()

Q6 : What do you expect Kyocera to achieve in terms of environmental protection activities? Please specify.

()

Q7 : What is your position? (Circle all that apply)

1. Citizen in a region where Kyocera's plants or operation centers are located
2. Kyocera's dealers 3. Government or administration 4. NPOs such as Environmental groups
5. Press 6. Kyocera employee or family member 7. Other ()

Q8 : If you have any other opinions or thoughts, please let us know.

Address to Mail

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Living Together

Living in Harmony with the Earth, Nature and Society



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Published in November 2002



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