Plant and Office Initiatives for the Environment

The Tokyo Electron Group's plants and offices are implementing measures to save resources and prevent global warming, and these are introduced in this section.

Preventing Global Warming

Reducing Energy Consumption

Our Group is committed to reducing energy use in compliance with the provisions of the Energy Saving Act. Its sites are actively reducing their energy consumption by setting specific energy-saving targets for lighting, OA machines, and air conditioners through appropriate temperature control.

For example, Tohoku Plant introduced inverters for the air supply and exhaust fans used for air conditioning. Plant employees had manually adjusted the fans, but after installing inverters, it became possible to operate the electric motors more efficiently, resulting in an annual reduction in the power consumption of approximately 200,000 kWh and a reduction in CO_2 emissions of approximately 100 tons.

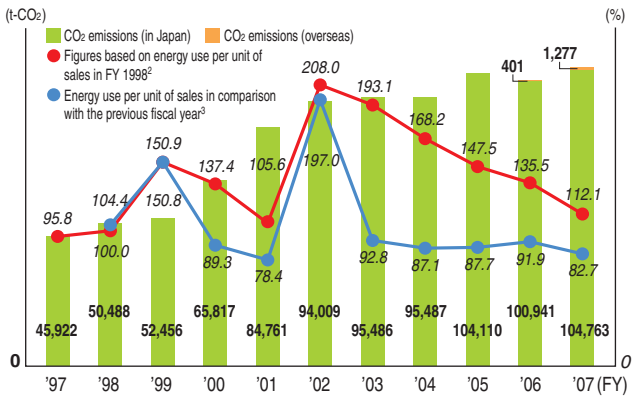
▲ Installation of inverters

Energy Consumption

In FY 2007, as in FY 2006, our total energy use increased due to an increase in production quantities. However, we were able to reduce per-unit energy use and achieved the target of reducing the energy use per unit sales by 1% compared with the previous fiscal year. We will continue to improve on our energy-saving measures.

In FY 2007, in calculating CO_2 emissions, we converted power consumption into CO_2 emissions using the emission coefficients specified by each electric power company and started to identify the use of gas by our overseas sites.

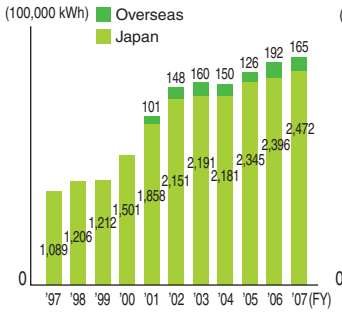
Total Energy Consumption (in CO_2 Equivalent[1])



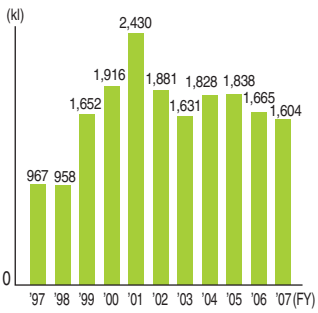
1. Calculated based on the guidelines for the calculation of greenhouse gas emissions from business entities published by Japan's Ministry of the Environment
2. Energy use per unit sales in FY 1998 = 100%
3. Percentage of per-unit energy consumption in the current fiscal year to per-unit energy consumption in the previous fiscal year

(Plants in Japan and overseas)

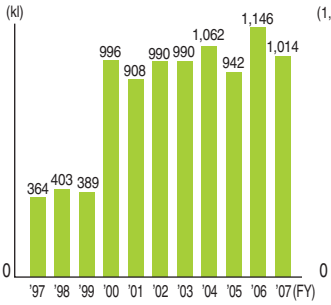
Electricity Consumption



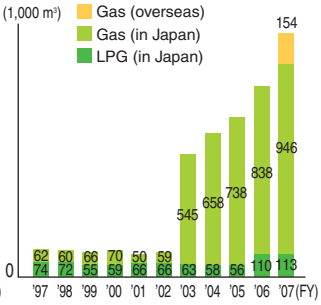
Heavy Oil Consumption



Kerosene Consumption



Gas Consumption



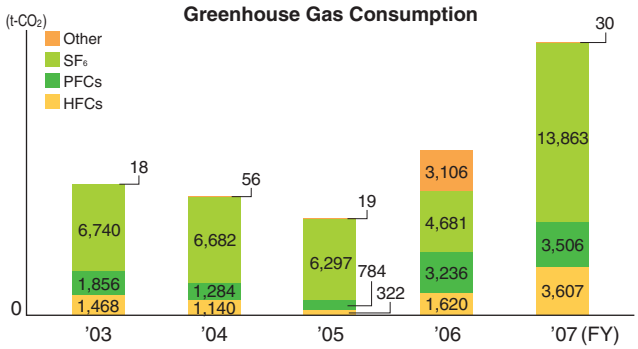
(Plants in Japan and overseas)

Reducing the Use of Greenhouse Gases other than CO_2

We use perfluorocarbons (PFCs) and sulfur hexfluoride (SF_6), which are greenhouse gases, in dry etching, cleaning and other processes during process development and process evaluation.

