

# Environmentally Conscious Production

In FY2004, a cogeneration system was commissioned at the Gifu Works, and all Kawasaki works achieved zero emissions. We are making sincere efforts to decrease greenhouse gas emissions and reduce use of hazardous chemical substances through energy and resource conservation activities.

## Energy Conservation

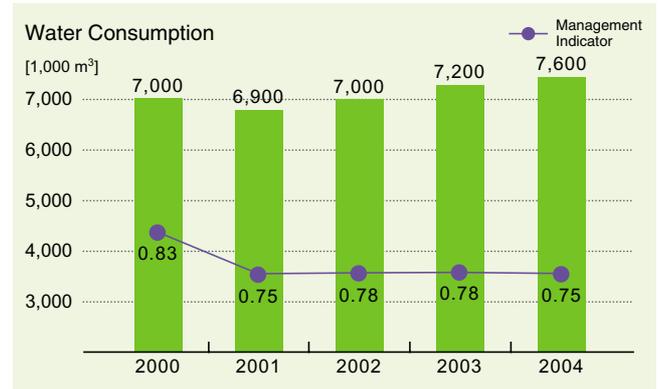
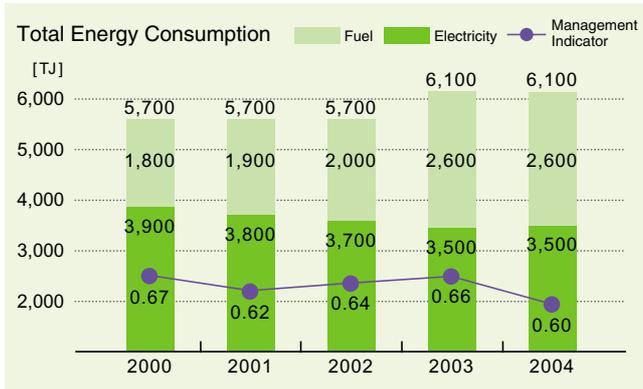
All internal companies and major affiliates grasp the statuses of their utilization of electricity, fuels and water in their business activities and have energy management indicators (basic units) for these activities. Their energy conservation activities include the promotion of employee energy conservation awareness, operation with lower energy consumption in conjunction with ISO 14001 environmental management programs (EMP) and improvement of production lines through understanding energy flows in their major processes.

We are actively investing in energy conservation plants and equipment

including a cogeneration system at the Akashi Works (commissioned in 2001) and a variable heat-electricity ratio cogeneration system at the Gifu Works (commissioned in 2004).

In spite of an increase in production, our total energy consumption in FY2004 remained the same as in FY2003 and an improvement was achieved in terms of management indicators.

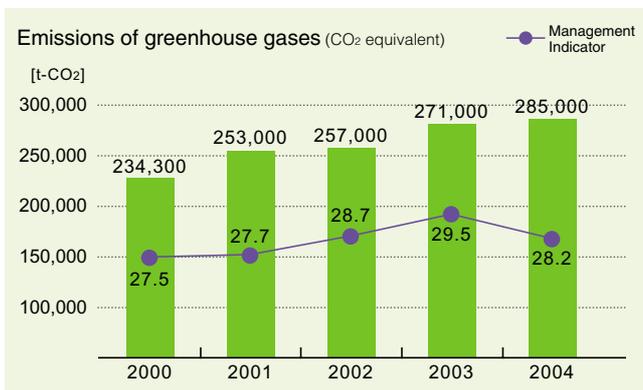
(NOTE) For management of energy conservation efforts, we use total quantity of heat (TJ: terajoules), which represents the sum of electricity and thermal energy, as the measurement unit.



\*Management Indicator: Total energy consumption, water consumption, and CO<sub>2</sub> emissions each divided by sales volume (including Kawasaki Shipbuilding Corporation and KPM).

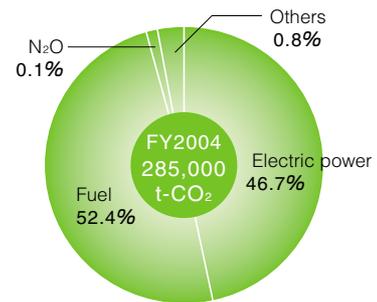
## Prevention of Global Warming

Through energy conservation, resource conservation and waste reduction efforts, our business divisions are performing effective activities and making investments in plants and equipment to decrease greenhouse gas emissions. These efforts improved our management indicator, but our overall CO<sub>2</sub> emissions increased by 14,000 tons due to electricity conversion factor increase by power utility companies in FY2004.



- Calculation of sulfur hexafluoride (SF<sub>6</sub>) has been included since FY2001.
- Waste disposal subcontracted to outside agents has been excluded since FY2002.
- The electricity conversion factors employed are those specified by the power utility companies.
- Each fuel conversion factor is as specified in the Kawasaki guidelines.

