

Environmental Conservation Activities

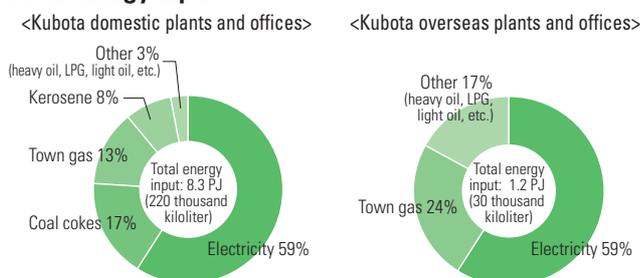
Global Warming Prevention

The Kubota Group Global Warming Prevention Activities were established and launched in line with the government's evaluation and revision of the Outline for Promotion Effects to Prevent Global Warming. Focusing on energy efficiency improvements, we will promote the activities across the Kubota group focusing on a one percent annual reduction of CO₂ emissions per unit output.

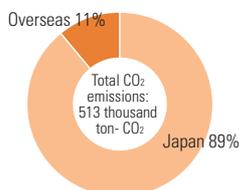
Total energy inputs and CO₂ emissions

In FY2004, total domestic energy inputs in the Kubota group were 8.3 PJ, while total CO₂ emissions were 455 thousand ton - CO₂. As a result, the CO₂ emissions decreased by 31% from the FY1990 level.

Total energy inputs



CO₂ emissions (the entire Kubota group combined)



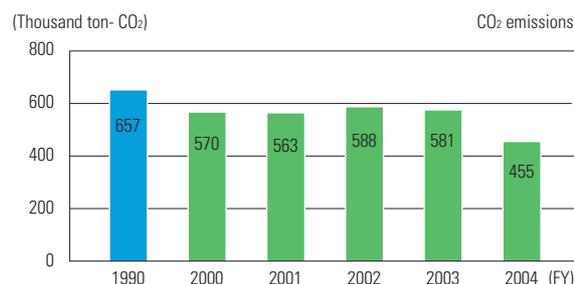
CO₂ reduction targets by 2010 (upon the enforcement of the Kyoto Protocol)

Upon the Kyoto Protocol's enforcement in February 2005, the Japanese government established the Kyoto Protocol Target Achievement Plan. This target is demanding and by the year 2010 Japanese industries are required to reduce CO₂ emissions by 8.6% from the 1990 levels. Nevertheless, our domestic manufacturing plants have already achieved the target. We will further promote the reduction of CO₂ emissions per unit output.

CO₂ emission reduction in Kubota domestic manufacturing plants

Total CO₂ emission in Kubota domestic manufacturing plants was 425 thousand ton-CO₂, reduced by 35% from FY1990. CO₂ emissions per unit output were drastically improved, reducing by 26% from FY2003. In 12 out of 16 plants and offices, CO₂ emissions per unit output achieved the target level, reducing by 1% or over from the prior year.

Changes in CO₂ emissions (Kubota group domestic plants and offices)



* Calorific value
 - Fuel: The values were calculated using the Net Calorific Value Table by Type of Energy Sources (revised March 30, 2001) released by the Agency for Natural Resources and Energy.
 - Electricity: The values were calculated using a conversion ratio of 9.83 MJ/kWh based on the Enforcement Regulations for the Law Concerning Rational Use of Energy (revised December 27, 2002).
 - Unit: PJ = 10¹⁵J

* CO₂ emission coefficient
 FY1990-FY2002: The values were calculated using the following coefficient based on the Report on Survey of Carbon Dioxide Emission (1992) released by the Ministry of the Environment: CO₂ converted volume (ton-CO₂) = Carbon converted volume (ton-C) × 3.664
 FY2003 and FY2004: The values were calculated using the coefficient based on proposed Guidelines for Greenhouse Gas Accounting and Reporting at Entity-level (tentative draft: version 1.5) (July 2003) released by the Ministry of the Environment.

* Volume of CO₂ emission for FY2003 and FY2004 would be 584 thousand ton-CO₂ and 518 thousand ton-CO₂ respectively, if calculated using the coefficient applied until FY2002.

