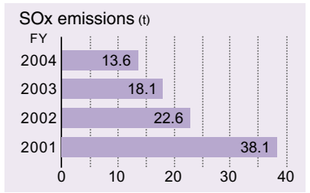
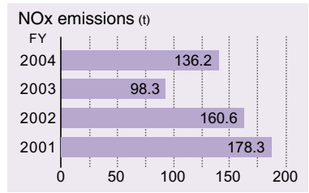
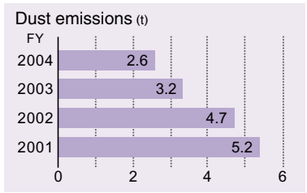
# Environmental Data

In our work to reduce environmental impacts, we are promoting energy conservation, the prevention of global warming, waste reduction, and chemical substance reduction. The table below summarizes the energy and resource inputs and outputs associated with our FY2004 business activities by internal companies and major affiliates. Information about the environmental impacts and products of our major production works is given on pages 29 and 30.

## ■ Internal Companies / Affiliates




∗1. Performance items in the table below were taken from State of Activities for Reduction of Environmental Impact contained in the Environmental Reporting Guidelines of the Ministry of the Environment in Japan. Environmental data is given in the horizontal direction for internal companies as well as for a single group consisting of the Head Offices, branch offices and the Corporate Technology Division.
∗2. The discharge concentration of regulated substances and the generation of noise, vibrations and odors are listed as "Compliant" or "Not Compliant."
∗3. "—" shows that data was unavailable. "0" means the measured data was zero.
∗4. "Not applicable" means there were no regulated facilities that caused environmental impacts of this type.
∗5. Data in [ ] is the percentage of increase/decrease from the performance data of the previous year and is provided only where last year's data was available.

