Product-Related Initiatives for the Environment

Over its life cycle, semiconductor production equipment has the largest impact on the environment when it is in use. Accordingly, we are implementing measures to reduce the energy consumed by the equipment while in use in addition to measures to reduce the use of regulated chemical substances in the equipment.

Reducing the Total Environmental Impact of Products

Our Approach to Reducing the Environmental Impact of Our Products

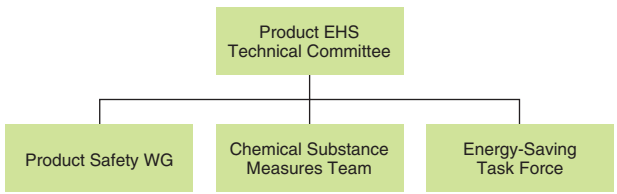
We believe it is extremely important to promote environment-conscious designs, as we have clearly stated in the revised Tokyo Electron Group Credo and Principles on Environmental Preservation. We give priority to the provision of energy-saving equipment and to reducing or finding substitutes for the regulated chemical substances contained in our products.

Organization for Reducing Environmental Impact

We have three units established under the Product EHS Technical Committee. The Product Safety Working Group is responsible for conducting activities to improve product safety. The Chemical Substance Measures Team is responsible for reducing and finding substitutes for regulated chemical substances contained in equipment parts and components. The Energy-Saving Task Force, which was founded in October 2005, is responsible for implementing measures to improve the energy efficiency of our products.

Recently, there are increasing expectations from various quarters for us to improve and continue our environmental, health, and safety (EHS) measures. Accordingly, it is becoming more and more important for us to design and develop products that incorporate EHS. In accordance with the globalization of our business, we also need to pay more attention to the legal regulations of each of the countries in which we do business. We will continue to promote “Design for EHS.”

Organizational Structure to Promote EHS Measures for Products



TOPICS

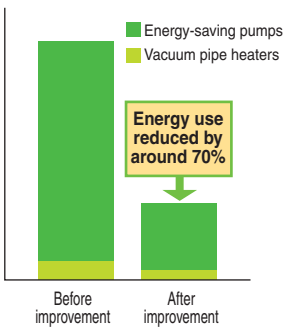
Modification to Existing Equipment to Reduce Energy Consumption

As was pointed out at the roundtable meeting with stakeholders held for our *Environmental and Social Report 2006*, the Tokyo Electron Group thinks it important to reduce the energy consumed by equipment purchased by our customers in the past and still in use. Although we are now developing, manufacturing, and delivering new products with more consideration given to conserving energy and resources, some of the products that we sold and delivered to customers in the past were not designed with the same consideration for the environment that is acceptable today.

To rectify this, the Tokyo Electron Group markets products which can be used to make improvements to existing equipment. For example, we provide various products designed to improve the environmental functions of the thermal processing system ALPHA (α)-8SE, including the following two products:

1. **Improving the heat insulating properties of the pipe heater**
   It is necessary to keep the inside temperature of some pipes used in the thermal processing system as high as 100 to 200 degrees centigrade to prevent substances adhering to the inside surface. The electricity consumed by the pipe heaters used to control the inside temperature is reduced by 40 to 50% by installing high-performance heat insulators around the heaters.
2. **Energy-saving pumps**
   Power consumption is reduced by approximately 70% by replacing conventional pumps with highly-efficient energy-saving pumps. Use of these products may result in an overall reduction in energy use by around 70%.

Effect of Energy-Saving Modifications



ALPHA (α)-8SE ▶

In addition, we provide products that help reduce the amount of heat discharged into the clean room by the water cooling mechanism, products that reduce the amount of nitrogen used, and products that improve the overall process quality and productivity.

CLEAN TRACK™ LITHIUS™ ▶

Preventing Global Warming

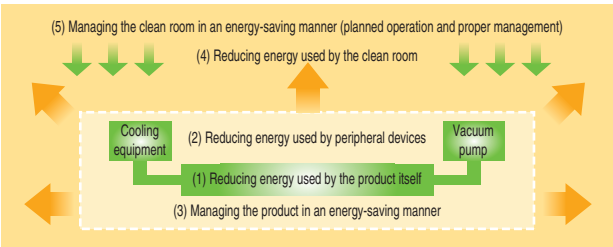
Energy-Saving Measures for Products

To reduce the energy that our products consume when they are used by our customers, we are examining measures to achieve the following five targets and will develop the necessary technologies: (1) reducing energy used by the product itself; (2) reducing energy used by peripheral devices; (3) managing the product in an energy-saving manner; (4) reducing energy used by the clean room; and (5) managing the clean room in an energy-saving manner (planned operation and proper management).

