

Environmental Report 2002



TOKYO ELECTRON LIMITED

Cover Message

The blue sky, the green forest, crystalline water and fresh air: Our lives and those of all living things would be impossible without them. While society grew materially wealthy during the 20th century, humans were often neglectful of the natural world. Reconciling our lifestyles to the parameters of the natural world is imperative for those of us living in the 21st century.

Should it not be our common goal to use advanced technology to protect the earth and its ecosystems in the 21st century? The front cover illustrates this wish through a design whose elements include a dolphin and an electronic circuit.

Tokyo Electron (TEL) is working to promote information technology through the advancement of semiconductors and to ensure that high quality knowledge and information are shared throughout the world. On this basis, we will continue to contribute to the building of an energy-saving and nature-rich society through the appropriate use of knowledge and information.



TOKYO ELECTRON LIMITED

Environment, Health and Safety Center
30-7 Sumiyoshi-cho 2-chome,
Fuchu City, Tokyo 183-8705
Tel: +81-42-333-8052 Fax: +81-42-333-8477
<http://www.tel.co.jp>
Published October 2002



This report uses OK Matte Coat Green 100 (85% brightness), 100% post-consumer recycled paper that has received Japan's Eco Mark seal. It is printed with soy-based inks that are highly biodegradable and readily de-inkable-features that facilitate the recycling of printed materials.

Contents

Corporate Profile, Editorial Policy, Range of Coverage ... 1
 Striving to be a Truly Globally Excellent Company ... 3
 TEL and Society 5
 Environmental Targets and Results 7
 Topics at Major Sites 8

Eco Products

Products with Reduced Environmental Impacts 9
 TEL's Eco Products 11
 Green Procurement and Logistics 12

Eco Factory

Waste Reduction and Recycling 13
 Energy Conservation 15
 Resource Conservation 16
 Chemical Management 17

Environment, Health and Safety Management

Environmental Management System (EMS) 19
 Environmental Education 22
 Environmental Accounting 23
 Health and Safety 25
 Societal Contribution 27
 Environmental Communication 29
 Site Report: Yamanashi Plant 30

TEL Environmental and Safety Activity Record

May. 1994	Standardization & Environmental, Safety Center (Environmental, Health & Safety Center)
Mar. 1996	Product Safety Subcommittee (TEL Group Worldwide Product EHS Committee) launched
Apr. 1996	Environmental Subcommittee (TEL Group EHS Committee) launched
Dec. 1997	Sagami Plant earns ISO14001 certification
Feb. 1998	Tohoku Plant earns ISO14001 certification
Mar. 1998	Saga Plant earns ISO14001 certification
Mar. 1998	Kumamoto and Koshi Plants earn ISO14001 certification
May. 1998	Yamanashi Plant earns ISO14001 certification
Sept. 1998	The TEL Group Credo on Environmental Preservation established
Nov. 1998	The TEL Group Credo and Principles on Safety & Health credo established
June. 1999	"Safety First" declaration established
Aug. 1999	Ozu Plant earns ISO14001 certification
Dec. 1999	The item "Health, Safety and the Environment" added to the Management Philosophy
Jan. 2000	Study begins on implementing environmental accounting
Apr. 2000	Unified safety training system "Safety 2000" implemented
Apr. 2000	Study begins on implementing LCA (life-cycle assessment)
Sept. 2000	Study begins on implementing green procurement
Dec. 2000	Environmental Report 2000 issued
Apr. 2001	Study begins on implementing environmental training for office not yet ISO14001-certified

Corporate Profile

Company name: Tokyo Electron Limited (TEL)
 Address: TBS Broadcast Center, 3-6 Akasaka 5-chome, Minato-ku, Tokyo 107-8481
 Phone: +81-3-5561-7000
 Representative: Tetsuro Higashi, CEO, President
 Established: November 11, 1963
 Capital: ¥47,213,750,000 (as of April 1, 2002)
 Main products: Semiconductor production equipment (developed in-house), flat panel displays (FPD) production equipment (developed in-house), semiconductor production equipment (imported), computer network related products, electronic components
 Employees: 1,530 (as of April 1, 2002)
 Group employees: 10,269 (as of April 1, 2002)
 Sales (consolidated): ¥417,825,000,000 (FY ended March 2002)

Editorial Policy

This is TEL's third Environmental Report. Our first priority has been to make this report easy to read and comprehensive, to give you a better understanding of TEL's environmental, health and safety initiatives, as well as the achievements of its societal contribution efforts during fiscal 2001. The TEL Group's business operations are wide-ranging; therefore, it is our hope that this report will gain the widest possible readership and help further to open channels of communication with all those concerned with TEL. We welcome your opinions and impressions of this Environmental Report so that we may continue to develop our Editorial Policy.

The Ministry of the Environment's Environmental Reporting Guidelines (Fiscal Year 2000 Version) and the guidelines of the Global Reporting Initiative, which sets international guidelines for corporate reporting, helped to guide the creation of this report.

Range of Coverage

Organizations covered: This report covers initiatives of the entire TEL.

<Major Japanese Bases>
 Tokyo Electron Limited, Tokyo Electron Tohoku Limited, Tokyo Electron AT Limited, Tokyo Electron Kyushu Limited, Tokyo Electron EE Limited, Tokyo Electron Sapporo Limited, Tokyo Electron FE Limited, Tokyo Electron Device Limited, Tokyo Electron Leasing Co., Limited, Tokyo Electron Logistics Limited, Tokyo Electron Agency Limited.

<Major American Bases>
 Tokyo Electron America, Inc., Tokyo Electron Texas, LLC, Tokyo Electron Massachusetts, LLC, Tokyo Electron Arizona, Inc., Supercritical Systems, Inc., Timbre Technologies, Inc.

<Major European Bases>
 Tokyo Electron Europe Ltd., Tokyo Electron Italia S.p.A., Tokyo Electron Deutschland GmbH, Tokyo Electron Switzerland Ltd., Tokyo Electron Nederland B.V., Tokyo Electron Espa_a S.L., Tokyo Electron Ireland Ltd., Tokyo Electron Israel Ltd., Tokyo Electron France S.A.R.L.

<Major Asian Bases>
 Tokyo Electron Korea Ltd., Tokyo Electron Taiwan Ltd., Tokyo Electron (Shanghai) Ltd.

Period covered: This report contains data for the period April 1, 2001 - March 31, 2002.

Areas covered: This reports addresses the TEL environmental management, as well as social and economic aspects of corporate societal contributions and other activities.

In brief...

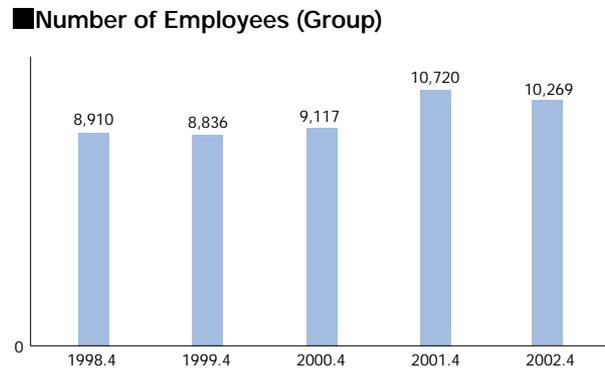
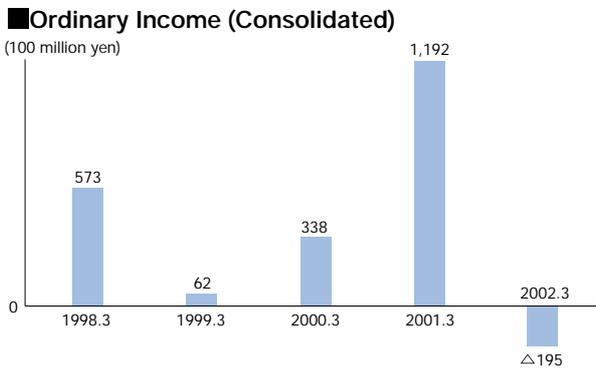
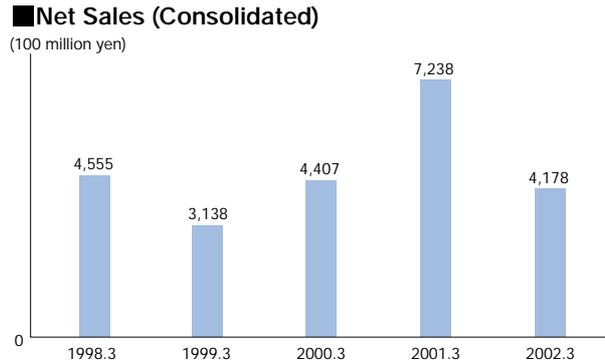
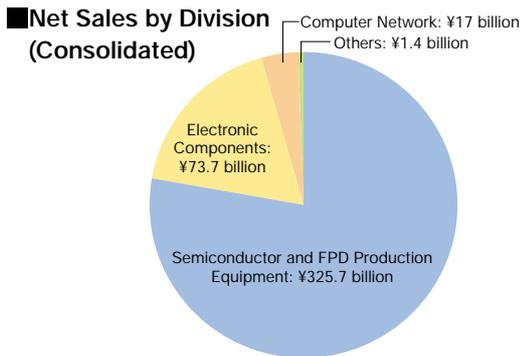
TEL's primary business is manufacturing equipment used to make semiconductors.

Japan's semiconductor production technology is said to be crucial to the entire world, but TEL got its start offering the most advanced semiconductor production equipment from the U.S. to semiconductor manufacturers in Japan. Later, Japanese manufacturers started looking for equipment built to their own specifications, so TEL's role grew to include equipment modification. In the process, TEL began to manufacture equipment for itself. Presently, we have grown into a company that develops and manufactures nearly all products we carry. Thus, TEL's history is the story of the evolution of a trading company into a manufacturer.

Manufacturing semiconductors and flat panel

displays (FPDs) involves many processes which require assembly with specialized machinery during each process. TEL provides most major types of equipment used in the manufacturing process. At present, TEL is the second largest manufacturer of semiconductor and FPD production equipment worldwide, measured on the basis of sales.

TEL started with the import, sales and service of U.S.-made products, and since the 1990s, has exported Japanese-made equipment to semiconductor and FPD manufacturers in countries around the world, including the Americas, Europe and Asia. Currently, overseas sales account for about 70% of total sales.



FPD (flat panel display): A thin flat display. FPDs include liquid crystal and plasma displays.

Semiconductor and FPD production processes: Semiconductor production processes can be broadly divided into front end processes, in which circuits are formed on a silicon monocrystal panel (i.e., a wafer), and back end processes, in which packages are assembled. Semiconductors and FPDs are both produced using 200-300 process steps.

Striving to be a Truly Globally Excellent Company

TEL has a mission to contribute to the development of a sustainable society, making environmental and safety measures top management priorities.



CEO, President
Tokyo Electron Limited

Our Commitment

1.
TEL is adding value and contributing to the creation of a sustainable society.

2.
Bearing the utmost respect for humanity, TEL makes human health and safety its top priority, while also taking into account the protection of the global environment.

3.
TEL seeks to fulfill its global obligations as a leading company by also making industry-leading efforts on behalf of the environment.

Focused on a Sustainable Society through "Only One" Value Enhancement

TEL conducts business as a supplier of semiconductor and FPD production equipment, among other products, to support the global development of the semiconductor and liquid crystal industries. Since our founding in 1963, we have pioneered technical innovation in the semiconductor industry, and at present, many of our products command the top share of their respective markets globally. Technical innovation of information and communication systems continues to advance, and as it does, TEL maintains its mission to live up to our customers' trust and expectations and contributes to the development of a sustainable society.

A World Leader in Environmental and Safety Measures

At the same time, TEL seeks to be a truly Globally Excellent Company, one that inspires people, both employee and the general public, to think, "Only TEL could have done that!" Our "Respect for Humanity" concept, which has guided the company since it was founded, embodies this desire. Furthermore, in our "People. Technology. Commitment." Corporate Message, respect for humanity is in part defined as making human health and safety the highest priority and giving consideration to the protection of the global environment.

The development of advanced technology and IT has offered unprecedented possibilities to humanity, but misuse of these developments can also cause incalculable damage to the global environment. In addition, one aspect of the rapidly expanding global competition is deterioration of the natural environment. TEL understands that

we must not be remiss in carrying out the environmental and safety measures that can help us minimize such risks.

TEL seeks to be an industry-leading company in areas of the global environment and human health and safety. Therefore, we recognize that world-class obligations have been placed upon us, and that it is our policy to advance environmental and safety measures as a top challenge of management.

A Stronger Environmental Protection System in TEL

TEL and its group actively worked to reduce the environmental impacts of our business activities through a program of ISO14001 certification of production bases and the implementation of Environmental Management Systems (EMSs) in our offices in fiscal 2001.

Moreover, TEL endeavors to develop products exceeding even our customer's most demanding requirements. We do this in part by establishing concrete goals for reducing environmental impact, designing equipment to save energy and footprint, and curbing the use of chemical fluids. Our Process Technology Center, established in 1998, is enhancing our environmental protection technology while it is performing the R&D needed to realize next-generation semiconductor technology.



A Greater Contribution to Society

It is simply no longer possible to view sustainable corporate development as separate from the environment. In recent years, environmental awareness has grown in society, and interest has risen among our employees. TEL is encouraging an environmentally-centered attitude throughout the company by raising employee awareness through environmental and societal contributions closely bound to local community.

Efforts on behalf of the environment necessarily require cooperation within industry. As our Principles on Environmental Preservation state, "We, with our customers and suppliers, shall continuously strive to minimize the impacts of processes and operations on the environment." TEL is confident that, as a leading company, we will improve environmental measures. A particularly important issue facing us now is the recycling of products currently discarded as waste.

