

# Industrial Waste Reduction

Green Factories

## Targeting Zero-emission

Fujitsu is striving to raise every employee's awareness of the need to promote reduction, effective use and minimized emission of waste. These activities are aimed at realizing Zero-emission at the earliest date possible.

## Results Achieved in Industrial Waste Reduction

The volume of industrial waste disposed of in fiscal 2000 totaled 2,037 tons, 51% less than in the previous year and 93% below fiscal 1991 levels. This represented achievement of the targeted total reduction of over 88% relative to 1991 levels by the end of fiscal 2000.\*1

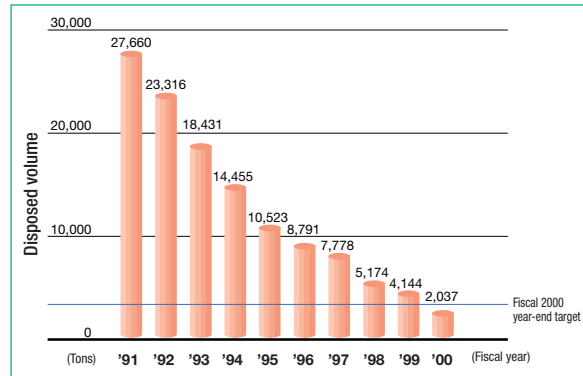
As part of ongoing efforts to fulfill our responsibility as an emitting company, we have established new "Waste Management Standards" designed to ensure proper handling of waste.

\*1: High-performance plants in FY2000 are the Kawasaki, Oyama, Nasu, Nagano, Numazu, Kumagaya, Minami-Tama, Akashi, Kanuma, Suzaka, Iwate, Aizuwakamatsu and Mie plants and Fujitsu Laboratories (Atsugi)

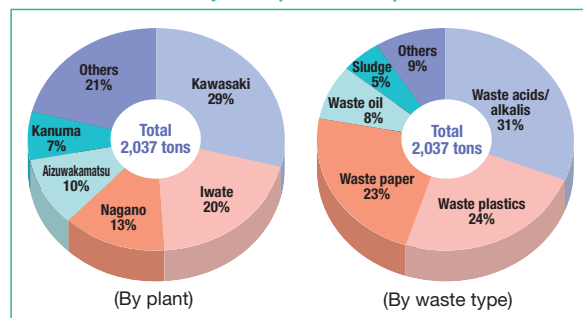
### Targeted Waste

Waste acids and alkalis	Sludge
Metal scraps	Waste paper
Waste plastics	Glass/ceramic shards
Waste oil	Fiber scraps
Wood chips	

### Changes in Disposed Volume of Industrial Waste



### Volume of Waste Disposed (Fiscal 2000)



## Zero-emission Program

Fujitsu aims to achieve Zero-emission at 14 sites\*2 by the end of fiscal 2003. The Kumagaya Plant achieved Zero-emission in fiscal 2000. In the wake of this achievement, it set the new goal of even further reduction of re-usable waste at a rate of 5% in the three years following the year it achieved Zero-emission.

\*2: The 14 sites are the Kawasaki, Oyama, Nasu, Nagano, Numazu, Kumagaya, Minami-Tama, Akashi, Kanuma, Iwate, Aizuwakamatsu and Mie plants, the Akiruno Technology Center and Fujitsu Laboratories (Atsugi).

### Definition of Zero-emission

100% effective use of all output waste

### Targeted Zero-emission Waste

Waste acids and alkalis	Waste paper
Metal scraps	Glass/ceramic shards
Waste plastics	Fiber scraps
Waste oil	Animal/vegetable matter (kitchen waste)
Wood chips	Purification vat sludge
Sludge	

### Zero-emission Measures

- Thorough waste separation and collection procedures (especially for mixed waste plastics)
- Restrictions on volumes of waste generated
- Pursuing a manufacturing process that does not generate waste
- Development of processing technologies for certain categories of waste

## Re-use of Kitchen Waste in Organic Fertilizer

Fujitsu recycles kitchen waste from various sites as organic fertilizer, which is employed on farms to cultivate organic vegetables. These are supplied, in turn, to Fujitsu site cafeterias and sold to employees. In fiscal 2000, this program was extended to a further five sites\*3. Plans also call for introduction of a food circulation system by the end of fiscal 2003.



\*3: The five sites are the Kumagaya, Minami-Tama, Iwate and Aizuwakamatsu plants and the Akiruno Technology Center

**“All our employees are joining hands in efforts to re-use all waste.”**

“In the past, we disposed of all highly concentrated waste sludge from processing by sending it to landfill. We now process it in-house with resource recycling equipment we have installed. In fiscal 1999, we achieved the goal of Zero-emission. In fiscal 2000, better internal processes enabled us to reduce the volumes of pharmaceuticals used and improve our separation techniques. These moves helped to reduce the total volume of waste by 20% relative to fiscal 1999 levels. We remain committed to the complete re-use of all waste through the cooperation of all our employees.”