In FY 2007, we used 21,006 metric tons of greenhouse gases (as CO_2 equivalent), which is substantially larger than the amount used in FY 2006 (12,643 metric tons). This was partially because the volume of SF_6 used for product development and evaluation greatly increased. We will examine replacing these greenhouse gases with alternatives.

Greenhouse Gas Consumption



(Plants in Japan)

Resource Conservation

Our Approach to Resource Conservation

We are minimizing our use of resources based on the concept of green procurement, which means to give preference to environment-conscious products in purchasing. Specifically, we are reducing the use and purchase of copy paper and stationery, and when we purchase them we choose environment-conscious products. At our offices, we have replaced printer toner cartridges with cartridges made from recycled materials and cooperate with the manufacturers in the recovery of end-of-life cartridges. At some offices, using the intranet, we have established a system under which stationery no longer being used by a certain department can be reused by another department.

Efforts to Reduce the Use of Paper

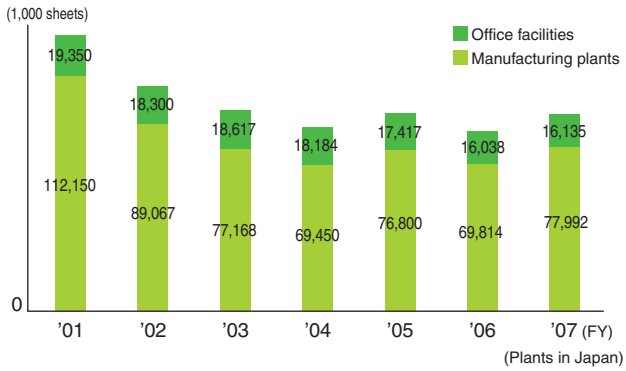
The entire Group is committed to reducing the use of paper. We have been encouraging duplex copying, copying at reduced size, and digitization of information and documents circulated among employees, but in FY 2007, the total use of copy paper by the Group increased by approximately 10% over the FY 2006 amount, that is, by approximately 8.3 million sheets. This is partially because of an increase in production quantities and business processing. Also, we have been encouraging the use of recycled paper with the exception of some special-purpose papers, and introduced paper cups made from kenaf, which is an alternative to wood pulp.

We will continue to reduce the use of copy paper in our business operations by minimizing the number of different types of records and slips, thereby further reducing the total paper use.

Efforts to Reduce the Use of Water

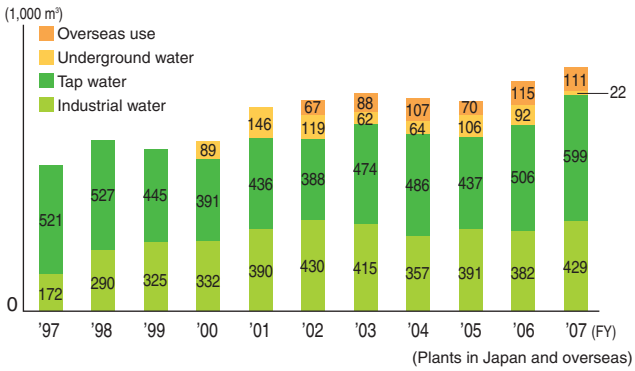
At our manufacturing plants, various measures are being taken to reduce the use of water. For example, the plants have installed a water recirculating system to reuse cooling water. They have also installed automatic faucets in restrooms and other facilities. These touch-free automatic faucets prevent wastage of water by automatically shutting off the supply when the hands are removed from the sensor range.