For energy-saving management of the clean room, we need to cooperate with customers and facility manufacturers. This close cooperation will allow us to make further efforts to reduce the energy consumed by our products while they are in use. In addition, we will identify how much energy our products and their supplementary devices (e.g. vacuum pumps and cooling equipment) consume in reference to the SEMI S23 standard*, including the consumption of electricity as well as the consumption of water, dry air, cooling water, and exhaust heat, which will be converted into electricity using appropriate energy coefficients.

* **SEMI S23:** *Guide for Conservation of Energy, Utilities, and Materials Used by Semiconductor Manufacturing Equipment* issued by SEMI

Measures to Save Energy



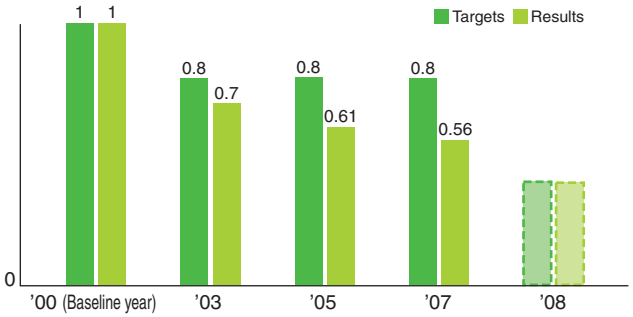
Energy-Saving Examples

Referring to SEMI S23, we calculated the total energy consumption, including the use of electricity, nitrogen, waste air, and pure water. These were then converted to give the overall power consumption, allowing us to calculate the energy consumed in producing a wafer per unit area. We set reduction targets for each product based on this energy consumption. The following describes two energy-saving efforts we made to achieve our targets.

Initiative for the Coater/Developer CLEAN TRACK™ LITHIUS™

For the coater/developer, we set a numerical target for reducing energy use per unit area of wafer compared to our Group's baseline year (FY 2000). In FY 2007, we implemented the following: we reduced the standby power consumption using an auto standby function, reduced the nitrogen gas purge volume; made appropriate adjustments to the exhaust flow, and optimized the use of cooling water. As a result, we achieved our numerical target (set at 0.8) with a value of 0.56. In FY 2008, we will continue our efforts to reduce the overall energy consumption, including further optimization in the use of cooling water. Based on this initiative, we will also reduce the energy consumed by our new product CLEAN TRACK™ LITHIUS Pro™.

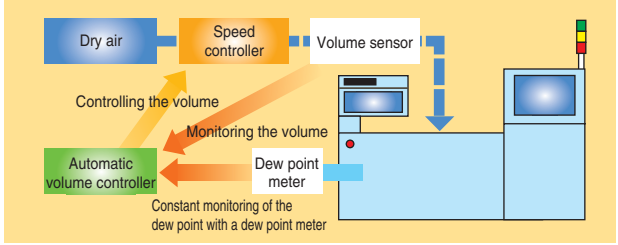
Energy Consumed Per Unit Area of Wafer (Comparison with FY 2000)



Initiative for the Test System Precio™

The test system (wafer prober) is used to carry out electrical tests on chips while they are on the wafer by contacting the semiconductors electrodes with probe needles. The system is equipped with heating and cooling functions to enable durability tests in an environment similar to the actual environment in which the semiconductors will be used. Dry air is used for heating and cooling and according to our calculation, the energy used to produce the dry air accounts for a large percentage of the overall energy used by the wafer prober. We focused on the energy used to produce the dry air and reduced its volume by up to 60% by the following method. We installed a dew point meter to monitor and adjust the volume of dry air used to regulate the temperature according to predefined specifications.

