

Takeda's Answer



Takeda has developed basic environmental principles in all areas of its business.

Basic Principles on the Environment

1. Overall Policy

Give serious consideration to the impact on the environment in every aspect of corporate activities, including R&D, production, distribution, marketing, procurement and clerical works, and make the best efforts to conserve and improve the environment.

2. Efficient Utilization of Resources and Minimization of Waste

Conserve energy and other resources, and actively pursue waste minimization and resource recycling.

3. Assessment of Environmental Impact from Products and Manufacturing Processes

When developing new products and processes, evaluate the impact on the environment in advance, during development, and periodically after commercialization. Consider the entire business cycle from procurement of raw materials and supplies through the use and the final disposal of products to reduce the impact on the global environment.

4. Development and Utilization of Environmental Technologies

Develop technologies for environmental protection and improvement, and actively pursue outside technologies when it is beneficial.

5. Response to Emergencies

When an adverse effect on the environment is foreseen, exercise the best possible contingent efforts to eliminate or minimize such adverse impact.

6. Clear Definition of Accountability and Responsibility

Appoint executives and managers in charge of environment-related activities and clearly define their authority.

7. Cooperation with the Community and Society at Large

Actively cooperate with the environmental efforts of local communities and provide fair and unbiased information.

8. Education and Training

Educate and train each employee to understand and realize the importance of environmental issues and to act accordingly in his or her daily routine.



See Takeda's web site for details.

Stakeholders' Question



Is Takeda protecting the global environment?

Actions for Environmental Protection and Achievements in Fiscal 2004

Theme	Action	Achievement in FY 2004
Promotion of basic efforts to respond to environmental issues	Development of legal compliance systems and adherence to in-house standards	Established in-house standards which are more stringent than the legal requirements, implemented regular environmental measurements based on the in-house standards and confirmed compliance with laws and regulations.
	Acceleration of the Responsible Care activities	Continued efforts to accelerate activities to attain the goal of the "2nd Responsible Care program."
	Enhancement of the environmental management systems	Improved the environmental control systems, for example, by reexamining existing systems.
	Encouragement and dissemination of green purchase	Encouraged to actively purchase greens through the Internet Purchase System.
Energy conservation and reduction in greenhouse gas emissions	Reduction in energy usage to 166K kL of crude oil equivalent by fiscal 2005 in accordance with the 8th five-year plan for energy conservation (3.3% down from fiscal 1999 levels)	Achieved a reduction to 160K kL of crude oil equivalent (6.7% down from fiscal 1999 levels.)
	Reduction of CO ₂ emission to 399K tons by fiscal 2005 in accordance with the 8th five-year plan for energy conservation (2.9% down from fiscal 1999 levels)	Achieved a reduction of CO ₂ emission to 386K kL (6.3% down from fiscal 1999 levels.)
Waste reduction	Company-wide initiative to reduce waste	Exerted a company-wide initiative to reduce waste by reusing and recycling.
	Reduction of the final disposal volume of waste by 20% compared to fiscal 2000 levels company-wide by fiscal 2005 and further reduction after achievement of the target	Achieved a reduction of 79% compared to fiscal 2000 levels through continued unstinting efforts.
	Promotion of sorted collection and recycling of waste	Achieved the recycling rate of 97.3%.
	Effort for volume reduction of packaging materials and material improvement, and pursuit of package designs with less environmental load	Advanced the removal of PVC packing sheets used mainly for tablet and capsule products and achieved a conversion rate of about 60% on item bases by fiscal 2004.
	Appropriate selection of waste management companies and assessment of their disposal processes	Periodically inspected existing waste treatment companies as well as new ones to be commissioned to ensure adequate disposal was being made.
Adequate management of chemical substances and reduction of their release to environment	Facilitation of adequate management of hazardous and toxic substances	Implemented strict consumption and remainder controls using ledgers and other tools.
	Efforts to reduce the amount of chemical substances released to the environment	Worked on curtailing emissions to the environment, mainly through the stable operation of exhaust treatment equipment.
	Plant-by-plant reduction of priority control chemical substances by 30% compared to fiscal 2000 levels by fiscal 2005	Achieved an average reduction of 68% compared to fiscal 2000 levels.
	Development of a risk communication system and minimization of environmental risk by chemical substances	Promoted the minimization of environmental risk through chemical substance risk evaluation as well as developing a risk communication system.
Implementation of educational and awareness raising activities	Implementation of activities to raise all employees' awareness of environmental issues	Actively implemented events of the environment month and worked to raise employees' awareness by presenting environmental reports, newsletters, posters and others.
	Promotion of compliance education in relation to environmental issues.	Provided compliance education in relation to environmental issues.
Contribution to communities	Improvement in communication with authorities and community members and dissemination of correct information on Takeda's approach to environmental issues	Complied with the emission standards and collected information from the "Sensing Monitors" from selected residents in the vicinities of the plant.
	Making utmost effort to prevent accidents and preserve the environment as well as working to attain a correct understanding of the Company	Made effort to prevent accidents and protect the environment through environmental, health and safety patrols at plants and issued "Takeda Environmental Report 2004" as an effort to promote a proper understanding of the Company's approach by the public.
	Participation in and support for cultural and welfare advancements of local communities to enhance the corporate image	Actively participated in culture and welfare related events held in local communities and facilitated exchange to strengthen the communication pipes and contributing to brightening up the communities.