Outlines of global warming prevention activities in the Kubota group

Target	CO ₂ emissions per unit output* 1% reduction per year				
Period	Nine years from FY2004 through FY2012 (Gradual reduction approach based on the government policy)				
Scope	KUBOTA Corporation		Kubota's subsidiaries		Physical distribution division
	Manufacturing plants	Nonproductive offices	Manufacturing plants	Nonproductive offices	
Japan					
Overseas	-			-	-

* CO₂ emissions per unit output = CO₂ emissions / Manufacturing quantity

Changes in CO₂ emissions (Kubota domestic manufacturing plants)



Energy conservation activities – Activity examples –

Energy Saving Month Activity

In the Energy Saving Month, we promoted company-wide activities involving subsidiaries to raise the level of awareness among the Group as a whole. The activities included organizing educational activities in each plant or office, and providing information through the intranet. We also arranged plant visits to the outstanding energy saving companies so as to foster horizontal connection development focusing on the control method of CO₂ emissions per unit output.

Sakai plant presentation at the Energy and Environment Exhibition (ENEX) 2005

In ENEX 2005 - Harmony of Earth, Environment and Energy - hosted by the Energy Conservation Centre, Japan (ECCJ), we introduced our energy conservation activities of the Sakai coastal plant in a session called "Energy Conservation Study & Tour."

- Department: Engine division
- Facilities and equipment: Working machines [machine center (M/C), milling machines, processing machines, etc.: 11 units]
- Improvements: Replacement to inverter-controlled hydraulic systems
- Implementation: From October 2003 through March 2004.
- Outcome: Reduction of energy consumption by 22,000kWh/year



Hosted plant tour of Keiyo plant (Funabashi) recognized as the outstanding energy saving company

In February 2005, we organized a plant tour sponsored by ECCJ at Keiyo plant (Funabashi) which was awarded the Minister of Economy, Trade and Industry Prize (Heat category) in FY2003. We had more than 40 attendees from outside the Kubota group of companies.

We introduced our activities that contribute to coke consumption rate reduction in cupola melting processes, which was well received among the participants.

Installation of air conditioning system (Eco Ice system)

Keiyo plant (Ichikawa) introduced the Eco Ice System - thermal heat pump system, when replacing air conditioning systems, and achieved 40% reduction of energy consumption from the prior year.



Plant visit to the outstanding energy saving company (In Mitsubishi Electric Corporation Fukuyama)



ENEX 2005 (at the International Exhibition Center, Osaka: Intex Osaka)



Visit to the outstanding energy saving plant (Keiyo plant – Funabashi)



Thermal storage tank for the Eco Ice System

Eco office initiatives (Environmental management activities at nonproductive offices)

Since FY2004, the eco office initiatives study, or environmental audit, has been implemented to raise environmental management capacity among nonproductive offices.

Items identified as requiring improvements were education and related activities.

We will focus on improving in these areas and, at the same time, review the audit findings and evaluations to reinforce environmental management in nonproductive offices.

Major activities

Subjects	Details for promotion activities
Greenhouse gas reduction	Turn off the lights and office automation (OA) devices when not in use.
Energy conservation	Strict temperature controls of air conditioning system
General waste reduction	Thorough implementation of waste segregation and recycling
	Reduction and recycling of waste paper
Green purchasing promotion	Priority purchasing for green products

List of evaluation items and results of environmental audits

	Evaluation items	Number of evaluation items	Number of items requiring improvements (12 offices combined)
Evaluation standards for administration offices	Promotion structure	3	13
	Educational activities	5	20
	Energy conservation and global warming prevention	10	14
	Waste	7	15
	Conservation of water resources	3	1
	Devices and equipment container PCBs	2	0
	Company cars	4	6
	Green purchasing	3	12
	Sub-total	37	81
Evaluation standards for office of machinery	Hazardous materials	12	4
	Chemical substances	4	4
	Air	3	0
	Water quality	19	5
	Waste	21	4
	Working conditions	2	0
	Noise	1	0
	Odor	1	0
	Sub-total	63	17
Total		100	98

Environmental conservation activities in physical distribution process

In an effort to reduce CO₂ emissions and air-pollutant discharges in physical distribution (PD) process, we promote modal shift, that is, a shift from trucking to rail transport and shipping, in addition to effective utilization of joint transport and return trips, and improvement of load efficiency. We also promote reduction of packaging materials, to further reduce waste and CO₂ emissions in manufacturing and disposal process of packaging materials.

