

Environmental Initiatives of Our Suppliers

The Tokyo Electron Group collaborates with its suppliers to reduce the environmental impact of its products.

The following describes initiatives taken by two of our suppliers to reduce their environmental impact.

Environmental Initiatives of Our Suppliers—Fujikin Incorporated

Fujikin Incorporated

Fujikin Incorporated and its affiliates are leading manufacturers of valves and flow control systems. Since its foundation in 1930, Fujikin has offered products that are used in a wide range of applications, such as aerospace equipment, ocean development, chemical processes and nuclear power plants. Fujikin was granted the Manufacturers' Award for four straight years in recognition of its technological excellence. The Tokyo Electron Group sources valves, connectors and flow control systems from Fujikin.



Precision valves for semiconductor manufacturing*

Fujikin provides outstanding service through its technical support units located at our manufacturing sites as well as customer service centers worldwide.

* In semiconductor/FPD production equipment, valves are used to control trace gases precisely and their contamination with even minute particles can lead to extensive problems. Fujikin inspects every valve to detect any leakage or particle contamination in order to maintain the high quality of its products.



Super clean room

Environmental Management System

Fujikin operates with an environmental philosophy of, "preserve our beautiful planet, be kind to people, cherish our products, be strict about our work, be passionate about ourselves, and enjoy our lives." It also promotes group-wide environmental activities through its Environmental Security, and Safety Committees, at its headquarters, offices and plants. Fujikin's Tsukuba Research Plant has been ISO 14001 certified since September 2002. Fujikin also implements programs to encourage its employees to pass the Certification Test for Environmental Specialists (Eco Test), become certified as high pressure gas managers, and obtain other environmental qualifications.

Environmental Activities

Fujikin is engaged in a variety of environmental activities, including:

(1) Development of the 1.125" IGS (Integrated Gas System)

The IGS has become the most commonly used system for gas flow units for semiconductor/FPD production equipment. While standard IGS-based gas flow units are lighter and smaller than previous models using gas panels, Fujikin's newly developed 1.125" IGS has attained an even lighter weight and



Comparison between 1.5" IGS and 1.125" IGS

more compact design. Compared with the existing 1.5" IGS, this new model achieves a reduction of about 30% in installation space and weight. When combined with Fujikin's FCS-P (Flow Control System-P) it enables an even smaller equipment footprint.



Fujikin's FCS-P

(2) Going Green in Business Activities

Fujikin is working to reduce its electricity use and waste generation. It has installed energy-efficient FFU (fine filter unit) motors in its clean rooms, with the new motors requiring 20% less electricity than those previously used. Fujikin also achieves higher energy and process efficiencies by streamlining the layout of work spaces. In addition, redundant packaging has been eliminated to reduce resource consumption.

(3) Sturgeon Farming

Fujikin started raising sturgeon in 1989 as part of its efforts to launch a biotechnology business. In 1992, Fujikin became the first private sector company to artificially cultivate this endangered fish. Sturgeon farming has become a successful commercial business, and Fujikin now sells caviar on the market. Fujikin's sturgeon farming facility



Sturgeon at Fujikin's aquaculture facility

uses 800 tons of water daily, which is continuously recycled using a water circulation system.



Fujikin technology can be found wherever something is flowing

Yoshihiro Tsuchiya

Chairman of the Environmental Security, and Safety Practice Committee
Tsukuba Research Plant
Fujikin Incorporated

The manufacturing process is the most energy-intensive stage in the life of our products. We therefore give high priority to improving the efficiency of our clean rooms. To meet customer expectations, we strive to offer products manufactured in an environmentally friendly manner, at affordable prices and with a short delivery period.

Environmental Initiatives of Our Suppliers—Newtech Corporation

Newtech Corporation

Newtech Corporation (Newtech) has maintained a working relationship with the Tokyo Electron Group since their foundation in 1976. TEL sources assembly (Assy*) components (harnesses, boards, units, etc.) for our etch systems, single wafer deposition systems, test systems, and FPD plasma etch/ash systems manufactured in our Yamanashi Plant from Newtech, which is based in Kai City, Yamanashi Prefecture. The company procures parts, manufactures and inspects such Assy components for our Group.



Manufacturing process at Newtech

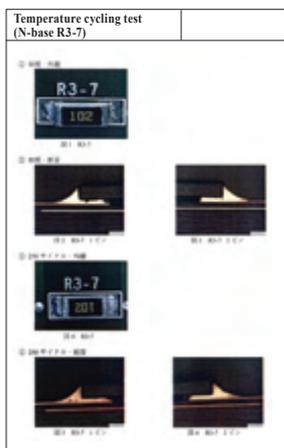
*Assy: Abbreviation of assembly. Assy components refer to both individual parts and multi-component parts.

Compliance with the RoHS Directive

To ensure its products are RoHS compliant, Newtech began reviewing about 3,500 components (which are grouped by Assy type for this purpose) in the second half of 2006 using a check list prepared by the Japan Green Procurement Survey Standardization Initiative (JGPSSI). If supplier data was not available, Newtech used Tokyo Electron Group's analytical equipment to confirm the status. In order to achieve lead-free products, Newtech sought support for the assessment of 1000-cycle reliability tests from external parties, such as an industrial technology center operated by the local prefectural government. The company also confirmed patent status with regard to this technology to manufacture lead-free components. Additionally, Newtech installed additional facilities and appointed full-time staff responsible for RoHS compliance.

As a result, the RoHS-related survey was nearly complete as of June 2008. Applicable products are labeled with yellow stickers and stored in a separate location.

Dedicated storage cabinet for RoHS-compliant components



Temperature cycling test

Environmental Activities

Newtech takes various steps for the preservation of the environment. For instance, the company began using different washing equipment to address concerns over the use of CFCs, which have an adverse effect on the ozone layer. Newtech also strives to reduce use of resources. For example, recycling cable caps and packaging plastic bags in cooperation with companies in charge of the next process of the supply chain. This improvement was based on an idea from an employee offered through an internal program set up to solicit employees' insights and ideas for improvement. Electricity consumption is checked hourly and the temperature setting of air conditioners is adjusted accordingly. Other major activities include neighborhood cleanups and fundraising campaigns for disaster relief.



Recyclable cable caps

Quality Improvement Activities

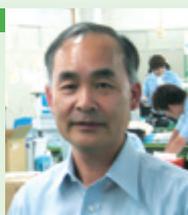
Newtech's quality control goal is to prevent any nonconforming products from being made available externally. In fiscal year 2008, the company achieved this goal with regard to etch systems supplied to our Group, attributed by higher usage of jigs* in assembly and inspection processes, as well as rigorous inspection and assessment of components by following a quality control process chart. The company also encourages its staff to take national-level technical skill tests. As a result, most factory workers at Newtech hold public qualifications, such as electronic circuit connection engineer certification and vocational training provider status.



Inspecting cables

Newtech also works to ensure all employees have regular physical exams, as they believe that their employees' well-being is an important element of quality production. The high quality of Newtech products underpinned by these efforts was recognized with an award from the Tokyo Electron Group.

*A jig is a device used to instruct and guide the locations of tools during manufacturing operations



Great agility and flexibility is our strength

Yoshihiro Hiraga

President & CEO
Newtech Corporation

The Tokyo Electron Group has been a client for more than 30 years. We will continue our efforts to meet the Group's environmental, quality, cost, delivery time and other requirements. While we have traditionally supplied TEL's Yamanashi Plant, we are currently gearing up to provide our products for the company's new Miyagi Plant as well.