Plant and Office Initiatives for the Environment – Preventing Global Warming

TEL has reduced its overall energy consumption and is doing its share to prevent further global warming.

Reducing Energy Consumption

Many of TEL's manufacturing plants are classified as Type 1 Designated Energy Management Factories under Japan's Law concerning the Rational Use of Energy and are promoting energy conservation in accordance with the provisions of the law.

Each plant is working actively with the program and has established goals for saving energy used by lighting and office machines, for managing air conditioner temperature settings, and so on. They have also instituted full machine shutdowns during three-day weekends and task efficiency drives to achieve further energy savings.

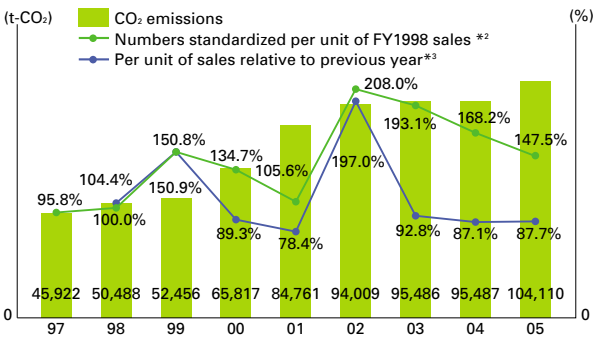
Koshi plant reduces the volume of air circulation in its clean rooms and reduces lighting in logistics areas during the night and days off. It has been praised for its approaches, and in February 2005 was presented with a commendation for its efforts in conserving energy by the Kyushu Bureau of Economy, Trade and Industry (Electrical Division).

Kyushu Bureau of Economy, Trade and Industry Director's Prize

Energy Consumption

The utilization rate of TEL's manufacturing facilities rose this year, following the rise the previous year. The total amount of energy consumed rose with the increase in our production, but the energy per unit of sales was reduced. The energy use per unit of sales (a measure in which the benchmark 1997 level is equal to 100%) met the target reduction of 1% from the previous year. Efforts for conserving energy will be strengthened under the impetus of the Kyoto Protocol.

Total Energy Consumption (CO_2 Equivalent*1)



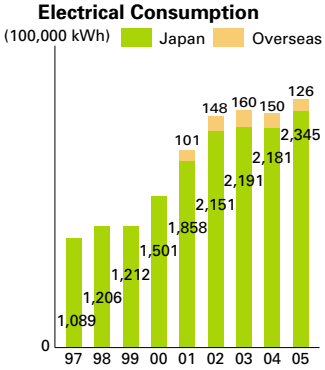
*1 For CO_2 equivalent, see the Ministry of the Environment's "Environmental Activity Evaluation Program."

*2 Unit of sales = energy consumption/sales (FY 1998 = 100%)

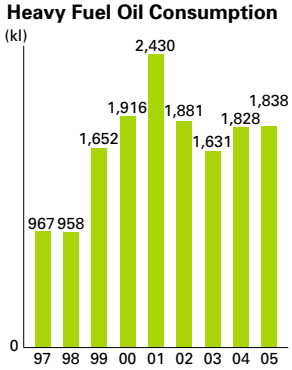
*3 Year-on-year ratio = current year emissions per unit of sales/previous year emission per unit of sales

(Plants in Japan and overseas)

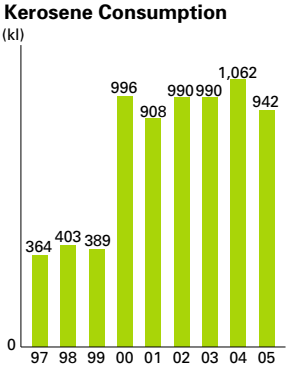
Electrical Consumption



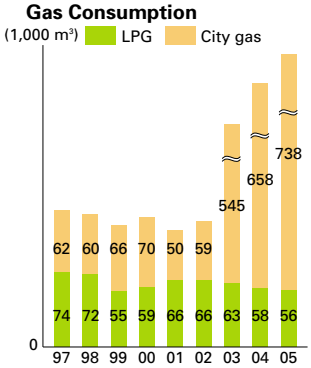
Heavy Fuel Oil Consumption



Kerosene Consumption



Gas Consumption

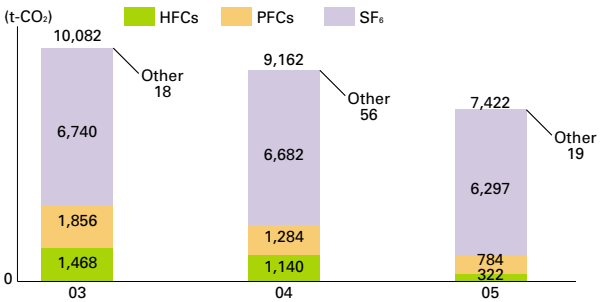


(Plants in Japan and overseas)