FY2004 results

Net product transported	372,150 thousand ton-km
Total CO ₂ emissions in product transport	46,108 ton-CO ₂
Modal shift rate	42.6 %
CO ₂ emission reduction by PD improvements	1,429 ton
Effects in monetary value	25 million yen

An example of crate improvement for engine exports



We reduced wood waste by utilizing steel-frame crates for engine exports. (180 ton/year)

Compliance with the law for promotion of sorting and recycling of containers and packaging

We sell a range of products for companies and general consumers, targeting diverse fields and usage, and use a variety of packaging materials and methods. However, most of our products are shipped with a type of packaging not subject to the Law for Promotion of Sorting and Recycling of Containers and Packaging.

The net use of plastic and paper packages were approximately 189 ton and 174 ton, respectively.

Since most of the products were shipped to the dealers, or were unpacked during the course of the distribution process, the package waste discharged as municipal solid waste at the customer delivery point was relatively small.

Our efforts continue to promote a shift to recyclable materials to create recycling society as well as package waste reduction to prevent global warming.

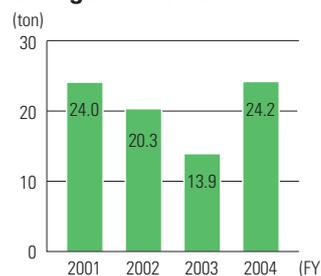
Prevention of Environmental Destruction

Each office makes efforts to improve environmental performance with regard to output to the environment in order to prevent air pollution and water contamination and to comply with the applicable environment laws. Strict self-management targets are set according to local ordinances and agreements to control closely the level of outputs.

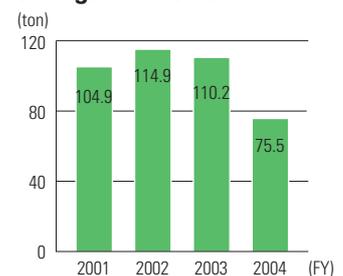
Air pollution prevention

We work to comply with the regulation values set by laws and ordinances and to reduce air pollutants through proper management and periodical inspections of facilities and equipment. Aiming to curb VOC emissions, we held the VOC process technology study team meetings in February 7, 2005, and promote improvement measures to achieve our targeted VOC reduction.

Changes in SOx emissions



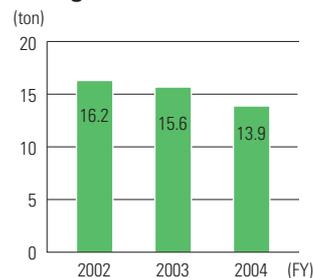
Changes in NOx emissions



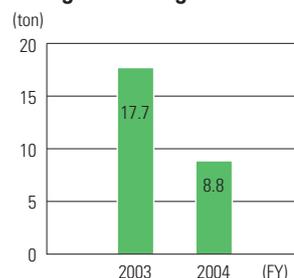
Water contamination prevention

Since the enforcement of the 5th Total Pollutant Load Control, we have been working on decreasing water pollutant loads, and as a result, emissions of COD, nitrogen and phosphorus decreased from the prior year.

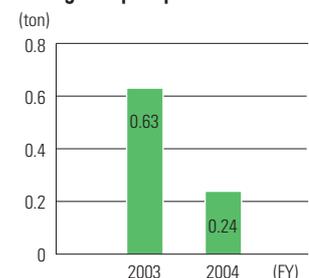
Changes in COD emissions



Changes in nitrogen emissions



Changes in phosphorus emissions



* Subject plants:

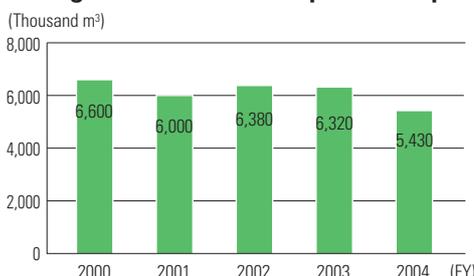
Hanshin plant (Mukogawa), Keiyo plant (Funabashi), Keiyo plant (Ichikawa), Hirakata plant and Sakai coastal plant

Water consumption reduction

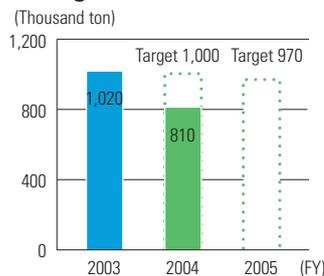
We endeavor to reuse domestic and processed wastewater to meet our goal of effective use of water resources and reduction of environmental loads. Water consumption in Japan was decreased by approximately 14% from the prior year.

