

Construction of a New, Environmentally Friendly Cleaning Plant

The ULVAC Group audits its environmental facilities upon their opening in order to reduce their environmental loads and prevent environmental incidents.

Construction of a Cleaning Plant for Large FPDs in Suzhou, China

We are building a new cleaning plant in the Suzhou Industrial Park to provide cleaning services for large FPDs in China (scheduled for completion in December 2011 and to start cleaning operation in February 2012). Designed in accordance with the ULVAC Group's design, construction, and operation standards for chemical treatment plants*, this new plant will adopt the following new environmentally friendly cleaning methods: recycling of heat, water, and other resources generated from the operation of the plant's equipment as well as the use of new materials and technologies instead of the conventional chemicals.

Wastewater is to be collected by special chemical tanks and discharged in amounts below the statutory effluent limit by the new wastewater treatment equipment. The final

wastewater treatment tank is equipped with double monitoring sensors and automatic control valves to prevent the discharge of wastewater exceeding the limit from the plant.

At this new plant, with a total area of 4,000 square meters (which can be expanded as necessary), we will work to improve product quality, enhance productivity, and operational efficiency as well as promote cleaning line automation. The plant will offer full service to customers, including large equipment production, parts processing, technological development, process provisioning, and cleaning services. We hope this environmentally friendly plant will receive many orders.

*** Design, construction, and operation standards for chemical treatment plants:**
The ULVAC Group's standards intend to ensure that plants handling surface treatment and cleaning operations that use acids and alkali have environmentally-conscious designs and are safely built and operated with minimal environmental impact.



Cleaning Plant

Outline of the New Plant

- Location:** On the premises of ULVAC (Suzhou) Co., Ltd., No. 277 Suhong East Road, Suzhou Industrial Park, Suzhou City, Jiangsu Province
- Construction Schedule:** April 2011 start, December 2011 completion
- Building:** One-story plant with a total floor area of 4,000 m²

ULVAC (Shanghai) Trading Co., Ltd.

Sale and customer support for ULVAC products in China



ULVAC (Suzhou) Co., Ltd.

Production and sale of vacuum equipment, devices, and components in China



Cleaning Department, Suzhou Branch, ULVAC (Shanghai) Trading Co., Ltd.
Tang Jian-Ming, General Manager (center)
Zhou Ming-Hua, Deputy General Manager (left)
Wang Bin, Manager (right)

Targets of ULVAC environmental initiatives and FY2010 results

Initiative item	Environmental policy	Action item	ULVAC environmental initiative target	FY2010 results	Evaluation	FY2011 environmental initiative target
Environmental contribution through our products	To provide products that help save energy and resources and protect the environment	Distribution of products contributing to the environment/re-use of resources	Expanding sales of eco-friendly products	We actively participated in exhibitions and trade fairs and promoted our products. We installed photovoltaic quick-charging systems on Yakushima Island and other locations. We also installed quick-chargers in various locations, contributing to an approximately 20,000 kg annual reduction in CO ₂ emissions	○	Expanding sales of eco-friendly products
		Green procurement	Completing elimination of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE by July 2011	Some of the products of the Components Division and the Materials Division now comply with RoHS	△	Completing elimination of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE by July 2013
	To promote energy and resource savings and environmental protection in products (equipment and components)	Energy savings through production processes and products	Reducing energy consumption of products	We gathered data on our equipment's energy consumption while in use and examined how to reduce such consumption. We will apply our findings in our products	○	Reducing energy consumption of products
Environmental contribution at our plants and offices	To promote energy and resource savings and environmental protection in production processes	Improving efficiency in usage of target and process materials (gas)	Improving efficiency in usage of target and process materials (gas)	We improved efficiency in usage of various target materials and assessed our results with actual equipment and systems. We are investigating further efficiency improvements	○	Improving efficiency in usage of target and process materials (gas)
		Practicing the 3Rs	Recycling raw materials	We examined recycling of various target raw materials. For some target materials, we established a procedure from the solution to the recycling stage	○	Recycling raw materials
		Recycling and reduction of waste	Recycling and reduction of waste	We successfully improved the efficiency of waste recycling by reviewing the waste treatment method in the Chiba area. We lowered the landfill rate in the Chigasaki and Susono areas to below 3%	◎	Recycling and reduction of waste
		Resource savings	Improving yield of materials	We improved the yield of long MoTi products. We will reflect the higher yield by reducing costs	◎	Improving yield of materials
		Improvement of the plant and office environments	Reducing usage of harmful chemicals	We improved the safety of the specialty gas by strengthening usage management. Through proper use, we reduced wasteful use of such gas	○	Reducing usage of harmful chemicals
Energy savings	Reducing energy consumption	We upgraded the heat source equipment at the Institute of Semiconductor & Electronics Technologies, reducing energy consumption by approximately 20% in crude oil terms	◎			