This report lists the accomplishments of TEL environmental protection initiatives in fiscal 2001 and offers a preview of directions for future initiatives. We hope that you will learn more about the TEL's efforts and will not hesitate to offer your advice. In turn, we will continue to offer environmental information and strive to be a company that responds sincerely to public opinion and is capable of contributing to a sustainable society.

October 2002

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, shareholders, 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

CEO, President Tokyo Electron Limited



My Eco-lifestyle

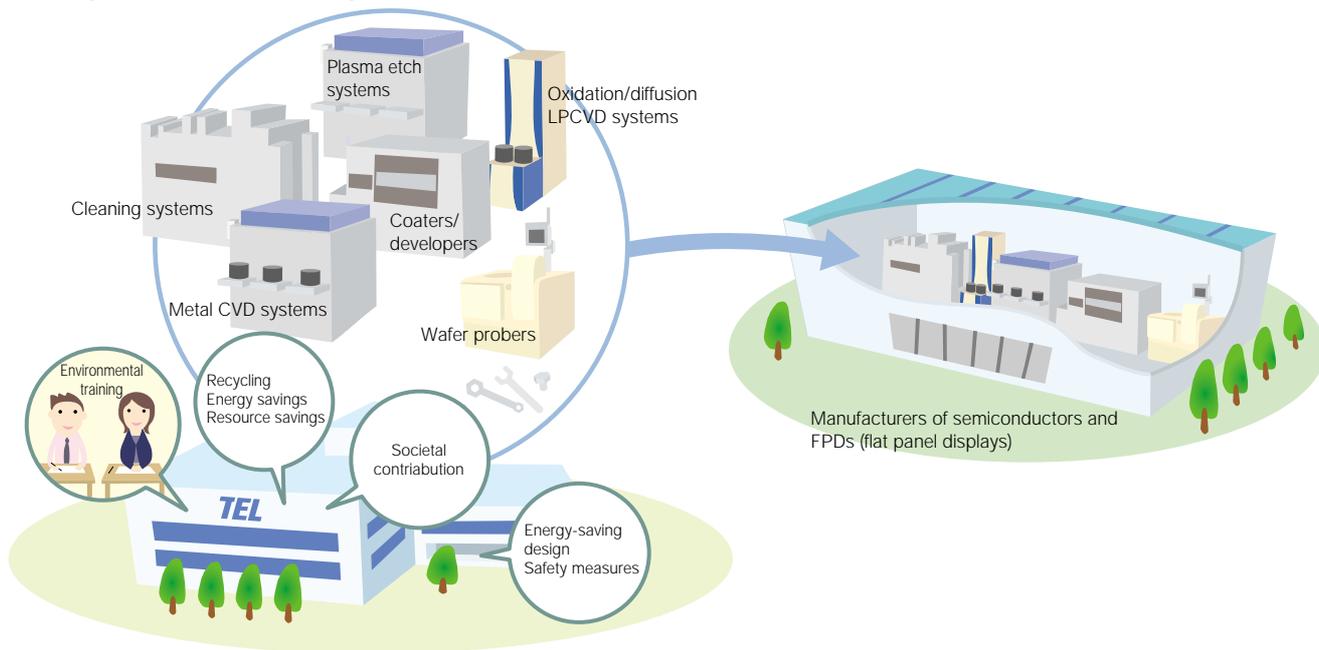
"Being able to spend time out in nature is very special to me. When I'm outdoors in the natural environment, I feel energized and my sense of humanity seems to be revitalized. My usual stress melts away and my outlook on life broadens. At my cabin, tasks like splitting firewood are very refreshing.

"When I think of these things, however, I feel sharply aware of the responsibility our adult generation has for past damage to the natural world. I want our children to have a good future. Therefore I believe that we adults have to act now."

Tokyo Electron and Society

TEL is working to establish a foundation that will facilitate information sharing on trends in the global environment and society.

■ Tokyo Electron and Society



Tokyo Electron and Society

TEL supplies semiconductor production equipment to semiconductor manufacturers, helping them to achieve a higher degree of circuit integration and production of high-performance semiconductors, thereby contributing to the worldwide advancement of information and communication technologies.

So how does the advancement of information and communication technologies affect the environment? To give one example, the advancement of semiconductors has greatly reduced the amount of electricity consumed by previously energy-hungry machine tools and consumer electronics. In addition, the effective use of information and communication technologies has made it easier for trucks, to carry full loads on both their departing and returning trips, thus reducing waste. The further enhancement of communication services could also make working at home a more common practice, thus

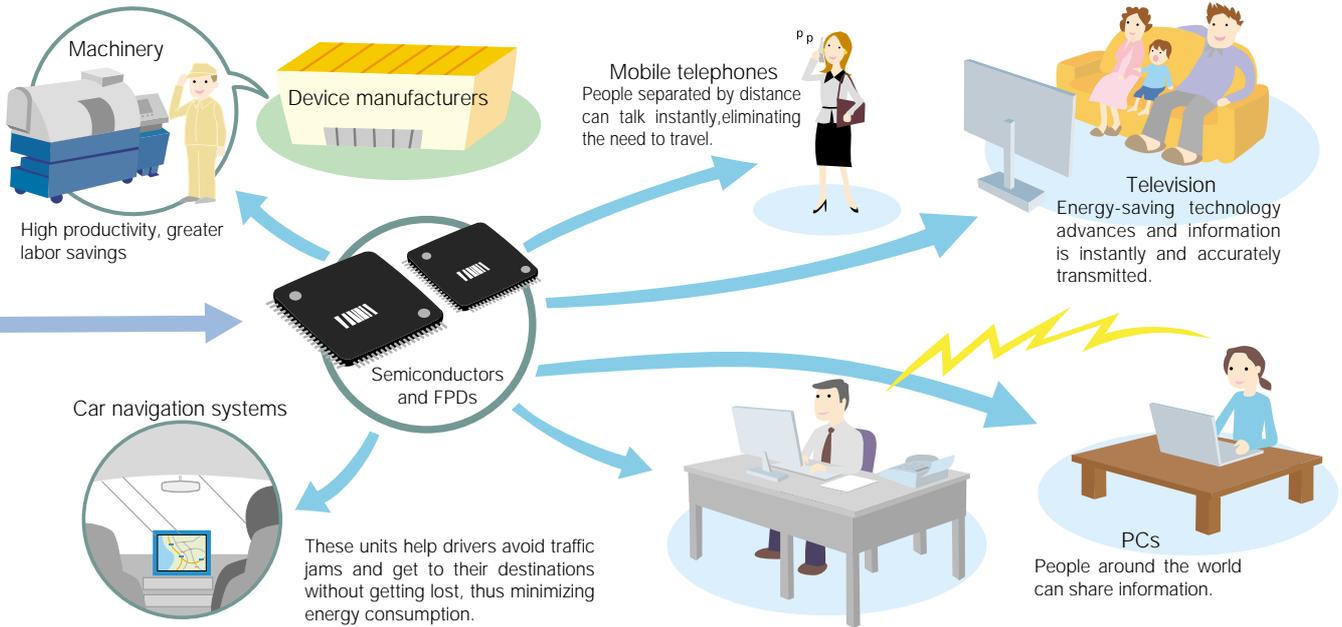
cutting down on unnecessary commuting. With PCs and the Internet reaching more people and reducing communication cost, it is becoming possible for people around the world to share advanced information.

Hereafter, protection of the global environment will require that all of us share accurate information about trends in the environment and society. No element in creating the foundation for this is more important than information and communication technologies. It is TEL's desire to make a major contribution toward preparing this foundation for environmental protection.

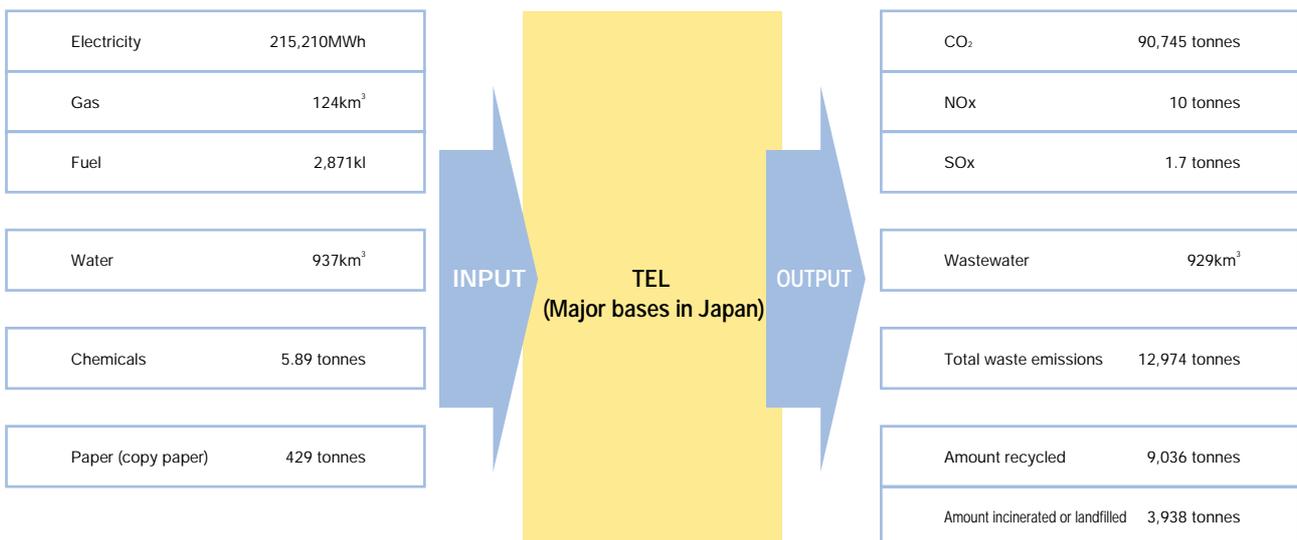
Nevertheless, TEL's plants do have considerable environmental impact during the process of creating products. Therefore, we have taken it upon ourselves to reduce the impact through a thorough program of resource saving, energy saving, recycling and assurance of employee and customer safety.

Cleaning systems: machines that clean dust and particles off wafers. These use pure water, acid, etc.
 Oxidation/diffusion LPCVD systems: machines that bind oxygen (O₂) or nitrogen (N₂) on the surface of wafers and create oxide films, nitride films, etc., at high temperatures.
 Metal CVD systems: machines that form metal wiring on wafers. CVD is a process of making deposits on the surface of wafers by causing chemical reactions with vapor and gas.

TEL contributes to reducing society's environmental impact through advancing information systemization.



TEL's Flow of Materials



Coater/developer: A machine that applies an even coat of photosensitive material (photoresist) on wafers, dries them, and then develops the exposed wafers.

Plasma etching system: A machine that uses plasma to etch away (or chemically corrode) only certain portions of the surface of wafers.

Wafer prober: A machine that inspects each circuit formed on finished wafers.

Environmental Targets and Results

Each workplace of TEL sets voluntary environmental protection targets based on the TEL Group Credo and Principles on Environmental Preservation and makes efforts to achieve these targets.

On September 25, 1998, TEL established a Credo and Principles to define its position on environmental protection.

The Group workplaces establish their own environmental policies, regulations, and procedure sheets based on this Credo and Principles on Environmental Preservation.

Results from fiscal 2001 and targets for fiscal 2002 are listed below.

■ Environmental Targets and Results

	Results from Fiscal 2001	Targets for Fiscal 2002
Eco Products	Developed systems to reduce power consumption	Continue to study and perform
	Developed systems to reduce consumption of chemical fluids and pure water	Continue to study and perform
	Inspected and analyzed degree of environmental impact through life cycle assessment (LCA)	Use LCA data as feedback for system development
	Gave green procurement policy explanatory session and evaluated suppliers	Provide instruction and training to improve level of suppliers with low scores
Eco Factories	Worked to reduce power consumption	Set targets for each workplace and work to reduce consumption
	Worked to reduce paper consumption	Set targets for each workplace and work to reduce usage
	Worked to reduce water consumption	Set targets for each workplace and work to reduce usage
	Worked to reduce total waste volume	Set targets for each workplace and work to reduce waste volume
	Worked to improve waste recycling rate	Set targets for each workplace and work to improve recycling rates
	Further enhanced chemical management system	Continue to study and perform
EHS (Environment, Health and Safety) Management	Published Environmental Report 2001 Worked to disclose environmental information	Publish environmental report once per year and disclose information Expand content of environmental report
	Provided environmental training to office employees Prepared to implement environmental management systems in office facilities	Implement ISO14001-compliant environmental management system and TEL Eco-Activities at office facilities
	Calculated and monitored environmental protection costs through environmental accounting Tested calculating and monitoring of environmental protection effects (i.e., economic effects) through environmental accounting	Officially begin tracking effects Expand environmental accounting contents and improve precision
	Updated and continued to perform safety training	Continue to update and perform



Tetsuro Higashi
CEO, President

President's Comments

The semiconductor production equipment that we provide to our customers has a substantial environmental impact. For example, the amount of power consumed when the customer uses equipments to make semiconductors. TEL performs life cycle assessments (LCAs) on each type of equipment we sell, with a particular focus on targets for reducing environmental impact during the use of the machinery. The analysis results are then fed back into new development and design. In addition, TEL seek

to strengthen cooperative ties with its customers through the exchange of information.

TEL has also set up an internal management system to address both environmental and safety concerns. One issue we are addressing in fiscal 2002 is how to promote a good balance of recycling, resource conservation, energy conservation and chemical management group-wide using the internal management system.

TEL-Manufacturing Subsidiaries: Topics in 2001 and Targets for 2002

Tokyo Electron Tohoku Limited



Kengo Kuroiwa

President
and Representative Director

Eco Life : To create a recycling-oriented society, it is important that each of us become proactive and participate both in the corporation and as private citizens. For example, I talk to my son about the environment and what we can do about it at home, like choosing fuel-efficient autos and always turning off the electricity when not in use.

LCA Results impacting Product Design in 2002

Tokyo Electron Tohoku Limited manufactures systems that perform the thermal processing functions of semiconductor production processes. Until now, development work took place separately at the Sagami and Tohoku Plants, but in April 2002 we consolidated all stages from system development to production in the Tohoku Plant.