| Performance Items ∗1 | | | Units | Rolling Stock & Construction Machinery Company | Aerospace Company | Gas Turbines & Machinery Company | Plant & Infrastructure★ Engineering Company | Consumer Products & Machinery Company | Head Offices, Branch Offices & Corporate Technology Division | Kawasaki Shipbuilding Corporation | Kawasaki Precision Machinery Ltd. (KPM) | Total | Comparison with Previous Year ∗5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Environmental Impacts from Material / Energy Input | Total material input: Metals (steel, aluminum, copper, etc.) | | ton | 58,043 | 8,783 | 21,961 | 31,216 | 172,610 | 98 | 171,676 | 29,309 | 493,696 | [+5.8%] |
| | Recycled material amount | | ton | 5,130 | 0 | 0 | 0 | 725 | 0 | 1,497 | 0 | 7,352 | |
| | Total energy consumption | Electricity | TJ | 491 | 647 | 518 | 131 | 760 | 88 | 557 | 300 | 3,490 | [0%] |
| | | Fuel | TJ | 147 | 584 | 531 | 26 | 681 | 45 | 354 | 202 | 2,570 | [+3.5%] |
| | | Total | TJ | 637 | 1,231 | 1,048 | 157 | 1,441 | 133 | 911 | 502 | 6,060 | [+1.5%] |
| | Renewable energy consumption | | TJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Water consumption | | $m^3$ | 602,487 | 4,018,757 | 526,162 | 92,291 | 1,208,437 | 69,883 | 872,384 | 225,586 | 7,615,987 | [+6.4%] |
| | Recycled water amount | | $m^3$ | 0 | 88,530 | 0 | 30,222 | 30,234 | 0 | 34,425 | 22,831 | 206,242 | [−42.2%] |
| | Recycled resource and recycled parts input | | ton | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 25 | [+150%] |
| | Amount of hazardous material handled | | ton | 1,997.5 | 115.7 | 27.0 | 26.7 | 614.9 | 0 | 927.8 | 41.7 | 3,751.3 | [+25.3%] |
| Upstream Environmental Impacts | Green purchasing | | 1 million yen | 18 | 276 | 18 | 461 | 189 | 17 | 9 | 32 | 1,021 | [−13.8%] |
| Environmental Impacts from Output of Refuse | Emissions to Air | Greenhouse gas emissions | | t-$CO_2$ | 27,149 | 65,341 | 51,305 | 6,270 | 63,180 | 5,494 | 44,712 | 21,391 | 284,842 | [+4.4%] |
| | | Ozone depleting substance emissions | | ODP ton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | SOx emissions | | ton | 5.1 | 4.2 | 4.2 | 0 | 0.1 | —— ∗3 | 0.03 | 0.02 | 13.6 | [−25.2%] |
| | | NOx emissions | | ton | 5.1 | 34.6 | 75.3 | 0.3 | 10.2 | —— ∗3 | 0.2 | 10.5 | 136.2 | [+38.5%] |
| | | Soot and dust emissions | | ton | 0.87 | 0.39 | 0.65 | 0 | 0.54 | —— ∗3 | 0.03 | 0.09 | 2.57 | [−19.3%] |
| | | VOCs emissions | | ton | 169.6 | 152.0 | 19.2 | 25.5 | 138.1 | —— ∗3 | 1,113.1 | 34.1 | 1,651.6 | |
| | | PRTR regulated substance emissions | | ton | 169.9 | 64.2 | 19.2 | 24.9 | 138.1 | 0 | 738.1 | 34.1 | 1,188.6 | [+8.5%] |
| | | Concentration of restraint substances when emitted | SOx | PPM | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Not applicable ∗4 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | |
| | | | NOx | PPM | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Not applicable ∗4 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | |
| | | | Dust | g/$m^3$N | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Not applicable ∗4 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | |
| | | | Dioxins | ng/$m^3$N | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Compliant ∗2 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Compliant ∗2 | |
| | | | Benzene | mg/$m^3$N | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | Not applicable ∗4 | |
| | | Noise and vibration | | dB | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Not applicable ∗4 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | |
| | | Odor | | $m^3$/min | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Not applicable ∗4 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | |
| | Emissions to "Water and Soil" | Total amount of drainage | | $m^3$ | 276,483 | 2,239,580 | 127,884 | 26,145 | 639,288 | 0 | 114,939 | 68,457 | 3,492,776 | |
| | | PRTR regulated substance discharge | | ton | 0 | 0.3 | 0 | 0 | 2.0 | —— ∗3 | 0 | 0 | 2.4 | [−20.9%] |
| | | | COD discharge | ton | 0.5 | 8.6 | 0.05 | 0.09 | 5.3 | 0 | 1.3 | 0.5 | 16.3 | [−1.4%] |
| | | | Nitrogen discharge | ton | 0.8 | 15.1 | 0.03 | 0.3 | 10.7 | —— ∗3 | 1.0 | 0.8 | 28.7 | |
| | | | Phosphorus discharge | ton | 0.04 | 0.18 | 0.002 | 0.05 | 0.34 | —— ∗3 | 0.32 | 0.11 | 1.04 | |
| | | Density of emissions of substances under drainage control | | mg/L | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | Compliant ∗2 | |
| | Emissions of Wastes | Total amount of wastes | | ton | 12,380 | 3,726 | 4,909 | 4,178 | 14,992 | 361 | 22,582 | 3,803 | 66,929 | [+0.8%] |
| | | Reused resources | | ton | 5,176 | 2,052 | 1,078 | 3,275 | 4,418 | 154 | 16,733 | 522 | 33,408 | |
| | | Recycled resources | | ton | 6,745 | 1,056 | 3,522 | 504 | 9,355 | 115 | 2,542 | 3,070 | 26,909 | [+1.9%] |
| | | Resources subject to thermal energy recovery | | ton | 423 | 388 | 279 | 399 | 1,184 | 83 | 123 | 210 | 3,089 | |
| | | Amount of wastes incinerated | | ton | 0 | 0 | 0 | 0 | 0 | 0 | 2,023 | 0 | 2,023 | [−3.8%] |
| | | Final disposal wastes | | ton | 35 | 5 | 24 | 0 | 36 | 10 | 1,160 | 0 | 1,270 | [−39.6%] |
| | | Waste reduction by intermediate treatment | | ton | 0 | 225 | 6 | 0 | 0 | 0 | 0 | 0 | 231 | |
| | | Specially controlled industrial waste | | ton | 96.4 | 184.4 | 0.2 | 0 | 606.8 | 22.6 | 89.2 | 25.2 | 1,024.9 | [−1.2%] |
| | | PRTR substance transfer | | ton | 140.8 | 37.1 | 2.7 | 1.8 | 40.2 | 0 | 36.8 | 7.6 | 267.0 | [+8.7%] |
| Downstream Environmental Impacts | Environmental impact caused by product characteristics | | | | P13—20 | P13—20 | P13—20 | P13—20 | P13—20 | P13—20 | P13—20 | P13—20 | P13—20 | |
| | Production and sale of environmental impact reducing products | | | | —— ∗3 | —— ∗3 | —— ∗3 | —— ∗3 | —— ∗3 | —— ∗3 | —— ∗3 | —— ∗3 | —— ∗3 | |
| Environmental Impacts from Transportation | $CO_2$ emissions during transport | | | t-$CO_2$ | 9 | 339 | 51 | 388 | 20 | 2 | 0 | 0 | 810 | |
| | NOx emissions during transport | | | ton | 0.07 | 1.67 | 0.59 | 2.44 | 0.14 | 0 | 0 | 0 | 4.91 | |
| | Number of eco-vehicles introduced | | | unit | 0 | 6 | 6 | 8 | 10 | 0 | 0 | 0 | 30 | [−44.4%] |