Reducing Use of Greenhouse Gases

TEL uses perfluorocarbons (PFCs) and SF_6 (sulfur hexafluoride), which are greenhouse gases, in dry etching (erosion of a substance without liquid chemicals), washing and other processes during process development and process evaluation. We also use HFCs, which are CFC substitutes, for cleaning the chambers of our assessment equipment and other tasks. Our total usage of greenhouse gases in FY 2005 was about 7,500 tons (CO_2 equivalent). We will continue to manage and reduce our usage of these gases.

Greenhouse Gas Consumption



(Plants in Japan)

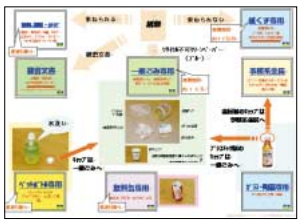
Plant and Office Initiatives for the Environment – Waste Reduction and Recycling

TEL is working to decrease its volume of wastes and improve recycling efficiency in order to decrease its environmental burden.

Approach to Waste Reduction and Recycling

The Group is working seriously to reduce wastes, following its policy to generate as few wastes as possible, to recycle as many of those we produce as possible, and to dispose of the non-recyclable remains properly. There are a dwindling number of waste disposal sites, so landfill fees are rising fast. Reducing wastes is an integral part of reducing costs.

Specifically, TEL has programs to separate wastes, to find new recycling services, to manage the certification of members of the waste disposal industry, to verify contractors' disposal methods regularly, and to modify its own production processes to eliminate waste. TEL also puts up easy-to-understand displays in all its plants showing how to separate wastes. It has created and is using training materials in Yamanashi plant which show how to separate wastes such as paper, PET bottles, drink cans, bottles, etc.



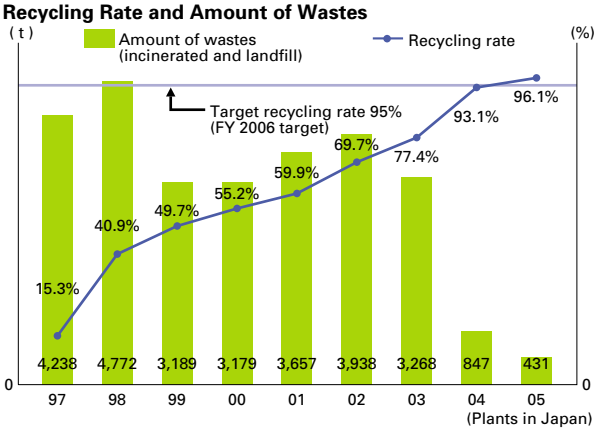
Waste separation procedures information

Total Waste and Recycling Rate

The amount of TEL waste reaching landfills and our recycling rate are summarized in the table below. We have raised our recycling rate every year through steady efforts for more effective use of resources.

We have had a program promoting a goal of an overall TEL group average recycling rate of 95% by FY 2006; in FY 2005 we reached a rate of 96.1%, a year ahead of schedule. In the future, we will emphasize reducing the total amount of wastes, including those we are able to recycle.

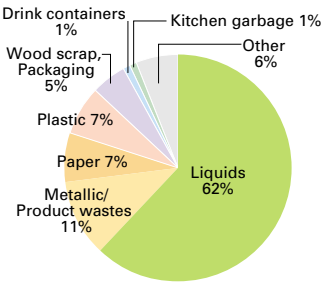
Recycling Rate and Amount of Wastes



Breakdown of Wastes

Liquid chemicals are the largest portion of the wastes generated by TEL. Chemicals are used in the development and evaluation of products and then disposed of. Currently, nearly all of the liquid wastes we generate and dispose of externally are recycled. Some of our facilities have also implemented equipment internally for processing waste fluids, and these are working to reduce wastes through internal processing of their liquid chemicals.

Breakdown of Volume of Wastes



Zero Emissions

TEL defines facilities where fewer than 2% of wastes are incinerated or sent to a landfill as "zero-emissions facilities." The entire Group participates in zero-emissions activities. Following up on the successes of the previous year, zero-emission status was achieved by all five facilities of Tokyo Electron AT (Hosaka, Fujii, Miyagi, Tohoku and Amagasaki) in FY 2005. Facilities besides manufacturing plants are also working to reach zero-emissions in the future.