The actual volume used for computing the ratio to the benchmark year is adjusted to make the coverage of the benchmark year meet that of fiscal 2004.

ISO 14001

Takeda's main production facilities - the Hikari Plant, which primarily manufactures pharmaceuticals and bulk vitamins and the Osaka Plant, which is positioned as the core production site of pharmaceutical products for overseas and domestic markets - obtained ISO 14001 certification, globally accredited authentication for environmental management systems in December 1998 and August 2000 respectively.

Responsible Care Activities

Responsible Care is an international voluntary program concerning the management of chemical substances by businesses, with activities now extending to 52 countries. Takeda's activities and achievements are announced to the world by the external organization, "The Japan Responsible Care Council."

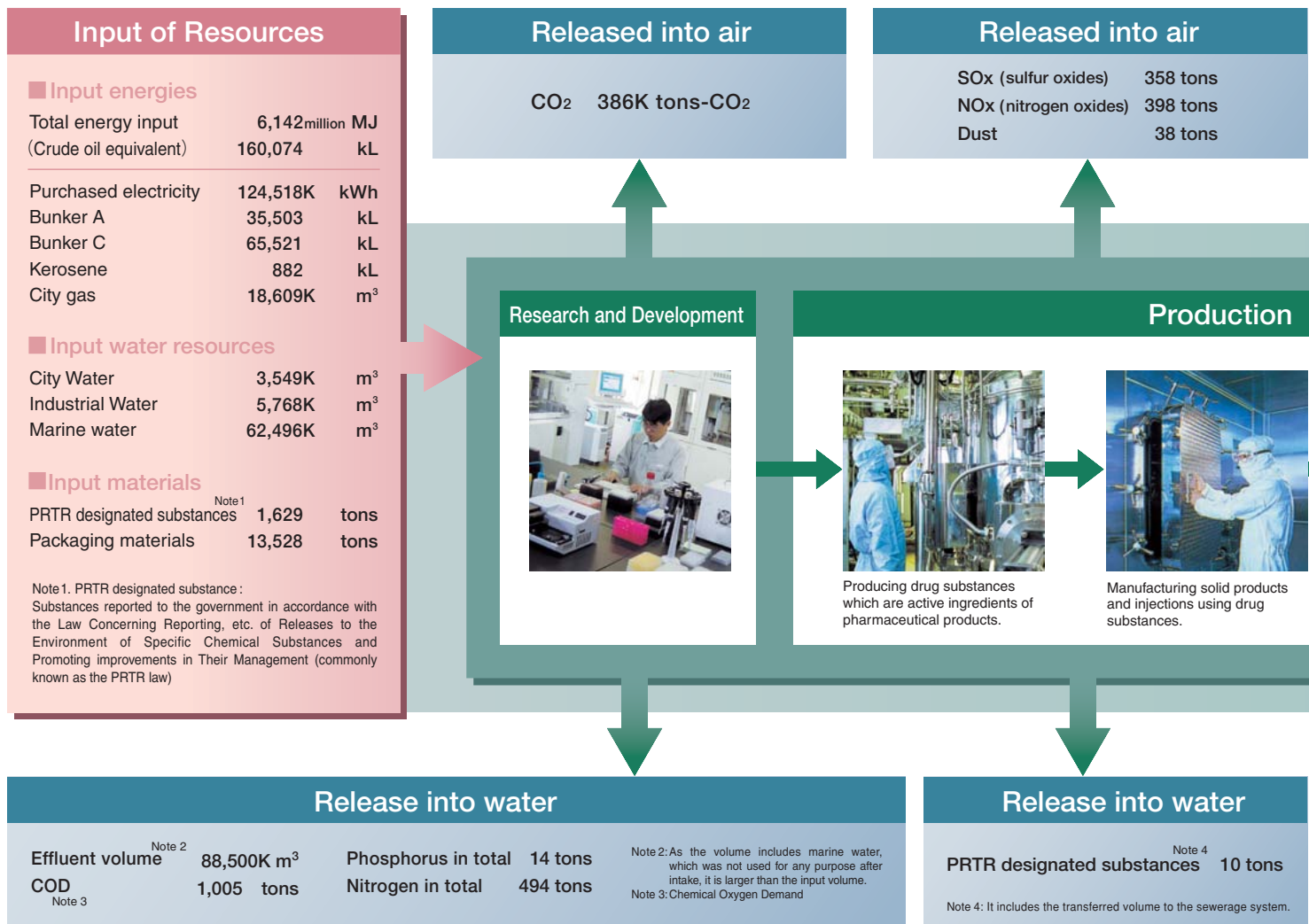


Environmental Load Associated with Business Activities

Takeda's Answer



Takeda strives for the reduction of loads on the environment during its production processes.



Compilation Method of Environmental Data

Data collection period

Actual data collected from April 1, 2004 to March 31, 2005

Data collected sites