We also set reduction targets for clean water and wastewater starting from FY2004 and promote the reduction accordingly. Clean water consumption decreased by approximately 21% from FY2004, which was well above the target level.

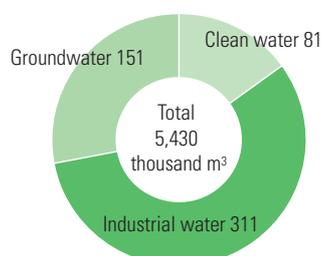
Changes in water consumption in Japan



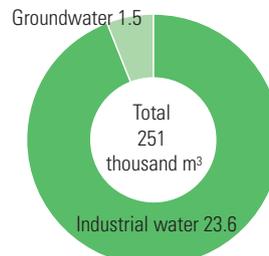
Changes in clean water consumption



Breakdown of water consumption in Japan



Breakdown of overseas water consumption



Soil contamination measures

As a part of the land readjustment project of Namba area in Osaka city, we closed down the Naniwa factory (located in Shikitsu Higashi 2-chome, Naniwa-ku, Osaka city; approximately 12,000 m²) on September 30, 2004, and plan to begin demolition and removal of the factory

building and facilities followed by land-clearing. With the closedown, we implemented a voluntary soil investigation on the premises, where we found a minor amount contamination. Details and countermeasures for this contamination are stated as below.

Results of soil investigation and its countermeasures

[Results]

- (1) We found three substances - lead, fluorine and cyanides – at the site, which exceeded the designated limits. Of 127 partitions (10m x 10m per partition) lead was detected in 11 partitions and fluorine and cyanide detected in 1 partition each at depth levels within 1.0 m from the soil surface.
- (2) We also conducted groundwater quality inspection for the above three substances, we found no contamination, with all meeting the groundwater standards.

[Source of contamination]

We reviewed the past records of chemical substance use in the factory, however, we found no record of using the three detected substances, and therefore, we have no known cause for the contamination at present.

[Effects on neighborhood]

- (1) For the soil contamination, the premises are currently shatterproof, since most of the premises are paved with concrete, and green spaces were protected with sheet curing.
- (2) For ground water, the inspection results showed that the groundwater standards are met, and there is no drinking use of groundwater in the neighboring area. Therefore, we judge that there is no effect on the health of residents in the surrounding area.

[Countermeasures]

We will excavate and remove the contaminated soils in the detected partitions. This countermeasure work is planned from May 2005 and will be completed by September 2005. When excavating the soil, we will prevent soil drifts by using water spray, and thoroughly clean the excavation machinery and vehicles within the premises.

[Land use after decontamination]

The land will be transferred to the Osaka-shi Namba Tochi Kukaku Seiri Kumiai (Namba Union of Land Readjustment Project in Osaka city) upon completion of decontamination work (planned in September 2005) according to a land replanning plan proposed by the land readjustment project of Namba area in Osaka city.

Pollutants and its concentration

1) Soil elution

Items	Designated limits (mg/l)	Detected value (mg/l)	Inspection layer (m)	Detected layer (m)	Detected layer/ inspection layers
Lead	0.01	0.013	Surface to 5	Surface to 0.5	1/127
Fluorine	0.8	1.5	Surface to 5	Surface to 0.5	1/127
Cyanides	Not detectable	0.7	Surface to 5	Surface to 0.5	1/127