TOPICS

Wastes separated into 31 groups for recycling at Tohoku Plant

At Tohoku Plant, wastes from the manufacturing processes and offices are separated into 31 types for recycling. For example, sludge is left after liquids are neutralized; the sludge is then recycled for use as raw material for production of stainless steel. As another example, cable and controllers were once excluded from recycling because they consisted of a mix of plastic and steel, but now they can be recycled. Methods have been established for re-using every one of our waste materials.

Examples of Recycled Wastes

Material type (Steel · Stainless steel Aluminum · Drink containers)	→	Material type (Steel · Stainless steel Aluminum · Drink containers)
Copy paper Vending machine cups	→	Toilet paper
Cardboard boxes	→	Cardboard boxes
Sludge from dining room waste	→	Organic fertilizer
Toner cartridges	→	Toner cartridges
Waste fluids	→	Release into river after neutralization Feedstock for stainless steel from neutralization sludge

Plant and Office Initiatives for the Environment – Resource Conservation

TEL is encouraging reductions in the amount of resources used.

Our Approach to Resource Conservation

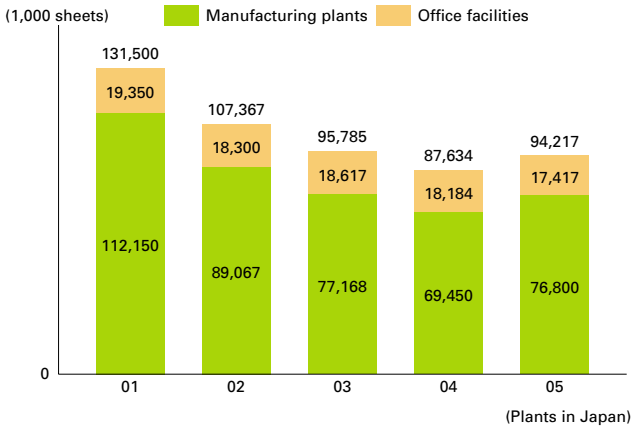
We are keeping our use of resources to the lowest possible volume with a procurement program that emphasizes respect for the environment. We are reducing the amount of copy paper and stationery purchased and used, buying eco-friendly products and collaborating with manufacturers to recover products that have reached the end of their useful life.

Efforts to Reduce Paper Usage

TEL is addressing the issue of reducing usage of paper. For example, now we photocopy on both sides of paper, encourage reduced-size copies and have developed digitalized forms for many kinds of announcements and messages. We are taking other steps to preserve forest resources as well; for example, we use recycled paper for all but special uses, and paper cups made from kenaf, a non-forest product. In spite of those efforts, however, our use of copy paper in FY 2005 rose by about 10% (6,580,000 sheets) over the previous year. The main reasons for this were the increases in sales and shipments. We will continue reviewing the usage of copy paper in our facilities, to consolidate records and forms, and ultimately, to reduce our paper consumption.

Poster urging our employees to use less paper

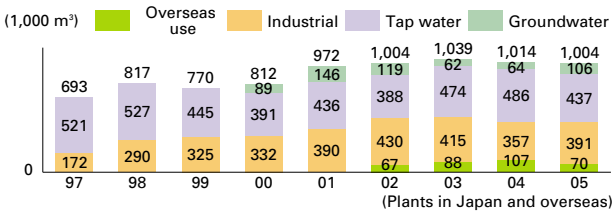
Copy Paper Consumption



Reducing Water Consumption

TEL's manufacturing plants are conducting a wide spectrum of activities to reduce the volume of water they consume. We are taking other measures to conserve water with systems to recirculate cooling water and other fluids in all our manufacturing processes, and automatic faucets in washrooms and other sanitation facilities to eliminate water wasted by users' forgetting to turn it off or other carelessness. TEL has been praised for its initiatives. Koshi plant was awarded a prize for its conservation of water in the Higo area (see "Communication with Stakeholders," p. 30).

Water Consumption



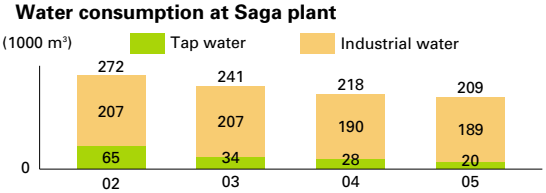
TOPICS

Reducing water consumption at Saga plant

Saga plant is making great efforts to reduce water consumption during development, evaluation and inspections of products. About 90% of its water consumption is for industrial purposes. It produces the highly pure water it needs for product inspections from the regular industrial water supply. Used water is recovered and subjected to reverse osmosis to re-purify it for re-use; this volume is about 300 tons/day. The plant is pursuing other water conservation projects, including recirculation of cooling water in manufacturing processes, replacing water-cooled vacuum pumps with air-cooled models, and comprehensive conservation of water for personal use.