In fiscal 2001 Tokyo Electron Tohoku put its energy into increasing its rate of recycling of waste. The result was a recycling rate in excess of 90%, as compared to about 40% in fiscal 2000. Moreover, we plan to achieve zero emissions within three years. Another challenge we are dealing with is reducing the environmental impact of our systems. We have not only reduced power consumption, but also decreased the amount of materials used, such as nitrogen gas and wiring, which has reduced CO₂ emissions. In fiscal 2002 our plan is to put to use the LCA results from fiscal 2001, actively incorporating them into all stages of the development and design pro-

Tokyo Electron AT Limited



Mamoru Hara

President
and Representative Director

Eco Life : The introduction of ISO practices has not only affected me at work; off the job my consciousness has changed as well. I've long felt that one should use things as long as possible, so at home I save resources and energy. I feel it's now even more important to act for the benefit of "the whole" and not just treat the symptoms, such as global warming.

Close Ties and Exchanges of Technical Information with Our Customers Lead to Development of Systems with Reduced Environmental Impact

The Yamanashi area is home to an equipment production plant (Tokyo Electron AT Limited) and a semiconductor process Technology Development Center (Tokyo Electron Limited). The Technology Development Center collaborates with our customer's engineers to develop semiconductor production equipment that is not only high-quality but also reduces environmental impact, by saving energy. Environmental awareness at TEL has been very forward-looking, starting six years ago when TEL determined that it would earn ISO14001 certification as a group. In Yamanashi, an EHS (Environment, Health and Safety) Management System was established in fiscal 2001 and has been carried out and disseminated with the goal of enriching both safety and environmental efforts. Moreover, a new section has been created specifically to deal with health issues and has enriched activities in that regard. In 2002, we will push forward with reducing energy consumption in the workplace overall, for example, by reviewing the base units for calculating this consumption. (For details, see the special site report for the Yamanashi Plant on page 30.)

Tokyo Electron Kyushu Limited



Megumi Yamashiro

President
and Representative Director

Eco Life : From our location near Mt. Aso where rivers flow so abundantly, we are especially careful not to pollute the water, in order to protect this resource. At home my family separates the trash and recovers waste items. As much as possible, we refrain from using the car and instead go by bicycle.

Achieving Zero Emissions, Our Environmental Efforts are Gaining Momentum

Tokyo Electron Kyushu Limited mainly produces equipment that handles resist and developing and cleaning fluids. Recent years have brought a shift, from a time when we built to order, to a time when TEL needs to assert its autonomy. During the last few years, our employees have steadily become more aware of the environment. I believe achieving zero emissions will further encourage this consciousness. We also face more stringent water regulations than businesses in other prefectures, so we practice closed-loop recycling of coolant water.

The Koshi Plant achieved a 99.6% industrial-waste recycling rate in fiscal 2001, and in 2002 it expects to achieve zero emissions by recycling vinyl chloride, which is still an issue. In 2002, other plants will follow Koshi in raising their own recycling rates.

Products with Reduced Environmental Impact

TEL actively applies LCA techniques and works to conserve energy in order to efficiently reduce environmental impact.

TEL Stance on Eco Products

TEL offers its customers services and products, such as semiconductor production equipment, FPD production equipment and electronic components produced in-house. TEL has prospered by incorporating customer suggestions into our products and by providing world-leading technologies and products. At a time when concern about environmental issues is growing, we face the need to reduce environmental impact during manufacturing and to eliminate harmful substances from our equipment materials. Notably, customers have asked us about the environmental impacts of products throughout their lifecycles. Taking a sincere approach to customer requests, TEL has compiled environmental impact data for products during manufacture, usage and disposal. TEL plans to continue working with our customers to further reduce environmental impact.

Product Emissions and Consumption Reduction Targets

TEL determines reduction targets for gas emissions and power consumption of its products and works to reduce their environmental impact. Because semiconductor wafer size has increased from 200mm to 300mm, we express these targets in surface area units.

TEL is looking into further aggressive reductions in PFCs* in the event that SEMI*, SEMATECH* or similar organizations promote further measures in the future.

Long-term Targets for Reducing Environmental Impact Occurring During the Use of Semiconductor Production Equipment (Product EHS Roadmap)

	1997 standards ¹		1999 standards ²		2002 intermediate targets		2005 targets	
	200mm	300mm	200mm	300mm	200mm	300mm	200mm	300mm
Wafer size	200mm	300mm	200mm	300mm	200mm	300mm	200mm	300mm
Energy consumption	1	1	0.8	0.8	0.65	0.5		
Water consumption (coolant water, etc.)	1	1	0.8	0.75	0.65	0.4		
Water consumption (ultra pure water)	1	1	0.8	0.85	0.65	0.7		
HAPs* emissions	1	1	0.4	0.7	0.35	0.4		
VOCs* emissions	1	1	0.4	0.7	0.35	0.4		

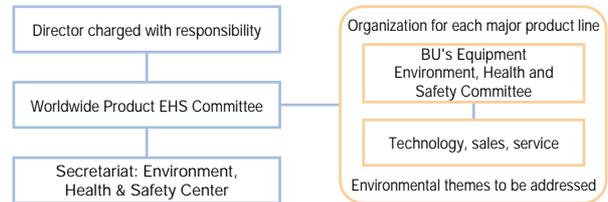
*1 Standards are defined as the amount consumed or emitted per square area unit in 1997 by 200mm semiconductor production equipment.

*2 Standards are defined as the amount consumed or emitted per square area unit in 1999 by 300mm semiconductor production equipment.

Organization for Mitigating Environmental Impacts Associated with Products

Environmental impacts that are common to the areas of semiconductor and FPD production equipment made and sold by TEL are subject to the mitigation efforts of a special organization set up at TEL. See page 20 for details.

Countermeasures Organization for Mitigating Environmental Problems Associated with Products



Example of Major Efforts in Each Business Unit (BU)

BU (Business Unit)/Plant	Efforts made
Etch Systems/Yamanashi	•Reducing power consumption
Single Wafer Deposition/Yamanashi	•Reducing power consumption •Reducing N ₂ and exhaust
FPD Systems/Yamanashi	•Reducing power consumption
FPD Systems/Ozu	•Reducing chemicals
Cleaning Systems/Saga	•Reducing use of chemical liquids •Reducing use of IPA* •Reducing use of pure water •Reducing power consumption
Clean Track/Kumamoto Koshi	•Reducing use of chemical liquids •Reducing power consumption
Thermal Processing Systems/Tohoku	•Reducing equipment footprint •Reducing use of wiring made with vinyl chloride •Establishing guidelines for scrapping equipment •Reducing power consumption

PFCs: Perfluorocompounds, a CFC alternative.

SEMI: Semiconductor Equipment and Materials International, an industry association consisting of semiconductor and FPD production equipment and materials manufacturers.

SEMATECH (SEmiconductor MAnufacturing TEChnology): A consortium of American, European and some Korean and Taiwanese semiconductor device manufacturers.

Fiscal 2002 Action Plan Items

The following table describes TEL's fiscal 2002 action plan for

the manufacturing of environmentally-friendly products, based on the Product EHS Roadmap (see page at left).

■ Fiscal 2002 Action Plan for the Manufacturing of Environmentally - friendly Products

Item	Fiscal 2002 Action Plan Items	
Global warming prevention	Reduce power consumption	Achieve Product EHS Roadmap fiscal 2002 targets Achieve sufficient reductions in power consumption in fiscal 2002
	Reduce emissions of VOCs*	Achieve Product EHS Roadmap fiscal 2002 targets Achieve sufficient reductions in VOCs in fiscal 2002
Air pollution prevention and acid rain countermeasures	Reduce emissions of HAPs*	Achieve Product EHS Roadmap fiscal 2002 targets Achieve sufficient reductions in HAPs in fiscal 2002
Ozone layer depletion prevention	Regulate usage of ozone layer-depleting substances	Promote elimination of HCFC-based substances
Reduced consumption of depleted resources	Promote recycling and reuse (dismantling into separate materials, marking materials, disposal)	For each product type, set targets and begin performing Study the tasks and procedures associated with dismantling and discarding, and how to incorporate these into manuals
	Make equipment and components last longer	For each product type, set targets for extending equipment and component life and begin performing these initiatives
Purchasing measures	Practice green procurement	Establish basis for application to green-procurement products
	Regulate lead usage	Share information regarding lead solder substitutes and learn lead usage status of purchased products
LCA performance	Implement LCA	For major products of each product type, perform LCA with the objective of helping prevent global warming

*We have already achieved a more than 90% reduction in PFCs by improving abatement system performance and using alternative gases.

Efforts to Perform LCA

LCA, or life cycle assessment, is a procedure for quantitatively assessing the environmental effects of a product at every stage of its life, including the manufacture of the product from raw materials, transportation of the product, its usage and disposal. An LCA of semiconductor and other production equipment sold by TEL would concentrate in large part on the environmental impact occurring during the process of making semiconductors.

A unified set of standards is essential to compare the environmental performance of production equipment from different manufacturers. Our group is actively involved in the SEAJ (Semiconductor Equipment Association of Japan) effort to establish an energy-savings calculating standard and, in particular, in seeking to establish a world standard that incorporates the LCA principle.

Beginning in fiscal 2001, the TEL Group has performed LCAs on all newly developed products. These LCAs have taken place within the BUs and it is our intention to take the best examples of improve-

ments made and implement these in other BUs within two years.

Examples of LCA Efforts in Fiscal 2001

Environmental impact for each life stage of a product (material manufacturing, equipment manufacturing and assembly, transportation, usage by the customer and disposal) is calculated in terms of CO₂ emissions. By changing the materials used in the equipment, total CO₂ emissions change as well, so CO₂ emissions are calculated for each material.

In all life stages, equipment usage creates the greatest environmental impacts, and the proportion accounted for by ultra pure water used in cleaning systems is the greatest; with this in mind, cleaning equipment built to water-saving specifications can be the most efficient way to reduce environmental impact. (See page 11.)

HAPs: Hazardous air pollutants

VOCs: Volatile organic compounds

IPA: Isopropyl alcohol

TEL's Eco Products

Using LCA techniques, TEL is efficiently reducing the environmental impact of its equipment. Building equipment to energy-saving specifications also controls running costs.

Example of Product Energy Saving Measures

TEL studies the environmental effects of all its products based on LCA principles. The following account is an example of saving energy in the development of a cleaning system.



Old product (UW8000)

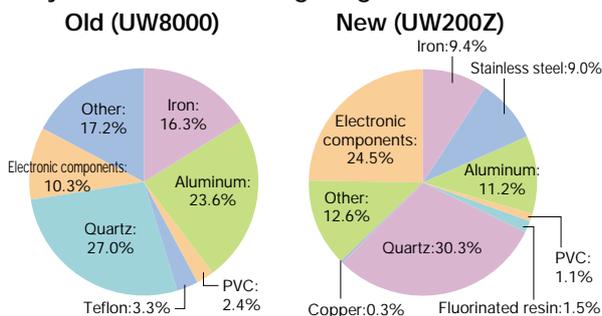


New product (UW200Z)

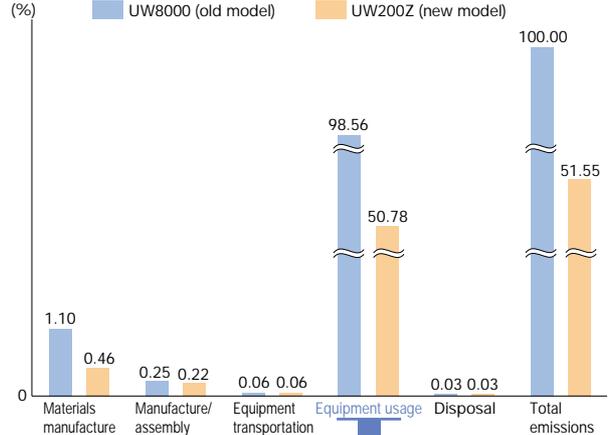
Efficiently reducing the environmental impact of equipment usage requires analysis of equipment characteristics. LCA-based evaluation of cleaning systems indicates that a great deal of energy is used for ultra pure water, power and ventilation of the system during use. TEL has studied specifications for reducing these quantities at the equipment development stage. When the new UW200Z is compared to the older product, UW8000, by converting environmental impacts into CO₂ emissions, we find that the total environmental impact is cut in half and that, in fact, environmental impact was reduced at every stage of the product's life. Guiding the development of this new system was a policy to cut by half the amount of ultra pure water characteristically used by cleaning systems. This led to an effective reduction in environmental impact.

Moreover, regarding the choice of materials used in the system, TEL opted to use SUS stainless steel, which takes little energy to produce, in place of aluminum, which requires a great deal. As a result, the energy now used is only 42% of that previously consumed.

Proportion of CO₂ Emissions Accounted for by Each Material During usage

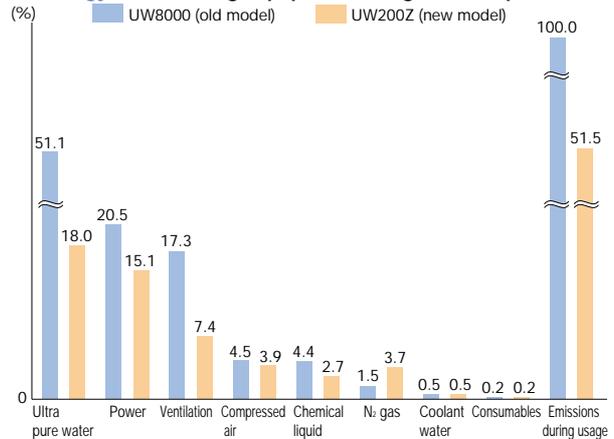


Energy Used at Each Life Stage (CO₂ Equivalent)*



*Where total emissions from UW8000 are taken as the standard.

