

ENVIRONMENTAL REPORT 2001



Environmental Report 2001 Contents

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This report was prepared based on the results of the Tokyo Electron Group's environmental preservation activities, mainly in Japan, during fiscal year 2000 (from April 1, 2000 to March 31, 2001). We plan to issue this report annually.

Contact

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Message from the President

Having set the “Globally Excellent Company” as the group goal, Tokyo Electron is actively pursuing to achieve it in all facets of their business activities giving careful consideration toward the environment, safety and health.

Such consideration is reflected in our corporate message “People. Technology. Commitment.” laid down last year. Specifically to say, we clearly stated in the message that “We encourage community involvement, exercising responsibility by promoting safety and environmental conservation.”

This Environmental Report is our corporate pledge to preserve the global environment. We explain our environmental policies, specific plans for action in implementing those policies and the results of such actions in this report. We intend to issue updated reports on an annual basis.

We sincerely hope that this report will impress upon you our deep commitment to environmental preservation, and that it will be informative. As always, we welcome your candid comments and suggestion.

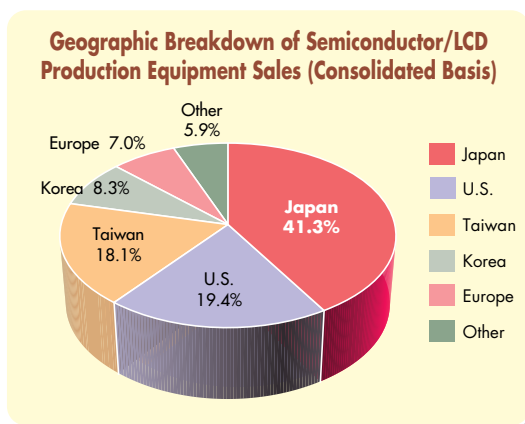
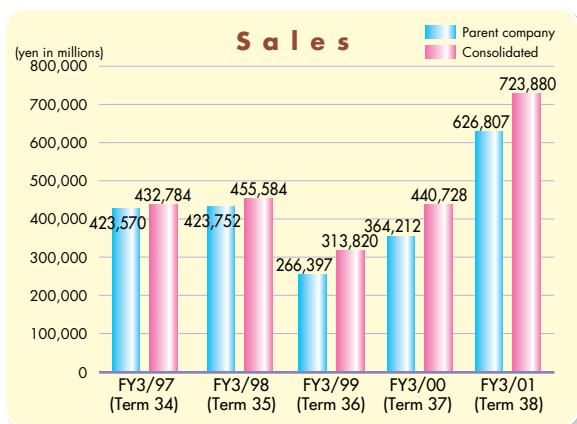


A handwritten signature in black ink, which appears to read "T. Higashi".

Tetsuro Higashi
C.E.O., President
Tokyo Electron Limited

Corporate Profile

Company name: Tokyo Electron Limited
 Address: TBS Broadcast Center, 3-6 Akasaka 5-chome, Minato-ku, Tokyo 107-8481
 Phone: 03-5561-7000
 Representative: Tetsuro Higashi, C.E.O., President
 Established: November 11, 1963
 Capital: ¥47,212,750,000 (as of March 31, 2001)
 Main products: Semiconductor production equipment (developed in-house and imported), LCD production equipment (developed in-house), computer networking equipment, electronic components
 Employees: 1,330 (as of April, 2001)
 Group employees: 10,693 (as of April 1, 2001)
 Sales (consolidated): ¥723,880,000,000 (FY3/O1)
 (parent company): ¥626,807,000,000 (FY3/O1)

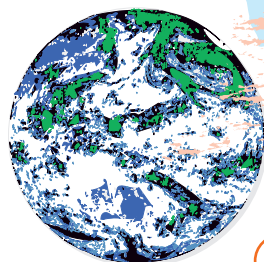


< Domestic Subsidiaries >

- Tokyo Electron Sapporo Limited (Hokkaido)
- Tokyo Electron Tohoku Limited (Iwate)
- Tokyo Electron AT Limited (Yamanashi)
- Tokyo Electron FE Limited (Tokyo)
- Tokyo Electron Logistics Limited (Tokyo)
- Tokyo Electron Leasing Co., Limited (Tokyo)
- Tokyo Electron Agency Limited (Tokyo)
- Tokyo Electron EE Limited (Kanagawa)
- Tokyo Electron Device Limited (Kanagawa)
- Tokyo Electron Kyushu Limited (Saga)

< Overseas Subsidiaries >

- Tokyo Electron America, Inc. (Texas)
- Tokyo Electron Texas, Inc. (Texas)
- Tokyo Electron Massachusetts, Inc. (Massachusetts)
- Tokyo Electron Phoenix Laboratories, Inc. (Arizona)
- Tokyo Electron Arizona, Inc. (Arizona)
- Supercritical Systems, Inc. (California)
- Timbre Technologies, Inc. (California)
- Tokyo Electron Oregon, LLC. (Oregon)
- Tokyo Electron Europe Ltd. (England)
- Tokyo Electron Deutschland GmbH (Germany)
- Tokyo Electron Italia S.p.A. (Italia)
- Tokyo Electron Switzerland Ltd. (Switzerland)
- Tokyo Electron Nederland B.V. (The Netherlands)
- Tokyo Electron España S.L. (Spain)
- Tokyo Electron Ireland Ltd. (Ireland)
- Tokyo Electron Israel Ltd. (Israel)
- Tokyo Electron France S.A.R.L. (France)
- Tokyo Electron Korea Ltd. (Korea)
- Tokyo Electron Taiwan Ltd. (Taiwan)



Tokyo Electron homepage: <http://www.tel.co.jp>

Tokyo Electron Group Credo on Environmental Preservation



Tokyo Electron Group (“TEL Group”) established the “Environmental Credo” and “Environmental Principles” on September 25, 1998 to exhibit its commitment to global environmental preservation activities. The respective plants of the group are to promote environmental preservation activities based on their own environmental policies, standards, manuals and procedures developed based on the above “Credo” and “Principles”.

Tokyo Electron Group Credo on Environmental Preservation

<The TEL Group Credo on Environmental Preservation>

The Tokyo Electron Group believes that preserving the global environment and constantly improving it is one of the most important objectives for mankind as well as our business. Based on this credo, We are determined to expand our business by maintaining harmony with the global environment, and thus win the trust of our many customers, share holders, employees and society in general.

<The TEL Group Principles on Environmental Preservation>

1. Continuous Improvement

TEL is conscious that products manufactured by the TEL Group affect the environment, and based on this awareness, we, with our customers and suppliers, shall continually strive to minimize the impact of processes and operations on the environment.

2. Knowledge

TEL continually strives to enhance its understanding of the impact that the TEL Group has on the environment and the responsibility that this entails. In addition, TEL aims to gain a quantitative grasp of environmental factors, and the impacts resulting from TEL Group activities and operations.

3. Performance Criteria

As well as strictly observing mandatory environmental laws, treaties and agreements, TEL strives to enhance its own environmental management system and improve global environmental preservation programs by the proactive establishment of its own aggressive environmental performance criteria.

4. Disclosure

TEL shares information about its environmental concept, principles and the progress of our contribution toward environmental protection with employees and the general public.

5. Partnership

TEL actively participates in environmental protection activities practiced by our customers, suppliers and communities.