Reverse osmosis system for recovering water

Water consumption at Saga plant



Plant and Office Initiatives for the Environment – Management of Chemicals

TEL is working to prevent environmental pollution before it happens by expanding its chemical substance management.

Our Approach to Chemical Substance Management

The main use of chemicals at TEL occurs in two stages: in the evaluation of our products' performance during development and in inspection and evaluation during manufacture. During the development stage, chemicals are occasionally used which have never been used before, or in ways in which they have never been used. Before such new uses, the system is built to verify the new substances or methods. The risks to the environment and to industrial safety are assessed so that the necessary measures can be taken before the actual applications begin. TEL is changing over to chemicals which pose as little danger or toxicity as possible for use in inspection and evaluation during manufacture.

TEL's Response to the PRTR* Law

TEL is continuing its programs to reinforce management of all chemicals in accordance with the law and has achieved a better grasp of the amounts which it handles and which it sends out for disposal. Hydrogen fluoride, one of the substances designated in the PRTR Law which we use in high volume, is generally used for cleaning test wafers. Used hydrogen fluoride is removed by specialist contractors or handled appropriately within the company. In the same way, we also use large amounts of ethylene glycol as a heat-transfer medium for cooling water, but nearly all the ethylene glycol is recycled after use. We will continue to exercise the appropriate level of risk management of chemicals. Since the amounts we use are increasing, we will also be looking for ways to reduce our consumption.

* PRTR (Pollutant Release and Transfer Register): A framework for controlling chemical substances that may be hazardous to ecosystems and human health. It involves determining, compiling and reporting on the amounts of chemicals used, released into the environment and contained in waste transferred off-site.

Amounts of PRTR Law Class 1 Chemicals (kg)

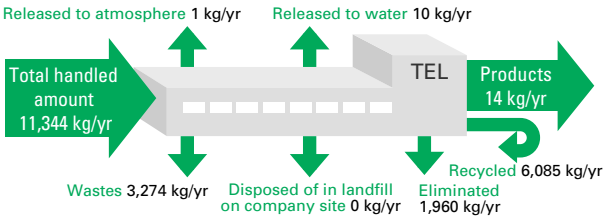
No. in the law	Name of Class 1 Designated Chemical	FY 2002	FY 2003	FY 2004	FY 2005
1	Water-soluble zinc compounds	0	50	0	70
3	Acrylic acid	0	0	0	20
16	2-Aminoethanol	520	430	0	475
43	Ethylene glycol	1,500	4,000	9,144	6,353
44	Ethylene glycol monomethyl ether	120	0	0	0
63	Xylene	180	0	0	0
78	Diphenylmethane-4,4'-diisocyanate	0	0	0	14
172	N,N-dimethylformamide	290	450	309	131
207	Water-soluble copper salts (except complex salts)	190	120	0	110
227	Toluene	620	0	0	5
260	Pyrocatechol	0	30	0	3
283	Hydrogen fluoride and its water-soluble salts	2,470	3,690	4,558	3,553
311	Manganese and its compounds	0	900	450	610
Sum		5,890	9,670	14,461	11,344

* Quantities were found in tons in FY 2002, 2003 (Plants in Japan)

Emissions of Class 1 Designated Chemicals under PRTR Law (kg)

Emission points	Amount
Released	11
Transferred	3,274
Consumed	14
Eliminated	1,960
Recycled	6,085
Sum	11,344

Balance of Materials Designated under PRTR Law



PCB Storage

TEL reports how much polychlorinated biphenyl (PCB) we are storing and how much we have disposed of to the local government every year, in accordance with the Law Concerning Special Measures against PCB Waste. The PCB-containing equipment TEL is currently storing consists of two transformers and four condensers; they are in very secure storage.

Topics

Management of chemicals in Yamanashi plant

TEL has a program which tracks chemical substances before use, during use and after disposal at our Yamanashi plant (Fujii and Hosaka facilities). We carry out a risk assessment before we commit to incorporating a new substance in our processes. We have established our own list of 16 banned substances (nine organic chlorine solvents and seven heavy metals). An MSDS* is posted on location while any chemical is in use, and tasks are restricted to approved personnel when designated substances are being used. The destinations are fully informed of the contents of materials to be disposed of so that they can be properly treated. The Hosaka plant monitors the fluorine concentration of its waste water and has a complete system to maintain it within legal levels.

* MSDS (Material Safety Data Sheet) : A form with warnings about the toxicity of a chemical material and instructions on how to handle it safely.

Management of fluorine concentration in waste water