Energy Used during Equipment Usage (CO₂ Equivalent)*



*Where total emissions from UW8000 are taken as the standard.

TOPICS

Example of Oxidation/Diffusion System Environmental Impact Reduction

TEL is also using LCA techniques to mitigate environmental impact in areas other than cleaning systems. Oxidation/diffusion systems, which are used to produce semiconductors, consume considerable energy during thermal processing at hot temperatures. In addition, the equipment must be cooled. For this reason, equipment is built that enables coolant water to absorb heat from the heater, rather than allowing the heat to radiate into the surrounding room.

Because semiconductor production takes place in clean rooms that must be kept immaculate and at a constant temperature, displacing extra heat into the room's interior leads to energy waste when air conditioning is used. TEL is undertaking energy-saving measures suited to this production environment.

Green Procurement and Logistics

TEL works with its suppliers to set up internal organizations that promote the use of low-impact materials and logistics systems.

TEL's Stance on Green Procurement

Producing semiconductor production equipment, the TEL's main business, requires that nearly all materials and components be purchased from suppliers. For this reason, in all areas of business activity, TEL must work to protect the environment not only within the confines of its group itself, but through our suppliers. In the future, TEL has plans to start procuring materials solely from those suppliers meeting environmental standards. Green procurement is also being promoted for various computer systems and high-end network systems handled by our Computer Network BU.

Efforts in Fiscal 2001

Having set fiscal 2001 as our year to begin preparations for green procurement, TEL carried out the following measures:

- (1) TEL drew up and carried out a survey of environmental initiatives to help track suppliers' efforts, and received responses from suppliers.
- (2) TEL ranked suppliers in one of four categories based on survey responses.

Efforts in Fiscal 2002

Building on fiscal 2001 efforts, in fiscal 2002 TEL created a program to help those suppliers that had not met standards to accelerate their efforts.

Specific measures:

- (1) TEL established an internal program to train individuals who can, in turn, train suppliers.
- (2) TEL established a system to encourage suppliers to set their own environmental targets each year and work to meet those targets.



TEL's Green Procurement Guideline sets standards and targets for chemicals, energy savings, packaging, resource saving and recycling, and information disclosure.

Logistics Efforts

Most of our main product line, semiconductor production equipment, is built to unique specifications, which mean that, depending on the customer, each unit is differently shaped and therefore packaging has to be taken into account. In addition, units are shipped at irregular intervals, making it difficult to take environmental impact-reducing measures, such as joint shipments with other firms or warehouse consolidation, practices commonly used for household electronics and other products. Determining how to rationalize the logistics of product shipments from TEL to customers is a major challenge for us. TEL, however, is cooperating with its suppliers to minimize the environmental impacts of shipping product components and materials from suppliers to TEL.

● Efforts on Shipments from Suppliers

TEL works with suppliers to recover and reuse cushioning material and AirCap®. We also no longer use AirCap for moving objects and are instead employing reusable protective covers.



A reusable protective cover used for shipping purposes

● Efforts on Shipments to Customers

In the past, TEL shipped equipment parts by packaging them individually in corrugated cardboard boxes with cushioning material. We have now switched to using mirromat (a soft polyethylene sheet with high expansion factor; it provides excellent cushioning, heat insulation, water repellence, moisture barrier and cleanliness) and reusable corrugated plastic cartons. This packaging reduces the amount of cushioning needed.



Packaging with mirromat and a corrugated plastic carton

Waste Reduction and Recycling

TEL is working to reduce waste generated by its business and to lessen environmental impacts.

Stance on Reduction and Recycling of Wastes

TEL's stance on waste reduction and recycling is: "Produce no waste. Recycle any waste that is produced. Properly dispose of any waste that cannot be recycled."

Based on this stance, TEL is working to reduce the waste generated by our business. Every year, the shortage of final disposal sites becomes more critical and landfill costs are on the rise. In addition, reducing waste is crucial in minimizing environmental impacts, as well as in cutting production costs.

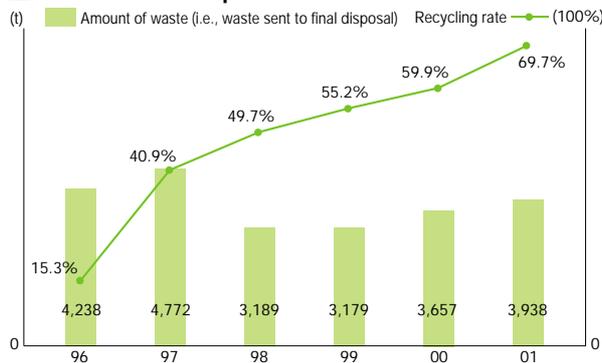
Each TEL plant is making continuous efforts aiming for zero emissions. These plants are sorting and recovering wastes and actively seeking out recycling outlets as part of the effort to promote recycling. It is incumbent on manufacturers not simply to make good products, but also to make every manufacturing process environmentally friendly. TEL promotes proper disposal as outlined in the Wastes Disposal and Public Cleaning Law, for example by carefully selecting the contractors it engages to process its wastes.

Total Waste

The following diagram shows the amount of TEL waste undergoing final disposal and the rate of recycling. The recycling rate has risen year by year, and efforts to use resources effectively have resulted in the rate rising above that of fiscal 2000. The total amount of waste produced rose slightly, with liquid wastes accounting for most of the increase.

Since fiscal 1999, TEL has included wastes from our office facilities with those from manufacturing plants in the waste total. The amount of waste produced rises and falls according to production levels and factory operating status, but TEL is committed to working toward consistent reduction of waste levels.

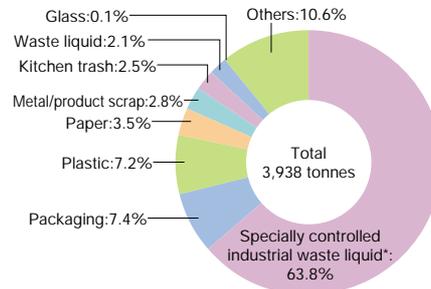
TEL's Waste Output



Breakdown of Waste Volume

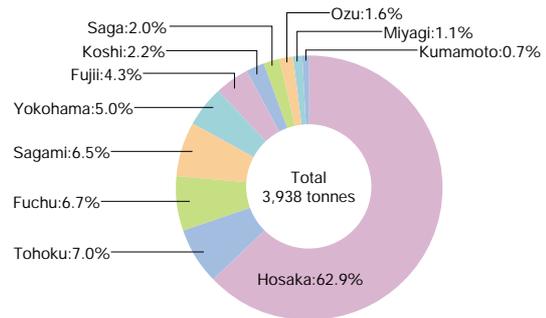
Waste liquids account for about 70% of all TEL's wastes. This is due to the fact that we use a variety of chemical liquids during the development and evaluation of the products we manufacture. Other wastes for TEL as a whole total just over 1,000 tons, a notably small amount of waste for a business of this size.

Breakdown of TEL's Waste for Fiscal 2001



*Specially controlled industrial waste liquid: Liquid waste deemed to pose a risk of harm to human health or living environment and designated by the government as subject to special control.

Breakdown of Wastes by Region for Fiscal 2001



TOPICS

Example of Efforts to Reduce Waste Saga Plant

Each TEL site has established a special subcommittee for waste reduction and carries out its efforts through this body. Notably, the Saga Plant has reduced the amount of waste undergoing final disposal by more than 90% since fiscal 1996. This factory's system has made it possible to take concrete measures, such as thorough waste sorting and the recycling and salvage sale of previously discarded metals and plastics. The Saga Plant particularly focused on recycling solid wastes in fiscal 2001.

Recycling

Promoting efficient recycling requires thorough separation when waste is initially discarded. TEL site separate waste into between 24 and 29 categories, according to waste characteristics. The types of materials sorted are primarily paper, drink containers, scrap wood, glass, plastics and metals. Through sustained efforts, our recycling rate has risen year by year. In fiscal 2001 this rate reached 69.7%, up about 10% from the previous year. This achievement was made possible by changes in the method of disposal of waste liquid at various locations and by thorough separation of wastes, among other efforts. TEL plans to continue to work at each workplace to make recycling even more effective.

Control of Waste Processing Yards and Contractors

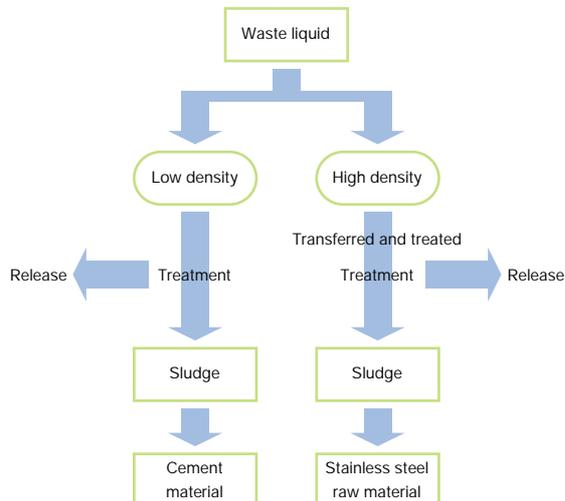
Each TEL site certifies and controls the intermediate processors and final disposal contractors for waste. When a new contractor is to be used to process waste, each site performs a study to certify the contractor, checking their licenses and making onsite checks. This is done to determine whether the contractor is capable of proper processing or disposal, as outlined in the Wastes Disposal and Public Cleaning Law. Once the contractor is certified, it undergoes regular onsite checks to continue monitoring its waste processing status.

TOPICS

Recycling Example 1 Waste Liquid Recycling: Tohoku Plant

At the Tohoku Plant, where waste liquid once made up about 70% of all wastes, employees are controlling the amount of liquids used and thoroughly separating the liquids. A process in which liquids are separated and recovered according to high or low density is making it possible to recycle these wastes, and a contractor is engaged to process the wastes. Low-density waste liquid is treated and the remaining sludge is used as cement material. Recycling of high-density waste liquid began in fiscal 2001. The sludge remaining after processing is recycled as raw material for stainless steel, or as a melting agent. These efforts have pushed the recycling rate at the Tohoku Plant to higher than 90%.

■ Recycling of Waste Liquid, Once 70% of All Waste



Recycling Example 2 Expanded Polystyrene Recycling: Yamanashi Plant

Expanded polystyrene (EPS), the foam used as cushioning when shipping components, is light, but bulky, and is therefore a challenge to ship whether it is discarded or recycled. The Yamanashi Plant addressed this issue by installing an EPS compacter and recycling the material efficiently. The EPS is compacted into ingots and transferred to a contractor, who then recycles the material into hangers, cassette tapes and other products.

TEL recycled about two tonnes of EPS in fiscal 2001.



EPS compacter

Recycling Example 3 Office Initiatives

Office recycling initiatives, pioneered at our World Headquarters in Akasaka and at the Fuchu Technology Center in fiscal 2000, were implemented at other site in fiscal 2001. For example, documents that were once shredded and burned for confidentiality reasons are now recycled. The documents go into a transportation box and are recycled in a system that prevents the viewing of their contents. This effort resulted in the recycling of 770kg of confidential documents at our Osaka Branch Office in fiscal 2001.

For paper cups, we have switched from timber pulp to non-timber kenaf, and our paper-cup recycling program has spread to other site.

Energy Conservation

TEL promotes energy conservation at all sites as a way to help prevent global warming. In addition, TEL's ISO14001-certified sites set energy-saving goals and targets and work systematically to achieve these..

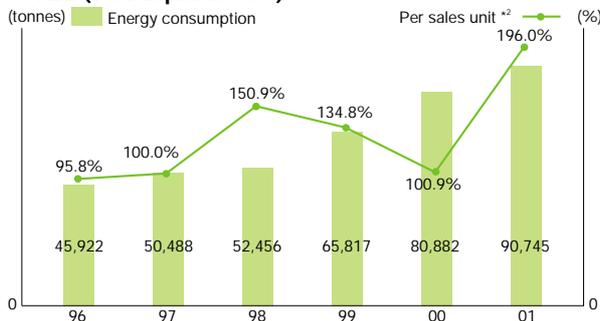
Stance on Energy Conservation

Nearly all of TEL's manufacturing plants are Type 1 Designated Energy Management Factories as per the Law concerning the Rational Use of Energy. As the law dictates, these factories engage in creating and complying with management standards based on judgment standards; appoint Energy Management manager; and, handle management organization. Certified workplaces set targets for each geographical area and perform energy conservation activities. Clean room facilities used for production and development consume a great deal of electrical power; therefore, the TEL's various manufacturing subsidiaries work to make their clean rooms more energy-efficient, as well as more efficient overall, thus reducing energy consumption. By making our development and assessment tools more energy-efficient, we reduce the amount of energy used for these functions in each site

Total Energy Usage

The slower economy caused a downturn in orders in fiscal 2001, so our manufacturing plants and the production and assessment facilities at our R&D facilities were less busy. On the other hand, new buildings were added at the Fujii area of Yamanashi and Koshi Plants, and the Hosaka area of Yamanashi Plant started testing 24-hours a day. Developments like these caused power consumption to rise considerably. Converted to CO₂ emissions, energy consumption rose 12% compared to the previous year. Energy consumption per sales was nearly double that of fiscal 1997, which is the TEL's baseline year. TEL will make further conservation efforts as it seeks to cut total energy consumption.

Total Energy Consumption at TEL (CO₂ Equivalent*)



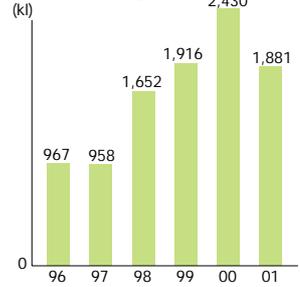
*1: Refer to the Ministry of the Environment's Environmental Activity Evaluation Program regarding CO₂ conversion.