2) Soil contents

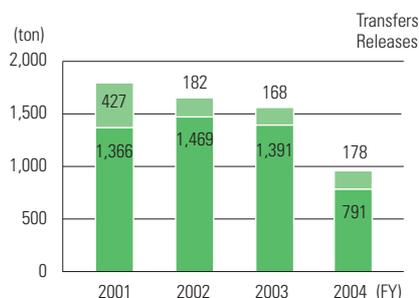
Items	Designated limits (mg/l)	Detected value (mg/l)	Inspection layer (m)	Detected layer (m)	Detected layer/ inspection layers
Lead	150	3500	Surface to 5	Surface to 1.0	10/127
		710		Surface to 1.0	
		550		Surface to 1.0	
		390		Surface to 0.5	
		350		Surface to 0.5	
		330		Surface to 0.5	
		290		Surface to 0.5	
		210		Surface to 0.5	
		170		Surface to 0.5	
		160		Surface to 1.0	

For details, please visit our website at <http://www.kubota.co.jp/new/2005/naniwa.html>

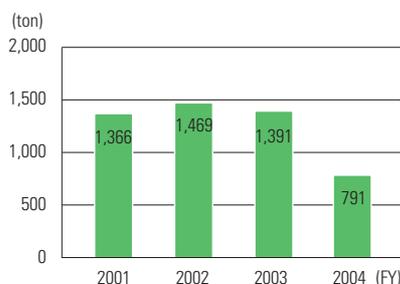
Chemical substance controls

Releases and transfers of PRTR designated substances decreased by 37.8% and VOC emission decreased by 43.1% from FY2003.

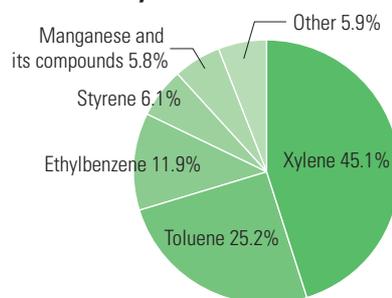
Changes in PRTR designated substances releases and transfers



Changes in the amount of PRTR designated substance (VOC)



Proportion of release and transfer amounts by substance



Results of PRTR reporting FY2004

(a list of the substances whose amount of annual transaction were one ton or over each)

(In kg/year; mg-TEQ/year for dioxins)

Ordinance No.	Chemical substances	Releases				Transfers	
		Air	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
1	Zinc compounds (water-soluble)	0	34.6	0	0	8.5	188.3
9	Bis (2-ethylhexyl) adipate	0	0	0	0	0	362.6
16	2-aminoethanol	0	0	0	0	0	13,464.0
29	Bisphenol A	0	0	0	0	0	0
30	Bisphenol A type epoxy resin (liquid)	0	0	0	0	0	1,381.8
40	Ethylbenzene	99,850.0	0	0	0	0	15,040.2
43	Ethylene glycol	27	0	0	0	0	950.8
63	Xylene	401,255.9	0	0	0	0	36,525.6
68	Chromium and chromium(III) compounds	0	0	0	0	0	24,844.8
69	Chromium(VI) compounds	0	0	0	0	0	454.9
100	Cobalt and its compounds	0	0	0	0	0	173.6
132	HCFC-141B	114.0	0	0	0	0	440.0
176	Organic tin compounds	11.3	0	0	0	0	40.5
177	Styrene	59,435.9	0	0	0	0	0
179	Dioxins	7.3	0	0	0	0	0.13
211	Trichloroethylene	1,491.0	0	0	0	0	1,164.0
224	1, 3, 5-trimethylbenzene	6,729.3	0	0	0	0	74.1
227	Toluene	222,460.7	0	0	0	0	21,817.4
230	Lead and its compounds	34.9	0	0	0	0	2,471.4
231	Nickel	3.9	0	0	0	0	158.9
266	Phenol	0	0	0	0	0	0
270	Di-n-butyl phthalate	0	0	0	0	0	86.4
272	Bis (2-ethylhexyl) phthalate	0	0	0	0	0	432.5
304	Boron and its compounds	0	0	0	0	0	1,702.0
311	Manganese and its compounds	0	0	0	0	0	56,567.2
346	Molybdenum and its compounds	0	0	0	0	0	0.3
Total		791,413.9	34.6	0	0	8.5	178,341.2

*Subject plants: Domestic plants of Kubota and Kubota's subsidiaries.
: Volatile Organic Compounds (VOC)

Towards a Recycling Society

We optimize resource utilization as part of our corporate working and rollout zero-emission initiatives to make a contribution towards a recycling society. For that purpose, we are working to reduce, reuse and recycle wastes generated in our plants and offices.