Date: September 25, 1998

Tetsuro Higashi

C.E.O., President

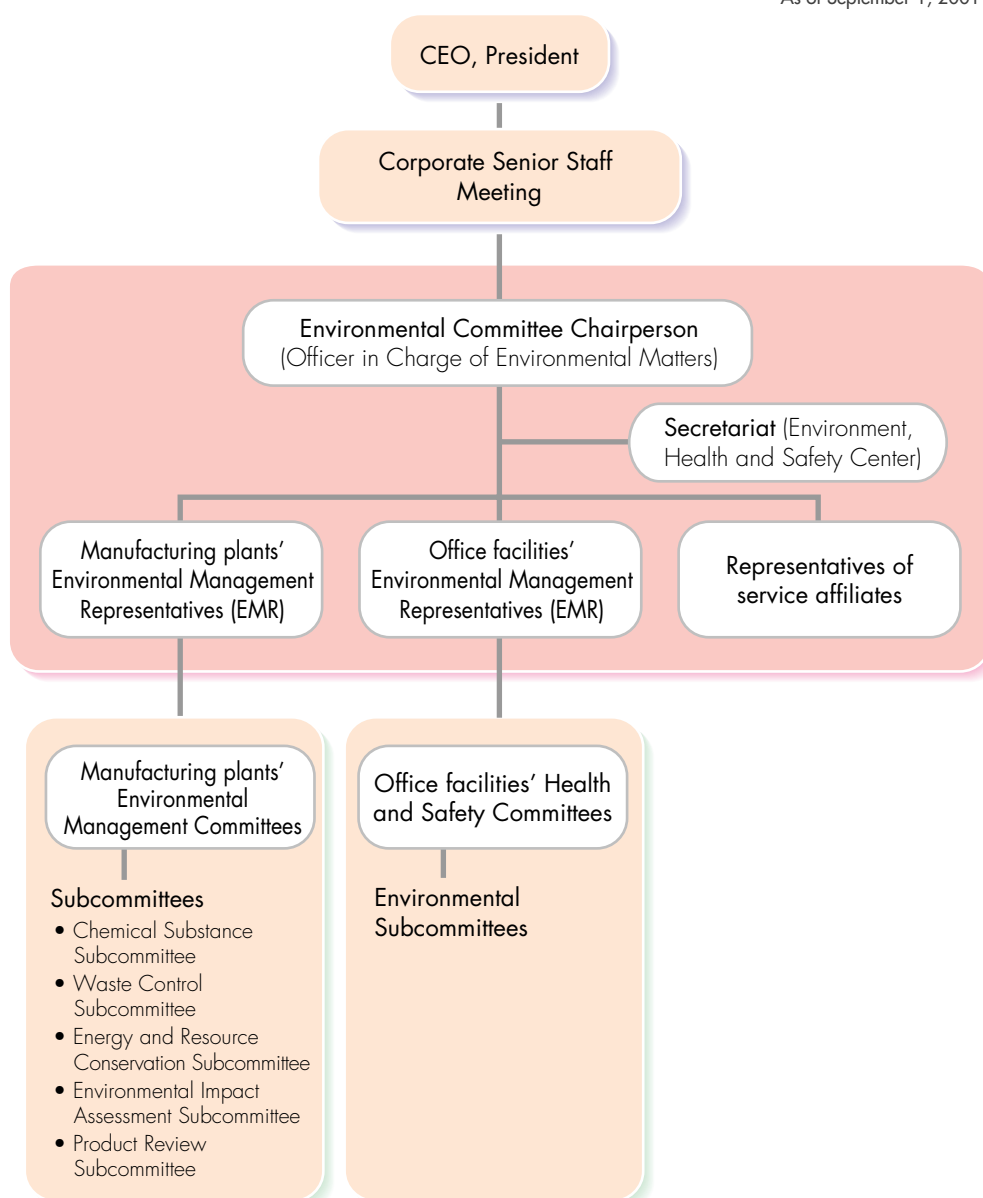
Tokyo Electron Limited

Tokyo Electron Group Environmental Preservation Activity Promotion Organization

The organization that drafts and finalizes the TEL Group's policies regarding environmental management activities and drafts, deliberates on, and approves targets and action plans is the TEL Group Environmental Committee, chaired by the board member in charge of environmental issues. The Environmental Committee addresses and resolves company-wide issues. The Environmental Management Committee, headed by the Environmental Committee Chairperson and Environmental Management Representative, promotes environmental preservation activities at each plant in cooperation with top management. As of October 2001, the TEL Group Environmental Committee and the Plant/Field Engineering(FE) Safety Committee will merge to form the Environmental Health and Safety Committee, which will continue the job of promoting environmental preservation activities throughout the TEL Group

TEL Group Environmental Committee Organization

As of September 1, 2001

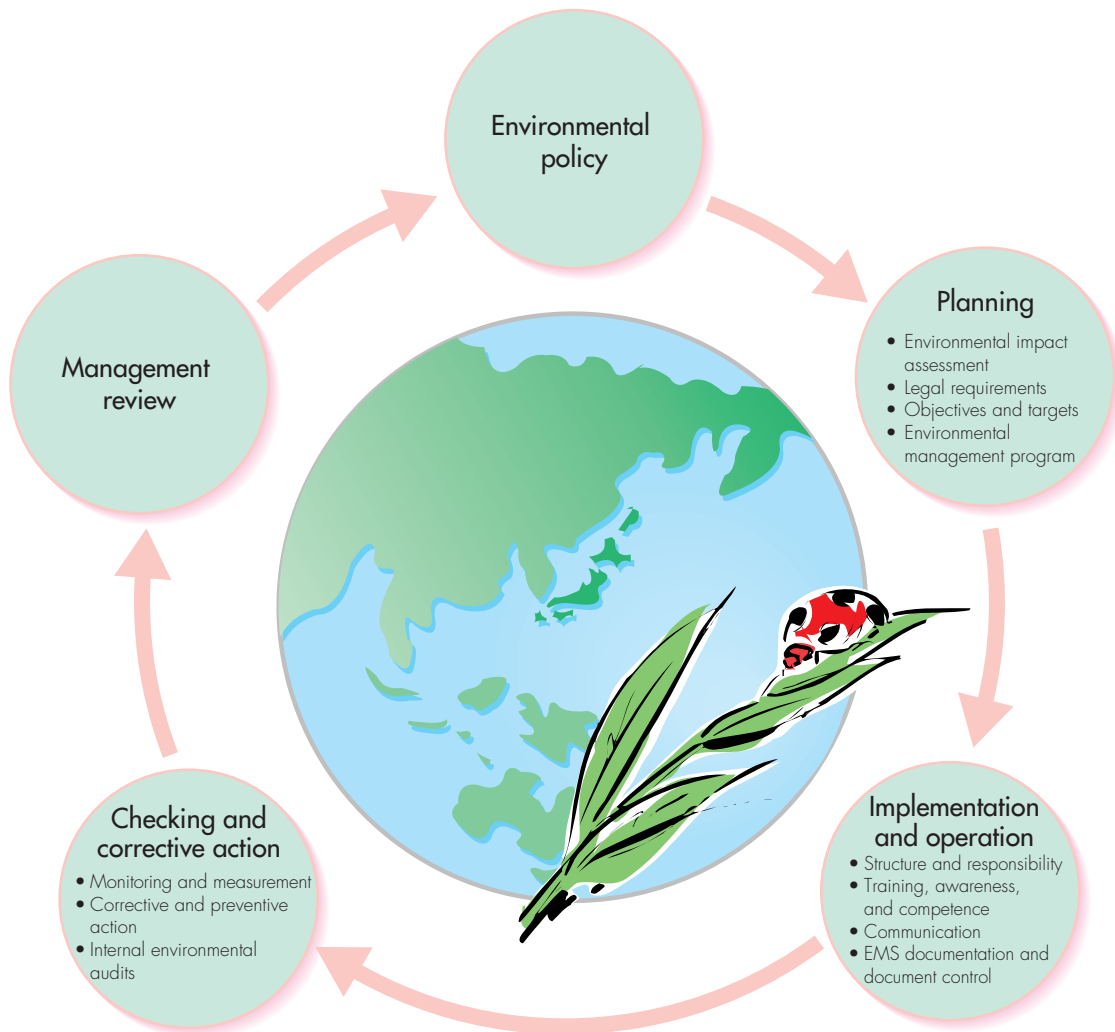


Environmental Management System



To continually promote environmental preservation activities, the TEL Group has developed and implemented an environmental management system based on the ISO14001 international standard. At present, we conduct internal audits of the environmental management system, primarily at ISO14001-certified facilities. Third party inspections of such facilities are also conducted periodically by the authorized external environmental certification organization.

■ Conceptual Diagram of the Environmental Management System



■ Establishment of the TEL Group Environmental Committee

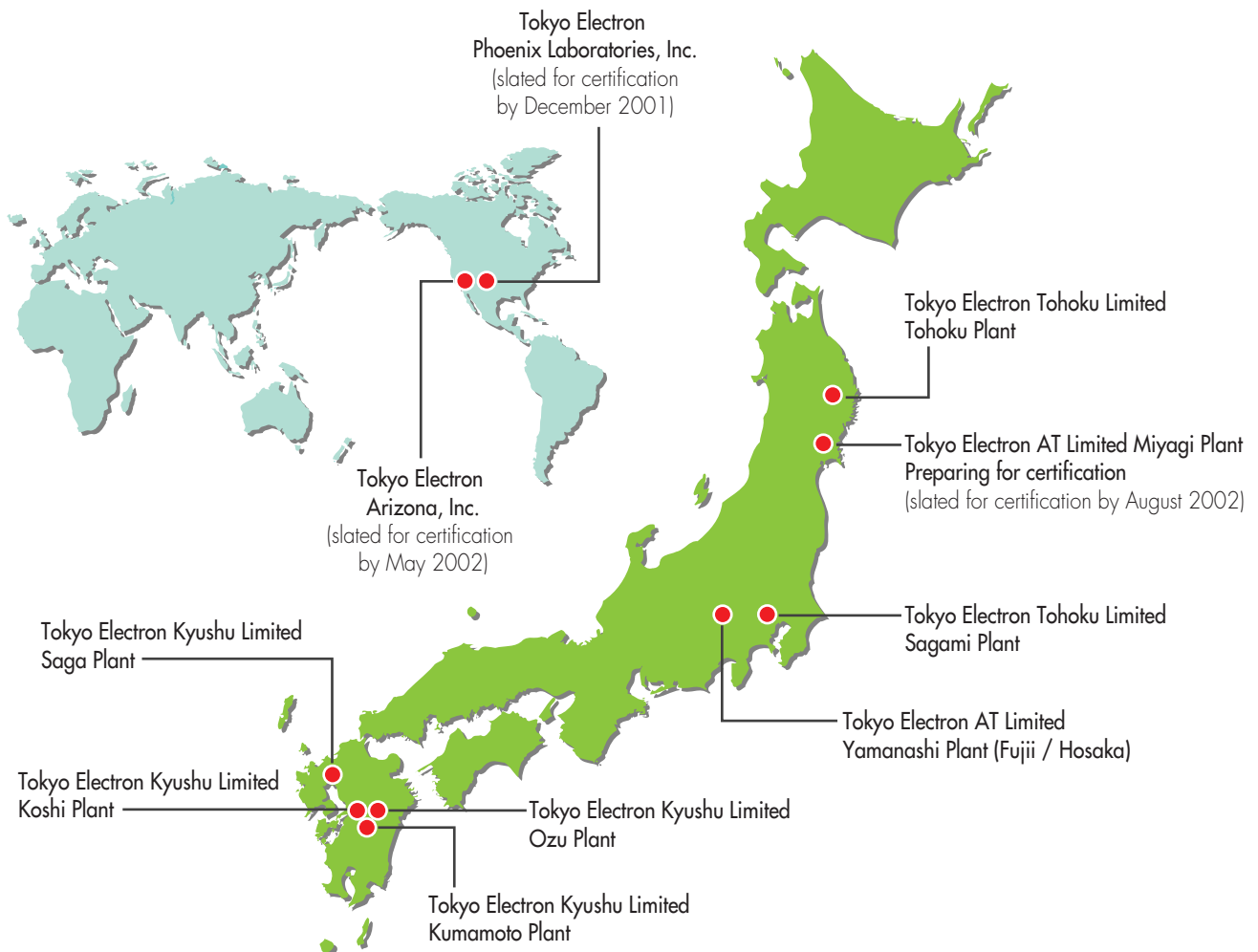
In response to mounting global environmental problems, the TEL Group established the TEL Group Environmental Committee in 1996 as an offshoot of the existing Product Safety Committee. The Committee has been sequentially proceeding to promote ISO14001 certification of the seven major manufacturing and research facilities in Japan (Sagami, Tohoku, Saga, Kumamoto, Yamanashi, Ozu, Koshi). As a result of such efforts, all seven facilities have been certified by third-party certification organizations during FY1997–FY1999. The Committee presently oversees the environment at TEL facilities and is promoting environmental preservation activities on a group-wide basis. Environmental issues pertaining to equipment and parts are managed by the Worldwide Product EHS (Environment, Health, and Safety) Committee.

