

Zero Waste Emission (Waste Reduction Measures)

Zero emission of waste achieved by 13 Fujitsu sites a year ahead of schedule

The Fujitsu Group continues to implement positive measures to realize zero emission at the earliest possible date based on our "3R" (Reduce, Reuse, Recycle) policy targeting every kind of waste generated by our operations. Thanks to the efforts of individual employees acting on their own initiative, we achieved zero emission of all categories of waste, including waste generated by employee life functions (cafeteria kitchen waste and restroom sewage) at our 13 domestic sites by the end of March 2003, one year ahead of schedule. Two Group company sites in Japan also achieved zero emission in fiscal 2002.

Fujitsu Group: 13 Fujitsu sites/plants, 28 domestic affiliates (manufacturing), 19 overseas affiliates (manufacturing)

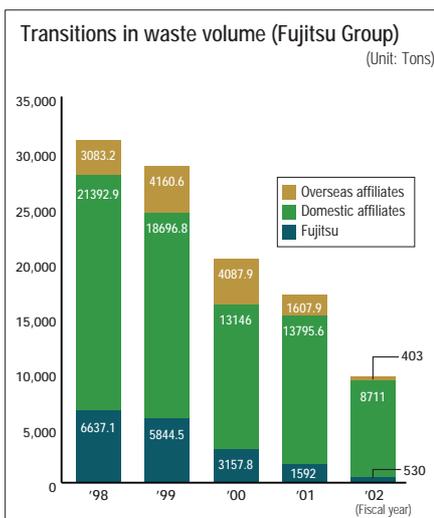
13 Fujitsu sites: Oyama Plant, Nasu Plant, Nagano Plant, Numazu Plant, Kumagaya Plant, Minami-Tama Plant, Akashi Plant, Mie Plant, Aizuwakamatsu Plant, Iwate Plant, Kawasaki Plant, Akiruno Technology Center, Fujitsu Laboratories (Atsugi Area)

Waste Reduction Result

We disposed of a total of 9,644 tons of waste in fiscal 2002, 69.0% less than in fiscal 1998. Of this total, waste disposed of by Fujitsu Japan in fiscal 2002 was 530 tons, down 66.7% from the previous fiscal year. We continue to make favorable progress in our waste reduction activities.

Fiscal 2002 analysis

The Group companies in Japan succeeded in reducing their waste volume dramatically in fiscal 2002 as compared with the preceding term. The achievement of zero emission by two Group companies (Yamagata Fujitsu, Fujitsu Ten) and the sharing of information concerning effective practices with other companies in the Group stand out as significant reduction factors.



Zero Emission Program

Thirteen domestic sites (Fujitsu) achieved the target — zero emission of every category of waste, including waste generated by human life functions — by the end of March 2003. The sites that already achieved zero emission have set a goal of reducing the total volume of waste generated (effective used volume: 19,254 tons) by 5% within three years of the fiscal year of achievement. In fiscal 2002, moreover, the total volume of waste generated (total waste volume including valuable materials such as metals) was 25,032 tons.

Characteristics of zero emission at Fujitsu

Promotion of in-house resources circulation

We place the highest priority on resources

circulation, or use of waste generated by our sites as resources for in-house use.

Upgrading of 3R

We are striving to improve our environmental burden reduction further, from recycle to reuse, from reuse to reduce.

Environmental burden reduction through a green waste logistics system

We are working to reduce CO₂ emissions in the process of collecting and transporting waste through implementation of a system to collect waste of the same type generated by neighboring sites together in order to minimize the number of collection vehicles employed.

* Fujitsu's definition of zero emission: Zero landfill and zero simple incineration achieved through 100% effective use of all categories of waste.

Method of effective use of waste (representative example)

Upgrading the 3Rs

Reduce (restraint of generation)
Reduction of chemicals through reexamination of manufacturing processes
Others

Reuse
Reuse of IC trays
Reuse of sulfuric acid
Others

Materials recycling
Employing sludge from wastewater treatment as a material for cement production
Employing waste plastics as materials

Thermal recycling
Use of waste heat from recyclable wastepaper and waste plastics
Others

Zero emission achievement

Zero Emission Program Case Studies

Establishment of a “triple resources circulation system” for fertilizer generated from purification tank sludge (Fujitsu Numazu Plant)

The Fujitsu Numazu Plant has established a “triple resources circulation” system realizing extensive application of fertilizer generated from purification tank sludge within the plant as well as on local farms and farms in other prefectures. The Numazu plant improved the quality of the fertilizer through repeated cultivation experiments and fermentation experiments on the plant’s experimental farm. After it became the first fertilizer produced by the electronic equipment industry to receive certification from the Ministry of Agriculture, Forestry, and Fisheries as a commercial fertilizer (sludge fermentation fertilizer), it was put into practical use over a wide area.