Reducing the Amount of Dry Air Used by the Wafer Prober (Image)



Product-Related Initiatives for the Environment

Management of Chemical Substances

Our Commitment to Reducing the Use of Regulated Chemical Substances in Products

Against the backdrop of growing concerns over the impact that harmful substances contained in parts and materials have on the environment and ecosystem, an increasing number of countries are regulating the use of these substances in automobiles and electrical products in recent years. The Tokyo Electron Group is making appropriate responses to these movements. For example, with regard to the RoHS Directive[1] that took effect in July 2006, we have made a written statement demonstrating that the semiconductor production equipment manufactured by our Group falls outside the scope of the Directive because they are large-scale stationary industrial tools, to which the Directive does not apply. We have already met all the requirements for China's RoHS[2], which came into force in March 2007.

In order to meet the regulatory requirements of relevant countries even before they are actually implemented, we established a Chemical Substance Measures Team, which comprises representatives from our manufacturing department. The team shares information and investigates the use of regulated chemical substances in our products and advises us when to replace products containing these substances with alternatives in cooperation with our suppliers. In FY 2007, we fixed the schedule to discontinue the use of six substances in our products that are regulated by the RoHS Directive. We are scheduled to start shipping products that do not contain any of these six substances in October 2008.

1. **RoHS:** Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment
2. **China's RoHS:** Officially called "Management Methods for the Prevention and Control of Pollution from Electronics Information Products"

Chemical Substances to be Reduced

First Priority

Cadmium	Pigments, stabilizers, and resins
Hexavalent chromium	Chrome plating
Lead	Solders, paints, electrical wire coating, and free-cutting metal
Mercury	Batteries and fluorescent lamps
PBBs	Resin parts
PBDEs	Resin parts

Second Priority

Substances designated as Level A substances in JIG* (We have already implemented measures for many of these substances.)

* Joint Industry Guide for Material Composition Declaration for Electronic Products (JIG) was prepared by Japanese, American, and European private trade associations and this Guide lists the chemical substances for which measures should be implemented. The Guide classifies the substances into Level A and Level B: 16 substances are listed as Level A substances, including cadmium, hexavalent chromium, lead, mercury, PBBs, and PBDEs, and more than 400 substances are listed as Level B substances.

Response to China's RoHS

China's RoHS, which was enforced in China on February 28, 2007, is intended to regulate the use of chemical substances in electronic information products sold in the Chinese market. The Tokyo Electron Group has already made the necessary responses to this regulation, which requires compliance with the following two rules.

1. Product Labeling

Products containing chemical substances regulated under China's RoHS must carry a label showing the period during which the product can be used in an environmentally safe manner. The Tokyo Electron Group usually sets this period at 25 years.

2. Disclosure of Information on the Use of Chemical Substances

Information on the use of products containing regulated chemical substances should be disclosed in the product's instruction manual and similar documents in the Chinese language. The Tokyo Electron Group complies with this rule.

System to Reduce the Use of Regulated Chemical Substances

The Tokyo Electron Group's Chemical Substance Measures Team is responsible for reducing the use of regulated chemical substances. The team comprises representatives from TEL's headquarters and its manufacturing subsidiaries. We share relevant information through this team and are asking our suppliers to cooperate with us in replacing parts and materials that contain regulated chemical substances with alternatives that do not contain them.

We have established a chemical substances management system based on the principle of not using, purchasing, or selling parts containing regulated chemical substances. This system is used to register and refer to information on the use of chemical substances in various parts. This system allows us to check whether parts to be used in our products contain regulated chemical substances or not and prevents the manufacture or shipment of products containing these substances. We have adopted the JGPSSI format for the system, which is a standardized industry format under the Japan Green Procurement Survey Standardization Initiative (JGPSSI).

Future Regulations on Chemical Substances

In Europe, the REACH[1] regulation, which mandates safety evaluations of almost all chemical substances sold in the market and registration of the relevant information, will be enforced and the use of PFOS[2] will also be regulated. Under these circumstances, companies will be increasingly required to fulfill their responsibilities as a manufacturer and follow the precautionary principle. To comply with these regulations, all the departments of the Tokyo Electron Group, from those engaged in product development and design, manufacturing, materials procurement, quality assurance, and environment and safety will make concerted efforts.

1. **REACH:** Registration, Evaluation, Authorization and Restriction of Chemicals
2. **Perfluorooctanesulfonic acid (PFOS)** is used as a water repellent and waterproof coating and in producing flame-resistant greases and oils.