*2: Consumption per sales unit = energy consumption divided by sales (where the fiscal 1997 value is 100%)

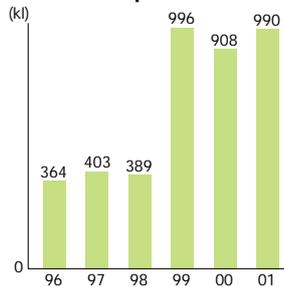
TEL's Power Consumption



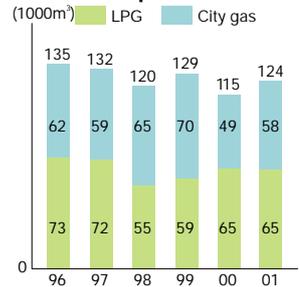
TEL's Heavy Oil Consumption



TEL's Kerosene Consumption



TEL's Gas Consumption



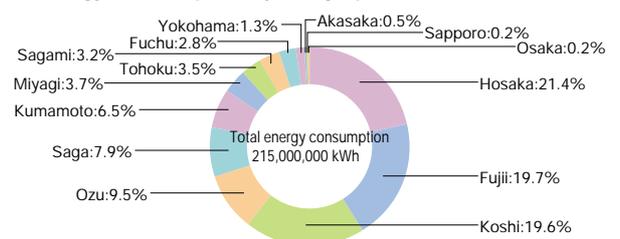
Major Efforts Made

All sites conserve energy with their lighting and office equipment and control the temperature settings of air conditioning equipment. The Kumamoto Plant implemented energy-efficient temperature controls when it remodeled the third floor of its No. 2 Building. This resulted in power consumption for the entire floor falling by 4,835kW/month and costs dropping by 26,595 yen per month. The Yamanashi Plant conducts planned stoppages of its equipment during the summer and New Year's holidays, and Tokyo Electron Arizona, Inc. has implemented an energy control system and worked with its utility company to cut energy consumption by 18% from fiscal 2000 levels.



Checking office temperature and humidity on an energy patrol at the Yamanashi Plant

Energy Consumption by Geographical Area in Fiscal 2001



Resource saving

As one step for resource saving, TEL is reducing paper consumption. TEL is taking other measures as well, for effective use of resources, such as saving water, not letting automobiles idle, and actively purchasing recycled products.

Stance on Resource Conservation

TEL is working to reduce to an absolute minimum the amount of resources used and is procuring environmentally-friendly resources.

TEL works to reduce the amount of water, copy paper and stationery that it buys and uses, actively purchases green products, and works with office supply manufacturers to collect discarded products, thereby promoting good resource conservation.

Efforts to Reduce Paper Usage

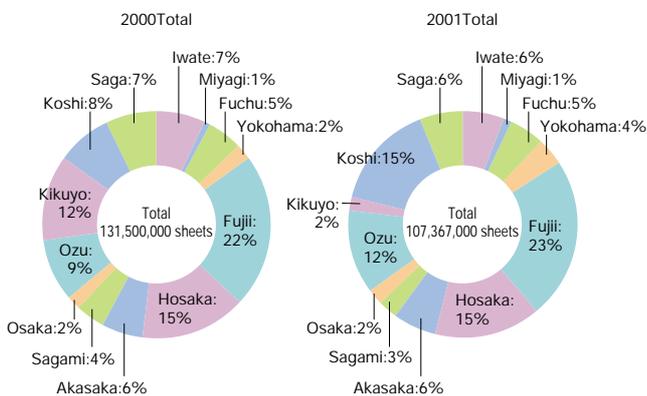
TEL sites especially those that are ISO14001-certified, are endeavoring to reduce the amount of paper used. All sites promote using both sides of copy paper and save by shrinking copy sizes.

In addition, sites try as often as possible to share information without using paper. Efforts are being made to switch to electronic information; for example, our circulating documents are shared in electronic formats. As a result, paper consumption in fiscal 2001 fell from the previous year's level.

Our plan for the future is to continue revising how we do things and consolidate our records and forms to the minimum necessary. Furthermore, all sites are using recycled paper for all documents with the exception of certain applications.

TEL has also undertaken to help protect forest resources by introducing paper cups made of kenaf, a non-timber fiber source, in place of traditional wood-fiber paper cups. Finally, TEL has called on its employees to limit paper cup usage to one per person each day.

TEL's Copy Paper Usage by Geographical Area



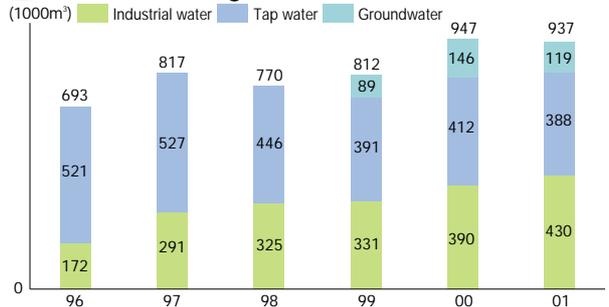
Efforts to Reduce Water Usage

TEL's manufacturing plants are reducing water usage by implementing coolant water recirculating systems and reusing industrial water used in all stages of operations, such as production, development, assessment and shipping. Additionally, all workplaces are installing automatic faucets in lavatories and elsewhere to save water by avoiding cases where workers forget to turn off tap water or otherwise use water inefficiently.



Automatic water tap

TEL's Water Usage



Other Efforts

When leases on company cars expire, a number of sites, including the Osaka Branch Office, are switching over to hybrid cars and autos that benefit from the green tax system. According to a study by the Osaka Branch Office, hybrid cars consume just half the fuel of conventional gasoline-powered cars. Moreover, the group encourages drivers to refrain from leaving cars idling.

Besides these efforts, the group is also contributing to the effective use of resources by actively purchasing recycled products and recovering and returning printer toner cartridges to the manufacturer.



A hybrid car used by TEL



A sticker on a leased car encouraging the driver to avoid idling

Chemical Management

In order to prevent environmental pollution, we strictly control the chemical substances we use. We are working to find alternative substances and methods for reducing the use of hazardous chemicals. At the same time, we are also making efforts to determine which chemical substances are present in the products we purchase.

Stance on Chemical Management

Depending on the handling methods and types, the chemicals used in business activities could pose risks of environmental pollution.

In order to prevent pollution from chemical substances, TEL carries out strict controls that take the environment and safety into account at every stage, from the initial decision to introduce a chemical, to its eventual disposal.

Before introducing a new chemical, each plant obtains MSDS* information and evaluates the risk of hazard and then makes a decision about whether or not to handle the chemical. We also take measures to ensure that no chemical leaks occur, and make an effort to find alternatives for and reduce the use of hazardous chemicals in products.

Clarifying the Chemicals Contained in Products

In response to a number of international and domestic laws, regulations and related trends, TEL is working to clarify which chemicals should be prohibited from use in products, such as asbestos, mercury and cadmium, and which chemicals should be reduced, such as lead and PVCs. Our goal is to properly manage the chemical substances contained in products.

We are also applying our chemical management experience to green procurement, and improving efforts to select and determine the amount of chemicals that should be controlled, and that are contained in the products we purchase.

Responses to the PRTR Law*

Japan's PRTR Law requires that companies report emissions and transfers to products and wastes of Class 1 substances (354 chemical groups in total) for those handled in amounts of 5 tonnes or more during the first two years of the law's enforcement, beginning in 2001. TEL, however, is controlling and determining quantities of 0.1 tonne or more- smaller amounts than those required to be reported to the government. In other words, our restrictions are more stringent than those required by law.

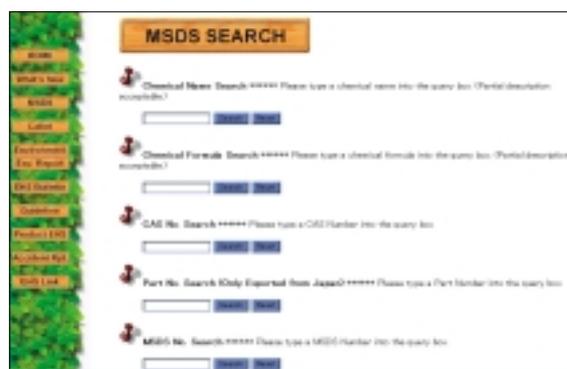
TEL statistics for PRTR target substances in fiscal 2001 are shown in the table below. Of substances that are subject to reporting under the PRTR law, we handled no more than five tonnes per year at any one factory.

■ Data on Substances Controlled under the PRTR Law (Units: tonnes)

Official number	Name of Class 1 chemical	Amount handled
16	2-amino ethanol	0.52
43	Ethylene glycol	1.50
44	Ethylene glycol monomethyl ether	0.12
63	Xylene	0.18
172	N,N-dimethylformamide	0.29
207	Copper salts (water-soluble, except complex salts)	0.19
227	Toluene	0.62
283	Hydrogen fluoride and its water-soluble salts	2.47

MSDS Database Management

We are sharing MSDS safety information on all chemicals newly introduced at any plant by using a database hosted on TEL's intranet. Because information searches can be conducted from all plants, any user can determine the toxicity and hazard level for each individual chemical, and make a decision on whether or not to use it.



Screenshot of an intranet search

MSDS (Material Safety Data Sheet): Material information used to determine accurately the toxicity and proper handling of chemical substances. PRTR (Pollutant Release and Transfer Register): A framework for overseeing chemical substances that may be hazardous to ecosystems and human health, which is employed to identify and compile data, and report on the amount of chemicals used, the amount released into the environment, and the amount contained in wastes transferred off-site.

Management of PCBs

The Law Concerning Special Measure against PCB waste was enacted on June 15, 2001, and went into effect on July 15 of the same year.

This law requires Japan's national and prefectural governments to develop plans for handling PCBs in order to dispose of PCB waste, and to undertake efforts to secure the proper infrastructure to dispose of PCBs, including the construction of treatment facilities. The law also makes it mandatory for private entities that are storing PCB waste to dispose of it within 15 years of the date the law went into effect, and to report to the prefectural government every fiscal year on the PCBs being stored and the status of disposal.

TEL is carrying out stringent control of PCBs in storage, and as soon as a suitable treatment method is available, will dispose of these wastes.



PCB storage building

The following table shows the status of storage and control of equipment containing PCBs.

Storage and Control of Equipment Containing PCBs (in Japan)-Tokyo Electron Group

Item	Number in storage
Transformers	2
Condenser	1

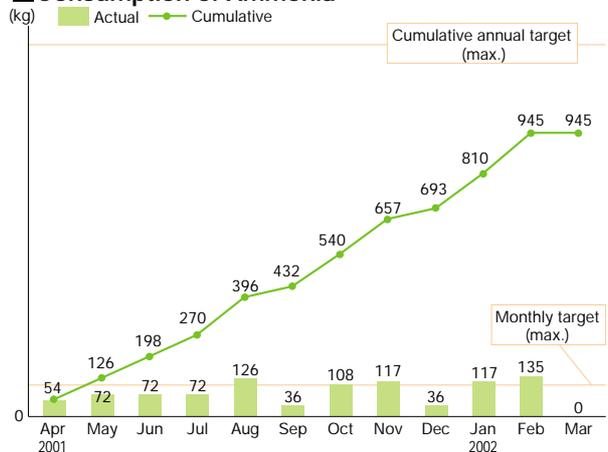
Activities by Each Plant

The types and amounts of chemicals used are different for each plant. Because of this, each plant is conducting its own controls based on its actual use of chemical substances, including determining which substances to reduce and what the reduction targets should be.

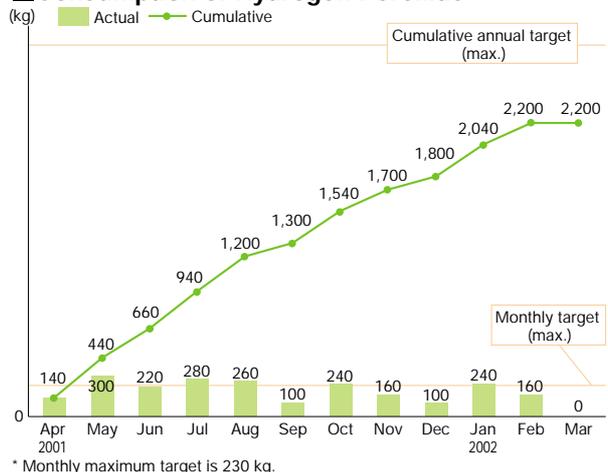
A subcommittee at the Saga Plant has created an organizational system for the proper management of chemical substances. This system, which enables the plant to maintain the proper levels of chemical stocks and supplies, was established during fiscal 1998 and continues today.

To illustrate the Saga Plant initiative, the graphs below compare the consumption of ammonia and hydrogen peroxide in fiscal 2000 and 2001. For both chemicals, the amounts used declined from fiscal 2000. We will continue to strive to minimize the amounts of chemicals used and their environmental burdens.

Consumption of Ammonia



Consumption of Hydrogen Peroxide



Environmental Management Systems (1)

At our manufacturing plants we are running environmental management systems based on ISO 14001. At office facilities we have our own TEL Eco-Activity management systems.

Stance on Environmental Management Systems

We have developed environmental management systems (EMS) based on ISO 14001 in order to move ahead steadily with our activities to preserve the environment and reduce environmental burden. Among our manufacturing plants, seven affiliate companies and sites in Japan had obtained ISO 14001 certification by the end of November 1999. Today we are aiming for this certification at other plants, including those overseas, and every year we create targets for related activities and make ongoing improvements. In addition, we undergo third-party audits annually and update our systems accordingly. At office facilities, we have introduced and are operating a simplified EMS that we call "TEL Eco-Activity," an independent environmental management system within TEL and its group.