★ Plant & Infrastructure Engineering Company: The Environmental Division and Steel Structure Division are under direct control of the Head Office, while the Power Plant Division became an independent company, Kawasaki Plant Systems, in April 2005.

## ■ Production Base

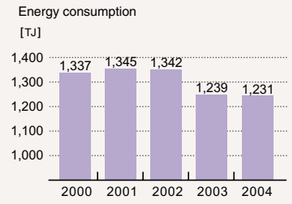
Wastes: Discharged amount / Recycled amount / Recycling rate

### Gifu Works
(including Nagoya Works 1 and Nagoya Works 2)

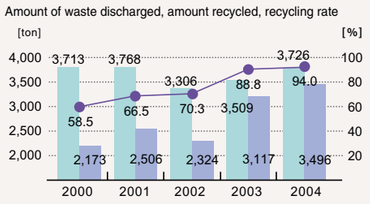
Major products: aircraft (including helicopters), spacecraft, aviation-related facilities and equipment
Address: 1 Kawasaki-cho, Kakamigahara, Gifu 504-8710 Japan

BK117 C-2 helicopter

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 4.2 |
| NOx | 34.6 |
| Dust | 0.39 |

Amount released into public water (ton)

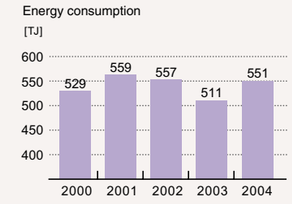
| | |
|---|---|
| COD | 8.6 |
| Nitrogen | 15.1 |
| Phosphorus | 0.18 |

### Kobe Works
(including Kawasaki Shipbuilding Corporation)

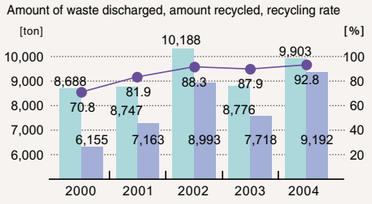
Major products: marine vessels, offshore structures, submarines, land and marine turbines, diesel engines
Address: 3-1-1 Higashikawasaki-cho, Chuo-ku, Kobe, Hyogo 650-8670 Japan

Two-cycle marine diesel engine

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 4.2 |
| NOx | 75.3 |
| Dust | 0.7 |

Amount released into public water (ton)