Shonan Plant (Kanagawa Pref.), Osaka Plant (Osaka Pref.), Hikari Plant (Yamaguchi Pref.) and Tsukuba Research Center (Ibaraki Pref.) Including the Sumitomo Chemical Takeda Agro Company, Limited, in the Hikari and Tsukuba regions. However, for PRTR and waste data, the Sumitomo Chemical Takeda Agro Company, Limited is excluded.

Referred guidelines

"Environmental Reporting Guideline (Fiscal Year 2003 Version)" by the Ministry of the Environment

"Environmental Performance Indicators for Businesses (Fiscal Year 2002 Version)" by the Ministry of the Environment

"Guidelines for Calculating Greenhouse Gas Emissions by Businesses (Version 1.6)" by the Ministry of the Environment "GHG Protocol" by WBCSD

"Manual for PRTR Release Estimation Methods (the 3rd edition)" by the Ministry of the Environment

"Environmental Accounting Guidelines 2005" by the Ministry of the Environment

"Accounting Guidelines for Chemical Companies" by the Japan Chemical Industry Association

[CO₂ emission]

Coverage of calculation

The direct emission from the combustion of fossil fuels and the indirect emission associated with the consumption of electricity are used for the calculation of CO₂ emission. (CO₂ emission derived from transportation is not included.)

CO₂ emission coefficient

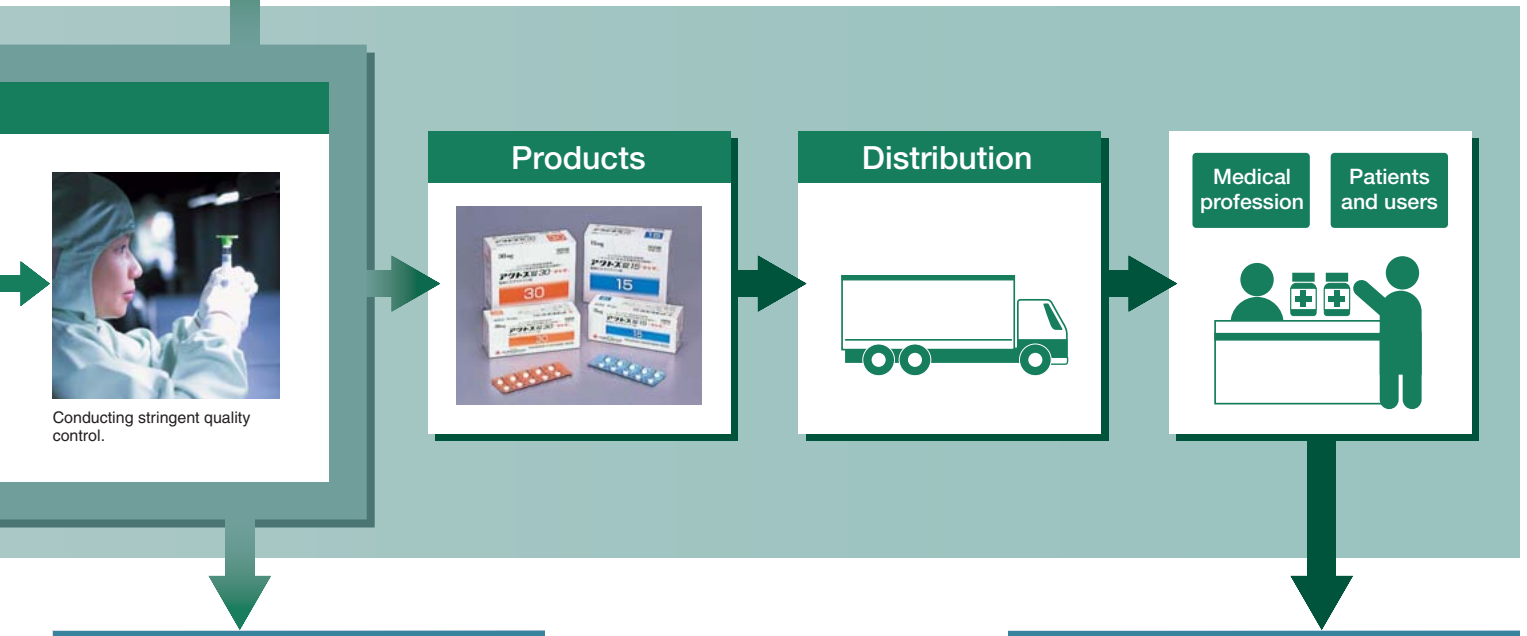
The CO₂ emission coefficient is based on "Guidelines for Calculating Greenhouse Gas Emissions by Businesses (Version 1.6)."