### Breakdown of Greenhouse Gas Emissions



### Steps toward Reducing Greenhouse Gas Emissions

#### 1st step (2002 - 2004)

[Promotion of Cost-Effective Emission Reduction]

- Energy conservation and data analysis
- Review of reduction effects and cost effectiveness resulting from investments in plants and equipment
- Research on 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

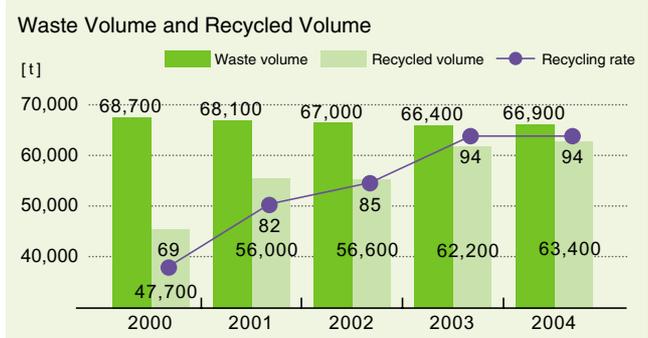
## Waste Reduction

In March 2005, the Gifu Works, Nagoya Works 1, Nagoya Works 2 and Yachiyo Works declared the achievement of zero emissions. This means that all the works and offices of Kawasaki Heavy Industries (non-consolidated basis) achieved zero emissions.

The Zero Emissions Working Group, consisting of the representatives from works in the Kansai region, around Osaka and Kobe, was organized, in 2000, marking the beginning of our efforts to achieve zero emissions. Since then the group has investigated the statuses of waste occurrence, sorting methods, recycling methods and technologies, defined the problems to be solved and selected reliable recycling agents. By expanding development of these activities to the Kanto (around Tokyo) and Chubu (around Nagoya) regions, achievement of zero emissions was fulfilled during FY2004.

We will further enhance activities for alleviating environmental impacts by reducing amounts of wastes and improving recycling rates and product recyclability.

The two works of Kawasaki Shipbuilding Corporation have been making efforts to achieve zero emissions.



### □ Achievement of Zero Emissions by Fiscal Year

2001	2002	2003	2004
Harima Works	Hyogo Works	Akashi Works	Gifu Works
Banshu Works	Kobe Head Office	Seishin Works	Nagoya Works 1
Nishi-Kobe Works		Kobe Works (Machinery Division)	Nagoya Works 2
			Yachiyo Works
		Tokyo Head Office	
		Tokyo Design Office	

## Chemical Substance Reduction

Aiming to decrease the amounts of hazardous chemical substances handled and emitted by 2010, each Kawasaki works determined critical items and reduction targets and started activities necessary to achieve them. The Kawasaki Group will make efforts to fulfill the following targets:

- ① Decrease emissions of main volatile organic compounds (toluene, xylene, ethyl benzene) by 30%
- ② Decrease emissions of dichloromethane by 50%
- ③ Decrease the amounts of hazardous heavy metals (lead, hexavalent chromium, cadmium) handled (30% reduction targets for hexavalent chromium and cadmium)

### □ Total of Chemical Substances Handled in FY2004

Unit of measurement: ton (unless otherwise indicated)

Gov. 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							
30	Bisphenol A	0	0	0	0	0	6.4
40	Ethyl benzene	235.4	0	0	235.4	0	6.0
43	Ethylene glycol	0	0	0	0	0	0.3
63	Xylene	640.9	0	0	640.9	0	52.5
67	Cresol	0	0.1	0	0.1	0	1.0
68	Chromium and its trivalent compounds	0.08	0.02	0	0.1	0	54.3
100	Cobalt and its compounds	0.001	0	0	0.001	0	0.5
101	2-ethoxyethyl acetate	1.3	0	0	1.3	0	0.7
108	Inorganic cyan compounds	0	0.006	0	0.006	0	0.3
145	Dichloromethane (Also known methylene chloride)	70.0	0.02	0	70.1	0.0001	5.2
177	Styrene	8.1	0	0	8.1	0	2.7
207	Water-soluble copper salts (other than complex salts)	0	0.04	0	0.04	0	0.3
224	1,3,5-trimethyl benzene	0.77	0	0	0.77	0	0.04
227	Toluene	231.4	0	0	231.4	0	55.8
230	Lead and its compounds	0	0	0	0	0	0.5
231	Nickel	0.002	0	0	0.002	0	0.7
266	Phenol	0	0.004	0	0.004	0	5.9
283	Hydrogen fluoride and its water-soluble salts	0.29	1.1	0	1.4	0	6.7
309	Poly (oxyethylene) = nonylphenyl ether	0	0.001	0	0.001	0	2.5
311	Manganese and its compounds	0.32	0	0	0.32	0	56.7
346	Molybdenum and its compounds	0.001	0	0	0.001	0	0.3
[Special Type 1 Designated Chemical Substances]: 500 kg or more handled annually							
69	Hexavalent chromium compounds	0	0.009	0	0.009	0	3.5
179	Dioxins (mg-TEQ)	4.8	0.1	0	4.9	0	0
232	Nickel compounds	0	1.0	0	1.0	0	4.1
299	Benzene	0.005	0	0	0.005	0	0