■ External Certification (ISO14001)

Seven of TEL Group plants have been ISO14001-certified as of September 30, 1999. Additionally, Tokyo Electron AT Limited, Miyagi Plant aims to obtain ISO certification by August 2002.

Also, Tokyo Electron Phoenix Laboratories, Inc. (Arizona, USA) is working towards obtaining ISO certification in December 2001.

Plant	Certification Date	Expiration Date	Certification No.
Sagami Plant	December 10, 1997	December 10, 2003	EMSC-1110
Tohoku Plant	February 19, 1998	February 19, 2004	EMSC-1118
Saga Plant	March 12, 1998	March 12, 2004	EMSC-1119
Kumamoto Plant, Koshi Plant	March 26, 1998	March 26, 2004	EMSC-1120
Yamanashi Plant	May 15, 1998	May 15, 2004	EMSC-1124
Ozu Plant	August 27, 1999	August 27, 2002	EMSC-1414



Environmental Audits



At TEL Group, environmental audits are one of key activities for promoting the environmental preservation activities referred to in the “Credo.” We independently conduct internal environmental audits of every plant where an environmental management system has been implemented. The audit findings are reported to the top management at each plant and used for review and improvement of the environmental management system. To ensure that internal environmental audits are conducted reliably, they are conducted only by certified internal environmental auditors. An auditor certification system has been established at every applicable plant.

Internal Environmental Audit Implementation Status (FY2000)

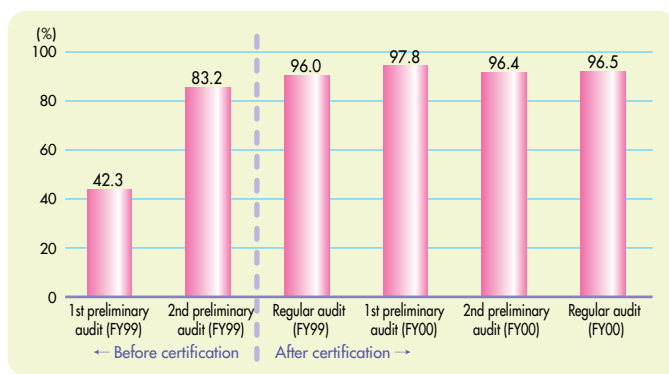
Plant	Tohoku	Sagami	Yamanashi	Saga	Kumamoto / Koshi	Ozu
Month of Audit (First audit)	'00/8	'00/7	'00/11	'00/9	'00/10	'00/5
(Second audit)	—	—	—	'00/12	—	'00/8
(Third audit)	—	—	—	—	—	'00/12

Number of Certified Environmental Auditors in the TEL Group (as of August 1, 2001)

Plant	Tohoku	Sagami	Yamanashi	Saga	Kumamoto / Koshi	Ozu	Total
Chief auditors	12	9	41	25	32	22	141
Auditors	14	15	85	6	58	18	196
Total	26	24	126	31	90	40	337

Topics (Audits conducted at Ozu Plant)

The Ozu Plant conducts internal environmental audits to continually upgrade its environmental management system. The plant conducted preliminary audits of all organization in May and August 2000, and regular audit in December 2000. As shown in the graph at right, the system is now firmly established, with consistently high overall audit scores of 97.8%, 96.4%, and 96.5% since the plant obtained certification in August 1999.



Trend in Overall Audit Scores (Ozu Plant)

Environmental Management System Objectives and Targets

At each plant, we first ascertained the type of impacts (environmental impacts) various environmental aspect of the plants operational activities, product manufacturing and services that have or may potentially have on the environment. We then assessed such impacts (environmental impact assessment). Through this process, we identified which environmental aspects have or may potentially have a major environmental impact (identification of significant environmental impact). To reduce the risk of these environmental impacts' occurrence, we clearly set objectives and targets.

The following lists the major objectives and targets established at ISO14001-certified plants.

- (1) Reduction of wastes and improvement of recycling rate
- (2) Promotion of energy and resource conservation
- (3) Proper control of chemical substances
- (4) Development of environmentally benign products

To achieve such objectives and targets, we have developed and are implementing an environmental management system. This entails preparing an Environmental Management Program (EMP) that specifies responsibilities, means, and schedules, among other matters; and periodically monitoring, measuring, and keeping records of key operational variables.

■ The TEL Group Credo and Principles on Safety and Health

Environmental Objectives	Environmental Targets
Reduction of wastes and improvement of recycling rate	<ul style="list-style-type: none"> • Thorough sorting of wastes • Promotion of general waste recycling • Implementation of plastic waste recycling • Improvement of recycling rate • Reduction of volume of waste per person • Implementation of recycling of all concentrated liquid wastes
Promotion of energy and resource conservation	<ul style="list-style-type: none"> • Reduction of paper usage • Reduction of water usage • Reduction of power usage • Development of energy management systems
Proper control of chemical substances	<ul style="list-style-type: none"> • Development of chemical-substance management systems • Compliance with the PRTR system • Augmentation of chemical substance monitoring equipment and operation thereof • Conduct of emergency response drills for chemical substance safety
Development of environmentally friendly products	<ul style="list-style-type: none"> • Reduction of products' energy consumption • Identification of products' recyclable components • Establishment of product disposal procedures • Reduction of quantities of chemical solutions used by products • Establishment of technologies to reduce the amount of gas and water used by products • Establishment of technologies to reduce the amount of PFCs, HAPs, and VOCs emitted by products

Waste Reduction and Recycling

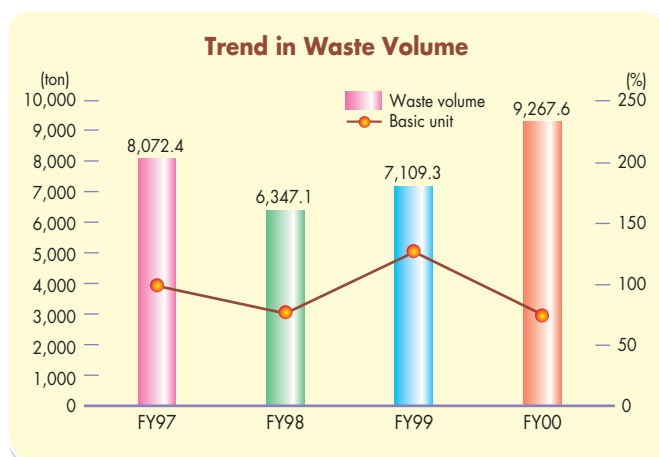


Waste reduction is an important issue in terms of both preserving the global environment and alleviating the burden on incinerators and other waste disposal facilities. Our philosophy is, “Minimize waste generation, maximize recycling of wastes that are generated, and properly dispose of wastes that cannot be recycled.” In accordance with this philosophy, every TEL Group plant reduces the amount of waste it generates and sorts wastes to facilitate recycling.

■ Total Waste Volume

The bar graph at right shows the progression of the TEL Group’s total waste volume, on a year-to-year basis. The linear graph shows changes in the basic units, calculated by dividing waste volume by sales of each year. For the purpose of comparing yearly results, the basic units (used to show the relationship between sales and waste volume) are calculated by taking the result of fiscal year 1997 as 100 points (100%). In fiscal year 1999, we started keeping a tally of the amount of waste generated by our non-manufacturing facilities, in addition to those at our manufacturing plants.

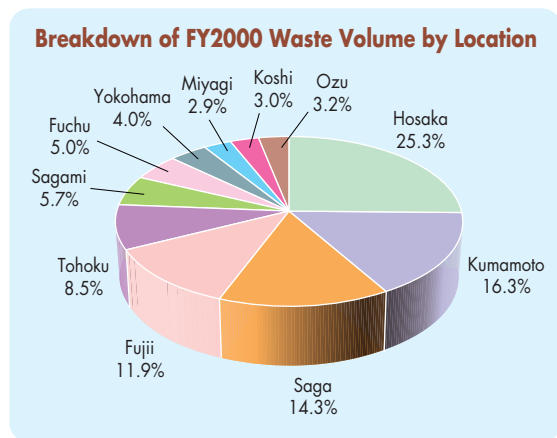
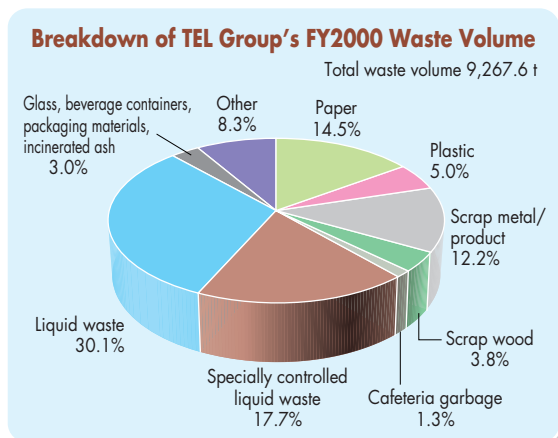
In fiscal year 2000, waste volume at manufacturing plants and research facilities grew in tandem with the substantial rise in production volume and utilization of plant capacity. As a result, the TEL Group’s total waste volume increased compared to that in fiscal year 1999. However, the basic unit improved considerably, from 121.4 points in fiscal year 1999 to 72.2 points in fiscal year 2000. This is equivalent to a drop of over 40 percent, or, 59.5% decrease of the 1999 figure.



$$\text{Basic unit} = \frac{\text{Waste volume}}{\text{Sales}} \quad (\text{FY1997} = 100\%)$$

■ Breakdown of Waste Volume

Liquid wastes (including liquids classified as specially controlled industrial wastes) account for some 47.8% of waste volume, followed in order by paper, scrap metal/product, and plastic waste. All liquid wastes that cannot be disposed of in-house are collected and properly disposed of by outside contractors.



