

Environmentally Conscious Production

In FY2003, 7 out of 12 works achieved "zero emissions" — a recycling and reuse rate of 100%.

We are also making diligent efforts to achieve targets for energy saving and reduction of greenhouse gases and hazardous chemical substances.

Energy Saving

All Kawasaki internal companies have already acquired ISO 14001 certification and are committed to energy saving activities according to our Environmental Management System program.

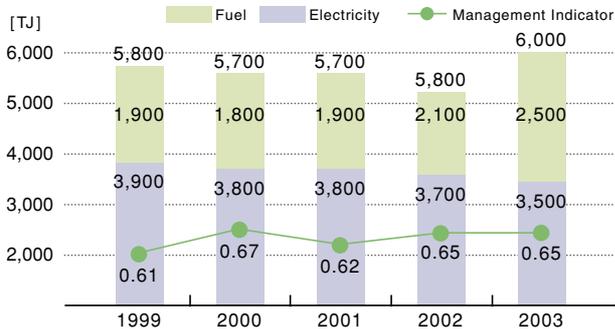
Our major efforts to conserve energy include optimal adjustment of the air pressures of compressors, which consume large amounts of electricity, turning unnecessary lighting off, setting air-conditioning to appropriate temperatures, and replacing old inefficient equipment and facilities with energy saving substitutes as soon as possible.

Despite various energy saving measures, however, our consumption of electricity and fuels in FY2003 was 200 TJ(terajoule), or 2.2% higher compared to FY2002 level, due to the increase in production in FY2003. In addition, water consumption in FY2003 was 2.3% higher than in FY2002.

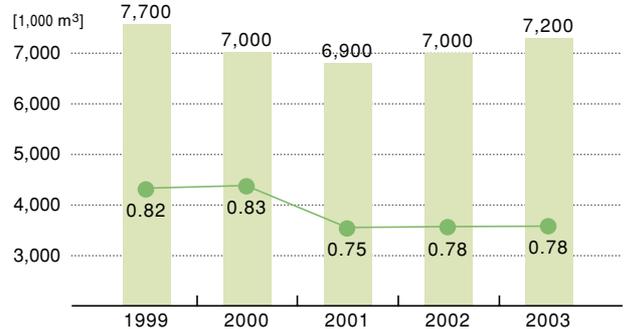
Currently, our Gifu Works is proceeding with introduction of a cogeneration system that can achieve dramatic energy savings. We expect that this system will eventually exhibit its effectiveness in our on-going energy saving efforts.

Incidentally, for management of our energy saving efforts, we use total quantity of heat, joules, as the measurement unit, which represents the sum of electricity and fuel.

Total Energy Consumption



Water Consumption



*Management Indicator: Total energy consumption, water consumption, and CO₂ emissions each divided by sales volume (including Kawasaki Shipbuilding Corporation and KPM).

Prevention of Global Warming

Due to increased production and other causes, our emission of greenhouse gases in terms of CO₂ equivalents in FY2003 was 6.2%, about 15,900 tons, more than in FY2002.

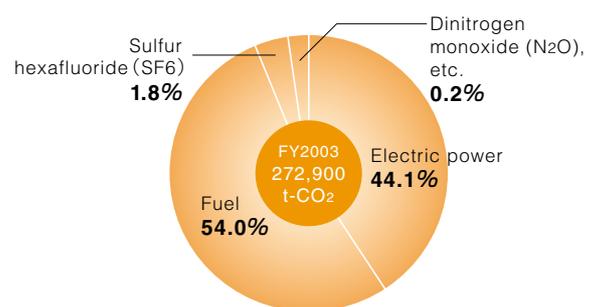
Note that Kawasaki developed our calculation procedures in July 2003 by referring to the guidelines for calculating enterprise greenhouse gas emissions issued by the Ministry of the Environment of Japan.

Emissions of greenhouse gases (CO₂ equivalent)



- Beginning with FY2001, calculation of sulfur hexafluoride (SF₆) has been included.
- Beginning with FY2002, waste disposal subcontracted to outside agents has been excluded.
- The electricity conversion factors employed are those specified by the power utility companies.
- Each fuel conversion factor is as specified in the Ministry of Environment guidelines.

Breakdown of Greenhouse Gas Emissions



Steps toward Reducing Greenhouse Gas Emissions

1st step (2002 - 2004)

[Promotion of Cost-Effective Emission Reduction]

- Energy saving and data analysis
- Review of reduction effects and cost effectiveness resulting from investments in plants and equipment
- Research of international trading

2nd step (2005 - 2007)

[Review of Possible Reductions, Costs, Effects, and Barriers]

- Determination of final reduction allotment
- Planning of credit trading system
- Determination of in-house standard for emission credit purchase cost

3rd step (2008 - 2012)

[Realization of 6% Reduction in Greenhouse Gases Relative to 1990 Level]

- Construction of in-house emission credit trading system



Waste Reduction

Promotion of the 3 R's (Reduce, Reuse, Recycle)

Since we produce a wide variety of products, the number of types of wastes is quite large. For this reason, all of Kawasaki is actively involved in implementing the 3 R's. For example, we control our wastes by classifying them into 20 types.

