

Reducing Emissions to the Zero Level

Achieving zero emissions in industrial waste

At Kubota, we have established the processing system shown in the diagram below, to handle waste products generated as a by-product of our industrial activities. This system has boosted our recycling rate and is helping us work towards our goal of zero emissions.

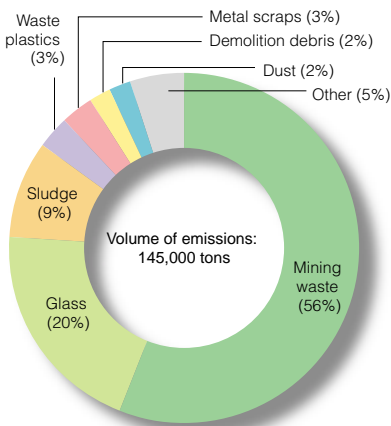
In 1998, the volume of industrial waste produced was 145,000 tons, 49,000 tons of which we processed and dis-

posed of ourselves. The remaining 96,000 tons were recycled by outside vendors. In addition, we sold 33,000 tons as valuable commodities. Kubota considers waste products to be a resource, and as a result of efforts to make effective use of these by-products, we have boosted our recycling rate by 14.6 points, to 72.5%.

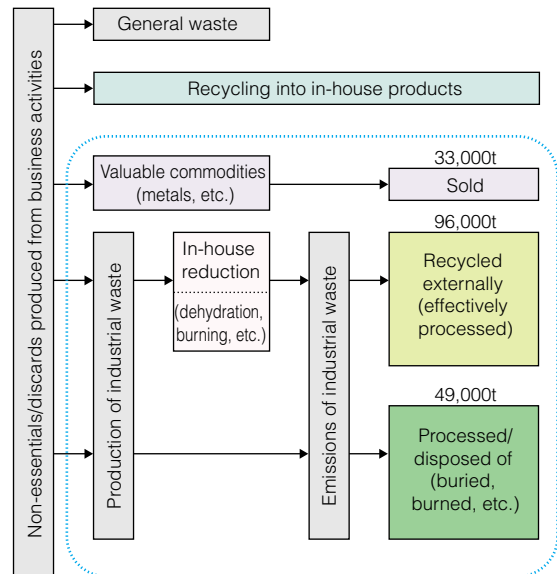
Future plans include promoting further reductions in and recycling of industrial waste products, mainly those from our machinery plants, such as cutting fluids and degreasing fluids. By 2000, we hope to boost our recycling rate to 90%. Through these efforts, our goal is to completely eliminate emissions by the year 2005.

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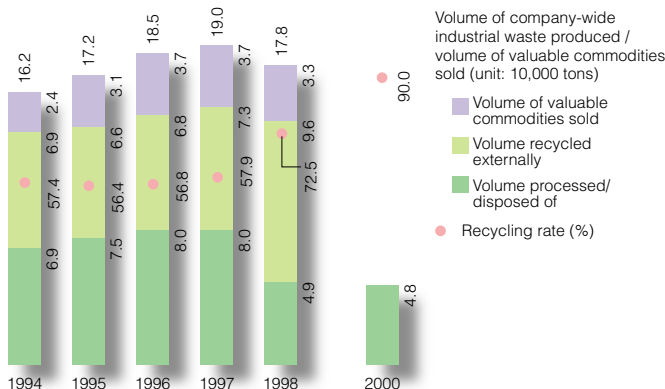
■ Volume and breakdown of company-wide industrial waste products for fiscal 1998



■ Volume of company-wide industrial waste products for fiscal 1998 and processing flowchart



■ Volumes of company-wide industrial waste products, valuable commodities sold, and transitions in recycling rates



Types of solid waste and recycling

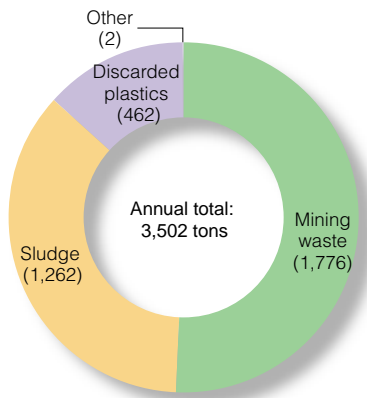
In fiscal 1998, mining waste accounted for 56% of our industrial waste. A portion of this waste was reused, while some was recycled externally, for use as roadbed material and raw material for cement. Glass scraps were recycled for use in roadbeds and cement, while sludge underwent secondary dehydration to reduce the volume, and was then recycled by external vendors for use in cement and other applications. Activities designed to reduce defects helped to suppress

the volume of plastic discarded. In addition, fragments and scraps were crushed and recycled in-house for use as raw materials for products. As a result of these and other activities, the volume of waste material processed or disposed of dropped significantly, from 80,000 tons in fiscal 1997 to 49,000 tons in fiscal 1998. Furthermore, by reducing the costs of having industrial waste processed by outside vendors and the costs of purchasing raw materials, we succeeded in reducing our annual costs by more than 236 million yen.

Recycling of casting sand

At Kubota's Okajima Plant, casting sand is used in manufacturing processes for cast products, and in fiscal 1998 approximately 30,000 tons of sand was produced as industrial waste. In order to use resources effectively and reduce waste, however, 90% more of this is now recycled and reused as raw material for cement and in roadbed material.

Volume and breakdown of company-wide industrial waste products for fiscal 1998



Reductions in industrial waste

Mining waste

- Furnace scraps and casting sand crushed, separated and reused
- Switch made from sand blasting to shot blasting

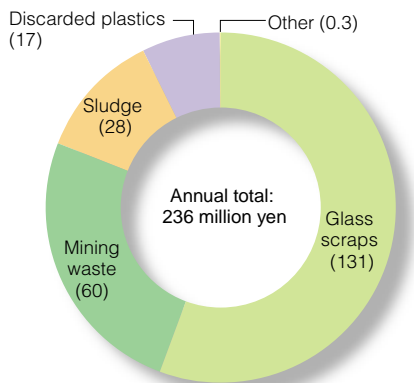
Sludge

- Volume of industrial waste reduced by putting sludge through secondary dehydration
- Raw material recycling rate boosted by improving facilities

Plastics discarded

- Production of waste minimized through activities to reduce defect rate
- Scraps and fragments crushed and recycled into raw materials

Cost reductions for fiscal 1998 and breakdown by category



Cost effect caused by reductions in industrial waste and external recycling

Glass scraps

- Reduction in consignment costs for having industrial waste recycled by outside vendors

Mining waste

- Reduction in consignment costs for having industrial waste recycled by outside vendors
- Reduction in purchasing costs for new sand, by recycling casting sand

Sludge

- Reduction in consignment costs for having industrial waste recycled by outside vendors
- Reduction in consignment costs for having industrial waste recycled, by reducing in-house volume (secondary dehydration)

Discarded plastics

- Reduction in purchasing costs for new materials, by recycling into products