Stakeholders' Question



What does Takeda think of the environmental impacts associated with business activities?

Released into air
PRTR designated substances 129 tons



Release of waste and others

Generated waste	16,801 tons
Final disposal	301 tons
Recycled waste	10,801 tons

Release of waste and others

Used packaging materials ^{Note 5} 4,728 tons

Note 5: Minimum obligation volume for recycling in accordance with the Container and Packaging Recycling Law

The emission of purchased electricity was calculated using the emission coefficient for the national average of all electric power sources by fiscal year; announced by the Federation of Electric Power Companies of Japan.

Emission of benchmark year

Re-calculation of the emission of the benchmark year due to change in organization was made in accordance with the "GHG Protocol."

[Waste]

Volume of generated waste

Total volume of general waste, industrial waste and valuable resources

Recycling rate

$$\frac{\text{Recycled volume}}{\text{Recycled volume} + \text{Final disposal}} \times 100$$

Volume of recycled waste

Total volume of reused waste, reclaimed waste and heat recovery (including valuable resources)

[PRTR designated substances]

The designation is in accordance with the PRTR law

[Environmental accounting]

As the data is not collected from any divisions of the headquarters, R&D cost, social activity cost and environmental remediation cost are not included in the calculation.

The trend in environmental protection cost covers all the existing Takeda plants at the calculation years.



Hikari Plant: Its sophisticated management system takes environmental protection into careful consideration.

Takeda's Answer



Since 1974, Takeda has systematically implemented energy conservation programs which lead to the reduction of CO₂ emission.

Takeda's Perspective for Energy Conservation and Prevention of Global Warming

The Kyoto Protocol came into effect in February 2005 and goals for reducing greenhouse gas emissions were assigned to the participating industrial nations. The Japanese government adopted a "Kyoto Protocol Target Achievement Plan" at a Cabinet meeting in April 2005 and established reduction targets for individual sectors including the industrial sector.

Although the CO₂ emission by the pharmaceutical segment accounts only for 0.4 percent of the entire industrial sector in Japan, Takeda views the reduction of greenhouse gases as the moral obligation of every company existing in the 21st century, and has implemented numerous initiatives.

Japan's overall CO₂ emission in fiscal 2004

1,252 million tons

CO₂ emission from industrial circles accounts for approximately 38% of the total emission.

CO₂ emission from Takeda in fiscal 2004

386K tons

Stakeholders' Question



Is Takeda active in reducing CO₂ emission concerning global warming?

Energy Conservation Program

By organizing the energy conservation committee in 1974, Takeda initiated company-wide energy conservation measures. Among those which are based on the mid-range program, the 8th five-year program for energy conservation is underway. Greenhouse gas emissions can be curbed by reducing energy usage and replacing it with fuels which generate less greenhouse gases. Takeda has strived to conserve energy through its intensive energy control management, and its commitment is partly demonstrated by the introduction of energy conservation equipment such as a cogeneration system, improvement of facilities for higher efficiency, reevaluation of production processes and efficient operation of facilities.

Takeda continues to lead various activities in efforts to attain the goal set by the Japan Pharmaceutical Manufacturers Association through its own action plan: "Reduction of CO₂ Emission of Pharmaceutical Companies in 2010 to the 1990 Levels."

Performance of Fiscal 2004

In fiscal 2004, both energy usage and CO₂ emission grew over the previous fiscal year because of facility expansion. Both energy usage and CO₂ emissions have also increased because of an upward trend of using strict production processes, which require more energy. Takeda does not compromise on product quality so that production activities are carried out in effective harmony between quality control and energy conservation.