FY2004 target (the Mid-term Environment Promotion Plan)

Waste emissions ... 3% decrease from FY2003
 Recycling rate 98%

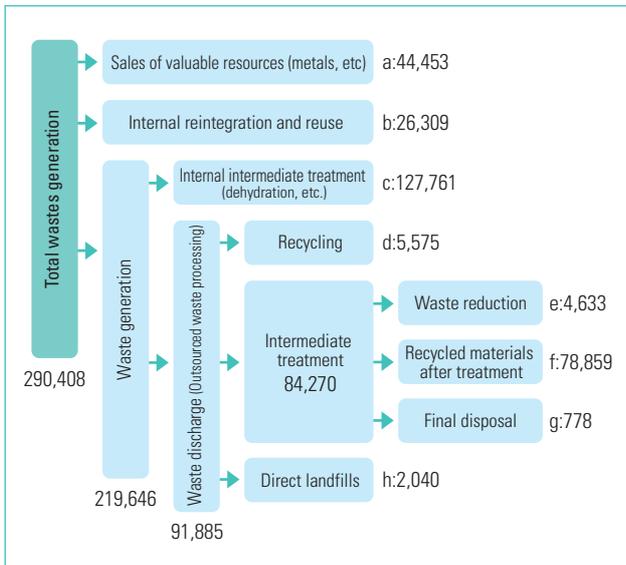
FY2004 results

Waste emissions

Total waste discharge in FY2004 was 91,885 ton, a 6.1% decrease from FY2003.

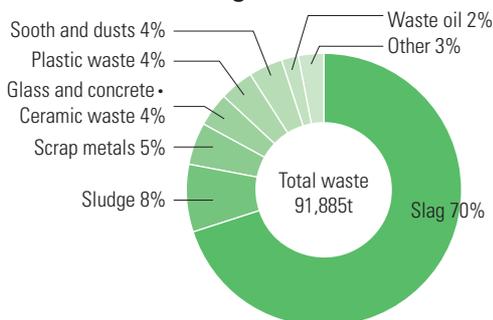
Recycling process flowcharts

(Ton/year)



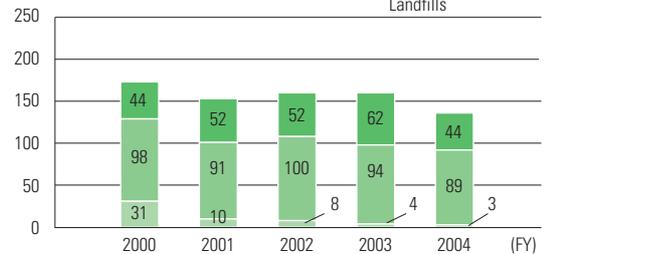
Notes: 1) Recycling rate (%) = (a+b+d+f) / (a+b+d+f+g+h) x 100
 2) Amounts of waste reduction, recycled materials after treatment and final disposal in the process of intermediate treatment were the results of surveys conducted by outsourcing companies.

Breakdown of waste generation



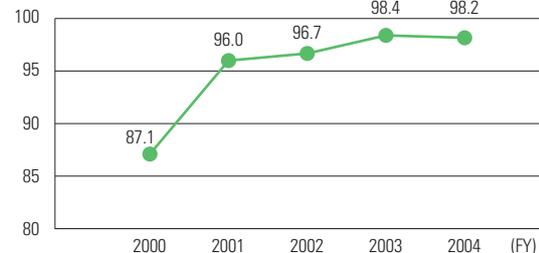
Changes in waste generation

(Thousand ton)



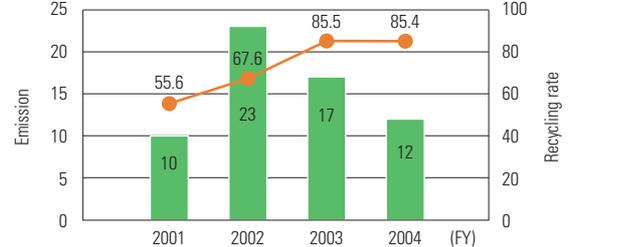
Changes in recycling rate

(%)



Changes in recycling of construction waste (Unconsolidated results of KUBOTA Corporation)

(Thousand ton)



Waste generation in overseas subsidiaries