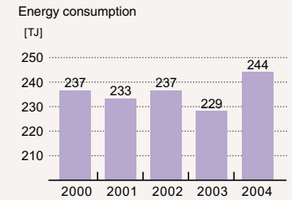
| | |
|---|---|
| COD | 0.05 |
| Nitrogen | 0.03 |
| Phosphorus | 0.002 |

### Hyogo Works

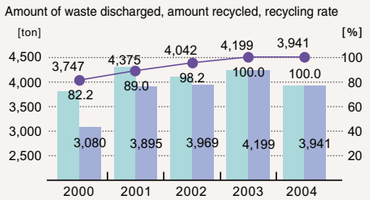
Major products: rolling stock, automated guideway transport, platform doors
Address: 2-1-18 Wadayamadori, Hyogo-ku, Kobe, Hyogo 652-0884 Japan

Magnetically levitated linear motor-driven high-speed train (for JR)

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 0.004 |
| NOx | 0.8 |
| Dust | 0.02 |

Amount released into public water (ton)

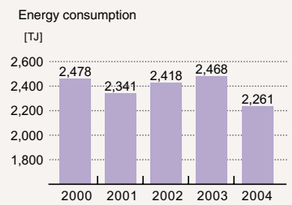
| | |
|---|---|
| COD | 0.07 |
| Nitrogen | 0.03 |
| Phosphorus | 0.004 |

### Akashi Works
(including Seishin Works)

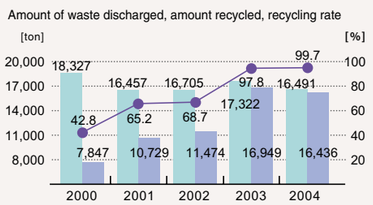
Major products: motorcycles, robots, jet engines, general-purpose gas turbines
Address: 1-1 Kawasaki-cho, Akashi, Hyogo 673-8666 Japan

Ninja ZX-10R

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 0.1 |
| NOx | 10.2 |
| Dust | 0.5 |

Amount released into public water (ton)

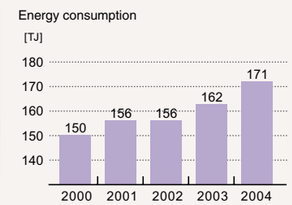
| | |
|---|---|
| COD | 5.3 |
| Nitrogen | 10.7 |
| Phosphorus | 0.34 |

### Banshu Works

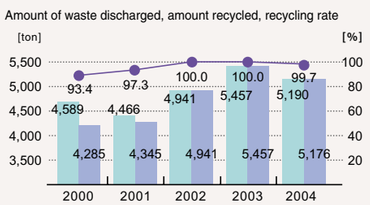
Major products: construction machinery, cargo handling machinery
Address: 2680 Oka, Inami-cho, Kako, Hyogo 675-1113 Japan

Wheel loader

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 0 |
| NOx | 0 |
| Dust | 0 |

Amount released into public water (ton)

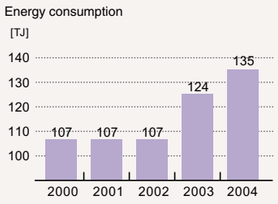
| | |
|---|---|
| COD | 0.4 |
| Nitrogen | 0.5 |
| Phosphorus | 0.005 |

### Harima Works

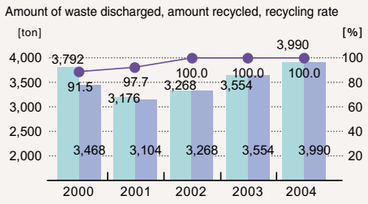
Major products: plants, environmental protection facilities, boilers, construction machinery, steel structures
Address: 8 Niijima, Harima, Kako, Hyogo, 675-0155 Japan

Detachable slurry triple station shield machine

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 0 |
| NOx | 0.3 |
| Dust | 0 |

Amount released into public water (ton)

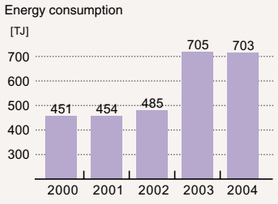
| | |
|---|---|
| COD | 0.09 |
| Nitrogen | 0.3 |
| Phosphorus | 0.05 |