At the Hikari Plant, for example, we reviewed the operational condition of the activated sludge process equipment and raised the running efficiency by leveling the process and increasing the processing capacity. This resulted in saving 466,400 kWh of electricity, which is

equivalent to reducing CO₂ by 196 tons.

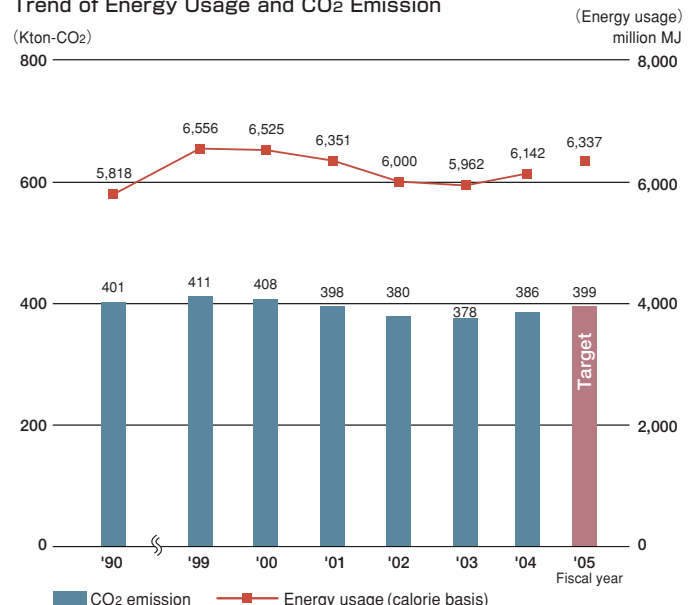
In addition, during fiscal 2004 we implemented 81 energy conservation measures to increase the operational efficiency of facilities, prevent heat release from steam equipment and meticulously control the air conditioning system.



Challenge for the Future

Takeda prides itself in its production system. We continue to strive to manufacture pharmaceutical products of higher quality and fulfill our responsibility to respond to global warming issues by re-evaluating our energy control system from diversified perspectives. We also believe it is important to clarify CO₂ emission volumes in overseas operations and to address global warming throughout all global operations.

Trend of Energy Usage and CO₂ Emission



For the compilation method of the environmental data, refer to Pages 35 to 36.

Target of the 8th five-year program for energy conservation

Energy usage
166K kL of crude oil equivalent
(3.3% down from fiscal 1999 levels)

CO₂ emission
399K tons
(2.9% down from fiscal 1999 levels)

Achievement of fiscal 2004

Energy usage
160K kL of crude oil equivalent
(6.7% down from fiscal 1999 levels)

CO₂ emission
386K tons
(6.3% down from fiscal 1999 levels)

Successfully achieved the targets of fiscal 2005 ahead of schedule.

Waste Reduction

Takeda's Answer



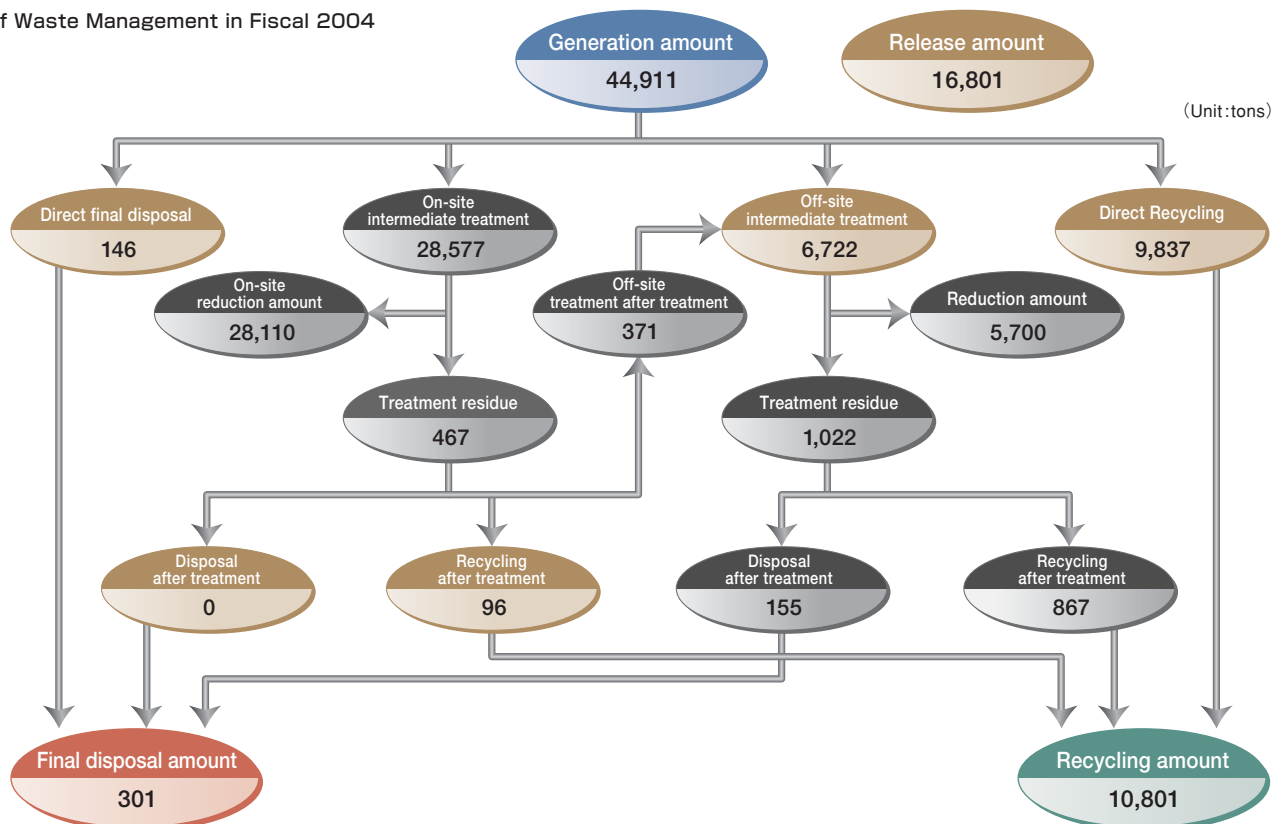
Takeda is promoting recycling and suppressing waste generation through several programs and initiatives.