■ Examples of Initiatives to Reduce Paper Waste

At our Osaka branch office, we have greatly reduced paper use and have reduced the volume of overall paper waste by installing air dryers in place of the paper towels in our bathrooms. We are also promoting the reduction of PPC paper use in all of our plants, also as part of our effort to reduce paper waste.

■ Sorting

Sorting is essential for recycling to work. At every plant, we collect wastes sorted into 26–46 different classifications by their physical properties.

■ Supervision of Waste Treatment Plants and Contractors

At each of our facilities, we select and oversee contractors that handle interim treatment and final disposal of wastes. Before contracting with a new contractor for waste disposal services, we conduct an official certification check, including verification of its license status and on-site inspection of its facilities.

We thus make sure that the contractor has the capability to properly and lawfully process and/or dispose of our wastes. Even after a contractor is selected, we conduct periodic on-site inspections to ascertain the status of its operations.



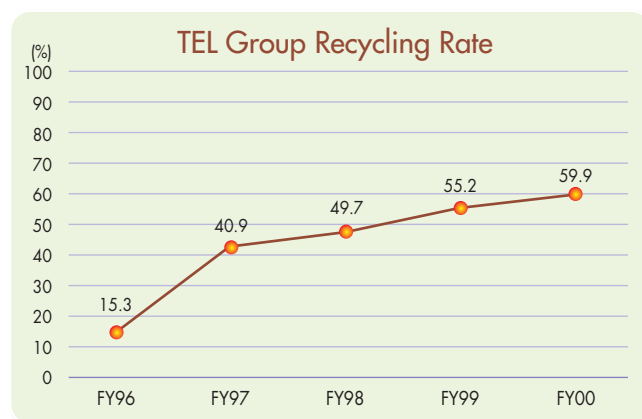
Waste storage facility (Koshi Plant)



Inspection of final waste-disposal site

■ Recycling

We mainly recycle paper, beverage containers, scrap wood, glass, plastic waste, and metal. Over the past five years, the TEL Group's aggregate recycling rate progressively increased from 15.3% to 40.9%, 49.7%, 55.2%, and 59.9%, respectively.





■ Examples of Recycling Programs at Offices

- At the Osaka branch office, we have adopted “widespread use of recycled paper” as one of our environmental targets and now use recycled paper in virtually all cases. In the future, we intend to fully implement our policy of using non-recycled paper only when necessary.
- At the Akasaka headquarters and Fuchu Technology Center, we are now recycling even confidential documents that were previously either shredded or incinerated. To do so, we teamed up with a recycling contractor to implement a box-shuttling system that allows for complete confidentiality. A feature of this system is that it permits recycling of all types of paper, regardless of quality, resulting in a significant contribution to environmental preservation efforts. It has been calculated that the effects of adopting this system (as opposed to incineration) include the reduction of 7,811 kg of carbon dioxide emissions per year, and the conservation of 781 trees per year (with a diameter of 14 cm and a height of 8 m).
- At the Akasaka headquarters and Fuchu Technology Center, paper cups made from kenaf, non-wood material replacing wood fiber, have been introduced to replace standard paper cups. Because they grow rapidly and may be harvested in only six months absorbing large quantities of carbon dioxide during their growth phase, it is considered to help preventing global warming.



Paper cups made from kenaf

■ Examples of Recycling Programs at Plants

- At the Ozu and Koshi plants, kitchen garbage-disposal units have been introduced to reduce overall garbage volumes. As a result, the amount of general waste generated at the plant has been reduced from 800 kg per month to zero. In the area of waste paper, savings have been achieved by promoting a reduction in the use of PPC paper.
- At the Miyagi plant, recycling rates of crating timber has been improved, following negotiations with timber recycling contractors. A total of 100 t of recycled timbers were used in fiscal year 2000, an increase of 7.5 times over the previous year.
- The Kumamoto and Koshi plants have established a paper-cup recycling system. As a result of this system, 89.8 kg (March 2001 figure) of paper cups that would have been incinerated as general waste is now recycled for use in the production of toilet paper.
- The Kumamoto and Koshi plants have established recycling systems for clean papers which had so far been unrecyclable and thus incinerated due to their surface processing to prevent fine particles. With the cooperation of everyone involved, non-recyclable clean paper has been replaced by recyclable clean paper, thus allowing it to be recycled along with magazines and catalogs.



A garbage-disposal unit



Toilet paper made from recycled paper cups



Recyclable clean paper

Energy Conservation

At the TEL Group, we promote energy conservation as a means of preventing global warming. At all our facilities, we universally strive to reduce power consumption through such means as turning lights off during lunch hour and regulating air conditioners' temperature setting. At ISO14001-certified plants, we systematically promote energy conservation toward specific objectives and targets.

Major Energy Conservation Measures

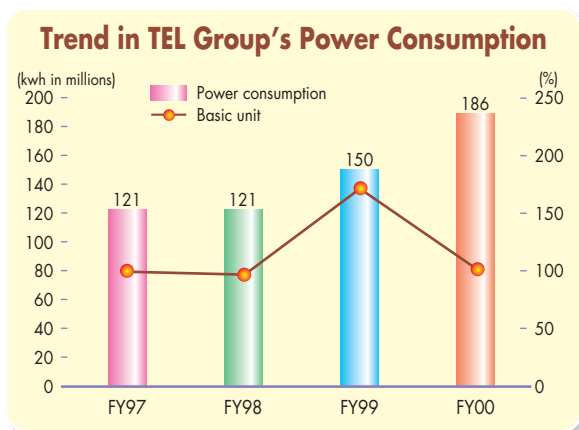
- Reduction of power consumption by lighting and office equipment (at all facilities)
- Regulation of air conditioning temperature setting (at all facilities)
- Design and operation of capacity utilization reduction system for demonstration equipment (Yamanashi)
- Turning-off of vending machines at night (Osaka)
- Partial suspension of clean room use (Saga)
- Scheduled equipment shutdowns (Ozu, Yamanashi)
- Turning-off of compressors at night (Yamanashi)
- Power saving stickers, which call for energy conservation, affixed to equipment used for product development and the like. (Sapporo)

Aggregate Power Consumption

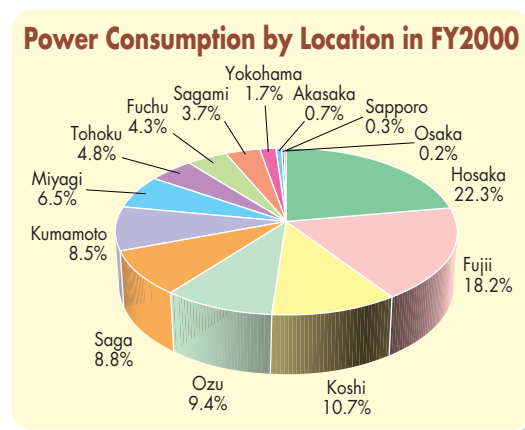
The bar graph at right shows the trend of the TEL Group's aggregate power consumption on a year-to-year basis. The linear graph shows changes in the basic units for each year, calculated by dividing total power consumption by sales for each year. For purposes of comparing yearly results, the basic units (used to show the relationship between sales and total power consumption) are calculated by taking the results for fiscal year 1997 to represent 100 points (100%). In fiscal year 1999, we started keeping a tally of the amount of power consumed by our non-manufacturing facilities, in addition to that by our manufacturing plants.

At our manufacturing plants and research facilities, production and assessment equipment have been operating continuously at full capacity throughout the fiscal year 2000. As a result, the TEL Group's aggregate power consumption increased in fiscal year 2000 compared to the previous year. However, the basic unit improved considerably, from 170.7 points in fiscal year 1999 to 96.8 points in fiscal year 2000. This represents a drop of over 40 percent, or, to 56.7% of the previous year's figure. This figure is even lower than the figure for the reference year of fiscal 1997.

We aim to further reduce our aggregate power consumption by continuing to promote energy conservation on an ongoing basis at all our facilities.



$$\text{Basic unit} = \frac{\text{Power consumption}}{\text{Sales}} \quad (\text{FY1997} = 100\%)$$



Examples of Energy Conservation Initiatives

- At the Ozu Plant, we reduced power consumption by turning off lights during the lunch hour and by allowing for an overall reduction in the number of lights used through an increase in luminosity of bulbs used throughout the plant. We also shut off the air conditioning at regular intervals. The result was a 1.1% (120,000 kwh per year) reduction in power consumption
- At our Osaka branch office, we installed timers on beverage vending machines. The timers conserve energy by automatically turning the machines off at night.

Resource Conservation



We are promoting reduction of paper use, mainly at ISO14001-certified plants, as a means of conserving natural resources. At all our facilities, we use recycled paper for everything except certain special uses. We have also reduced our water consumption through day-to-day water conservation activities and installation of cooling-water circulation systems and dry vacuum pumps.

■ Examples of Initiatives to Reduce Paper Usage

- At the Ozu plant, we switched to completely recycled paper (i.e., paper with 100% used-paper content), effective April 1999. In fiscal year 2000, we continued our efforts to promote the conversion of internal documents for circulation to electronic media in all departments, as well as the use of both sides of paper. As a result, usage of both sides of paper amounted to a total of 246,000 sheets.
- At all plants, we reduced paper usage by copying on both sides of a copy paper and also making reduced-size copies. We are also proceeding with conversion to electronic media to further minimize paper usage.