In FY2003, we emitted 66,400 tons of waste, a decrease of 600 tons relative to FY2002 level. The amount recycled in FY2003 reached 62,200 tons, which corresponds to a percentage of 94%, an improvement of 9% over the corresponding FY2002 level.

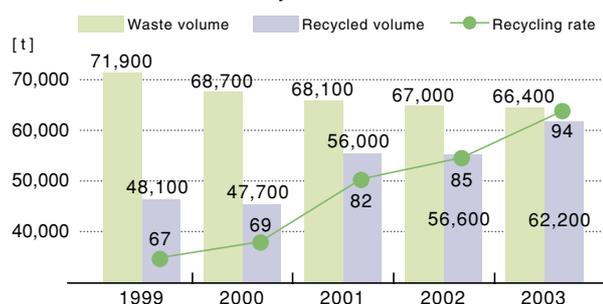
Three Works Achieved Zero Emissions in 2003

In FY2003, our Kobe, Akashi and Seishin Works achieved zero emissions of waste disposal as landfill. We have been working to fulfill zero emissions at all our works during this fiscal year (FY2004). The Kawasaki works that have already fulfilled zero emissions are now

Status of Fulfillment of Zero Emissions by Works

Works	Weight of wastes (tons/year)		Recycling rate (%)		Percentage recycled (%)		Fulfillment date
	① Total weight	② Weight excluding valuable materials	Before	After	① Material recycling	② Thermal recycling	
Harima Works	① 3,792 ② 464	① 3,268 ② 517	91.6	100	①95 ② 5	①97 ② 3	September 2001
Banshu Works	① 4,787 ② 1,292	① 4,941 ② 522	93.4	99.4	①95 ② 5	①96 ② 4	December 2001
Nishi-Kobe Works (KPM)	① 2,418 ② 1,027	① 2,804 ② 1,151	97.7	99.9	①73 ②27	①87 ②13	March 2002
Hyogo Works	① 4,375 ② 1,975	① 4,042 ② 1,865	89.2	100	①85 ②15	①91 ② 9	November 2002
Akashi Works (including Seishin Works)	① 16,705 ② 11,046	① 17,139 ② 11,961	75.0	99.3	①90 ②10	①92 ② 8	December 2003
Kobe Works (Machinery Division)	① 3,142 ② 1,155	① 2,838 ② 1,126	92.0	99.9	①83 ②17	①85 ②15	December 2003

Waste Volume and Recycled Volume



making efforts to decrease the total waste weight and improve the material recycling percentage. Measures for this purpose include thorough sorting of wastes and other exit controls. Entrance controls that inhibit the causes of wastes include material conserving design and improved production processes.

Chemical Substance Reduction

Compliance with Pollutant Release and Transfer Register (PRTR) Law

Beginning with FY2003, Type 1 designated chemical substances handled in amounts exceeding 1,000 kg must be calculated. As a result,

values for a total of 26 substances (as compared with 18 substances in FY2002) are included in Environmental Report 2004. The amounts of emitted toluene and xylene contained in paints are particularly high, so decreasing emissions of these poses another challenge.

Total of Chemical Substances Handled in FY2003

Gov't No.	Substance	Release into air	Release into public water area	Release into ground	Release subtotal	Transfer to public sewerage	Transfer as waste
[Type 1 Designated Chemical Substances]: 1,000 kg or more handled annually							
1	Water-soluble zinc compounds	0	58	0	58	0	636
30	Bisphenol A	0	0	0	0	0	4,576
40	Ethyl benzene	156,303	0	0	156,303	0	5,062
43	Ethylene glycol	0	0	0	0	0	342
63	Xylene	611,693	0	0	611,693	0	52,786
67	Cresol	0	193	0	193	0	1,094
68	Chromium and its trivalent compounds	49	20	0	69	0	33,955
100	Cobalt and its compounds	1	0	0	1	0	369
101	2-ethoxyethyl acetate	0	0	0	0	0	767
108	Inorganic cyan compounds	0	3	0	3	0	220
145	Dichloromethane (Also known methylene chloride)	75,724	16	0	75,740	0	5,169
177	Styrene	5,865	0	0	5,865	0	2,168
207	Water-soluble copper salts (other than complex salts)	0	12	0	12	0	229
224	1,3,5-trimethyl benzene	2,005	0	0	2,005	0	63
227	Toluene	243,729	0	0	243,729	0	50,242
230	Lead and its compounds	0	3	0	3	0	994
231	Nickel	3	0	0	3	0	1,162
266	Phenol	0	3	0	3	0	5,649
283	Hydrogen fluoride and its water-soluble salts	290	1,335	0	1,625	0	9,384
309	Poly(oxyethylene) = nonylphenyl ether	0	0	0	0	0	2,440
311	Manganese and its compounds	175	0	0	175	0	60,096
346	Molybdenum and its compounds	1	0	0	1	0	191
[Special Type 1 Designated Chemical Substances]: 500 kg or more handled annually							
69	Hexavalent chromium compounds	0	22	0	22	0	3,615
179	Dioxins (mg-TEQ)	0	1	0	1	0	0
232	Nickel compounds	0	1,327	0	1,327	0	4,468
299	Benzene	6	0	0	6	0	0