Copy Paper Consumption



(Plants in Japan)

Water Consumption



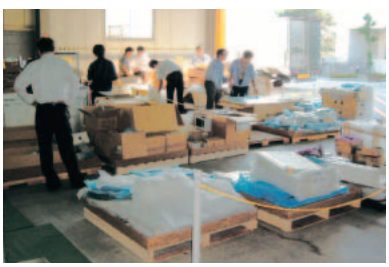
(Plants in Japan and overseas)

TOPICS

Waste Materials Exhibit

At the Yamanashi plant, materials discarded as defective property and waste materials are gathered prior to waste processing so that employees can see the actual materials. The objective is to foster an awareness among personnel about the causes of waste materials and teach them measures to help reduce them. More than 100 employees attended the initial exhibit, which encouraged employees to ask the question, "Why?" Seeing the actual materials first-hand substantially raised awareness and encouraged employees to address the causes of the problem. These types of activities will be continued in the future with the intention of achieving a balance between environmental preservation and business operations.

Scene from waste material exhibit ▶



Plant and Office Initiatives for the Environment

Waste Reduction and Recycling

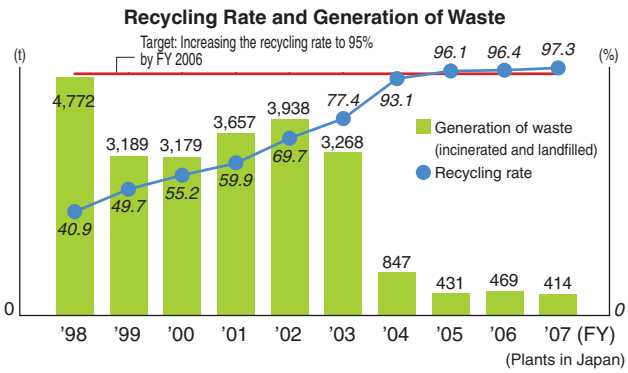
Our Approach to Waste Reduction and Recycling

The Tokyo Electron Group is making concerted efforts to reduce the generation of waste based on the policy of minimizing waste reduction, recycling generated waste as much as possible, and properly disposing of unrecyclable waste. In recent years, due to the lack of waste landfill sites, landfill costs have surged. This pushes us to reduce the generation of waste to make cost savings.

Specifically, we sort waste for recovery, change our manufacturing processes to generate no waste, use more recycling companies, check the qualifications of companies that we commission to dispose of waste, and regularly review the final disposal situation.

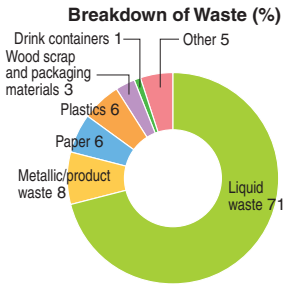
Waste Generation and Recycling Rate

In FY 1999, the Tokyo Electron Group set a target of increasing the entire Group's average recycling rate to 95% by FY 2006. As a result of making efforts to attain this target, we achieved a recycling rate of 96.4% in FY 2006 and 97.3% in FY 2007. In the future, we will focus on reducing our overall generation of waste, including recyclable waste.



Breakdown of Waste

Liquid waste from chemicals used in the product development and evaluation processes accounts for the largest percentage of waste generated by the Group. At present, most liquid waste is recycled. Also, some plants have installed equipment to treat liquid waste inside their premises. (See the TOPICS below.)



Zero Emissions

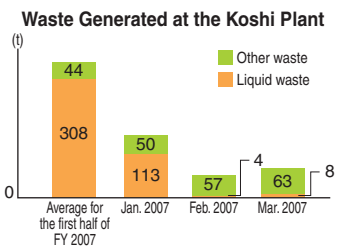
We define plants where less than 2% of waste generated by the plant is incinerated or landfilled as "zero emission plants" and encourage all plants to achieve zero emissions. In FY 2007, all the manufacturing plants excluding the Tohoku Plant achieved zero emissions consecutively from the previous fiscal year. Tohoku Plant was unfortunately not able to achieve zero emissions because its recycling rate dropped due to debris generated from repairs to floors. In the future, we will also achieve zero emissions at our office facilities.

TOPICS

New Liquid Waste Treatment Facility Constructed at the Koshi Plant

As shown in the "Breakdown of Waste" section, liquid waste accounts for a large percentage of the waste generated by the Tokyo Electron Group. In order to reduce the amount of liquid waste to be disposed of, we have been introducing liquid waste treatment facilities at our plants.

At the Koshi Plant, acid and alkali liquid waste generated from the product evaluation process used to first stored in tanks inside the plant and then carried outside the plant by a transportation company using tankers. After being transported outside, the liquid waste was then disposed of by an external company. In November 2006, however, a new liquid waste treatment facility was constructed within the premises of the Plant and started operation after a trial. Thanks to this facility, the amount of liquid waste carried outside the plant was reduced from approximately 300 metric tons per month to 10 metric tons per month, which resulted in a more than 70% reduction in the total waste generated from the plant. In addition, the environmental impact caused by the transportation of liquid waste from the plant to the outside could be decreased by approximately 70 t-CO_2 a year.