■ Examples of Initiatives to Reduce Water Consumption

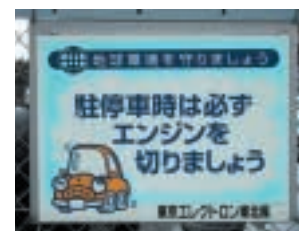
- At the Ozu plant, we introduced a waste water recovery system from vacuum pumps. Previously, water used to cool the pumps was disposed of as wastewater. Under the new system, this water is collected into a tank using a circulation system and reused as cooling water. This has resulted in monthly water savings of 830 m³, although due to increased production and other factors our overall consumption of industrial water actually increased.
- At the Kumamoto plant, we converted two of our vacuum pumps to dry pumps. By switching to pumps that do not use water, we have managed to reduce the consumption of both water and electric power. It is difficult to gauge the effectiveness of this reduction initiative due to the fact that a large number of personnel moved from the Kumamoto plant to the Koshi plant at the same time the new pumps were installed; however, it is clear that we are using less water than the amount used before (518 kl).



Wastewater recovery facility

■ Other Initiatives

- At a number of offices, including our Osaka branch office, as the lease agreements on our company vehicles have expired, we have gradually been replacing them with hybrid cars or cars that comply with the “green tax” system. According to the study carried out by our Osaka branch office, the fuel efficiency of these hybrid cars is twice that of standard gasoline-fueled vehicles. The change thus represents a contribution to energy savings and conservation of resources, as well as a contribution to the reduction of air pollution and to the prevention of global warming, even if the impact of the contribution is very small.
- At the Sagami and Yamanashi plants, we have discouraged drivers from leaving their car engines running while stopping, to help contribute to the prevention of global warming.



A sign urging drivers to turn off their car engines while stopping

Chemical Substance Control

■ Comprehensive Chemical Substance Control

At the TEL Group, we control the chemicals used for production and those used in our products appropriately and thoroughly, to prevent significant impact on the environment and on human health. To this end, we conduct risk assessments of the noxious properties of chemicals, based on an understanding of the actual circumstances involved. We have also developed and implemented a system at each plant involving the review and registration of chemical substances as they are first used.

■ Compliance with the Pollutant Release and Transfer Register Law (Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management)

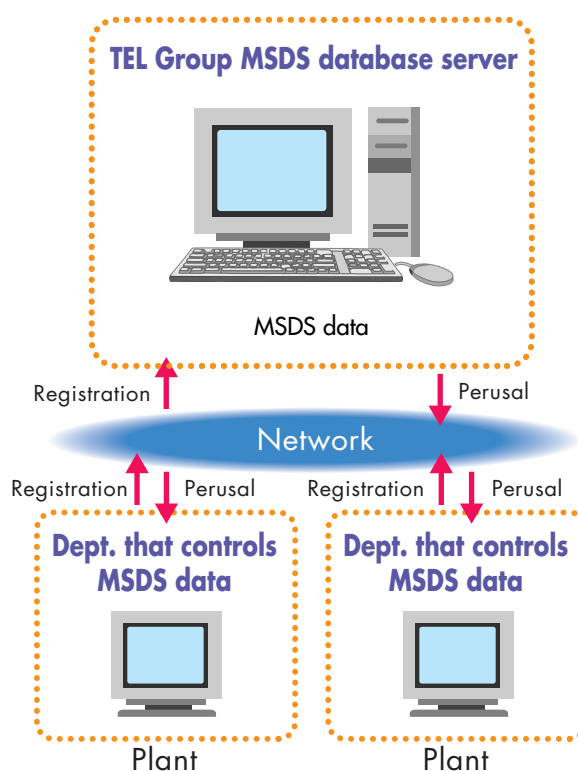
The Pollutant Release and Transfer Register (PRTR) Law was enacted in 1999 as “Laws Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management.” The law went into effect in April 2000. Since then we have been required to regulate the balance of substances subject to the PRTR. At the TEL Group, each plant conducted a survey of the chemical substances subject to the PRTR. As a result of which it was found that 35 of such substances were being used throughout the TEL Group. Each plant is currently looking into the usage and emission volume of such substances into the environment, while promoting overall improvements in the management of such substances.

■ Examples of Reductions in the Use of Chemical Substances

At the Saga plant, the use of isopropyl alcohol (IPA) has been completely terminated in the vapor-drier inspection process during the manufacturing of cleaning system. The amount of IPA used in the manufacturing process of coater/developers has also been reduced by switching to pure water. The switch has so far resulted in 66% reduction of IPA use per product.

■ Development of an MSDS Database

We manage and employ Material Safety Data Sheets (MSDS) using a computer system at each plant that reviews and registers chemical substances when they are first used. In addition, we have also been developing an online database that will enable group-wide access to MSDS data. This database currently contains information on around 500 chemical substances used at 5 plants (Tohoku, Sagami, Saga, Kumamoto, and Koshi). Information on the remaining plants is currently being compiled into the database.



Products for Reduced Environmental Impact



At the TEL Group, we have endeavored to satisfy our customers by offering services and products such as semiconductor and LCD production equipment and electronic components. Moreover, as stated in our Principles of Environmental Preservation, we will continuously endeavor in unison with customers to reduce TEL Group products' environmental burden. Specifically, every plant will undertake to develop environmentally benign products, setting product-specific targets for energy and resource conservation, reduction of chemical usage, and other such matters.

■ Examples of Key Initiatives

Business Unit / Plant	Description of Initiative
Etch systems / Yamanashi plant	<ul style="list-style-type: none"> • Reduction of power consumption
Single Wafer Deposition / Yamanashi plant	<ul style="list-style-type: none"> • Reduction of power consumption • Reduction of N₂, exhaust
LCD systems / Yamanashi plant	<ul style="list-style-type: none"> • Reduction of power consumption
LCD systems / Ozu plant	<ul style="list-style-type: none"> • Reduction of chemical usage
Cleaning systems / Saga plant	<ul style="list-style-type: none"> • Reduction of chemical solution usage • Reduction of IPA usage • Reduction of pure water usage • Reduction of power consumption
Clean track / Kumamoto plant, Koshi plant	<ul style="list-style-type: none"> • Reduction of chemical solution usage • Reduction of power consumption
Diffusion systems / Sagami plant, Tohoku plant	<ul style="list-style-type: none"> • Reduction of equipment's footprint • Reduction of vinyl chloride resin cable usage • Establishment of procedural guidelines for equipment disposal • Reduction of power consumption

■ Measures for Reduction of Environmental Impact in Physical Distribution [Use of Air-Filled Packaging Materials]

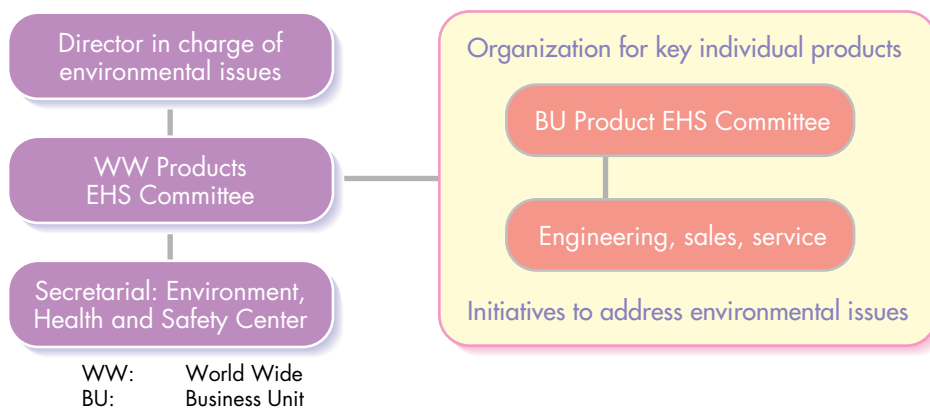
Until recently, we used polyurethane foam and environmentally-friendly, biodegradable loose-fill packaging material to package our parts for shipping around Japan and overseas. However, as of the end of 2000 Tokyo Electron Logistics Limited has been promoting the use of air-filled protective packaging at its offices around the country. This type of packaging cushions the contents in an air-filled bag made of translucent film. From an environmental perspective, this new packaging has a number of advantages over the old packaging: the packages can be reused any number of times simply by refilling with air, for example, and they produce little waste. Other advantages are that they are cleaner, offer easy access to contents when opened, and require little storage space when not in use.



Air-filled packaging material

■ Organization for Improvement of Products' Environmental Problems

Common issues related to improvement of environmental problems involving the semiconductor or LCD production equipment manufactured and sold by the TEL Group are reviewed and decided upon by the WW Product EHS Committee chaired by the director in charge of environmental issues. For product-specific environmental problems, the concerned design/production, sales, and/or service department conducts activities to improve the problem under the direction of the applicable BU Product EHS Committee.



■ Targets for Reduction of Product-related Emissions and Consumption

In product development, one of our aims is reduce products' environmental impacts such as gas emissions and power consumption. Toward this end, we have set targets for the 2002 models of our semiconductor production equipment for 200 mm and 300 mm wafers based on the 1997 models of our equipment for 200 mm wafers, as shown in the table below.

Product EHS Roadmap

Wafer Size	1997 Standard 200 mm	2002 Target 200 mm	2002 Target 300 mm
HAP emissions	1	0.4	0.5
VOC emissions	1	0.4	0.5
PFC emissions	1	0.4	0.5
Power consumption	1	0.8	1
Water consumption	1	0.8	1
Gas consumption	1	0.8	1

*Targets for 300 mm diffusion, LP-CVD equipment are set at 1.5 times the standard data.