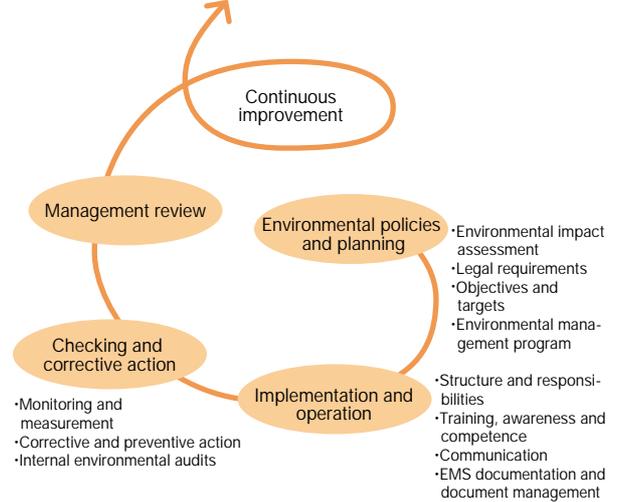
Effectiveness of Environmental Management Systems

At each sites, we determine the types of actual and potential environmental impacts that arise from various aspects of business activities and product manufacturing and services, then evaluate these environmental impact assessments. Next, we determine the primary environmental dimensions and set clear objectives and targets in order to reduce the environmental impact. We prepare environmental management programs (EMP) that include clear responsibilities, as well as procedures and schedules, and then supervise, monitor and record the key operational points.

Introduction of TEL Eco-Activity

Environmental initiatives have generally been implemented first at manufacturing plants, which started obtaining ISO 14001 certification in 1997. At our Akasaka, Fuchu, Yokohama, Osaka, Sapporo and Narita office facilities we have instituted our own independent "TEL Eco-Activity" environmental management systems based on ISO 14001. During fiscal 2001, besides starting an environmental education program for 2,500 employees, we also established guidelines and carried out environmental impact assessments. In April 2002, we began operation of TEL Eco-Activities. These activities are still very new, and no specific issues have yet to emerge, but after a one-year trial we plan to make improvements to boost the effectiveness of the systems.

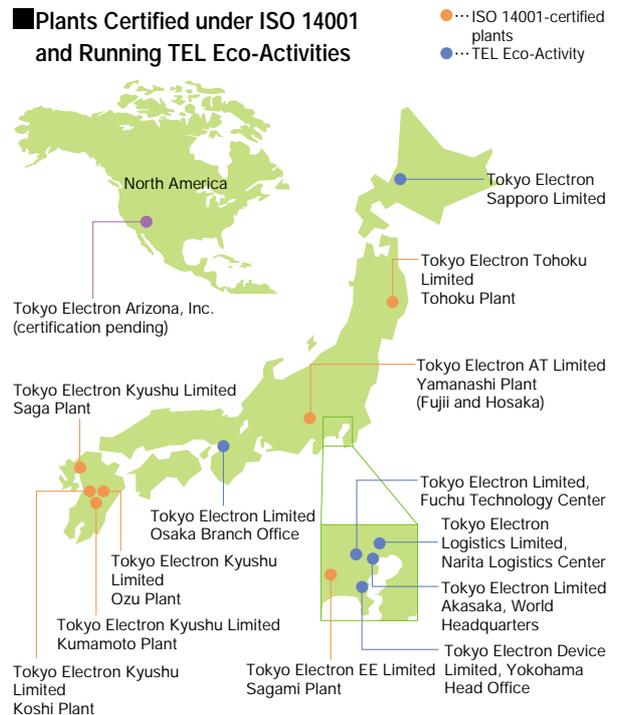
Conceptual Map of Environmental Management Systems



External Certification (ISO 14001)

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

Plants Certified under ISO 14001 and Running TEL Eco-Activities



Organizational Structure for Environmental Preservation

In TEL we have developed an organizational structure to promote environmental and safety issues, with the president of Tokyo Electron Limited as the top person responsible.

Corporate EHS Committee

This committee develops guidelines and actual proposals relating to the environment, health and safety management activities of TEL and its group, as well as proposals, considerations and decision-making on targets and activity plans. The president of Tokyo Electron Limited serves as the committee chair and provides common direction and problem solving on environmental, health and safety issues for all group companies.

Environmental Health and Safety Committee The Tokyo Electron Group Health and Safety Committee

The decisions of the Corporate EHS Committee are implemented in detail by the Environmental Health and Safety Committee, whose members are primarily the Environmental Management Representatives from each manufacturing plant, and by the Tokyo Electron Group Health and Safety Committee, which also covers office facilities.



A meeting of the Environmental Health and Safety Committee

Worldwide Product EHS Committee

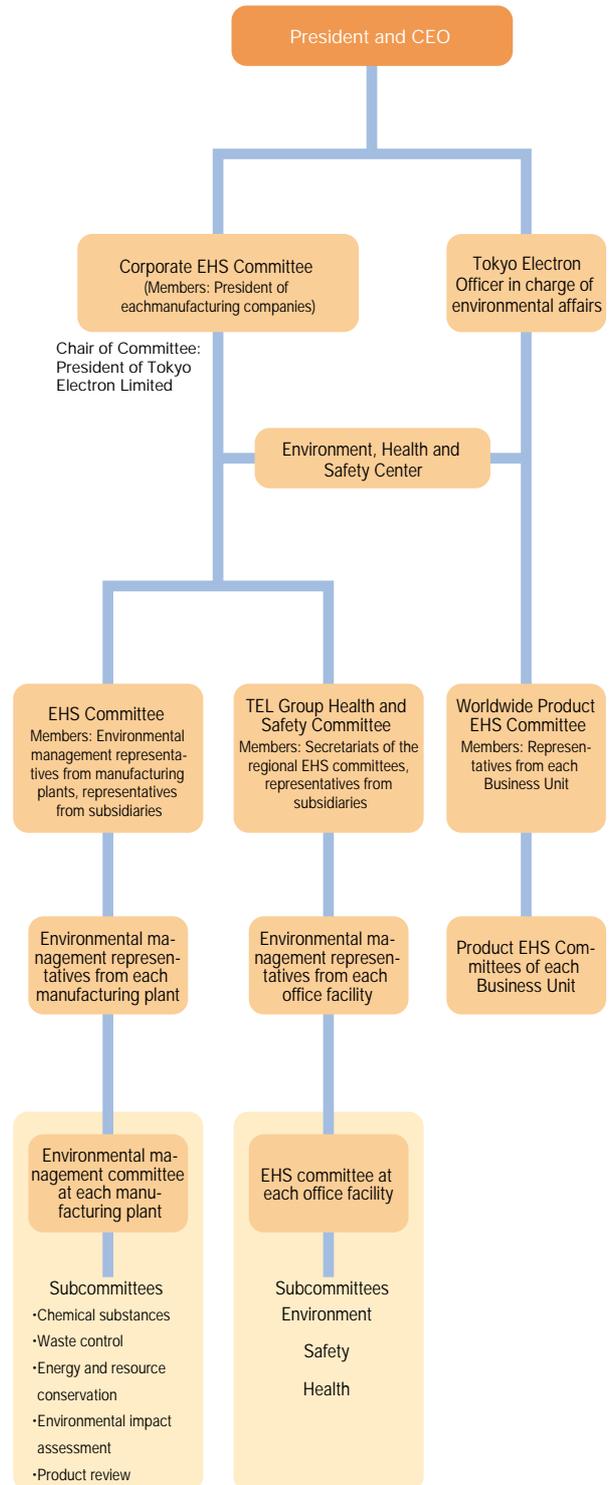
The Worldwide Product EHS Committee is in charge of common environmental measures relating to semiconductor production equipment and its parts manufactured and sold by TEL, as well as the manufacturing of flat panel display production equipment and its parts. A corporate officer serves as the chair of the committee, which considers and makes decisions on necessary policies and measures.

For environmental problems relating to individual products, the Product EHS Committee of each Business Unit is promoting improvements in the related design and manufacturing, marketing and service.



A meeting of the Worldwide Product EHS Committee

TEL Group's Organizational Structure for Environment, Health and Safety (EHS)



Environment, Health and Safety Management (2)

Environmental Auditing

We are regularly implementing third-party audits by external certification bodies, and we are implementing our own internal environmental audits at each plant that has an environmental management system. The results are reported to the top management at each plant, after which reviews and system improvements are established. A system to certify auditors for the internal audits is in place at each plant. We are considering the creation of a framework for peer audits (mutual audits within TEL) starting in fiscal 2002, in order to rectify deficiencies and promote parallel adoption of good practices throughout TEL.

Internal Environmental Audits

Plants that have established an environmental management system are conducting internal environmental audits on a regular basis. After obtaining certification, each plant has continued to maintain excellent standards in overall assessments, indicating that these systems are steadily taking root.

Internal Environmental Audits (Fiscal 2001)

Plant	Tohoku	Sagami	Yamanashi	Saga	Kumamoto /Koshi	Ozu
Month of audit (1st audit)	Nov '01	Oct '01	Oct '01	Apr '01	Oct-Nov '01	May '01
Month of audit (2st audit)	—	—	—	Feb '02	—	Aug '01
Month of audit (3st audit)	—	—	—	—	—	Dec '01

Number of Certified Environmental Auditors in the TEL Group (as of April 2002)

Plant	Tohoku	Sagami	Yamanashi	Saga	Kumamoto /Koshi	Ozu	Total
Chief auditors	17	6	46	27	33	24	153
Auditors	18	2	109	8	54	26	217
Total	35	8	155	35	87	50	370

Complying with Laws and Regulations

We are complying with all relevant laws and regulations, and, in fact, have established stringent independent standards that exceed legal requirements. During safety inspections we check on the management of chemical substances, water pH levels and other items, and we are meeting high standards through the cumulative results of our day-to-day efforts.

During fiscal 2001, no environment-related accidents, violations, fines or complaints occurred, and there were no related legal actions.

TOPICS

External Audits

Plants that have obtained ISO 14001 certification undergo an annual audit from an external certification body. Measures are taken immediately to correct any deficiencies. Furthermore, other plants and committees also check to ensure that they do not have similar deficiencies.

Examples of Issues Arising from 2001 External Audits

Plant	Main issues
Yamanashi Plant	<ul style="list-style-type: none"> Inadequate rotation of the personnel responsible for energy conservation patrols. Suitability of standards to select suppliers not adequately clear.
Tohoku Plant	<ul style="list-style-type: none"> Deficiencies in implementation of general education. Shortcomings in checking reviews of environmental impact assessments.
Saga Plant	<ul style="list-style-type: none"> Environmental management program not prepared by the resource conservation committee.

Monitoring of Wastewater Treatment-An Example from the Tohoku Plant

Monitoring of outflow from wastewater treatment facilities is being conducted here every two months, based on a pollution prevention agreement with the local city of Esashi in Iwate Prefecture. All amounts measured in fiscal 2001 were within the limits required under relevant laws and regulations. In addition, regular monitoring of exhaust from boilers is being done in accordance with the Clean Air Law, and these results have also been favorable.



Wastewater treatment facilities

Measurement Results of Wastewater Treatment Facilities

	Standard	97	98	99	00	01
Concentrations (note 1)	6~8.4 pH	6.4 ~7.3	6.6 ~7.7	6.6 ~7.4	6.7 ~7.4	6.8 ~7.5
BOD (note 2)	120 mg/l	2.9	0.8	0.5	1.4	0.8
SS (note 3)	150 mg/l	19	less than 1.0	less than 1.0	less than 1.0	5
Colon bacilli count	2,300 particles/cm ³	less than 30	less than 30	less than 30	less than 30	less than 30
Hexane extracts	3 mg/l	1.6	less than 0.5	less than 0.5	less than 0.5	less than 0.5
Fluorine compounds (note 4)	15 mg/l	5.1	6.9	4.0	3.9	6.9

Note 1: For hydrogen ion concentrations, this table shows annual maximum and minimum values. For other items it shows the annual maximum.

Note 2: Biochemical oxygen demand, an indicator of pollution in rivers and other water bodies.

Note 3: Suspended solids. Small particulate matter floating in water.

Note 4: The standard for fluorine compounds was 15 mg/l until the end of December 2001, and 8 mg/l thereafter.

Environmental Education

Representatives from office facilities in each region of Japan are working together to issue an environmental education textbook.

At each manufacturing plant, we are conducting special programs for personnel whose work involves important environmental aspect.

Stance on Environmental Education

At TEL, we believe that if all personnel share a similar knowledge about the environment, and if we can raise that environmental awareness, each person can promote more effective activities in his or her own work in order to reduce environmental impacts. We include environmental education as a key topic in our training program for new employees, and we also have special programs for directors, management personnel, and internal auditors.

Environmental Education at Office Facilities

During fiscal 2001 we started a common environmental education program targeting all personnel at six office facilities, including sales, administrative employees, field engineers, part-time cafeteria employees, and temporary cleaning employees. The trainers were mostly personnel from the regional EHS committees. Teaching materials consisted of original texts developed by a working group made up of representatives from each region. During fiscal 2001, about 2,500 employees participated in the program.

Number of Certified Environmental Education Trainers and Training Frequency at Office Facilities

Location	Number of trainers	Frequency
Fuchu	47	24
Akasaka	24	21
Osaka	6	13
Yokohama	4	5
Sapporo	3	9
Narita	1	5
Total	85	77



Certificate for completion of the environmental education trainer's program



Environmental education lecture



A group discussion (Osaka Branch office)

Environmental Education at Manufacturing Plants

At manufacturing plants, we consider various scenarios in order to prevent accidents that might pose major environmental threats, and we implement programs through environmental education and training to ensure that accidents do not occur. When new employees or workers join the company, we provide education so that they can help achieve the local environmental objectives and targets. We also make it mandatory for certain workers (those whose work involves important environmental dimensions) to have education, training and legally recognized certification for each registered facility or process. In addition, when building new facilities or undergoing renovations, and when starting to use new chemical substances, we hold meetings to explain MSDS information and the use of protective equipment. We also conduct routine emergency-response trainings.