Basic Stance on Waste Reduction

Reducing waste and promoting recycling are just some of the environmental challenges in dealing with environmental issues related to waste management, including a shortage of disposal sites and an increase in illegal dumping. Takeda has made continuous efforts to address the challenge and implemented company-wide waste reduction activities. The Company's basic stance on waste reduction is reflected not only in the suppression of waste generation and its effective re-utilization and the reduction amount within the Company

but by promotion of off-site recycling. In fiscal 1993, Takeda started the 1st waste reduction program, setting the target of "reduction of industrial waste treated or disposed of by outside services by 10 percent compared to that of fiscal 1992 levels by fiscal 1997" and in fiscal 1994, achieved a reduction of 38 percent compared to fiscal 1992 levels. The end of the 1st waste reduction program (fiscal 1997) was moved forward and the 2nd waste reduction program started in fiscal 1995 with the renewed target of "reduction of waste treated or

Flow of Waste Management in Fiscal 2004



Stakeholders' Question



Is Takeda striving to reduce waste and promote recycling?

disposed of by outside services by 20 percent compared to that of fiscal 1994 levels by fiscal 2000." In fiscal 2000, the reduction reached 32 percent compared to fiscal 1994 levels and the target was successfully attained.

Target of the 3rd Waste Reduction Program and Progress

The 3rd waste reduction program started in 2001 and aimed to reduce the amount of final disposal by 20 percent. To realize a reduction in the waste amount of final disposal, an intensive promotion of sorted collection and recycling of waste was carried out at the respective sites, while packages and packaging materials for raw materials and products were reused, and incinerated ash and boiler dust were recycled as raw materials for cement. In fiscal 2004, although the generated waste was 44,911 tons, as a result of our efforts, the final disposal waste in fiscal 2004 decreased by 27 tons to 301 tons, 79 percent down from fiscal 2000 levels.



Waste incinerator (gas furnace) of the Hikari Plant

The 3rd Waste Reduction Program

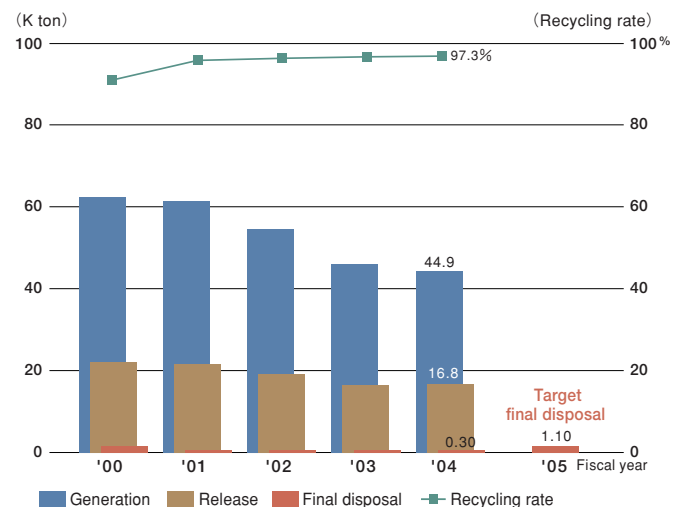
"Reduction of industrial waste and general waste of final disposal by 20% compared to that of fiscal 2000 levels by fiscal 2005"