- HAP: Hazardous Air Pollutants
- VOC: Volatile Organic Compounds
- PFC: Per-Fluoro Compounds



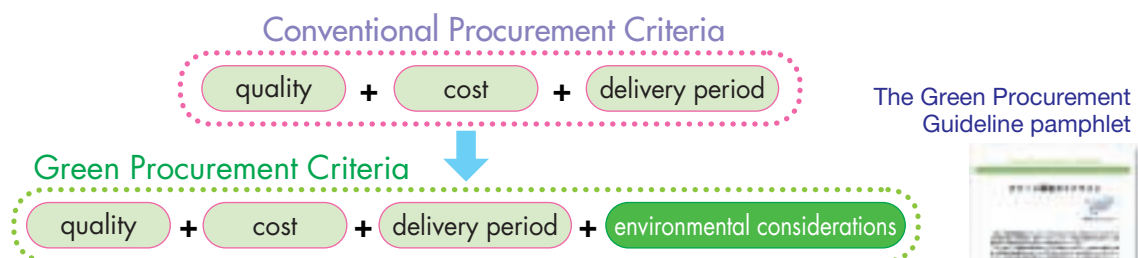
■ Fiscal Year 2001 Action Plan for Reducing Products' Environmental Impact

The table below shows the TEL Group's fiscal year 2001 action plan for developing environmentally benign products based on the Product EHS Roadmap.

Issue	FY2001 Action Plan	
Global warming prevention	Reduction of power consumption	Achieve the Product EHS Roadmap's targets for 2002. Adequately reduce power consumption in fiscal year 2001.
	Reduction of PFC emissions	Achieve the Product EHS Roadmap's targets for 2002. Adequately reduce PFC in fiscal year 2001.
Air pollution prevention, Safeguards against acid rain	Reduction of VOC emissions	Achieve the Product EHS Roadmap's targets for 2002. Adequately reduce VOC in fiscal year 2001.
	Reduction of HAP emissions	Achieve the Product EHS Roadmap's targets for 2002. Adequately reduce HAP in fiscal year 2001.
Prevention of ozone layer depletion	Restriction of use of ozone-depleting substances	Promote disuse of HCFC substances
Reduction of consumption of depletable resources	Promotion of recycling/reuse (dismantlement, labeling of materials, disposal)	Set targets for every product and commence action to achieve them. Determine feasibility of incorporating information into work procedures and manuals related to dismantlement and disposal.
	Prolongation of life span of equipment/parts	For every product, set targets for prolonging the life of equipment/parts and commence action to achieve them.
Purchased products	Green procurement	Establish applicable foundations for "green" procurement products.
	Lead-use restrictions	Share information regarding substitutes for lead solder. Ascertain extent of lead usage in purchased products.
Life-Cycle Assessment (LCA)	Introduction of LCA	Implement LCA for each primary product, to prevent global warming.

■ Preparation for Implementation of Green Procurement

"Green procurement" means procuring parts based on environmental considerations in addition to the conventional procurement criteria of quality, cost, and delivery period.



The TEL Group's Green Procurement Guideline was established in January 2001 and distributed to our suppliers throughout Japan. In addition, around 200 companies were invited to take part in green-procurement seminars held in Tohoku, Sagami, Yamanashi, and Kyushu, where they were asked to cooperate in the implementation of green-procurement policies. The first step in this process involves conducting vendor assessments on the environmental initiatives implemented by our suppliers. The second step involves an assessment of the environmental considerations for the parts procured by the TEL Group.

■ LCA Initiative

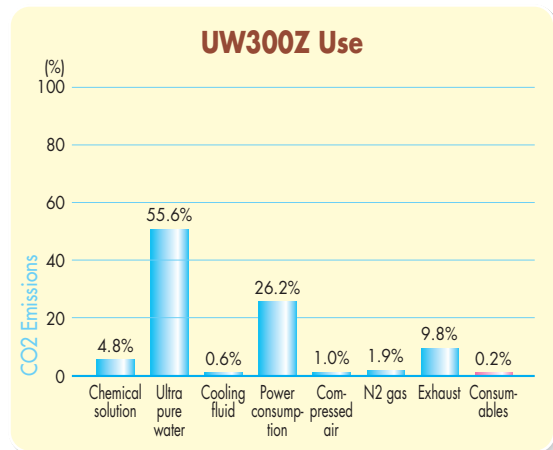
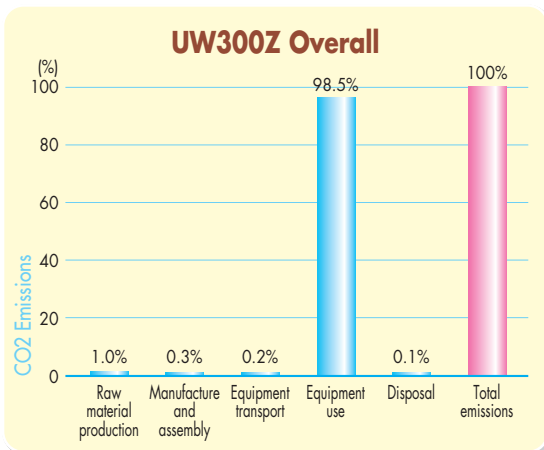
LCA (Life Cycle Assessment) is a technique for quantitatively assessing a product's environmental impact during the course of its life at each stage: from the raw-material stage through manufacture, transport, use, and disposal.

We can significantly reduce a product's overall environmental impact by analyzing, assessing, and giving priority to the rectification of any such major impact.

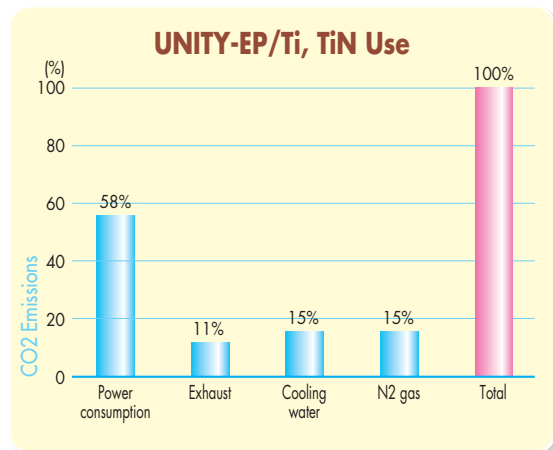
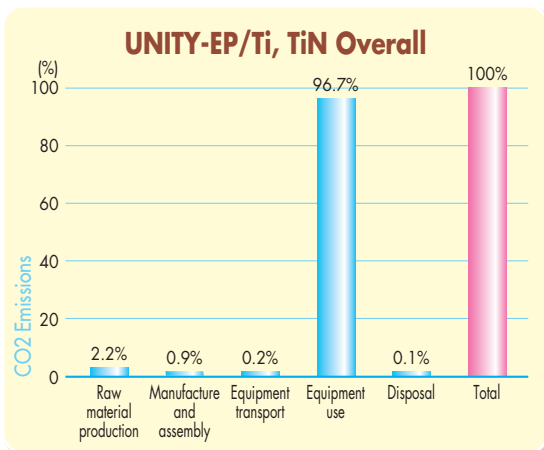
■ Examples of LCA Initiatives in Fiscal Year 2000

In fiscal year 2000, each business unit implemented LCA aimed at reducing global warming. One feature common to all of these assessment results was that the environmental impact for all products was the greatest at the use stage. Comparing the environmental impacts at the use stage for each of these products, we found that the impact varied from product to product, with some having the greatest impact through the use of ultra-pure water, and some having the greatest impact through power consumption. In the future, these assessment results will be considered in the course of the development of new products.

*1) Example 1 of LCA Result: Cleaning System



*2) Example 2 of LCA Result: Metal CVD System





■ Examples of Product-Related Energy Conservation Initiatives

At the TEL Group, in order to reduce the overall environmental impact of our products, we are considering ways of reducing the environmental impact both of the existing products and of the product development process. Examples of initiatives introduced for existing and new products are provided below.

1) Example of New Product

In the development of the new UW300Z (300 mm ϕ) cleaning system, considerable improvements were made over the old UW8000 (200 mm ϕ) model. For per wafer unit area, the amount of ultra-pure water used was reduced by approximately 60%, exhaust emissions were reduced by approximately 50%, and power consumption was reduced by approximately 40%.



UW300Z

2) Example of Existing Product

The UNITY Ver.II (200 mm ϕ) etch system has achieved energy savings of approximately 30% through the use of an energy-saving dry pump and through modification to the sequences and freezer circuits in the chiller unit.



UNITY Ver.II

Environmental Accounting

“Environmental accounting” is a tool for ascertaining the cost and effect of a company’s environmental activities for use within the company’s routine operations. At the TEL Group, we have decided to adopt an environmental accounting system to quantitatively ascertain the costs associated with our environmental conservation activities and utilize them as gauges of corporate activities.

Fiscal year 2000 marked the second year since the introduction of our environmental accounting system. Following up on the experiences of fiscal year 1999, when the system was run on a trial basis, we attempted to extend the scope of the tabulation of environmental accounting data. We intend to maintain these sorts of environmental conservation activities in the future as well.

■ Fiscal Year 2000 Results

Our fiscal year 2000 environmental costs (investment amount and expense amount) are tabulated below. The numbers apply to TEL Group domestic plants. Costs for the depreciation of capital equipment cover purchases made since fiscal year 1999.

In fiscal year 1999, environmental costs included business area cost, management activity costs, and social activity costs. In fiscal year 2000, an effort was made to include all costs associated with environmental conservation. However, it should be noted that results for upstream/downstream costs are based mainly on branch office information, while research and development costs represent costs associated with some equipment only.

■ Future Issues

We aim to provide even more accurate environmental conservation costs in the future. Further consideration needs to be given to calculating upstream/downstream costs and research and development costs. Furthermore, from the standpoint of the effective utilization of management resources, it is also necessary to quantify improvements in environmental performance and to ascertain their costs and effects. We plan to formulate an approach to ascertaining results and to undertake to quantify results in monetary terms based on this approach.