Successful recycling of waste silicon wafers for solar batteries

We joined Taku Material Corporation and Toshiba Corporation in developing a technology for recycling waste silicon wafers from production lines for LSIs and other semiconductors as a material for solar batteries. We are making the material available to overseas solar battery makers. This technology permits reuse of waste wafers as single crystal silicon wafers for solar batteries by removing various membranes from the surface of the waste wafers. Expanding demand is expected in the solar battery market, and this technology has won accolades as a recycling method benefiting from the characteristics of high-grade, high-precision silicon wafers manufactured for semiconductors. The technology was honored with the Clean Japan Center Chairman’s Award.



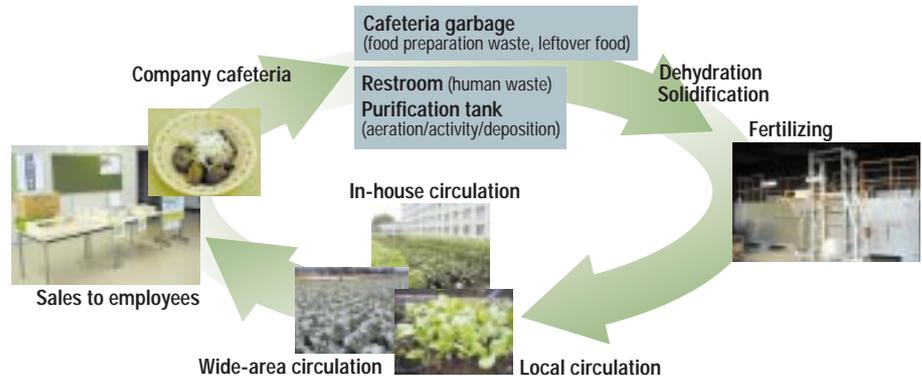
The CJC award ceremony

Triple resources circulation categories

In-house circulation: Using the fertilizer on the Numazu Plant’s farm to produce vegetables for consumption by employees

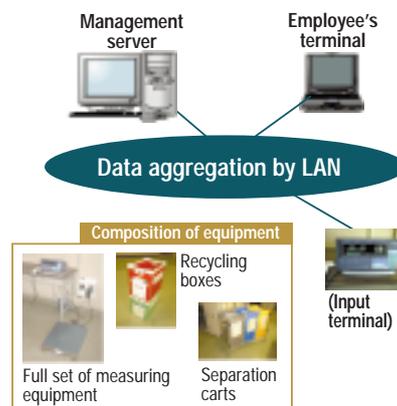
Local circulation: Providing the fertilizer to local farms to raise seedlings, which are then purchased by the Numazu Plant to raise vegetables on its own farm for consumption by employees

Wide-area circulation: Providing the fertilizer to large farms in other prefectures for use in raising vegetables for the general market



Zero emission achieved for first time by a Group company manufacturing division (Yamagata Fujitsu)

Yamagata Fujitsu announced its zero emission status in February 2003. The companywide efforts bore such fruits as reuse of the sludge generated in magneto-optical disc production to make cement, use of waste plastics as fuel, and intranet operation of emission/waste volume measurement systems by the various division. The division’s zero emission achievement is the first by a manufacturing division of the Group companies.



Zero emission of all categories of waste achieved for first time by a domestic research institute (Fujitsu Laboratories Atsugi Area)

Fujitsu Laboratories’ efforts to recycle waste chemicals generated in its experiments at the Atsugi Area facility, one of its main bases, enabled the facility to become the first domestic research institute to achieve zero emission of all categories of waste through materials recycling. Reclamation of waste chemicals generated in experiments by research facilities was formerly outsourced to a specialized contractor. The Atsugi Area laboratory succeeded in recycling waste chemicals itself, however, by adopting a new processing technique to recycle them as material for iron and cement as well as by implementing a uniquely constructed chemical substance management system. We intend to promote development of these techniques and know-how throughout the Fujitsu Group.

Reusing office furniture inside and outside the company

A substantial amount of office furniture had become unusable due to layout or size restrictions resulting from headquarters division relocations. We responded by developing a system to reuse this furniture at other sites or Group companies. In cases in which no place could be found to use office furniture, we distributed it to companies specializing in office furniture for auction for reuse by others.

Principal Plans for Fiscal 2003

- We are upgrading our 3R activities further while maintaining zero emission of waste. We are striving to reduce the environmental burden by cutting CO₂ emissions in waste collection and transportation, moreover, by limiting the number of vehicles by combined collection of waste of the same category generated by neighboring sites and switching to train transportation.