◎ Target achieved ○ Target 70%+ achieved
△ Target 50%+ achieved × Target less than 50% achieved

Environmental performance of the ULVAC Group

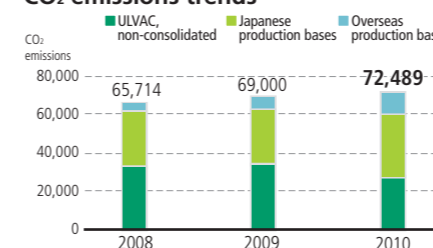
The ULVAC Group consists of about 60 domestic and overseas companies, each of which is committed to conserving energy and resources. We will continue to strive to use resources effectively and conduct our businesses in an environmentally friendly manner.

Towards more efficient use of energy

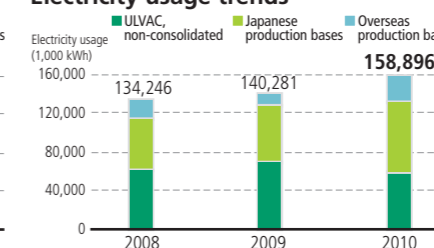
The ULVAC Group promotes energy conservation at its R&D and production sites. In FY2010, the group's overseas

energy use increased by 194% due to both steady production and the expanded scope of companies targeted for calculation. On the other hand, the group's domestic energy use dropped to 96.4% of the previous year's level thanks to stricter energy management. As overseas production is expected to continue to increase throughout FY2011, improving overseas energy use efficiency remains a challenge. We will continue our efforts to reduce energy use.

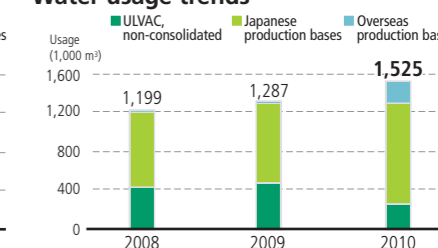
CO₂ emissions trends



Electricity usage trends



Water usage trends



Material balance (ULVAC Group)

INPUT			OUTPUT	
Electricity usage 158,896,000 kWh	Fuel usage ● Heavy oil: 1,178 KL ● Kerosene: 69 KL ● Light oil: 89 KL	Chemical substances (PRTR-listed) 275 t	CO₂ emissions 72,489t-CO ₂ Caused by use of electricity, gas, and fuel	
Gas usage ● PG: 130 t ● LNG: 746 t ● City gas: 1,939 t	Water usage 1,525,000 m ³	Packaging 1,168 t	Total waste emissions 7,586 t	Landfill rate 7.2%

* This data is based on individual data from major Japanese production bases (19 sites), overseas production bases (26), and R&D bases (4).
* Data for overseas production bases comes from 11 of the 26 such bases.
* Data for packaging is the total from 16 of the 44 sites.

Topics

Accolades for our contributions in reducing greenhouse gas emissions

Recipient of the first "Kanagawa Award for the Prevention of Global Warming"

ULVAC won the first "Kanagawa Award for the Prevention of Global Warming" in the Greenhouse Gas Reduction Technology Development Category for our development of a photovoltaic quick-charging system for electric vehicles. This award is given to enterprises, organizations, or individuals that have made excellent achievements toward greenhouse gas reduction. In this case, ULVAC developed the first photovoltaic quick-charging system in the prefecture and installed the system in Chigasaki's municipal parking area. The award is in recognition of our efforts to develop charging infrastructure for electric vehicles and promote the use of natural energy.

At the first awards ceremony, 10 companies received an award in the Greenhouse Gas Reduction Performance Category while 5 companies received an award in the Greenhouse Gas Reduction Technology Development Category. ULVAC entered the contest upon the recommendation of Chigasaki City and was the only winner among the 15 winners to be recommended by a public institution.