■ TEL Group’s Environmental Costs

(FY2000 results in thousands of yen)

Environmental Preservation Cost Classifications		Main Activities	Investment amount	Expense amount
1. Business area cost			408,264	545,705
Itemization	1.1 Pollution prevention costs	air pollution, water pollution, soil contamination, etc.	142,430	154,066
	1.2 Global environmental costs	climate change prevention, ozone layer depletion prevention, etc.	165,991	70,888
	1.3 Resource circulation costs	efficient use of resource, waste reduction, etc.	99,843	320,751
2. Upstream/downstream costs		green purchasing, green procurement, etc.	0	21,441
3. Management activity costs		environmental education, monitoring and measuring environmental impacts, etc.	432	112,966
4. Research and development costs		product R&D, etc.	0	2,447
5. Social activity costs		green purchasing, green procurement, etc.	6,500	44,148
6. Environmental damage costs		repairing damage to the natural environment, and the like.	0	0
7. Other costs		others	0	0
Total			415,196	726,707

*Environmental costs include the total amounts for all ascertained costs

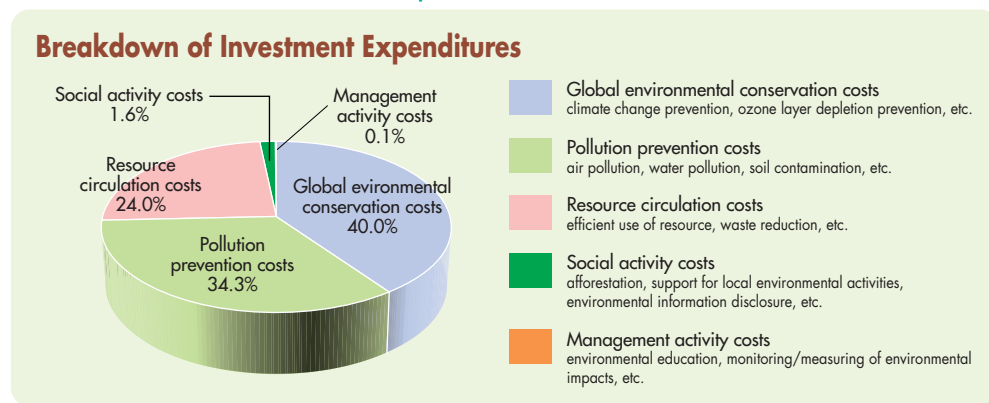


Major Environmental Costs

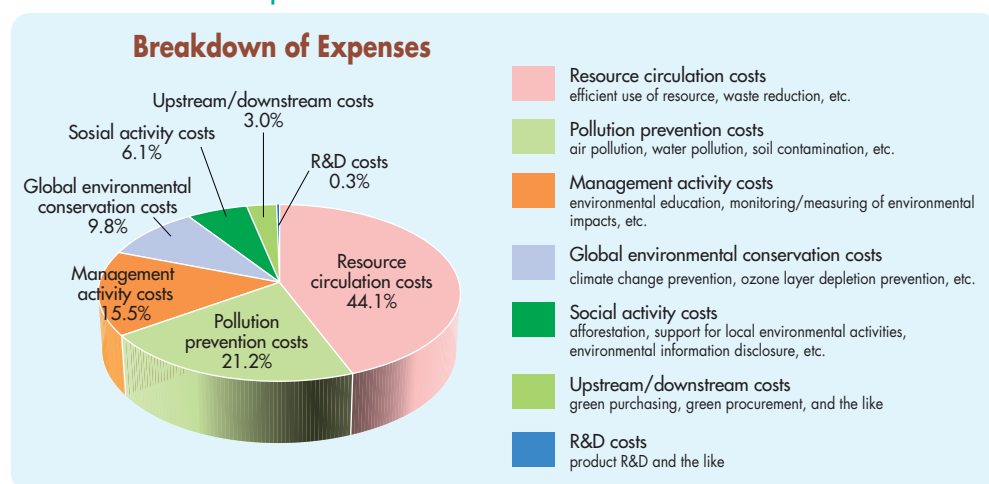
Below are several examples of the TEL Group's major environmental costs.

- Business area cost:
 - (1) Pollution prevention costs: installation of abatement equipment, wastewater neutralization equipment maintenance expenses, and the like
 - (2) Global environmental costs: installation of equipment for removing chlorofluorocarbons, and the like
 - (3) Resource circulation costs: installation of kitchen garbage-disposal equipment, expenses involved in reducing and disposing waste, and the like
- Upstream/downstream costs: hybrid car lease and maintenance costs, purchase of environmentally-friendly products, and the like
- Management activity costs: environmental measurement expenses for air/water pollution, soil contamination, etc., environmental education expenses, and the like
- Research and development costs: research and development aimed at reducing environmental impact of cleaning systems, and the like
- Social activity costs: afforestation expenses, and the like

Breakdown of Investment Expenditures



Breakdown of Expenses



Health and Safety

As a company that aims to excel globally, the TEL Group is actively promoting a number of initiatives in health, safety, and related areas.

Our continued existence as a corporation relies upon the safety and health of our employees, customers, and everyone involved with the TEL Group's business. As a sign of our commitment to building a trustworthy company to everyone aforementioned, on November 27, 1998, the TEL Group drew up what was referred to as the "TEL Group Credo and Principles on Safety and Health." This was followed on June 25, 1999 with the issuance of the "Safety First" declaration.

■ The TEL Group Credo and Principles on Safety and Health

According to the "TEL Group Credo and Principles on Safety and Health," safety and health considerations must always be taken into account—for all board members and employees of the TEL Group, and for all jobs. Considerations of profit and decisions regarding delivery dates and times must not take precedence over human safety and the safety of facilities and equipment (including items we sell and items we use within the company).

■ Safety First

We have prepared a "Safety First" declaration, based on the "TEL Group Credo and Principles on Safety and Health." By displaying its poster at prominent locations throughout the company, we strive to ensure that each and every employee is aware of the importance of safety in his/her daily activities.

We have also prepared a "Safety First" pamphlet titled as "Introducing Safety First Culture Awareness." This is distributed free of charge to customers and members of the public at their request, as part of our efforts to promote the TEL Group's commitment to safety.

The TEL Group has also incorporated its environmental, health, and safety principles into its Management Philosophy. We are convinced that giving the highest priority to health, safety, and the environment will help establish consumer trust in the TEL Group and will eventually lead to greater profitability.



"Safety First" poster



"Introducing Safety First Culture Awareness" pamphlet



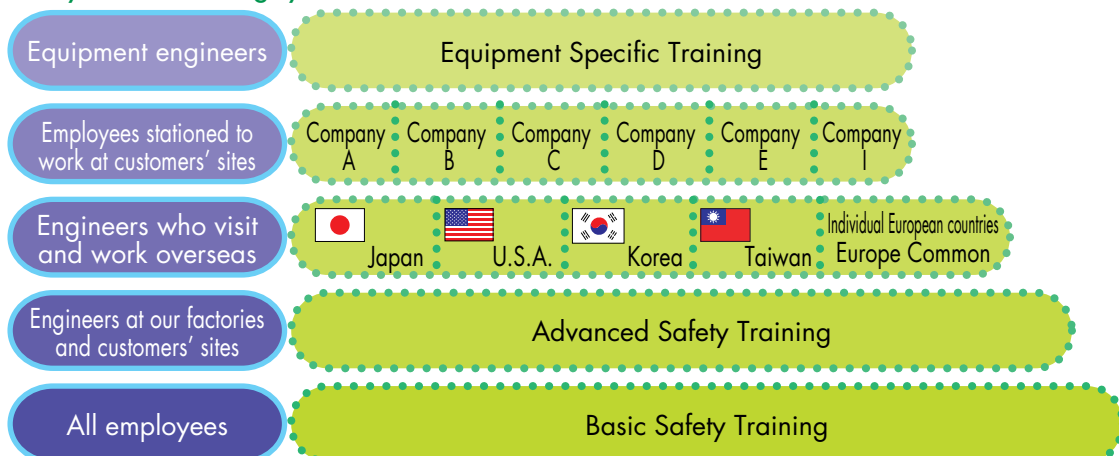
■ Safety Training (“Safety 2000”)

The TEL Group has established a standardized safety training program, referred to as “Safety 2000,” for all board members and employees in the group. As shown in the table below, this system provides different levels of training, depending on the experience and the worksite of the employee involved. Basic Safety Training and Advanced Safety Training had been introduced in July 2000. By December the same year, 98% of eligible board members and employees had undergone the appropriate training. In April 2001, a system was devised to enable safety training to be carried out at our overseas agencies; this will be introduced as the necessity comes along.

Safety 2000 Training Courses and Contents

Training Course	Contents
Basic Safety Training	For all TEL Group employees and contractor workers who work at TEL Group companies. This training usually takes place upon hiring and covers the TEL Group’s safety principles, basic information on health and safety laws and other relevant laws and regulations of the country of worksite, basic knowledge about safe work procedure, and basic health care information. A Basic Safety Training Certificate is valid for three years. Employees must take refresher courses, which include details of new safety rules, within three years after completion of the Basic Safety Training.
Advanced Safety Training	For all TEL Group employees and contractor workers companies who are engaged in work at TEL Group plants or other worksites. Employees learn about risk assessment and other techniques to ensure that all work is carried out safely. Training involves hands-on work with protective gear and other safety equipment. An Advanced Safety Training Certificate is valid for one year. Employees must take refresher courses, which include details of new safety rules, within one year after completion of Advanced Safety Training.
Safety Training for Employees who Visit and Work Overseas	Employees learn about the safety laws and regulations and work rules that apply when engineers are sent from Japan to work for TEL Group customers overseas.
Safety Training for Employees Stationed to Work at Customers’ Plants	Special safety training is carried out as required when employees are sent to work at plants run by Tel Group customers.
Equipment-Specific Safety Training	Safety training for engineers on each specific equipment (TEL Group products).