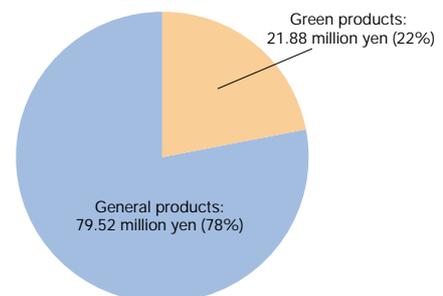
Training in the use of silane gas (a flammable gas used in the manufacture of semiconductors)

TOPICS

Green Purchasing

We are promoting green purchasing with our Green Procurement Guidelines, which were created in January 2001 and distributed to suppliers. We define "green products" as products with designs that take into account the issues of resource conservation and natural resource protection, environment, health and safety, and energy conservation. Supplies and office materials for TEL are purchased through Tokyo Electron Logistics Ltd., making it possible to determine accurately the total amount of supplies and materials purchased. In fiscal 2001, 22% of all our purchases were green products. All copy paper, business cards, company brochures and catalogs are made of recycled paper, and this environmental report, too, is made using 100% recycled paper.

Green Purchasing by TEL



Environmental Accounting

We are accurately determining the costs and benefits of environmental activities and using this knowledge to better manage the company.

Stance on Environmental Accounting

Environmental accounting is a management tool that helps to determine the costs and benefits of a company's environmental activities. At TEL we have introduced an environmental accounting system to determine quantitatively the costs of the environmental aspects of our business, and we are using this information to guide corporate activities.

Fiscal 2001 is the third year since the introduction of the environmental accounting system, and we have made greater efforts this year to improve the accuracy of information about investments and environmental activity expenses, as compared to fiscal 1999 (a trial year) and fiscal 2000 (when we worked to expand the range of data collected). Our aim for future years is to make our environmental activities sustainable.

Our environmental accounting complies with the Environmental Accounting Guidelines (2002 Edition) and Environmental Accounting Guidebook from Japan's Ministry of the Environment.

Environmental Preservation Costs

The costs of environmental preservation (investments and expenses) for fiscal 2001 can be seen in the table below.

Data was collected for TEL facilities in Japan. Depreciation on investments in facilities is calculated as an expense beginning with the investments made in fiscal 1999.

In the environmental accounting for fiscal 2000, the "upstream/downstream costs" primarily covered office facilities, and only a portion of products were covered under research and development costs. As a result, a complete assessment was not possible during that year. For fiscal 2001 however, we attempted to include all facilities in Japan in the calculations, as well as all environmental costs and cost categories. As a result of this more comprehensive approach, the research and development costs calculated for fiscal 2001 grew considerably, to 1.985 billion yen.

TEL's Environmental Preservation Costs in Fiscal 2001

Locations covered: All TEL facilities in Japan (Sapporo, Tohoku, Miyagi, Akasaka, Fuchu, Yokohama, Sagami, Yamanashi [Hosaka, Fujii], Osaka, Saga, Kumamoto, Koshi, Ozu)
 Period covered: April 1, 2001 to March 31, 2002

Units: Million yen

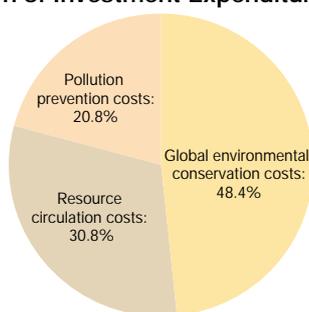
Classifications of Environmental Costs	Details of main initiatives (facilities, supplies, leases, depreciation, maintenance, etc.)	Investment amount	Expense amount	
1. Business area cost		91.4	774.1	
Itemization	1.1 Pollution prevention costs	Air pollution, water pollution, soil contamination, etc.	19.0	126.1
	1.2 Global environmental costs	Climate change prevention, ozone layer depletion prevention, etc.	44.2	67.6
	1.3 Resource circulation costs	Efficient use of resources, waste reduction, etc.	28.1	580.3
2. Upstream/downstream costs	Green purchasing, green procurement, etc.	0.0	72.6	
3. Management activity costs	Environmental education, monitoring and measuring environmental impacts, etc.	0.0	411.0	
4. Research and development costs	Product R&D, etc.	0.0	1,985.0	
5. Social activity costs	Planting trees and vegetation, supporting local environmental activities, information provision, etc.	0.0	42.9	
6. Environmental damage costs	Repairing damage to the natural environment, etc.	0.0	0.0	
7. Other activities	other	0.0	0.0	
Total		91.4	3,285.8	

Major activities

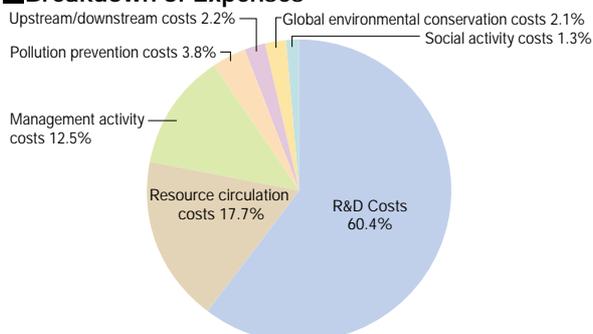
Below are several examples of the TEL's major activities.

Business area costs	
Itemization	① Pollution prevention costs Installation of abatement equipment, wastewater neutralization equipment maintenance expenses, upgrades to prevent oil spills, etc.
	② Global environmental costs Installation of inverters for lighting, installation of timers to control lighting and air conditioning, installation of equipment for removing chlorofluorocarbons, etc.
	③ Resource circulation costs Maintenance of organic waste disposal equipment, expenses involved in reducing and disposing of waste, recycling of liquid wastes, etc.
Upstream/downstream costs	
Hybrid car lease and maintenance costs, use of kenaf paper cups, costs of converting to recycled paper, purchase of environmentally-friendly products, etc.	
Management activity costs	
Environmental monitoring expenses for air/water pollution, soil contamination, etc., costs for preparing environmental education materials, personnel costs for environmental education, etc.	
Research and development costs	
Research and development for reducing environmental impacts, etc.	
Social activity costs	
Planting of trees and vegetation, etc.	

Breakdown of Investment Expenditures



Breakdown of Expenses



Effects of Environmental Preservation Activities

The results of calculations of economic effects relating to environmental preservation activities are shown in the table below.

We consider fiscal 2001 to be a trial for efforts to determine the effects and benefits of environment preservation activities. The economic effects of these activities were calculated for four of the TEL Group plants in Japan: Tohoku, Miyagi, Yamanashi (Hosaka and Fujii) and Saga.

Concerning categories of environmental accounting, this report covers only the economic effects of environment preservation activities. For the environmental effects based on physical quantities, please refer to the explanation of the Eco-Factory (pages 13 to 18 of this report).

TEL's Economic Effects of Environmental Preservation Activities

Locations covered: Four locations of TEL in Japan (Tohoku, Miyagi, Yamanashi [Hosaka, Fujii] and Saga)
Period Covered: April 1, 2001 to March 31, 2002
Units: Million yen

Category	Description	Amount
Cost reduction	Reduction of power consumed (power savings from stopping boiler operation during summer and scheduled stoppages)	70.2
	Reduction of water consumed	3.2
	Reduction of paper consumed	13.3
	Reduction of chemicals used in recovery of pure water, reduction in the use of heavy oil, reduction in the use of liquid nitrogen	17.5
	Reduction in the amount of disposed waste	5.4
	Cost reductions from other effects	1.5
Cost reduction		111.3
Total cost reduction	Sales of recycled (salvaged) materials	0.5
Total effect		111.8

Reduction of power consumed

For the effective utilization of management resources, it is also important to quantify improvements in environmental performance and to determine their costs and effects. In the future, we aim to improve the accuracy of our calculations of the economic effects of environmental preservation initiatives.

Health and Safety

Health and safety form the very foundation of work practices, and are driving forces for the betterment of society.

We treat health and safety as top priorities in our corporate activities.

Stance on Health and Safety

Aware that the health and safety of everyone connected to TEL (including employees and customers) should always come first, in November 1998 we established the TEL Group Safety & Health Credo. In addition, to further fulfill our social responsibilities as a corporation that aims to be a globally excellent company, and aware that safety, health and the environment are vital issues, in December 1999 we added a section entitled "Safety, Health and the Environment" to our Management Philosophy

●The TEL Group Safety & Health Credo

Corporate directors and employees have the responsibility to act with consideration for health and safety in mind at all times when performing their work. Specifically, this means that profits and deadlines should never be prioritized in such a way as to compromise the safety of human life, or the level of safety of facilities and equipment (sold to customers, or used within the company).

●Summary of Safety and Health from Our Management Philosophy

Directors and employees must give top priority to health and safety and be well aware that health and safety at work are prerequisites for the betterment of society. In addition, they have the duty to ascertain problem areas relating to health and safety in the course of business activities, and actively and continuously make further efforts to improve safety and advance health issues.

TOPICS

Activities at the Yamanashi Plant

The awareness that "It is you who protects your own health" is extremely important in terms of maintaining health. However, equally important are institutional efforts for maintaining health in the workplace, where we spend more than one third of each day.

The Yamanashi Plant is developing concrete policies in order to advance further activities that maintain and improve both mental and physical health. At present, we are creating the platform for those activities.

Initiatives to Improve Safety

In order to improve safety and prevent accidents, we are actively and continuously carrying out various initiatives, including studies, analysis and preventative measures. Our approach to improve safety involves the cooperation of external third-party organizations to conduct studies and analysis of both human and equipment-related factors, and then taking measures to prevent accidents.

①Human Factors

In cooperation with the Nippon Human Factor Institute, headed by Dr. Isao Kuroda, we are carrying out studies and analysis in order to prevent the recurrence of accidents caused by human factors. We are focusing on the backgrounds and common factors of accidents and zeroing-in on software-related problems, such as deficiencies in procedural manuals, hardware-related problems, including the failure to wear protective equipment, and problems related to the passage of time. In addition, we are looking at the effects of potential problems related to human relations, such as employees interactions with supervisors and colleagues, with a focus on people involved in incidents.

The TEL Group is not simply implementing measures that arise from isolated cases, but is developing preventative safety measures centered on the major potential common factors, with a focus on people.

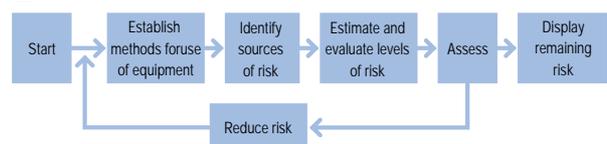
②Equipment-related Factors

Through cooperation with Sato R&D, headed by engineer Kunihito Sato, we are conducting studies and analysis of risk assessment in order to prevent accidents that arise from mechanical factors. Through this work, we have identified common risk factors, making it possible to eliminate the most serious risks. In order to eliminate the sources of the largest predictable risks, we are applying safety measures to equipment-side operations.

To reduce equipment-related risks, we consider implementing measures in the following order: (1) improving fundamental conditions for safety; (2) maintaining and protecting safety; and, (3) providing information about proper equipment use.

Using the ISO 13849 international equipment safety standards of risk evaluation, all accidents that have occurred in TEL would be classified in risk category "1," which is the lowest risk level.

■Risk Assessment Procedures at TEL



Stance on Safety Education

We are conducting safety education based on the principle of "providing necessary education to people who need it". All personnel who work inside and outside the company, including those at companies that TEL collaborates with, acquire basic knowledge when they join the company about safety policies and MSDS information, health maintenance, blood contamination, etc.

Employees who work in factories of TEL and its customers receive not only basic training, but also acquire basic knowledge about working in high places and enclosed spaces, the handling of chemical substances, and the prevention of electrical risks. These represent an approach to risk assessment* that is one step beyond simply predicting risks. In addition, refresher courses are conducted to maintain high levels of awareness and knowledge.

Details of TEL Safety Education

Education Program Name	Participants	Outline
Basic Safety Training	All employees	Employees acquire basic knowledge about TEL's safety principles, safety laws, work safety procedures, and basic health maintenance information. A refresher course is required within three years, to provide up-to-date information about new safety rules.
Advanced Safety Training	Workers at TEL Group and customer plants	Training includes risk assessment methods and safe habits for each type of work. Practical training is done using actual safety gear for workers and safety equipment. The training is valid for one year; a refresher course is required within one year to provide up-to-date information about new safety rules.
Safety Training for Employees who Visit and Work Outside Japan	TEL engineers sent outside Japan	Employees learn about the safety laws and regulations and work rules that apply when engineers are sent from Japan to work at TEL customer plants outside Japan.
Safety Training for Employees Stationed at Specific Customers' Plants	Employees working at customers' plants	Special safety training is carried out, as necessary, before employees are sent to work at plants run by TEL Group customers.
Equipment-Specific Safety Training	Engineers for each type of equipment	Safety training for engineers on each specific type of equipment (TEL products)

Occupational Health Management for VDT* Work

We are complying with the Guidelines for Occupational Health Management relating to VDT Work, released by Japan's Ministry of Health, Labour and Welfare in April 2002. We plan to establish systems guided by each region's health and safety committee in order to correctly determine the health conditions of employees and conduct proper health management at the earliest possible stages. At Tokyo Electron Sapporo Ltd., even before the guidelines were introduced, all employees were undergoing proper annual VDT health checkups.

Risk assessment: Identifying dangerous conditions and unsafe activities that could lead to accidents; following risk assessment, measures are then taken to prevent accidents.
 VDT (Visual or Video Display Terminals): Equipment consisting of output devices, such as flat panel displays that show information, combined with input devices, including keyboards.

TOPICS

TEL Receives Intel's SCQI Award

Tokyo Electron Limited was awarded Intel's Supplier Continuous Quality Improvement (SCQI) Award in fiscal 2001, for the second consecutive year. This is the highest award of distinction given to suppliers that strive for excellence in providing products and services.

One of the many factors considered for the award was safety, including continuous safety leadership, achievement of zero accidents in fiscal 2000 and 2001, guidance given to other suppliers, and safety inspections by top management.



SCQI Award ceremony

Emergency First-Aid Training

All employees in TEL receive emergency first-aid training organized by each region's health and safety committee.