Actual volume in fiscal 2004

Volume of final disposal **301 tons** (79% down from fiscal 2000 levels)
The target of fiscal 2005 was met ahead of schedule.

confirm their proper handling. With respect to the disposal of industrial waste, we issue a Control Manifest of Industrial Waste to commissioned transporters and waste treatment companies and always ensure that commissioned waste is transferred up to the final disposal. Waste disposal by outside facilities is strictly controlled in accordance with the guidelines and other documents prepared by the respective sites. All examinations and reports are audited by the Company's headquarters to keep the thoroughgoing waste management in place.

The 3rd Waste Reduction Program Trend of Waste Generation, Release, Final Disposal and Recycling



For the compilation method of the environmental data, refer to Pages 35 to 36. Due to the review of the scope of compilation, previous data have been corrected.

Appropriate Treatment and Disposal of Waste

Takeda ensures that waste is treated and/or disposed of in an appropriate manner to prevent illegal dumping or inappropriate handling. The Company examines waste treatment companies in terms of licensing, legal compliance, treatment capacity and others and set up contracts only with those who we have concluded handle waste in an appropriate manner. In addition, the Company regularly visits commissioned waste treatment companies and their facilities to

Handling of PCB Waste

The "Law Concerning Special Measures against PCB Waste" was enacted in 2001. This law mandates that businesses with stored PCB waste must dispose of it by July 2016. Takeda adequately manages the waste in accordance with its storage standards, which comply with relevant laws and are properly reported to the authorities. While the regional facilities for treating PCB waste are being developed; Takeda continues to maintain a tight grip on proper management of waste and ensure appropriate treatment.

Takeda's Answer



Takeda makes every effort to reduce the emissions of chemical substances and works to minimize environmental loads under stringent in-house standards.

Reduction in Emissions of Chemical Substances

Takeda uses a variety of chemical substances to manufacture pharmaceutical products. As a core activity of the Responsible Care program, the Company actively engages in reducing emissions of the specific chemical substances as well as appropriate management of such emissions. The Company has identified priority management chemical substances by their properties and quantity consumed. These substances are brought under a voluntary reduction plan to decrease emissions.

In the 1st Responsible Care program, started in fiscal 1995, we strived to reduce emissions of 15 kinds of the priority management chemical substances. As a result, in fiscal 2000, they were reduced by 42.3

percent compared to fiscal 1994 levels, where the target of 30 percent was exceeded.

In the 2nd Responsible Care program, started in fiscal 2001, toluene, dichloromethane and chloroform were newly classified as the priority management chemical substances. The Company installed activated carbon absorption equipment and combustion equipment for emissions. The upgrade resulted in a reduction of the consumption and emissions of these substances. Emissions were reported to the government in accordance with the PRTR Law^{*}, which took effect in 2000. We also strive for a reduction in the release of these substances and as a result, it is on a downward trend on the whole.

^{*} PRTR Law : "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting improvements in Their Management"

PRTR Data Reported (Amounts from April 2004 to March 2005)

(Unit : tons)

	Chemical substances	Releases				Transfers	
		Air emissions	Releases to water bodies	Land		Transfers to sewerage	Off-site transfers in waste [*]
				On-site land releases	On-site landfills		
Shonan Plant	Toluene	3.9	0.0	0.0	0.0	0.0	86
	Dichloromethane	0.10	0.0	0.0	0.0	0.0	0.8
Osaka Plant	Acetonitrile	0.31	0.0	0.0	0.0	0.27	20
	N, N-dimethylformamide	0.050	0.0	0.0	0.0	0.063	4.9
	Dichloromethane	0.066	0.0	0.0	0.0	0.013	3.2
	Chloroform	0.038	0.0	0.0	0.0	0.0019	2.5
	Toluene	0.071	0.0	0.0	0.0	0.0022	7.0
Hikari Plant	1,2-dichloroethane	79	0.0	0.0	0.0	0.0	33
	Dichloromethane	31	0.011	0.0	0.0	0.0	390
	Nickel compounds	0.0	9.0	0.0	0.0	0.0	0.0
	1,4- dioxane	4.4	0.0	0.0	0.0	0.0	0.0
	Benzene	7.4	0.0	0.0	0.0	0.0	0.0
	Formaldehyde	1.7	0.22	0.0	0.0	0.0	0.0
	Acetonitrile	1.2	0.0	0.0	0.0	0.0	26
	Barium and its water-soluble compounds	0.0	0.0	0.0	0.0	0.0	1.5
	Acrolein	0.0	0.0	0.0	0.0	0.0	0.0
	Ethylene glycol	0.0	0.0	0.0	0.0	0.0	0.0
	N, N-dimethylformamide	0.0	0.0	0.0	0.0	0.0	0.0