Safety 2000 Training system



■ Accident Reports

At the TEL Group, we do everything possible to protect the health and safety of our employees, our customers, and everyone involved with TEL Group business activities. However, regardless of the amount of attention we pay to safety matters, there is always a risk of an unforeseeable accident, or of a work-related injury or accident caused by fatigue. In the event of such unfortunate circumstances, it is vital that the accident be reported immediately to the superior or the relevant sections or departments. The first step toward eradicating the recurrence of such accidents is the reporting.

■ The Significance and Handling of Accident Reports

Immediately reporting major or notable accidents to management (as well as to any other relevant individuals in the business unit and area concerned) will allow for the quick appropriate response, and will allow the prevention of similar accidents in the future.

Initial reports should be delivered by e-mail or fax within 24 hours after the accident either by the person(s) involved or by those who witnessed the accident.

■ Prevention Measures

Whenever an accident occurs, the root cause and any contributing factors must be carefully clarified and resolved one by one. At the TEL Group, after reviewing each hazardous work that may lead to an accident, and the places where they were most likely to occur, we began conducting and promoting a procedure known as the Safety Management By Walking Around (SMBWA) as an effective means of preventing accidents. During these walking, participants strive to raise awareness of safety matters both within and outside the company by paying careful attention to each of dangerous practices and offering guidance on the use of protective equipment (helmets, safety glasses, safety shoes, safety harnesses, etc.).

As a result of these activities, we aim to reduce our 2001 Accident Reduction Target to 50% of the actual figures for 2000.



SMBWA in a clean room

Societal Contribution and Environmental Education



■ Societal Contribution

To preserve, maintain, and improve the global environment, businesses, government, and local communities must work together to conduct activities in close communication with each other. At the TEL Group, we actively participate in environmental preservation activities conducted by customers and local communities, in accordance with our Principles of Environmental Preservation. Below is a listing of the some of the activities our plants have done to contribute to their local communities.

■ Examples of Notable Activities

Yamanashi plant

- Cooperates with and conducts Japanese Red Cross blood drives
(1987: received commendation from Governor of Yamanashi Prefecture; 1991: received a certification of appreciation from the Minister of Health and Welfare)
- Co-sponsors the Takedanosato Fireworks Festival
- Makes annual donations to a local newspaper's welfare and culture foundation. Donations are collected in collection boxes provided in the plant's premises
- Contributes to the Red Feather Community Fund
- Allows plant parking lots to be used for events held by Nirasaki City
- Offers summer internships for local junior high school students
- Conducts plant tours for local students
- Collects and donates used postage stamps and new year's towels
- Contribution to construction costs of the Kofu Chamber of Commerce and Industry Hall
- Installed blinking intersection rivets on roads from the plant to intersections with major thoroughfares
- Donates to and otherwise supports local organizations (e.g., volunteer fire department)
- Conducts traffic safety activities under the auspices of the Nirasaki Police Department, including selection of Traffic Etiquette Ladies
- Contributes to costs of erecting mercury-vapor lamp posts along major prefectural highways
- Contributes to ward expenses for nearby municipalities
- Conducts beautification activities on and around the plant grounds
- Provides instructors for Yamanashi Prefecture's Technical Challenge School
Gives elementary and junior high school students throughout the prefecture the opportunity to experience the wonder and to appreciate the importance of manufacturing.
- Co-sponsors and participates in the Shingenko Festival
Around 40 employees attended



Scene from the Shingenko Festival

Tohoku plant

- Co-sponsors the Esashi Summer Festival
- Co-sponsors the Mizusawa Fireworks Festival
- Cooperates with and conducts Japanese Red Cross blood drives
- Organized the Young Drivers Club made up of employees under 25 years old

The plant formed the Young Drivers Club at the request of the Esashi Police Department, with the aim of preventing traffic accidents among young drivers under the age of 25. Five representatives attended Esashi City's "Challenge 100" driving safety seminar and received commendations for remaining "accident-free."
- Stations personnel at the plant's two entrances during morning rush hour to remind employees to drive safely in conjunction with Traffic Safety Week in spring and fall
- Encourages employees to contribute to a Year-end charity Fund Campaign and to the Red Feather Community Fund Campaign for donation
- Collects and donates used postage stamps
- Offers plant internships for national college of technology students and technical high school students
- Participates in clean-up campaigns in the industrial park as a member of the Esashi Industrial Park Occupant Committee

Every May and October, plant employees participate in a clean-up campaign sponsored by the Esashi Industrial Park Occupant Committee. The campaign involves picking up trash along the roads inside the industrial park, as well as other beautification activities.
- Co-sponsors and participates in the Esashi Folk Music Festival

130 people participated.



Clean-up campaign



Scene from the Esashi Folk Music Festival

Sagami plant

- Contributes to the Kanagawa Community Fund Association
- Cooperates with and conducts Japanese Red Cross blood drives
- Co-sponsors and contributes to the Lake Tsukui Cherry Blossom Festival
- Contributes to Kawajiri Hachiman Shrine
- Contributes to the Kanagawa Green Trust Foundation's Greenery Fund
- Offers internships to local junior high school students
- Received prize for efforts from the Government of Kanagawa Prefecture for recycling promotional activities



Work study program for local junior high school students



Commendation for promotion of recycling activities



Ozu plant

- Offers plant internships to local high school students

The plant offers internships to local commercial high school students, who spend a week in various departments.

- Participates in Ozu town intercorporate sports festival
- Helps remove snow from nearby roads during winter
- Co-sponsors the Azalea Festival and Jizo Festival
- Participates in 180 Day Driving Safety Contest

The contest is sponsored by the Ozu Police Department for local companies. Employees participate in the contest in teams of five. The object is for teams to go 180 days with no traffic accidents or violation.

- Participates in the annual Ozu town Environmental Beautification Campaign

Plant employees pick up trash on and around the plant grounds at certain times and days during June (Environment Month).



Beautification activities

Certificate of appreciation from the Japanese Red Cross Society



- Cooperates with Japanese Red Cross Society blood drives

The plant was commended for its many years of cooperation.

Saga plant

- Conducts cleaning and lawn mowing in nearby public parks
- Promotes a campaign to discourage drivers from leaving their engines running while stopped as one measure to prevent global warming
- Cooperates with and conducts Japanese Red Cross Society blood drives
- Donated computers to the Tosu Library
- Collects and donates used postage stamps and telephone cards
- Participates in the Tosu City Trash Reduction/Recycling Business and Eco Office Commendation Program

In February 1998, the Saga plant was awarded a certificate by Tosu City in recognition of the plant's previous efforts to address environmental issues. The plant has been and will be inspected and recertified at two-year intervals.



Eco Office commendation



Eco Office certificates

Kumamoto plant, Koshi plant

- Conducts beautification activities on and around the plant grounds

During June (Environment Month) and October (Hygiene Month), plant employees clean up the plant grounds and its environs, led by members of the Safety and Hygiene Committee and Safety Promotion Committee.



Employees involved in beautification activities

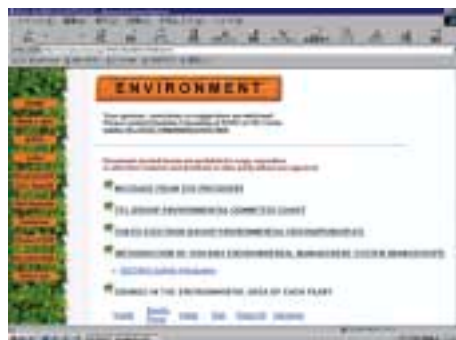
■ Environmental Education

At the TEL Group, we conduct environmental education for all grades of employees, including newly hired ones. In our advanced education program, we educate executives, managers and internal auditors, cultivating specialized knowledge. We also conduct special training in routine operations and management for employees involved with significant environmental aspects. We strive to increase their knowledge and emergency preparedness.



■ Other Education Activities

We also publish environmental information on the TEL Intranet Web site, including updates on the latest environmental trends and the status of our environmental initiatives. We are thus striving to share information within the TEL Group and further educate employees.



Environmental homepage on TEL Intranet

Other Activities



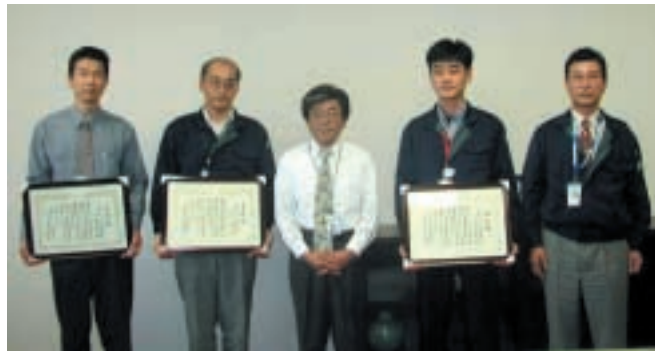
■ Other Activities

At the TEL Group, we have a system for assessing and awarding for contributions to the improvement and development of EHS (Environment, Health, and Safety) activities. Any individual, group, or team affiliated with the TEL Group who makes a contribution to EHS activities can be nominated for commendation. The winners were selected after careful consideration and presented with awards during the Business Strategy Meetings at the end of fiscal year.

■ EHS Awards

Tokyo Electron Group: Safety Training Master Trainer Team

The Safety Training Master Trainer Team received a commendation in recognition of their work in developing the various courses that make up the safety training program and for their actual efforts in carrying out safety training.



The Master Trainer Team from Tokyo Electron Kyushu Limited

Diffusion Systems (DS): Chemical Substances Safety Team

The Chemical Substances Safety Team received a commendation recognizing their work in developing and implementing a training system for the handling of chemical substances and in establishing a test system for the early detection of potential chemical substance exposure.

Etch Systems (ES): Energy Conservation Promotion Team

The Energy Conservation Promotion Team received a commendation being recognized for their work in devising techniques for saving energy when operating the dry pumps, chiller units, and gas-circulation systems used in etch systems and for their energy-saving designs.



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