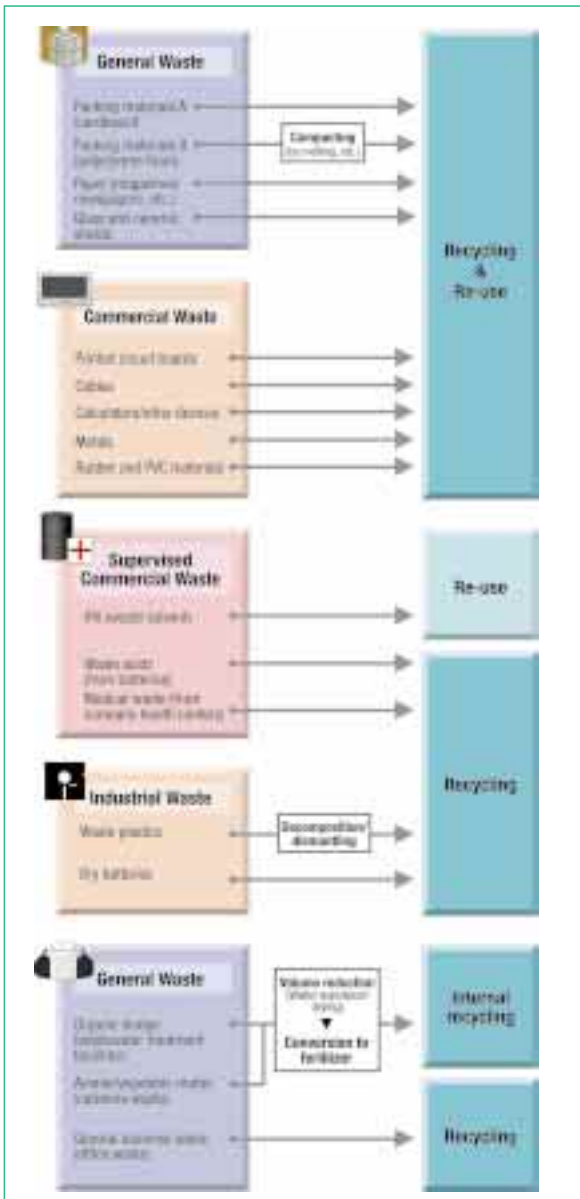
*Toshinari Wadahama General Manager, Akashi Plant*



**Plants achieving Zero-emission**

Numazu Plant and Akashi Plant (fiscal 1999)  
Kumagaya Plant (fiscal 2000)

**Efforts toward Zero-emission at Numazu Plant**



**Momentum toward Paperless Operations**

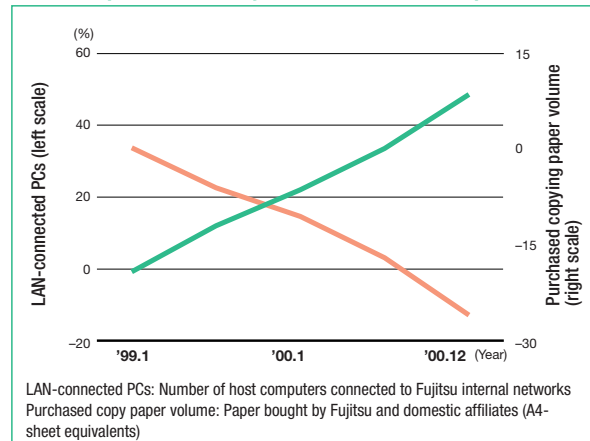
Fujitsu is working to reduce paper use by such means as promoting the use of PC networks and converting manuals to an electronic format. In fiscal 2000, we cut paper use by the equivalent of approximately 110 million A4 sheets.

**Paper Use Reduction Results**  
(Estimated A4-sheet Equivalents)

	(Million sheets)
Fiscal 1999 use	860
Fiscal 2000 use	750
Reduction achieved	110

Fujitsu and domestic affiliates

**Relationship between LAN Systems and Purchased Paper Volumes**



An internal survey has shown that the volume of paper purchased has declined over the past decade as the number of computers linked to company networks has risen. We think this is a result of conversion of internal documents and standard information to electronic data. In the future, we also plan to change sales communications to an electronic format to cut paper use further.



**Zero-emission Measures**

- Development of biological processing technology to deal with purification vat sludge
- Development of in-house processing technology for waste that is currently difficult to process (such as some waste acids/alkalis)
- Processing of metal-containing sludge into a saleable commodity