### Sakaide Works
(Kawasaki Shipbuilding Corporation)

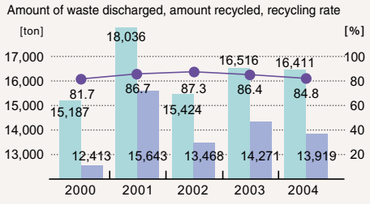
Major products: marine vessels, marine equipment (LNG/LPG carriers, container ships, oil drilling rigs, etc.)
Address: 1 Kawasaki-cho, Sakaide, Kagawa 762-8507 Japan

LNG carrier

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 0.03 |
| NOx | 0.2 |
| Dust | 0.03 |

Amount released into public water (ton)

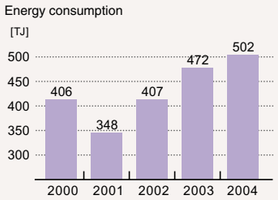
| | |
|---|---|
| COD | 1.3 |
| Nitrogen | 1.0 |
| Phosphorus | 0.32 |

### Nishi-Kobe Works
(Kawasaki Precision Machinery Ltd.)

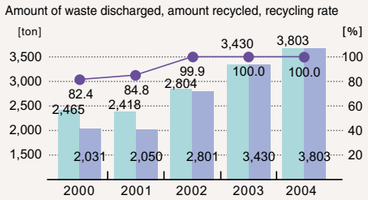
Major products: industrial hydraulic devices, marine machinery, precision equipment/devices
Address: 234 Matsumoto, Hasetani-cho, Nishi-ku, Kobe, Hyogo 651-2239 Japan

Hydraulic equipment

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 0.02 |
| NOx | 10.5 |
| Dust | 0.09 |

Amount released into public water (ton)

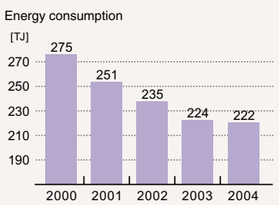
| | |
|---|---|
| COD | 0.5 |
| Nitrogen | 0.8 |
| Phosphorus | 0.11 |

### Yachiyo Works
(became Earth Technica Co., Ltd., an independent company, in April 2005.)

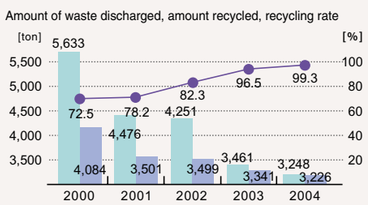
Major products: RPF production facilities, crushers, pulverizers, cast steel products, cast iron products
Address: 1780 Kamikoya, Yachiyo, Chiba 276-0022 Japan

RPF (fuel derived from solidified waste paper and plastic) production facilities

Energy consumption [TJ]




Amount of waste discharged, amount recycled, recycling rate [ton] [%]




Amount released into the atmosphere (ton)

| | |
|---|---|
| SOx | 5.1 |
| NOx | 4.3 |
| Dust | 0.9 |

Amount released into public water (ton)

| | |
|---|---|
| COD | 0.07 |
| Nitrogen | 0.3 |
| Phosphorus | 0.04 |

**Editor's Note:** Kawasaki joined Team Minus 6%, an environmental movement supported by the Japanese government, in June 2005.

Stop global warming together
Team Minus 6%

About Team Minus 6%
HOME >About Team Minus 6% > I am Team Minus 6%. > List > Details

**I am Team Minus 6%.**

Team member No. [213]
Kawasaki Heavy Industries, Ltd. Chairman **Masamoto Tazaki**

Through developing technologies to protect the global environment and supply environmentally conscious products, Kawasaki will contribute to the sustainable development of society. At the same time, with the "think globally, act locally" spirit, we will continue to maintain environmentally conscious business activities and routine activities with a global viewpoint.

**http://www.team-6.jp/about/people_detail_09.html#213**
This is an abridged translation. The original is in Japanese only.