▲ Liquid waste treatment facility

Management of Chemical Substances

Our Approach to the Management of Chemical Substances

The Tokyo Electron Group uses chemical substances mainly in developing and manufacturing products. In developing products, we sometimes adopt new chemical substances that were not used before, or use chemical substances in a way that is different from the traditional usage. In these cases, we look closely at the development facilities and methods, assess the environmental and operational risks associated with the use of the substances, and implement necessary measures before actually using the substances. As for the chemical substances that we use in our manufacturing processes, we are replacing dangerous and harmful substances with safer ones.

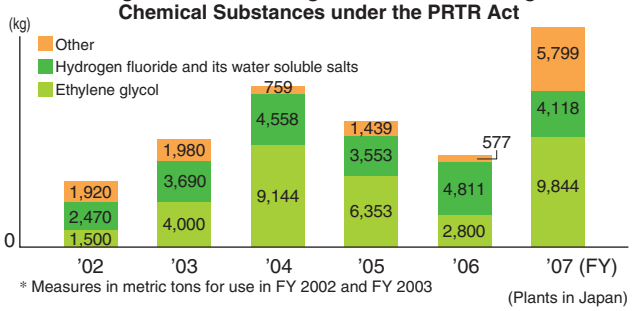
Compliance with the PRTR* Act

According to the provisions of the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act), we rigorously control the specific chemical substances regulated under the act and identify the use and emissions of these substances on a continuous basis. We use large amounts of hydrogen fluoride, which is one of the substances regulated under the PRTR Act, mainly for cleaning test wafers. The hydrogen fluoride waste is disposed of by an external company specializing in disposal or we dispose of it in the approved manner within our premises.

Yamanashi Plant uses ethylene glycol as a refrigerant for cooling water and the amount used increased substantially in FY 2007 due to the increased production of FPD manufacturing equipment. However, we recycle almost all the amount we use. We will continue to properly manage the risk associated with the use of chemical substances.

* PRTR stands for Pollutant Release and Transfer Register. Under the PRTR system, the use of chemical substances that may be hazardous to human health and the ecosystem, their release into the environment, and transfer (contained in waste) to the outside of the business premises are identified, tabulated, and announced.

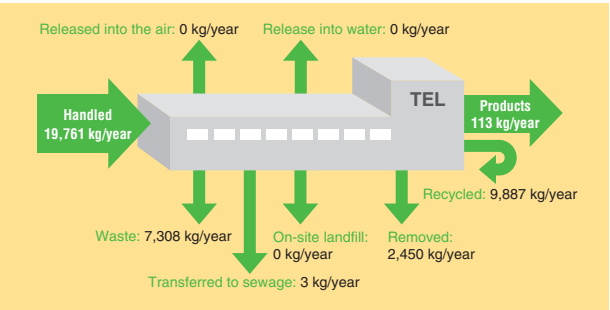
Handling of Substances Regulated as Class I Designated Chemical Substances under the PRTR Act



* Measures in metric tons for use in FY 2002 and FY 2003

(Plants in Japan)

Material Balance of Chemical Substances Regulated under the PRTR Act



PCB Storage

Based on the Law Concerning Special Measures against PCB Waste, we report on the storage and disposal of waste containing polychlorinated biphenyl (PCB) to the governor of the prefecture every year. The Tokyo Electron Group presently stores two waste transformers and four waste capacitors that contain PCB in a strict and secure manner.

TOPICS

Evacuation Drills for Employees Working in Clean Rooms

The Tokyo Electron Group uses special gasses and liquid chemicals to test its products during their development and evaluation processes by simulating the actual semiconductor manufacturing process. We evaluate our products using special chemical substances in a clean room, which is a special working environment, and employees working there need to evacuate promptly from the room in the event of a large earthquake or a fire.

At the Yamanashi Plant (Hosaka), drills to evacuate the clean room are conducted in preparation for contingencies. In a drill conducted in November 2006 in preparation for an earthquake, employees wearing clean suits evacuated from the clean room to the outdoors after the alarm was given. The number of employees who evacuated was checked by the department and notified to Headquarters. Through these practical evacuation drills, we share the experience of risks and identify problems to be prepared for an emergency at all times.

Evacuating the clean room ▶