^{*}Transfers in waste to outside sites

(Unit : mg-TEQ)

Osaka Plant	Dioxins	0.00012	0.0	0.0	0.0	0.0	0.010
Hikari Plant	Dioxins	0.30	0.0035	0.0	0.0	0.0	11

The incinerator of the Shonan Plant was closed down.

Stakeholders' Question



What steps does Takeda take to protect the environment?

Reduction of Environmental Loads

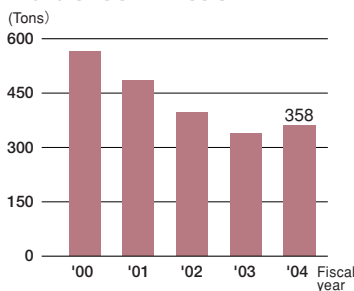
Takeda has the in-house standards, which are more stringent than the state and local governments laws. Compliance with these standards is confirmed by periodical environment measurements. This practice is prescribed in Takeda Group's Standard for Environmental Protection and Accident Prevention Work and same management practices are adopted by the domestic and international group companies.

Takeda uses less sulfur fuels in sulfur in order to reduce atmospheric pollution and ensure the proper operation of facilities by regular maintenance services in efforts to minimize releases of sulfur oxide (SOx), nitrogen oxide (NOx) and dust. The three incinerators currently in operation are also under constant control and generated dioxins are regularly measured, which has resulted in dioxin levels far below the emission standards.

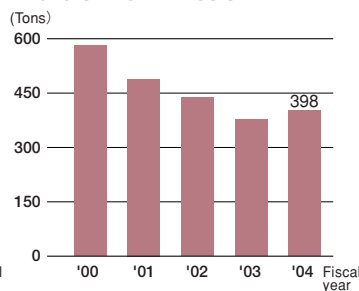
With respect to proper effluent management, the removal of BOD and COD by a biological treatment, incineration of liquid waste solutions with high COD, and water preservation technologies, including adsorption and filtration and automatic continuous measurement of waste water, are selectively adopted based on the features of the respective sites. When a value exceeding the level of in-house standard is discovered during regular monitoring, we immediately find and rectify causes so that no deviation is left unattended.

The results of regular air and water measurements in fiscal 2004 are all below the levels of the standards while emissions of SOx, NOx, dust and COD are at almost the same levels as the previous year.

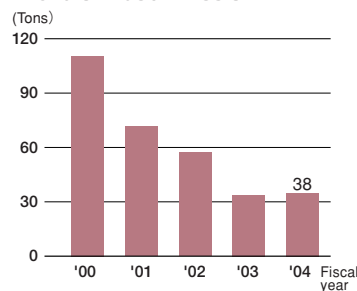
Trend of SOx Emission



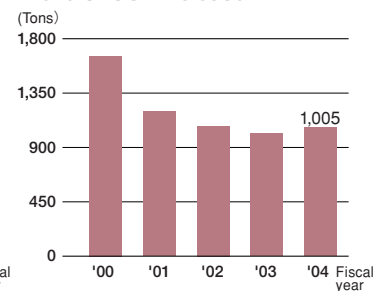
Trend of NOx Emission



Trend of Dust Emission



Trend of COD Release



Environmental Accounting

Takeda started calculating the environmental protection costs, breaking them down into investment and expenditure in fiscal 1980. The costs, including those for global warming protection, waste management and reduction in the release of environmental load substances exceeded 80 billion yen over 25 years. The environmental protection costs in fiscal 2004, as shown on the right, were prepared in accordance with the guidelines of the Ministry of the Environment and the Japan Chemical Industry Association. One of the major investments developed and improved the water effluent system in the Hikari Plant. The major expenditures are for effluent treatment and waste treatment/disposal. The economic effect of the energy conservation was equivalent to about 60 million yen.

Environmental Protection Cost

Category	(Unit: millions of yen)		
	Investment	Expenditure	
Business area cost	Pollution prevention cost	515	1,215
	Global environmental protection cost	51	45
	Resource circulation cost	204	873
Upstream/downstream cost		—	18
Administration cost		27	170
Total		797	2,321

For the compilation method of the environmental data, refer to Pages 35 to 36.

Environmental Protection Cost - Accumulated Expenditure

(in units of 100 million yen)