In addition, personnel who work in the clean rooms are required to take advanced safety training classes, and get special education for accidents caused by electricity. The use of electricity involves the risk of electric shock. The severity of injury from electric shock is generally much greater than from other occupational hazards, and in some cases it is fatal. It is critical to administer artificial respiration and cardiac massage promptly in order to prevent various functional impairments of the person affected. Depending on the situation at the actual scene of an incident, quick responses from colleagues who are present can greatly increase the chances of saving a victim's life.



Scene from emergency first-aid training

Societal Contributions

Based on our principle of respect for humanity, we strive to preserve the environment and contribute to society, in cooperation with governments and local communities.

Stance on Societal Contributions

At the core of TEL's business is the respect of humanity that has been part of the corporate philosophy since the company was established. The Tokyo Electron Group Credo and Principles on Environmental Preservation state, "TEL actively participates in environmental protection activities practiced by our customers, suppliers and communities." Each company and facility in TEL undertakes a variety of activities to preserve the environment and contribute to society, while building relationships of trust with governments and local communities. In the future, we would like to advance further in this along with customers and society direction along with customers and society. As we expand our activities as a part of our corporate mission.

Sponsorship for the Mount Fuji Restoration Campaign

TEL took up the challenge of helping to preserve the environment of Mount Fuji by becoming a sponsor of the "Live with Mount Fuji for a Week" event organized by the Mainichi Shimbun newspaper. This event was held as a part of the "Mount Fuji Restoration Campaign," which aims to restore the natural conditions of this mountain, a symbol of Japan's spirit and culture. A variety of events were held, including concerts and lectures, and the profits were used to purchase and install bio-toilets that use cedar chips in an effort to help preserve the environment and beauty of Mount Fuji.

Assistance for Rescue Operations

TEL donated approximately \$250,000 in emergency relief funds to the American Red Cross for victims of the terrorist attacks that occurred in New York on September 11, 2001. In addition, employees and families of our American subsidiaries donated a total of \$26,570 to the American Red Cross and the United Way September 11th Fund, and Tokyo Electron America, Inc. made a matching donation. In total, TEL donated more than \$300,000 for relief efforts. Few companies headquartered outside the United States made donations on this scale, and the American Red Cross sent a letter of appreciation to TEL headquarters. Through such donations, we hope that the hardships faced by the victims can be reduced, even if only in a small way.



Letter of Appreciation from the American Red Cross

TOPICS

Tokyo Electron America's Societal Contributions

Support for Nature Protection

As a part of its support for environmental protection activities, Tokyo Electron America, Inc. (TEA) became a sponsor of a permanent research and educational display at the Lady Bird Johnson Wildflower Center. For the past twenty years, the Center has been introducing people to the beauty and richness of the natural world and conveying the message of the need to preserve wild plants and ecosystems.

In addition, employees of TEA participated in Wildflower Walk 2002, organized by the Center. Donations collected are used for environmental education and restoration of natural landscapes.



Energy Green Choice Champion

TEA, Inc. registered for the Energy Green Choice program of Austin Energy, a local power utility in Texas. As a "Green Choice Champion," TEA has become a pioneer in purchasing clean and renewable energy.

In the autumn of 2001, TEA made an agreement to purchase 100% of the electricity it uses from renewable energy sources. This was a first for any high tech company in Austin. Each year over the next 10 years, the company will purchase about 6.5 million kWh of electricity generated from wind power, solar power, and methane gas generated from landfills. This is equivalent to the electrical consumption of about 550 households.



Certified as an Energy Green Choice Champion

Societal Contributions of Our Major Plants in Japan

At each plant, a variety of activities are being conducted through close ties with the local community.

● Tokyo Electron Limited, Fuchu Technology Center

- Blood-donation drive in cooperation with the Japanese Red Cross Society
- Donations of used postage stamps to the Fuchu Volunteer Center (to raise funds for facilities at a home for the aged)
- Cooperation with and donations for the Fuchu City Welfare Society
- Support for the Accident Prevention Campaign organized by Asahi Photo News
- Participation in outdoor activities for the National Traffic Safety Campaign
- Support for the First Joint Concert of Fuchu Citizens and the Tokyo Fire Department Band, organized by the Fuchu Fire Station



Sponsorship for the Fire Department's Joint Concert

● Tokyo Electron AT Limited, Yamanashi Plant (two facilities)

- Participation in model project to prevent illegal dumping
- Neighborhood beautification in the Fujii and Hosaka areas
- Environment and Safety Award from the Labour Standards Inspection Office
- Summer work-study programs for local students
- Factory tours for local students
- Support and cooperation for local events and celebrations

- Blood-donation drive in cooperation with the Japanese Red Cross Society
- Donations and collections (public welfare organizations, Akaihane Community Chest charity campaigns, welfare societies, fire brigades, and sports associations)



Environment and Safety Award from the Labour Standards Inspection Office

● Tokyo Electron Tohoku Limited, Tohoku Plant

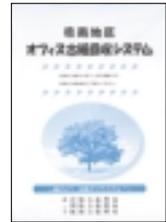
- Participation in the Iwate Prefecture South Region Resource Recycling System Project, aiming for zero emissions at the regional level
- Participation in the Green Campaign of the Esashi Industrial Park Occupant Committee
- Awareness campaign to stop unnecessary idling of vehicle engines
- Factory study and tour programs for technical college and high school students
- Blood-donation drive in cooperation with the Japanese Red Cross Society
- Other activities include donations to the Esashi City Welfare Society and implementation of traffic safety activities

TOPICS

Participating in Paper Recycling System Design—the Tohoku Plant

In the southern region of Iwate Prefecture, local governments (regional business promotion bureaus) are playing a pivotal role in tackling the issue of paper recycling. They have created a committee to study resource-recycling systems with the participation of paper manufacturers, waste treatment businesses, and other local corporations. Tokyo Electron Tohoku Limited, Tohoku Plant participated in the paper recycling system sub-committee and cooperated to help develop a paper recycling system.

During fiscal 2001, the company carried out a trial paper recycling initiative for three months during a test of the system, and helped to identify problem areas. This project started full-scale operations in fiscal 2002.



Pamphlet promoting recycling of office paper

● Tokyo Electron Kyushu Limited, Kumamoto and Koshi Plants

- Garbage clean-ups and beautification in areas around the plants during Environment Month in June each year
- Blood-donation drive in cooperation with the Japanese Red Cross Society
- Cooperation in local events
- Cooperation and donations to Earth Week Kumamoto, which organizes No Car Day and symposiums to protect the global environment
- Cooperation with Akaihane Community Chest charity campaigns



Clean-up activities

● Tokyo Electron Kyushu Limited, Saga Plant

- Clean-ups and weed removal in public parks near the plant
- Promotion of campaign to stop unnecessary idling of vehicle engines
- Blood-donation drive in cooperation with the Japanese Red Cross Society
- Donations of used postage stamps and telephone cards



Eco-Office Letter of Commendation



Eco Office Certificate

The Saga Plant has been actively working to promote recycling and reduce the amount of garbage produced, and since 1998 has been recognized as an Eco Office by Tosu City. The plant undergoes regular inspections and aims to maintain this certification.

Environmental Communication

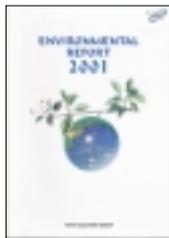
We believe that efforts to spread the word about our Credo and Principles on Environmental Preservation and the status of our environmental initiatives will add further impetus to environmental activities.

Stance on Environmental Communication, Publishing of Environmental Reports

TEL is actively working to promote health and safety and minimize the environmental impacts arising from its business activities. In order to further boost the effectiveness of future activities, it is essential that everyone involved in the companies' activities disseminate and share information to the greatest extent possible and work toward better communication. At TEL, we have been striving to provide information by publishing environmental reports since the year 2000.



Environmental Report 2000



Environmental Report 2001

Information by Internet

Anyone can access our environmental reports via TEL website. We also plan to release up-to-date information via the Internet about environmental accounting.



http://www.tel.co.jp/index_e.html

SEMI Akira Inoue EHS Award

Every year in December, Semiconductor Equipment and Materials International (SEMI), a global industry association, awards The Akira Inoue Award for outstanding achievement in environmental, health and safety in the semiconductor industry. It goes to the person or team in the semiconductor industry that has made the greatest contribution worldwide to the advancement of environment, health and safety during the year. This award was created to commemorate the late president of TEL, Akira Inoue, who worked actively to promote environmental, health- and safety-related activities throughout the industry. The first award was presented in 2000 to Pasquale Pistorio, the President and Chief Executive Officer of STMicroelectronics, a joint Italian-French semiconductor manufacturer. He worked tirelessly for years to convince corporate management to improve EHS principles and practices around the world. In 2001, Craig R. Barrett, President and Chief Executive Officer of Intel Corporation, received the award.

Product and Environment Seminar for International SEMATECH

International SEMATECH is an industry association of device manufacturers that have business activities in the United States, Europe, Korea and Taiwan. It conducts many activities in the area of environment, health and safety, and has considerable influence on manufacturers. TEL has introduced the life-cycle assessment (LCA) approach in its operations, analyzed the environmental dimensions of products, and is linking this knowledge to environmental strategies. We presented a well-received seminar on products and environmental strategies in August 2001 for International SEMATECH, and plan to offer the association a seminar on the LCA approach in 2003.

EHS Seminars in Taiwan

In November 2001, we offered the 2001 TEL Seminar on Environment, Health and Safety in Hsin-Chu for our Taiwanese customers, in particular for the personnel in charge of EHS issues. TEL makes health and safety a top priority, not only for our own employees, but also for our customers.

In-House Community News Magazine and Publication of the EHS Times

In order to promote higher awareness and more action on EHS issues, we carried a series of articles, entitled "Welcome to EHS," in our in-house community news magazine. In the articles, staff of the TEL Environment, Health and Safety Center covered key topics, such as environmental preservation activities and environmental reporting, safety education, and the importance of reporting accidents. In addition, the Center prints the EHS Times every two months. Besides introducing the discussions of the EHS Committee in understandable terms, the publication also runs a column carrying exchanges of opinion on EHS topics.



Environmental series in the in-house community news magazine AEOLUS



EHS Times

Site Report: Yamanashi Regional Office

Here we will introduce examples of initiatives at one particular plant. This time we report on the activities of the Yamanashi Plant, comprised of the Fujii area, which primarily manufactures products, and the Hosaka area, which primarily conducts research and development for semiconductor processes.



Fujii area

Hosaka area

Environmental Initiatives

The Yamanashi Plant has two dimensions, the production and assembly of products, and the research and development of semiconductor processes. The Process Technology Center at the Hosaka area, which is representative of such facilities in the group, conducts research and development related to next-generation semiconductor processes, and supports the making of products that help reduce the environmental impact

of the semiconductor manufacturers. However, because research and development require copious amounts of electricity and water, the environmental impact is large compared to our other business sites.

Taking the opportunity presented during ISO 14001 certification in May 1998, the Yamanashi Plant started to tackle environmental activities with the participation of all employees.

Environmental Management Activities in 2001

● EHS Management System

During fiscal 2001, we launched full-scale operation of the EHS Management System, which combines the environmental dimension with worker health and safety. We are improving operation of the system by correcting deficiencies identified during audits, such as training-related problems that arose when new staff were hired due to increased production.

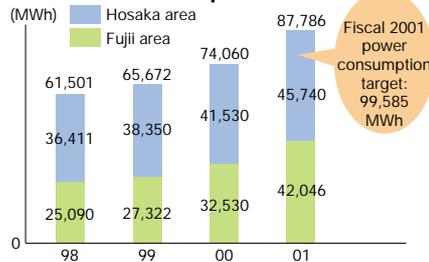
● Waste

We are trying to separate and recycle wastes thoroughly, but because of daily 24-hour operations of the Hosaka facility clean room in fiscal 2001, the amounts of discharged substances such as hydrofluoric acid, waste acid and waste alkali have increased.

● Power Consumption

In fiscal 2001, we succeeded in reducing our electrical consumption to less than 90 percent of our target for the period. This was due to systematic efforts to shut down facilities during long vacations, and a reduction in production due to the global downturn in the information technology industry. The net power consumption increased, however, compared to fiscal 2000, due to a new building operation at the Fujii area, and the shift to 24-hour-a-day operation for Clean Room #6 at the Hosaka area. It is, therefore, important for us to continue efforts for energy conservation in the future.

■ Power Consumption Trends



● Chemical Substances

We are managing chemicals according to TEL's Chemical Management Regulations. When new chemicals are to be introduced, an audit is conducted in advance using TEL's Chemical Substance Auditing Guidelines. In fiscal 2001, we carried out voluntary operation of the PRTR system, and organized a hearing to study the topic of reducing our releases of pollutants.

■ Use of PRTR Target Substances (fiscal 2001)

Substance	Amount used	Comments
Ethylene Glycol	1,246 kg	No releases to air, water or soil
Copper salts (water-soluble, except complex salts)	191 kg	No releases to air, water or soil
Hydrogen fluoride and its water-soluble salts	1,335 kg	Mostly disposed as waste
Manganese and related compounds	Under review	More than 100 kg

Note: At the Yamanashi plant, chemical substances for which the amount used is 100 kg or less are not subject to controls and reporting under the PRTR Law.

Future Issues

In the future, we intend to use the fiscal 2001 quantitative data on waste emissions and energy consumption to expand our efforts to reduce net amounts. Since this plant has been designated as an energy management factory, we will work to develop a new energy management sys-

tem that takes its guidance from the Ministry of Economy, Trade and Industry. In addition, a future safety goal will be to improve the control of chemical substances and the management of environment-related facilities.

As we continue to reduce consump-

tion of electricity, gas and water to levels below those of fiscal 2001, we will also strive to cut the amounts of greenhouse gases and ozone depleting substances released, and work to make products that can help to reduce the environmental impacts of our customers.