Director Yamamoto (left) receiving the award from the then governor of Kanagawa Prefecture

Saving electricity with renewable energy: solar and wind power

Developing a battery charging station for power-assisted bicycles

ULVAC developed and launched the Hybrid Cycle Pit, a battery charging system for power-assisted bicycles that integrates a small wind power generator, a solar power generator, and a battery charger.

The system's lithium-ion secondary battery makes it possible to offer 24-hour charging service using only clean energy (no commercial power supplies are necessary). The system can charge the batteries of up to 5 power-assisted bicycles at once, and as many as 10 bicycles per day. The electricity stored in the secondary

battery can also be used as emergency power.

The ULVAC Group will augment our product development efforts and business activities in order to realize a sustainable society using clean, renewable energy.



In July 2011, a ceremony to mark the opening of the Hybrid Cycle Pit was held in Chigasaki Park in Chigasaki City, Kanagawa

A distinguished natural heritage with a quick-charging station

Installing an electric vehicle quick-charging station with a power storage function on Yakushima Island, a World Natural Heritage Site

ULVAC installed an electric vehicle quick-charging station with a power storage function in the parking area of Kurio Beach in Yakushima Town, Kagoshima Prefecture. This system generates power using a combination of solar panels (5 kW) and a commercial power supply, storing the generated power in a lithium-ion battery. Its quick charger is capable of charging the batteries of electric vehicles to up to 80% of their full charge capacities in about 30 minutes.

This station can also be used as an emergency power system in the same manner as the battery charging station for power-assisted bicycles (above).

To accommodate foreign tourists to Yakushima

Island, the charging service is made available in four languages (English, Chinese, Korean, and Japanese). ULVAC hopes that this charging station will help reduce CO₂ emissions and conserve the island's rich natural environment.



Electric vehicle quick-charging station with a power storage function



The monitor offers a choice of four languages

Chemical Substance Management

The ULVAC Group is committed to properly managing the various chemical substances used in the research and development as well as production processes of products and parts.

Elimination of RoHS-Listed Substances

The ULVAC Group worked hard to eliminate RoHS-listed substances from our procurement items and products with an initial deadline in 2006 and a second deadline in 2008, but we were unable to fully achieve elimination before these deadlines. The third deadline was set to June 2011.

By this time, we were able to raise the RoHS conformity rate of our 1.6 million procurement items to 99.8%.

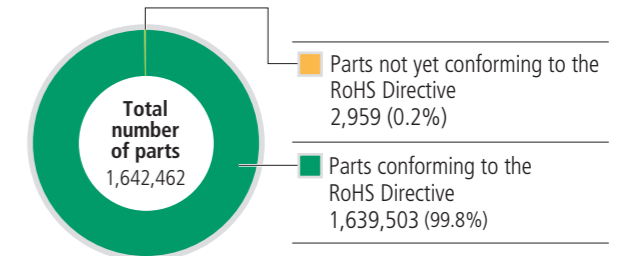
As for the number of products, however, 2,731 products (approximately 30%) conform to the RoHS Directive.

The remaining 70% of non-conforming products include many large devices composed of thousands or tens of thousands of parts. In some such non-conforming

devices, conforming parts account for 99.8% of all parts.

Unfortunately, we have yet to fully eliminate RoHS-listed substances, but we will review our targets and continue elimination efforts with our goal of passing a healthy environment to the next generation.

Promoting conformity to RoHS of registered parts



Toward Proper Management of Chemical Substances

The Tsukuba Institute for Super Materials researches and develops new materials, functions, and better deposition processes. Consequently, it handles many kinds of chemical substances as well as nanomaterials, such as carbon nanotubes.

To reduce the risks involved in the use and storage of chemical substances, the institute collects MSDS* and other hazard and toxicity information as well as safety information, assessing the risks of each research and development effort in advance. The March 11 Great East Japan Earthquake was sufficiently large to destroy the welds and wires of the tip-resistant fittings of the chemical storage cabinets, but the cabinets did not fall, thereby protecting the stored chemical substances. I believe this is evidence that the personnel responsible for

chemical substance management at each laboratory are storing chemical substances using the most suitable method for each kind.



The earthquake damaged the earthquake-resistant fittings of this chemical storage cabinet.



Takahiro Nakayama, Tsukuba Institute for Super Materials

*MSDS: Abbreviation of material safety data sheet. Such sheets contain information necessary for safely handling chemical substances.